Minnesota Energy Efficiency Potential Study: 2020–2029

Appendix L: Trade Ally Survey Report

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Conservation Applied Research and Development (CARD) FINAL Report

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Background:

Minnesota has a thirty-plus year history of leadership in energy efficiency policy and achievements. In order to continue to maximize the benefits of cost-effective energy efficiency resource acquisition by utilities, the project team, consisting of Center for Energy and Environment (CEE), Optimal Energy (Optimal) and Seventhwave, was commissioned to:

- Estimate statewide electric and natural gas energy efficiency and carbon-saving potential for2020-2029;
- Produce data-driven and stakeholder-informed resources defining market segments, end uses, measures, and programs that could be targeted in the decade ahead to realize the state's cost-effective energy efficiency potential; and
- Engage stakeholders in order to help advance robust energy policies and energy efficiency programs in the state, and to inform future efficiency portfolio goals.

The full report, supporting documentation, and associated presentations can be found at the following website: https://www.mncee.org/mnpotentialstudy/final-report/

This appendix provides detailed information about the trade ally surveys that were conducted as part of the potential study. According to a recent study, there were an estimated 44,800 energy efficiency jobs in Minnesota in 2017, representing more than 75 percent of total clean energy employment in the state.[1] These jobs are in a number of different fields, including HVAC, lighting, and construction related fields. Many of these jobs interact with utility energy efficiency CIP programs across the state. The term "trade ally" is used here to broadly refer to the contractors and service providers that hold these jobs.

The interviews conducted as part of the survey included a diverse set of trade allies to help better understand the current program landscape for residential, commercial, and industrial buildings from the perspective of Minnesota trade allies. This research helped inform estimates of current market share for efficient technologies, uncovered motivations behind participation in energy efficiency programs, and identified challenges and opportunities associated with energy efficiency program designs. The results of this research were used in both the estimation of statewide energy efficiency potential and to guide policy and programmatic recommendations.

[1] Clean Energy Trust. 2018. *Clean Jobs Midwest: Minnesota Executive Summary*. (https://www.cleanjobsmidwest.com/state/minnesota)

Methodology

The project team targeted six trade ally types: HVAC contractors, electricians, insulation contractors, plumbers, design architects, and residential home builders. In total, the project team interviewed 29 HVAC contractors, 26 electricians, 20 insulation contractors, 10 plumbers, 10 design architects, and 10 residential home builders for a total of 105 completed phone interviews.

The interviews focused on a wide variety of topics that included, but were not limited to, trade ally knowledge of utility programs, ease of participation in utility programs, customer awareness of utility programs, new technologies, and overall business impact of utility programs. A typical interview lasted between 15 to 30 minutes. To encourage participation, the project team provided an incentive of $50 per completed survey. The interview scripts can be found in supplemental Appendix L-2 on the project website.

The sampling frame for the interviews was based on a combination of publically available service lists (mainly ThomasNet and Angie's List), trade association lists, and business information data purchased for CARD-funded projects. As seen in Figure 1, the sample of interviews was balanced between trade allies who operate in the Twin Cities metro[2] and those who operate in outstate Minnesota.

[2] The seven-county Twin Cities region comprises Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties. The rest of the state is considered outstate Minnesota for this research.

Figure 1: Map of trade allies surveyed (by zip code)

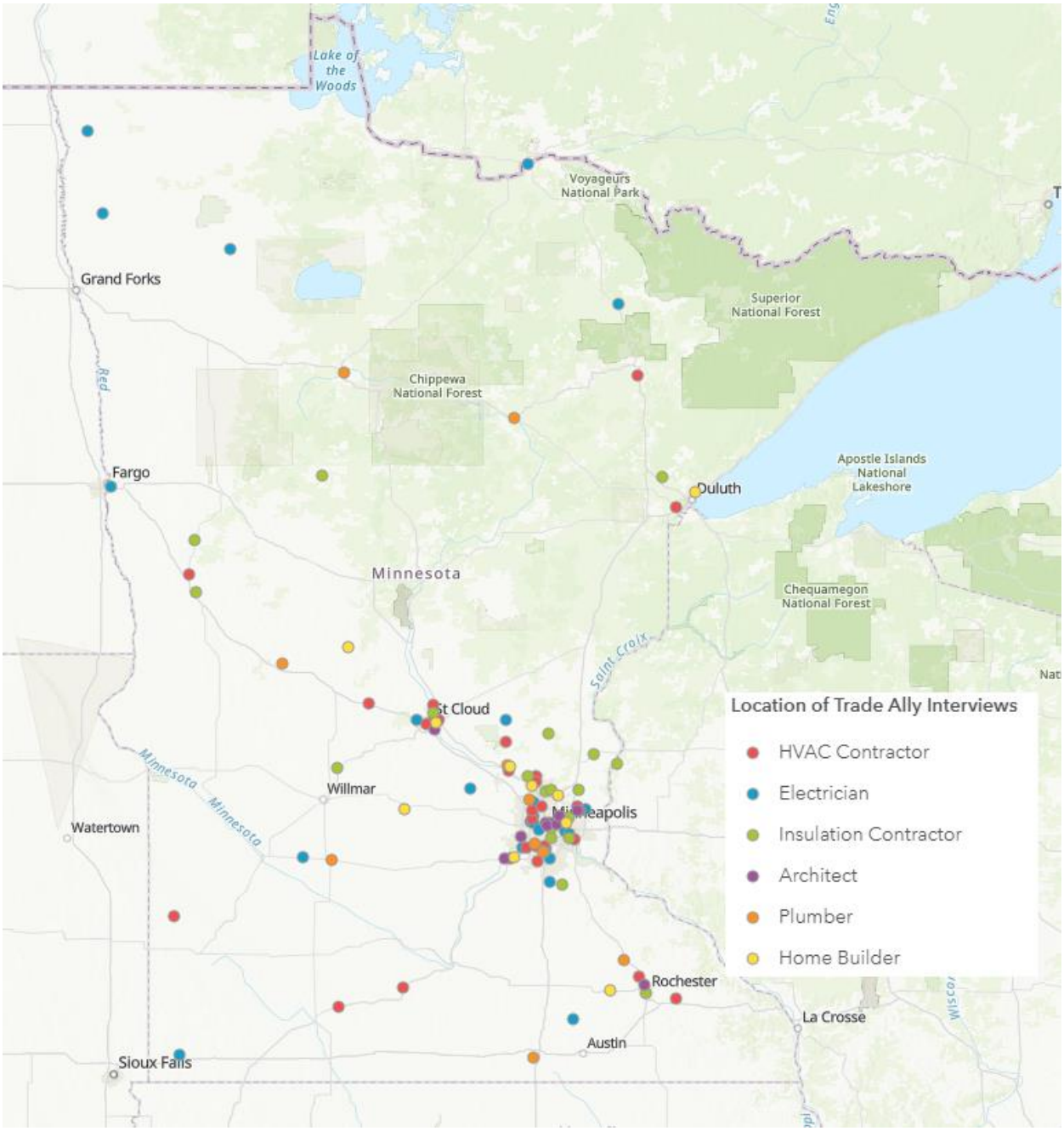
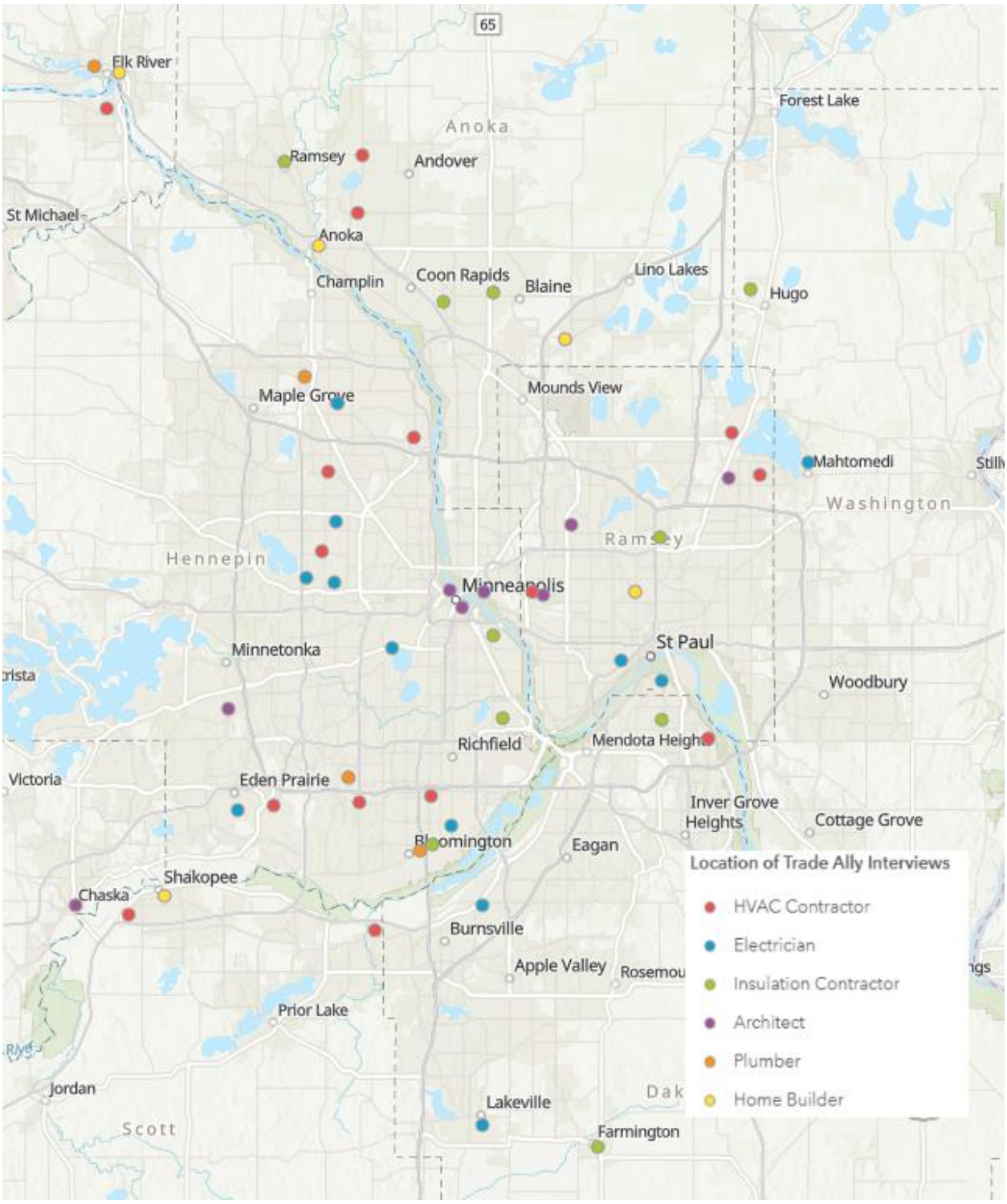


Figure 2: Map of trade allies surveyed in Twin Cities metro area (by zip code)



Overall summary statistics

A majority of interviewed trade allies have been in business for more than 20 years. Only seven percent of respondents indicated the age of the business was less than five years. Table 1 shows the distribution of the age of contractors interviewed. Table 2 shows the wide variety of business sizes represented in the survey population. There was fairly equal representation of all business sizes from small, one-person operations to large contractors employing greater than 20 people.

Table 1: Business age

Number of Years in Business	Count	% of Interviewed
Less than 5	6	7%
6-10	11	10%
11-20	33	31%
20+	55	52%
Total	**105**	**100%**

Table 2: Business size by number of employees

Number of Employees	Count	% of Interviewed
1	16	15%
2 to 5	27	26%
6 to 10	17	16%
11 to 20	20	19%
20+	25	24%
Total	**105**	**100%**

The distribution of all the trade ally interviews was divided between businesses located in the Twin Cities metro and businesses located in outstate Minnesota. Table 3 shows the count of businesses operating mostly in the metro area versus those operating in outstate Minnesota. Furthermore, it shows the percentage of businesses that reported working with at least one utility energy efficiency program. Businesses located in outstate Minnesota were less likely to have worked with a utility energy efficiency program. Across-the-board, contractors interviewed indicated a good business climate, with 93% of businesses stating that business has either been steady or growing over the past two years.

Table 3: Trade allies by location and utility interactions

	Count	% that worked with utility
Metro	56	84%
Outstate	49	71%

Table 4: Stated distribution of business growth

How would you describe your business growth over the past two years?	Percent
Growing	65%
Staying the Same	28%
Decreasing	7%

Table 5. Trade ally views of utility programs (% responding "yes")

	Plumbing Contractors	Electrical Contractors	HVAC Contractors	Insulation Contractors	Residential Home Builders	Architects
Worked with utility programs in the past	90%	100%	100%	85%	80%	80%
Utility programs are easy to participate in	80%	92%	93%	60%	40%	40%
Utility programs have helped business	60%	77%	90%	60%	30%	40%
Utilities should provide additional rebates to increase participation	60%	12%	65%	25%	70%	30%
Utilities should provide additional training and info to increase participation	50%	23%	35%	50%	80%	30%

Key takeaways

More than 75% of contractors interviewed who have worked with a utility efficiency program in the past described their experience as positive. Many contractors also stated that utility rebates and programs have helped their business. Contractors reported customers as being aware of the efficiency rebates available through utilities and that the rebates were a motivator for the customers to purchase energy efficiency upgrades.

Of the respondents who have had negative experiences with utility programs, a majority said that the length and complexity of the paperwork required to file for the rebates was a barrier for them. Others had concerns about the trainings required to participate in the programs and the frequency of changes to rebate amounts.

Opportunities for increasing the impact of utility programs were noted by some respondents, including increased rebate levels and additional customer outreach on the part of utilities. Furthermore, there is an opportunity for utilities to connect with contractors in outstate Minnesota that typically have fewer interactions with utility programs.

HVAC trade ally interview analysis

Summary

In total, the project team interviewed 29 HVAC contractors in Minnesota. These businesses were selected from publically available databases including Angie's List, ThomasNet, and internal project team contacts.

Overall, the interviews with HVAC businesses had a fairly even distribution across the state. The interviews captured responses from residential, commercial, and industrial focused contractors, and every HVAC business interviewed stated they had worked with a utility energy efficiency program.

Table 6: HVAC contractors by location and utility interaction

	Count	% worked with utility
Metro	16	100%
Outstate	13	100%

During the interviews, the project team noted which utilities the HVAC businesses stated they worked with. Some contractors mentioned several utilities they worked with, while other businesses stated they had only worked with one utility. Table 7 lists the frequency of utility mentions in the interviews. The frequency of utility mentions indicates that both electricity and natural gas utilities often work with HVAC businesses across Minnesota.

Table 7: Number of surveyed HVAC contractors that have worked with each MN utility

Utilities	Count
Xcel	23
CenterPoint Energy	19
Minnesota Energy Resources Corporation	9
Minnesota Power	5
Wright-Hennepin Co-op	4
Dakota Electric Co-op	4
Connexus Energy Co-op	4
Sterns County Co-op	4
MN Valley Co-op	3
Rochester Public Utilities	2
Shakopee Public Utilities	2
Otter Tail Power	1
Anoka Public Utilities	1
Chanhassen Public Utilities	1
Elk River Public Utilities	1
East Central Co-op	1
Brown County Co-op	1
BENCO Co-op	1
South Central Co-op	1
Alexandria Public Utilities	1
Austin Public Utilities	1

Distribution of HVAC businesses' age shows that a majority of businesses are older than 10 years. Table 8 summarizes the distribution of business age. In general, the interviewed HVAC businesses employ more than 10 people. The full summary of HVAC business size can be found in Table 9.

Table 8: Business age of HVAC contractors

Number of Years in Business	Count	% of Interviewed
Less than 5	2	7%
6-10	2	7%
11-20	12	41%
20+	13	45%

Table 9: HVAC contractor size by number of employees

Number of Employees	Count	% of Interviewed
1	3	10%
2 to 5	3	10%
6 to 10	6	21%
11 to 20	9	31%
20+	8	28%

Overall, HVAC businesses in Minnesota described their businesses as growing over the past two years. A majority of HVAC businesses have experienced business growth and have hired at least one new employee recently.

Table 10: HVAC contractor stated business growth

How would you describe your business growth over the past two years?	Percent
Growing	59%
Staying the Same	34%
Decreasing	7%

HVAC contractor comments - Utility efficiency programs

Overall experience with utility programs

Table 11 and Table 12 highlight the results of two key questions related to HVAC businesses' general experience participating in utility programs. A large majority, over 90%, of HVAC contractors indicated that utility programs were fairly easy to participate in and that the programs have helped their business.

Table 11: HVAC contractor stated ease of participation in utility programs

Are utility programs easy to participate in?	Count	Percent
Yes	27	93%
No	2	7%

Table 12: HVAC contractor stated business effect of utility programs

Have the utility run programs helped your business?	Count	Percent
Yes	26	90%
No	3	10%

Contractors' stated opportunities to improve utility efficiency programs

Many of the respondents stated that providing larger rebates and increasing education on high efficiency technologies would encourage more customers to purchase equipment like ductless heat pumps, variable-speed furnaces, and condensing boilers. Some respondents said the paperwork needed to complete the rebates is too complicated, and that streamlining the process would result in increased program participation.

Comments on new technologies

The majority of respondents said they have a strong business interest in installing variable-speed furnaces and ductless heat pumps, as well as selling and service commercial roof-top units. Many said that utilities should provide more rebates and customer education around these technologies, noting that many of their customers are not aware of high efficiency options, and that increased awareness would help them sell more.

One technology that surveyed HVAC contractors were not generally involved in was installing and servicing building automation systems, with only 21% of contractors stating they had a significant business interest in that area.

Electrician trade ally interview analysis

Summary

In total, the project team interviewed 26 electrical contractors in Minnesota. These businesses were selected from publically available databases including the Minnesota Department of Labor and Industry's list of licensed electricians, Angie's List, ThomasNet, and Yellow Pages.

Interviews were conducted with contractors that operate both within the metro area and outstate Minnesota. Table 13 shows the geographic breakdown of contractors surveyed as well as the percentage of contractors who have previously worked with at least one utility program. 100% of electrical contractors surveyed indicated that they have participated in at least one utility program. 80% of electrical contractors interviewed focus most of their business in the commercial and industrial sector. 20% of businesses focus on working in the residential sector.

Table 13: Electrical contractors by location and utility interaction

	Count	% worked with utility
Metro	14	100%
Outstate	12	100%

During the interviews, the project team noted which utilities the electrical contractors mentioned they have worked with. Some contractors mentioned several utilities they have worked with, while other businesses stated they have only worked with one utility. Table 14 goes through the frequency of utility mentions in the interviews. Generally, electricians interviewed stated they have only worked with Minnesota electric utilities.

Table 14: Number of surveyed electrical contractors that have worked with each MN utility

Utilities	Count
Xcel Energy	19
Dakota Electric Co-op	7
Connexus Energy Co-op	6
East Central Co-op	3
Wright-Hennepin Co-op	3
Otter Tail Power	3
Chaska Public Utilities	2
PKM Co-op	2
Shakopee Public Utilities	2
MN Valley Co-op	2
Moorhead Public Utilities	2
Minnesota Power	1
City of Olivia	1
Marshall Public Utilities	1
CenterPoint Energy	1
MRES	1
Rochester Public Utilities	1
Peoples Co-op	1
Sterns Co-op	1
Minnkota Power	1
Lake Country Power	1

The interviews with electrical contractors indicated that a majority of businesses were over ten years old. Table 15 shows the full distribution of businesses age. A full range of business sizes were interviewed, from one employee to more than one hundred employees. Statistics on electrical contractors' business size can be found in Table 16.

Table 15: Business age of electrical contractors

Number of Years in Business	Count	% of Interviewed
Less than 5	2	8%
6-10	5	19%
11-20	6	23%
20+	13	50%

Table 16: Electrical contractor size by number of employees

Number of Employees	Count	% of Interviewed
1	6	23%
2 to 5	9	35%
6 to 10	5	19%
11 to 20	2	8%
20+	4	15%

In general, the interviewed electrician businesses indicated that business growth has either been increasing or staying the same. Table 17 shows that a majority of businesses describe business as either growing or steady. The interviews also captured that about 58% of electrician companies have hired at least one new employee in the past year.

Table 17: Electrical contractor stated business growth

How would you describe your business growth?	Percent
Growing	65%
Staying the Same	27%
Decreasing	8%

Electrician contractor comments - Utility efficiency programs

Overall experience with utility programs

Table 18 and Table 19 describe the experience electrical contractors have had with utility programs. A majority of contractors, 92%, indicated that utility programs are easy to participate in. A slightly smaller majority, 77%, felt that participating in utility programs helped their business.

Contractors noted that lighting rebates work well for customers, and that even though rebates sometimes take longer than desired to process, some projects would not have gone forward without being able to offer utility rebates. Several highlighted Xcel's One-Stop Efficiency Shop program as particularly effective, saying that the program helps owners make the decision to go forward with a project by providing a report detailing their current energy costs, what their savings will be, and when the project will pay off.

Table 18: Electrical contractors stated ease of participation in utility programs

Are utility programs easy to participate in?	Count	Percent
Yes	24	92%
No	1	4%
Unsure	1	4%

Table 19: Electrical contractors stated business effect of utility programs

Have the utility run programs helped your business?	Count	Percent
Yes	20	77%
No	6	23%

Contractors' stated opportunities to improve utility efficiency programs

Overall, electrical contractors said that utility programs are easy to work with, but that the rebate applications and processing time are too burdensome and take too long. They also noted that the process for gaining access to customer utility bills is difficult, but acknowledged that given the sensitive nature of customer information, it is understandable that the process involved in getting access would be challenging. General suggestions for improvement in these areas include making sure that applications are as consolidated as possible, are easy to enter information into, and do not require repeating the same information across multiple forms.

Comments on new technologies

Every contractor the project team interviewed mainly installs LED fixtures, indicating that the industry has fully adopted this relatively new technology. However, when it came to lighting controls and controllable receptacles for plug loads, despite being familiar with the technologies, they do not yet make up a significant share of their business.

Insulation trade ally interview analysis

Summary

In total, the project team interviewed 20 insulation contractors in Minnesota. These businesses were selected from publically available databases of insulation contractors including Angie's List, ThomasNet, and Yellow Pages.

Overall, the interviews with insulation businesses had a fairly even distribution across the state. The companies interviewed stated that they focus most of their business in the residential sector, although some companies indicated that they do some commercial work as well. On average, interviewed contractors stated that about 63% of their business comes from retrofits and 37% of their work comes from insulation jobs for new construction. However, a few larger firms focused a majority of their business in the new construction market. All of the insulation contractors that conduct their business primarily in the metro area stated that they have worked with a utility program in the past. However, there remain opportunities for utilities to connect with insulation businesses in outstate Minnesota.

Table 20: Insulation contractors by location and utility interaction

	Count	% worked with utility program
Metro	12	100%
Outstate	8	63%

During the interviews, the project team noted which utilities the insulation businesses mentioned they had worked with. Some contractors mentioned several utilities they have worked with, while other businesses stated they have not worked with any utilities.

Table 21 shows frequency of utility mentions in the interviews. It is important to note that the top three (in terms of total number of mentions) are all natural gas utilities, which makes sense because a majority of CIP spending in insulation programs comes from natural gas utilities.

Table 21: Number of surveyed insulation contractors that have worked with each MN utility

Utilities	Count
Xcel Energy	14
CenterPoint Energy	11
Minnesota Energy Resources Corporation	6
Connexus Energy Co-Op	3
Dakota Electric Co-Op	3
Otter Tail Power	2
Austin Public Utilities	1
Lake Region Co-Op	1

The distribution of the businesses' age was fairly split, with most insulation businesses having been in existence for more than 10 years. Table 22 shows the distribution of businesses' age. The insulation businesses interviewed were typically smaller in terms of the number of employees and annual gross revenue when compared to other trade allies. In general, they focus their work on insulation and air sealing services. Table 23 shows the distribution of insulation businesses interviewed based on number employees.

Table 22: Business age of insulation contractors

Number of Years in Business	Count	% of Interviewed
Less than 5	1	5%
6-10	3	15%
11-20	8	40%
20+	8	40%

Table 23: Insulation contactor business size by number of employees

Number of Employees	Count	% of Interviewed
1	3	15%
2 to 5	9	45%
6 to 10	3	15%
11 to 20	2	10%
20+	3	15%

Interviewed insulation contractors generally described their businesses as growing in the last two years. As seen in Table 24 only one business interviewed said that their business has been decreasing. In addition, a majority of respondents interviewed, 75%, stated that they have hired at least one new employee over the past year.

Table 24: Insulation contractor stated business growth

How would you describe your business growth over the past two years?	Percent
Growing	70%
Staying the Same	25%
Decreasing	5%

Insulation contractor comments - Utility efficiency programs

Overall experience with utility programs

Table 25 and Table 26 describe insulation contractors' general experience with participating in utility programs. Overall, a majority of insulation companies indicated that utility programs were fairly easy to participate in and that the programs have helped their business.

Table 25: Insulation contractor stated ease of participation in utility programs

Are utility programs easy to participate in?	Count	Percent
Yes	12	60%
No	5	25%
Not Applicable	3	15%

Table 26: Insulation contractor stated business effect of utility programs

Have utility programs helped business?	Count	Percent
Yes	12	60%
No	5	25%
Not Applicable	3	15%

Insulation contractors reported that utility programs help their business. Customers are generally aware of insulation rebate programs, and often hear about contractors from a utility audit or get the contractors' name from a preferred vendors list on the utility website. Furthermore, contractors felt that trainings to learn proper insulation techniques were helpful, and that they appreciated when utilities eliminate contractors from their preferred vendors lists who do not understand proper techniques.

Contractors also noted that utility rebates are often key to selling a job, with customers being significantly more likely to go forward with an insulation project when they see the size of the rebate being offered by their utility. In addition, some contractors indicated that they found the programs to be generally easy to work with, and that the time involved in completing and processing of the rebate was not overly burdensome.

Contractors' stated opportunities to improve utility programs

One common theme among insulation contractors is that they would like utilities to do more customer outreach to promote their insulation programs because many customers do not know that their utility offers rebates for insulation work. There were some who noted that from the application paperwork, to becoming a certified contractor, to the audit requirement some utilities have before insulation work could be completed, the requirements for utility insulation programs took too much effort. They were eager for utilities to streamline the process and cut out any parts of the process that may not be necessary.

Customers also pointed out that when the housing market is doing well and there are a lot of new homes being constructed, they can be busy just with new construction projects, which are typically easier and more lucrative for them. Some contractors do not like the amount of time they need to spend with customers when doing jobs in existing homes, which is another reason why new construction jobs may be preferred. Utility program designs that could minimize the time contractors need to spend selling and/or walking customers through insulation jobs would make those jobs more appealing to contractors.

Plumbing trade ally interview analysis

Summary

In total, the project team interviewed ten plumbing contractors in Minnesota. These businesses were selected from publically available databases including Angie's List, ThomasNet, and Yellow Pages. Below is some distribution analysis of the businesses that took part in the interview.

Interviews were distributed equally between contractors working in the metro area and those working in outstate Minnesota. 80% of respondents indicated that their primary business focus is in the residential sector, while 20% indicated that the commercial sector is their focus. Of the ten plumbing contractors interviewed, all but one had worked with a utility efficiency program in the past. Respondents indicated the utilities they recalled working with in the past. Table 28 shows the utilities mentioned and the frequency each was mentioned throughout the interviews.

Table 27: Plumbing contractors by location and utility interaction

	Count	% Work with Utility
Metro	5	80%
Out-state	5	100%

Table 28: Number of surveyed plumbing contractors that have worked with each MN utility

Utilities	Count
CenterPoint Energy	5
Xcel Energy	4
Minnesota Energy Resources Corporation	4
Minnesota Power	2
Beltrami Electric Co-Op	1
Freeborn-Mower Co-Op	1
Great Plains Natural Gas	1
Lake County Power	1
Renville-Sibley Co-Op	1
Rochester Public Utility	1

Nearly all of the interviewed plumbing contractors have been in business for more than 20 years. Only one respondent indicated the age of the business was less than 20 years. Table 30 indicates the distribution of the size of contractors interviewed. Most of the interviewed contractors employed at least 10 people, with a total range of 3-180 employees.

Table 29: Business age of plumbing contractors

Number of Years in Business	Count	% of Interviewed
Less than 5	0	0%
6-10	1	10%
11-20	0	0%
20+	9	90%

Table 30: Plumbing contractor size by number of employees

Number of Employees	Count	% of Interviewed
1	0	0%
2 to 5	2	20%
6 to 10	1	10%
11 to 20	3	30%
20+	4	40%

Table 31 shows that most of the interviewed plumbing contractors have experienced business growth over the past two years, and no contractor interviewed stated business has been declining. Additionally, 50% of contractors interviewed indicated that they have added new hires in the past year.

Table 31: Plumbing contractor stated business growth

How would you describe your business growth over the past two years?	Percent
Growing	70%
Staying the Same	30%
Decreasing	0%

Plumbing contractor comments - Utility efficiency programs

Overall experience with utility programs

Table 32 and Table 33 below summarize respondent's experiences with utility efficiency programs. Nearly all the interviewed contractors who indicated they had participated in a utility program, describe it as easy to participate in. Additionally, most contractors indicated that they believe utility programs have been positive for their overall business.

Table 32: Plumbing contractor stated ease of participation in utility programs

Are utility programs easy to participate in?	Count	Percent
Yes	8	80%
No	0	0%
Unsure	1	10%
Do not participate	1	10%

Table 33: Plumbing contractor stated business effect of utility programs

Do you feel utility programs have helped your business?	Count	Percent
Yes	6	60%
No	2	20%
Unsure	1	20%
Do not participate	1	10%

Many insulation contractors reported having great experience with utility programs, and that customers seem appreciative of the rebate, especially when they are not expecting it. These contractors stated that utility programs have really helped their businesses, with some saying that many jobs would not be feasible without the rebates.

While many contractors noted positive experiences, others noted that certain utility programs were harder to work with than others. One challenge for contractors is that continually changing program rules for what jobs qualify and the level of rebate amounts can be confusing and difficult to keep up with. This can translate into frustration on the part of both contractors and customers when there are misunderstandings over the program requirements.

Contractors' stated opportunities to improve utility efficiency programs

A general comment about utility programs was that making people more aware would increase demand, since many of their customers do not know that the programs exist. They thought utilities advertising programs through multiple channels might help increase awareness. Furthermore, contractors thought it would be very beneficial if utilities were able to coordinate and offer standardized programs and rebates across territories. Standardizing would make it easier for contractors who work across multiple utility territories to keep track of the utility programs available to the customers they're serving.

Comments on new technologies

When asked about new technologies, many contractors spoke about tankless water heaters. There are strong concerns among some plumbing contractors about technical issues with tankless water heaters, including concerns about functionality with hard water supplies and very cold incoming water

temperatures. They did not believe that utilities had a role to play in overcoming these issues, and indicated that they would install more once the technological issues were worked out.

Contractors also said that the incremental cost of a tankless water heater was a barrier to installing more of them, a similar comment that was made about condensing storage water heaters. They said that higher utility rebates would help overcome this issue for both technologies.

Residential home builder trade ally interview analysis

Summary

The project team interviewed 10 residential home builders in Minnesota. These businesses were selected from publically available databases including Angie's List, ThomasNet, and Yellow Pages. Below is the distribution analysis of the businesses that took part in the interviews.

Table 34 shows equal numbers of responses were received from home builders operating in the metro area and those operating in outstate Minnesota. The majority of our participants also indicated that they have participated in a utility efficiency program in the past. The percentages of builders who have participated in utility programs in the past were the same for metro area builders and out-state builders. Interview participants were able to identify five utilities they recalled working with. Table 35 shows the frequency of utility mentions in the interviews.

Table 34: Home builders by location and utility interaction

	Count	% Worked with Utility
Metro	5	80%
Out-State	5	80%

Table 35: Number of surveyed home builders that have worked with each MN utility

Utilities	Count of Home Builders Working with Utility
Xcel Energy	4
CenterPoint Energy	3
Minnesota Power	2
Connexus Energy	1
Minnesota Energy Resources	1

Table 36 and Table 37 below provide additional information on the size and age of the business. Interview responses recorded in the home builders category all came from relatively mature businesses. All builders interviewed have been in business for more than 10 years, and a majority have been operating for at least 20 years. In contrast, the size of builders interviewed is distributed relatively evenly, ranging from 1 to 35 employees.

Table 36: Business age of home builders

Number of Years in Business	Count	% of Interviewed
Less than 5	0	0%
6-10	0	0%
11-20	4	40%
20+	6	60%

Table 37: Business size of home builders by number of employees

Number of Employees	Count	% of Interviewed
1	2	20%
2 to 5	3	30%
6 to 10	2	20%
11 to 20	2	20%
20+	1	10%

The housing market in Minnesota is experiencing strong growth and demand. Table 38 shows nearly all of the builders interviewed have experienced increased demand in the past two years. All respondents who indicated their overall business was either remaining flat or decreasing, stated they were at capacity or made an organizational decision to reduce the number of jobs they accepted. Despite these growth trends, most respondents, 60%, indicated they have not hired any new employees in the past year.

Table 38: Home builders stated business growth

How would you describe your business growth over the past two years?	Percent
Growing	70%
Staying the Same	20%
Decreasing	10%

Residential home builder contractor comments - Utility efficiency programs

Overall experience with utility programs

Of respondents who indicated they have participated in a utility efficiency program in the past, most stated they felt the programs are easy to participate in. However, the majority of that same group stated they did not think that utility programs had a positive impact on their business.

Table 39: Home builders stated ease of participation in utility programs

Are utility programs easy to participate in?	Count	Percent
Yes	4	40%
No	1	10%
Unsure	3	30%
Do not participate	2	20%

Table 40: Home builders stated business effect of utility programs

Do you feel utility programs have helped your business?	Count	Percent
Yes	3	30%
No	5	50%
Unsure	0	0%
Do not participate	2	20%

Some residential home builders believed that utility programs have helped their businesses, and also noted that the programs teach them things that their subcontractors could improve on as far as the performance quality of the home build. However, many felt that utility rebates were not the deciding factor in home building considerations, and said that they do not include utility incentives in their pitch when selling to customers. Instead, they stress the long-term savings customers will benefit from in an efficient home, and said that they talk to every customer about the right thing to do from an operational perspective whether or not a rebate is available.

One regional difference in the surveys in that home builders who primarily build homes that are not connected to natural gas find that their customers really appreciate the ability to participate in advanced electric off-peak programs.

Contractors stated opportunities to improve utility efficiency programs

Home builders stated that it would be helpful for utilities to educate their customers more about the benefits of highly efficient homes, and for them to tell customers which builders are truly building efficiency homes. This would help deal with the problem noted by some that it is difficult for an energy efficient home builder to compete with people just building to code. When builders try to justify the cost difference by saying their homes are better quality and a better product, it can sound biased to the customers. If utilities, a trusted source, told people what the differences really were it could make a large difference in some cases.

Architect trade ally interview analysis

Summary

The project team interviewed 10 architects and designers in Minnesota. These businesses were selected from a list of architects included in the CARD Commercial Codes Compliance Study completed by Center for Energy and Environment (CEE). Below is a distribution analysis of the businesses that took part in the interviews.

Of the architects and design firms interviewed, the majority indicated that they accept clients across the entire state. The project team also interviewed several firms that indicated they work only in the metro area (see Table 41). The majority of firms interviewed also responded that they have worked with a utility efficiency program in the past. Respondents were asked to recall the utilities they worked with. Five utilities were mentioned and the frequency is recorded in Table 42.

Table 41: Architects by location and utility interaction

	Count	% Worked with Utility
Metro MN	4	75%
Contractor Works Statewide	6	83%

Table 42: Number of surveyed architects that have worked with each MN utility

Utilities	Count of Architect Companies that Stated Working with Utility
Xcel Energy	8
CenterPoint Energy	3
Great River Energy	1
Minnesota Power	1
Rochester Public Utility	1

Architects interviewed were mostly long established businesses that have been operating for at least 20 years. However, the size of the businesses varied significantly. Respondents indicated the number of employees ranged from 1 to 120. Table 43 and Table 44 show the full distribution of business characteristics.

Table 43: Business age of architects

Number of Years in Business	Count	% of Interviewed
Less than 5	1	10%
6-10	0	0%
11-20	3	30%
20+	6	60%

Table 44: Architect business size by number of employees

Number of Employees	Count	% of Interviewed
1	2	20%
2 to 5	2	20%
6 to 10	0	0%
11 to 20	2	20%
20+	4	40%

The majority of architects interviewed have experienced business growth over the past two years. Of those companies experiencing business growth, most expect this trend to continue in the near future. Despite growth trends, most companies interviewed (60%) did not hire new employees in the past year (see Table 45).

Table 45: Architects stated business growth

How would you describe your business growth over the past two years?	Percent
Growing	60%
Staying the Same	30%
Decreasing	10%

Architect comments - Utility efficiency programs

Overall experience with utility programs

Table 46: Architects stated ease of participation in utility programs

How would you describe your experience?	Count	Percent
Positive	5	50%
Negative	0	0%
Neutral	3	30%
Do not participate	2	20%

Table 46 shows how the architects interviewed described their experience with utility programs. Most architects surveyed that participated in utility programs in the past described their experience as positive. No respondents described their experience as negative, and three respondents had no opinion.

When it came to questions on code related issues, responses were split on both the role of utilities in code training and support, and the difficulty of current code compliance. When asked what role Minnesota utilities could play in code training and support, many respondents seemed unsure and could not identify specific actions where utility presence would be beneficial (see Table 47). Additionally, 50% of respondents indicated they had a difficult time complying with code.

Table 47: Architects view on code training

Do you see a role for Minnesota utilities in code training and support?	Percent
Yes	30%
No	40%
No Opinion	30%

Architects reported that utility training programs can be useful in bringing together providers in a non-competitive manner, and that it would be nice to have more of them to help create new norms and raise standards across the industry. Some respondents also indicated that the rebates are a nice bonus for customers, although with the paperwork and requirements in current programs, some customers opt to not pursue them.

Additionally, the programs are sometimes viewed as inflexible and not easy to participate in. This combined with increased proposal denial experienced by some architects may result in lower participation in utility programs.

Contractors' stated opportunities to improve utility efficiency programs

One architect stated that they would like to see a utility paid screening program for large commercial and institutional buildings that allows for a level I or II ASHRAE audit, or similar evaluation, followed by an immediate assessment of probable savings in the building to help customers make better decisions on when to pursue a full recommissioning study. They have found that a large number of customers are disappointed when a study identifies 7-8% savings; while these are actually not only good, but typical savings which would be cost-effective for them to implement. A utility paid audit, followed by savings recommendations, would help address this issue.

Also, architects identified solar technology and occupancy sensors as areas that have the most potential for additional energy savings in the future, and would like to see utilities place increased emphasis in these areas.