

Plymouth-area power grid upgrades

Frequently Asked Questions from comments received

Project need

1. Why is Xcel Energy Proposing to build Alternative C?

- a. Before making a decision on which alternative to propose, Xcel Energy carefully evaluated public input and compared the alternatives using measurable criteria. Public comments showed a clear disapproval of new power lines particularly near homes. Similarly, many comments expressed disapproval of the location of a new substation south of Schmidt Lake Road. Also received were over 40 copies of a letter, signed by homeowners expressing disapproval of using the existing 69 kV line east of the Hollydale substation.

Incorporating this public input into a data based comparison. It is clear that using an existing line has less of an impact than constructing a new line, therefore it is important to note that Alternative C would build less than half the length of new lines than Alternatives A or B. Alternative C also does not require pad-mounted transformers in neighborhoods it serves. Modifications to Alternative C addressed opposition to the new substation by moving the proposed site from south to the north side of Schmidt Lake Road. In evaluating opposition to the use of the existing 69kV line, the primary concern is potential health impacts. Xcel Energy evaluated these concerns and found that these concerns are not supported by scientific evidence (see FAQs 36 and 37). Xcel Energy is committed to working with homeowners adjacent to the existing 69 kV line by providing assurance that this line will not be upgraded to a higher voltage, working to minimize vegetation management impacts and continuing to provide information about energy safety.

The Xcel Energy project team believes that the modified Alternative C is the best way to meet the community's energy needs while minimizing the impact to the community. This alternative relies on existing infrastructure, requiring less construction of new facilities. In addition, Alternative C provides the best electrical performance of the three alternatives and is the best long-term solution for the area's electrical needs.

2. Why are the proposed alternatives needed?

- a. The population in the city of Plymouth has quadrupled over the last 40 years. Since 1990, the population has grown from nearly 51,000 to over 75,000 residents. The [Metropolitan Council](#) estimates the population of Plymouth will continue to grow to more than 80,000 by 2030.
- b. The four primary electric substations, as well as the majority of distribution and transmission lines serving the Plymouth area are between 25 and 60 years old. The proposed electric upgrades are an investment in the city's future. They will reduce and

protect against potential power outages, and they will strengthen the electrical system serving the community.

- c. We are providing solutions to ensure the electric infrastructure in the area can meet the electric reliability needs of the Plymouth and Medina areas for the next 20-30 years.
- d. View more information on the Xcel Energy Plymouth and Medina [Electrical System Assessment](#). The report is posted on the Plymouth project website. Here is the full link to the report:
http://www.transmission.xcelenergy.com/staticfiles/xe/Plymouth_and_Medina_Electrical_System_Assessment-Final_Complete.pdf
- e. The Electrical System Assessment is referenced several times in the following questions and answers.

3. What area will the proposed electrical upgrades serve?

- a. The three proposed alternatives are intended to meet both the distribution and transmission needs of the Plymouth area. The area in need of distribution improvements is the Focused Study Area, depicted on page 13 (Figure 4.2) of the Electrical System Assessment. The demand for power within this 24-square mile area currently exceeds the capabilities of the existing electrical distribution facilities. In addition, there is a need on the transmission system to alleviate low voltage conditions on the transmission system serving the Transmission Area of Concern. The Transmission Area of Concern is depicted in (Figure 4.3) on page 16 of the Electric System Assessment. The infrastructure improvements proposed by Xcel Energy in these three alternatives are designed to address both the distribution and transmission needs in these two areas of concern.

Figure 4.2

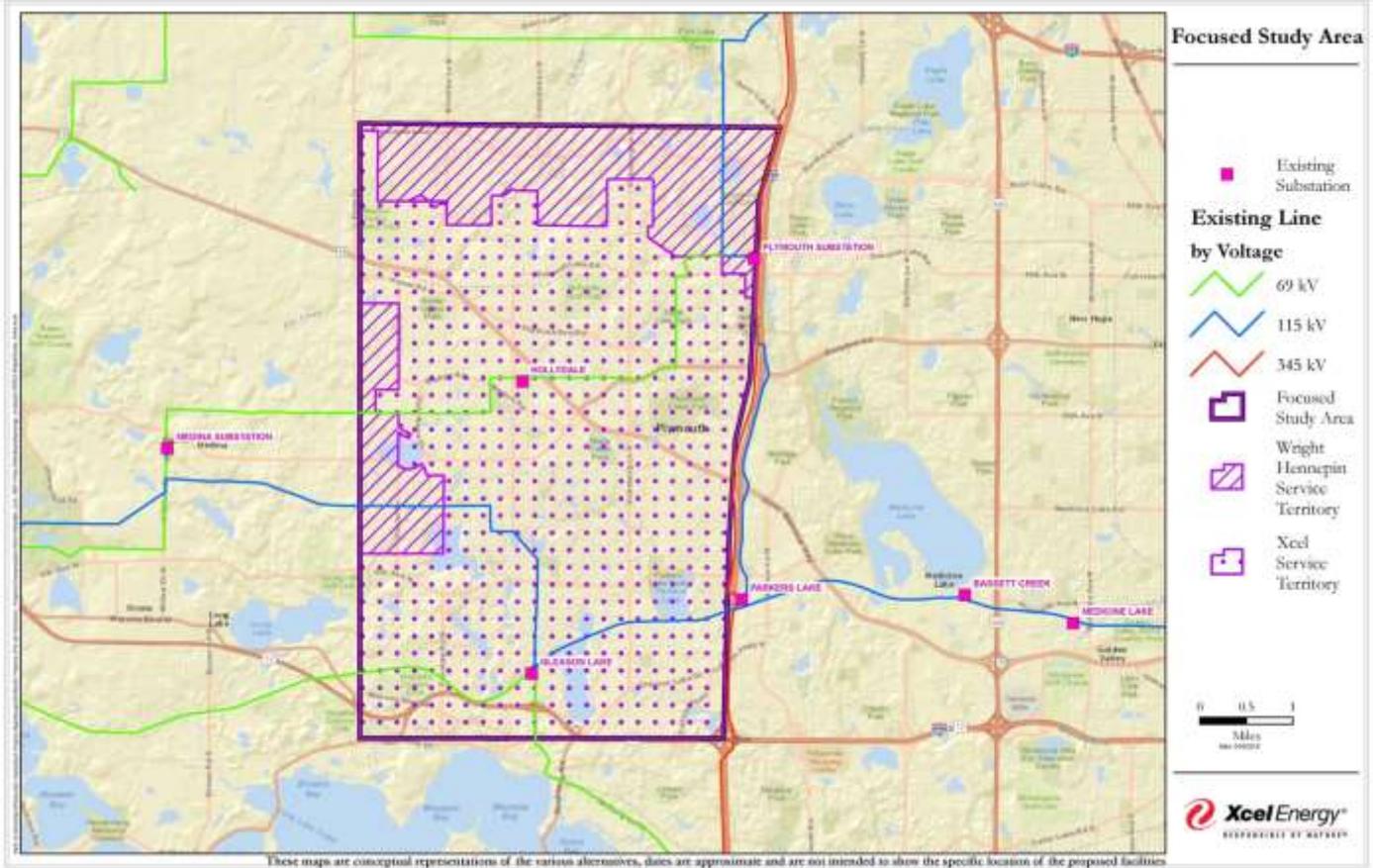
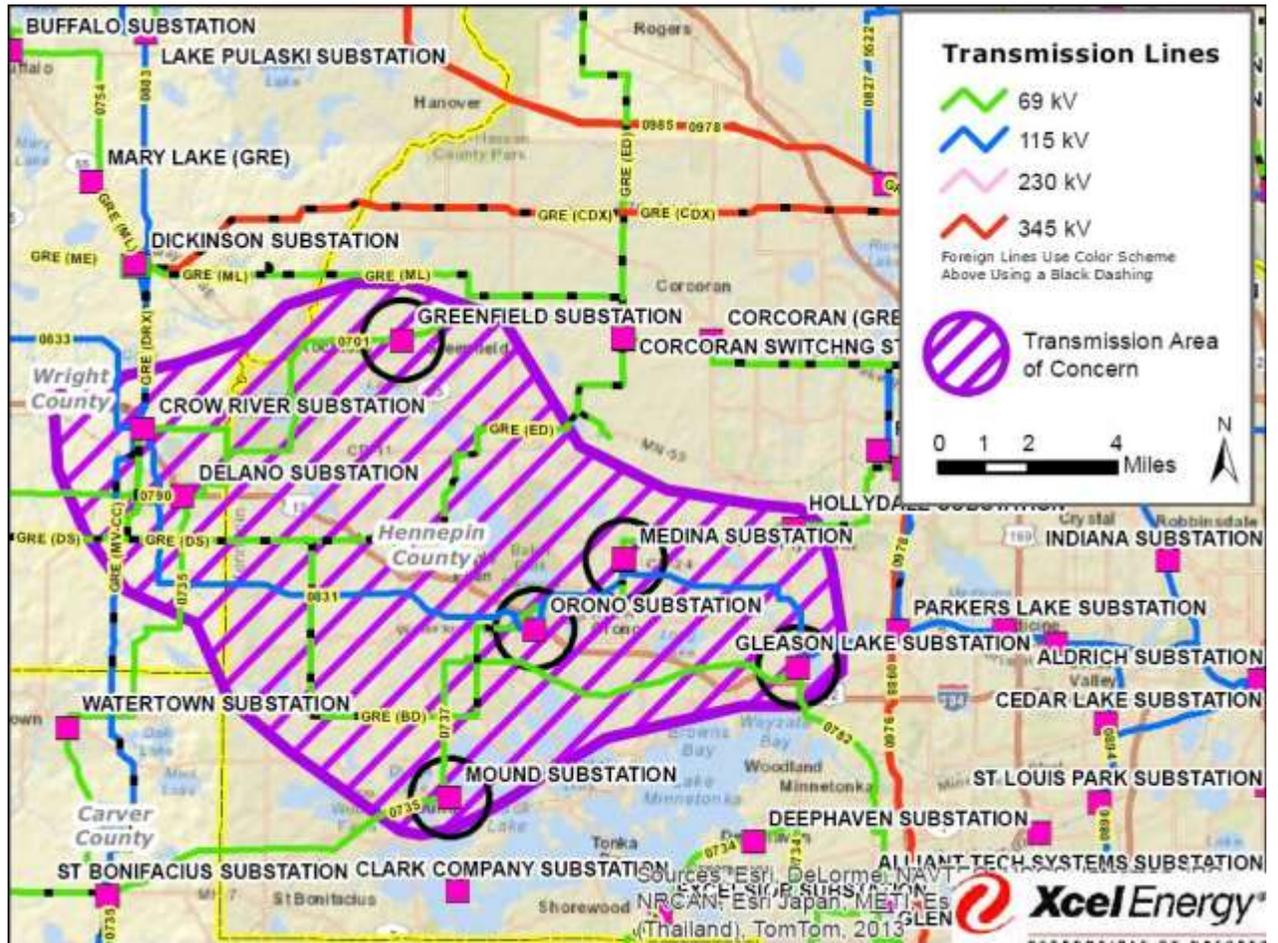


Figure 4.3



4. What is the expected electrical load growth for the project area?

- a. We estimate the peak load growth for the Plymouth area at 1% per year, based on the historic load growth trend from recent years. Our corporate load forecast for all of Northern States Power (NSP) shows an average load growth of 0.5% per year over the next 20 years. However, the corporate load forecast includes areas where load is saturated or is not otherwise growing, such as dense urban areas and rural towns. The fast-growing Plymouth area is located on the developed fringe of the Twin Cities metro, where load growth is higher than 0.5% and can be expected to increase as populations grow and the metro expands outward. (See Appendix D on the Electrical Assessment).

History

5. What are the details of the past Hollydale project?

- a. In 2011, Xcel Energy and Great River Energy proposed to upgrade an existing 69 kV transmission line in Plymouth and Medina to a 115 kV line. Both companies participated in a Certificate of Need and Route Permit process before the Minnesota Public Utilities Commission that continued through 2013. This upgrade was proposed to

meet distribution and transmission needs in the area allowing Xcel Energy to continue to reliably serve its customers. Due to lack of community acceptance of the proposed plan and the objections of legislators and other stakeholders, Xcel Energy and Great River Energy withdrew their applications in December, 2013 to begin working with stakeholders and to obtain consensus around an alternative electrical solution. The Hollydale law, introduced by legislators from the Plymouth area and passed by the legislature in 2013, and amended in 2014, strongly favored the use of distribution facilities rather than constructing a new transmission line. Since November, 2014 Xcel Energy has been making the quarterly filings with the Commission, implementing new Demand Side Management (“DSM”) efforts, and it also has developed three alternative electric distribution system solutions, including one alternative that re-energizes an existing 69 kV line, to address electric reliability issues in the Plymouth area. [View alternatives.](#)

- b. The outcome of the Hollydale process was to encourage Xcel Energy to develop distribution-level alternatives to address the electrical needs of this area. All three alternatives proposed by the Company meet this objective. The Commission also encouraged the Company to conduct public outreach regarding any proposed alternative. The Company recently held two open houses to present the three options and collect public feedback. The Company is continuing these public outreach efforts by responding to questions and comments from the public. After we have taken the opportunity to carefully review all comments, we will re-evaluate the three alternatives and keep the community informed of our next steps.

6. Were there distribution upgrades in the original Hollydale proposals?

- a. The Hollydale Project proposed the following distribution facilities: two 13.8 kV feeders from the Hollydale Substation (in-service in 2015); two 13.8 kV feeders from the Hollydale Substation and one 13.8 kV feeder from the Gleason Lake Substation (in-service in 2016); and one 13.8 kV feeder from Gleason Lake Substation (in-service in 2025). The figure below shows the transmission and distribution improvements that were contemplated as part of the original Hollydale Project.



Reliability

7. How do the three current alternatives proposed by Xcel Energy as part of the Plymouth-area upgrades compare in terms of improving power reliability now and in the future?

- a. Power outages can sometimes be based on unpredicted events, such as severe weather or public damage of equipment. However, other outages can occur due to forecasted events such as the overloading of equipment like wires, cables or transformers. These overloads can be prevented by increasing system capacity or otherwise reconfiguring the system to eliminate the overload conditions. All three proposed Plymouth-area power grid alternatives would improve reliability by reducing the frequency of power outages caused by overloaded equipment, and by decreasing the amount of time necessary to recover from an outage. In section 8 of the Electrical Assessment, the reliability performance of the three alternatives are compared on the basis of new distribution line lengths – the longer the distribution line, the greater exposure there is to the various factors that can cause outages.
- b. Appendix D of the Engineering Assessment provides details of each component that comprises the three alternatives, including cost for each component. With regard to future needs, the Company identified the need for future facilities based on the Company's projections for future electrical demand in the area. The Company developed different forecasts and projected needs based on these different forecasts. The distribution load forecasts are described in Section 5.1.2 of the Engineering Assessment and the transmission forecasts are described in Section 6.3. Transmission utilized a 1% and 2% load growth to analyze future needs. The 1% growth rate is the most likely growth scenario, based on historic load growth trends in the Focused Study Area and Transmission Area of Concern – the near term and far term costs for each

alternative as shown in Appendix D reflect this. However, 2% growth was also used as a 'worst case scenario' sensitivity analysis – these additional costs are listed separately in Appendix D to show the capability of each alternative to accommodate accelerated load growth.

8. What area of Plymouth would benefit electrically from Alternative A and B?

- a. See Focused Study Area in figure 4.2 and the Transmission Area of Concern in 4.3 referenced in Question 2.
- b. All three Alternatives benefit the same area in Plymouth.

9. What area of Plymouth would benefit electrically by Alternative C?

- a. See Focused Study Area in figure 4.2 and the Transmission Area of Concern in figure 4.3 referenced in Question 2.
- b. All three Alternatives benefit the same area in Plymouth.

Infrastructure size and location

10. How tall are the distribution structures?

- a. 40 to 50 feet.

11. What side of the street will the proposed distribution lines be built? What are the detailed locations of the proposed substations?

- a. The specific locations of poles are not yet known. Distribution poles are normally constructed in road right of way and private property use is usually not required. Design details and specific placements for distribution facilities are normally determined during the permitting, engineering and design stage of a project not the study stage. This is because the final engineering is labor and cost intensive and is typically performed for only the alternative that is selected for construction. Substation sites are also preliminary and are contingent on similar aspects, also requiring availability of land for purchase. The presented routes are preliminary and contingent upon permitting from the City. Some examples of design considerations are input from the community, the presence of existing utilities, attempts to minimize tree clearing, and avoidance of natural obstacles such as steep slopes and wetlands. After an alternative is selected, we will work to determine the best locations for the facilities in that alternative.

12. Can one of the existing substations in the Plymouth-area be expanded to meet the electrical needs?

- a. Using an existing substation typically requires major expansion and our only substation close enough to benefit the Focused Study Area with enough potential room is Parkers Lake substation. Expansion at Parkers Lake is utilized in Alternative B.

13. How many people live along the various alternatives?

- a. The identified routes are preliminary; therefore accurate house counts are not possible. A rough count of first row houses along each route is shown below.
 - i. Approximately 145 homes are along new line routes on Option A
 - ii. Approximately 98 homes are along new line routes on Option B

- iii. Approximately 26 homes are along new line routes on Option C
- iv. Approximately 85 homes along the existing 69kV line that would be re-energized in Option C

14. Did Xcel Energy try to identify an alternative that only routed lines through non-residential areas?

- a. Routing of new lines avoided residential areas where possible. However, the proposed new lines would function to support the existing distribution system serving residential neighborhoods and therefore must connect to the existing system at the pad mounted transformer locations. Because of this, it was not possible to completely avoid residential areas.

15. Did we look at upgrades that could be routed along Highway 55 and along I-494? If so, why were they not selected?

- a. We examined routing lines along Highway 55 and I-494, but as stated above, the new lines must connect with the existing system in certain load areas. These load areas are generally represented by the pad-mounted transformer locations. As a result, placing lines along Highway 55 and I-494 would not avoid the need to place lines to connect to these pad mounted transformer locations.

16. Do we have data on the other 12 alternatives studied?

- a. As part of the Certificate of Need proceeding for the previous Hollydale project, Xcel Energy studied 12 different alternatives to meet the electrical needs of Plymouth. The Company's analysis of these 12 alternatives was filed on August 19, 2013 in Docket No. E-002/ET-2/CN-12-113 and updated on October 28, 2013. This document can be accessed on the Public Utilities Commission website edockets system at: <http://mn.gov/puc/> by clicking on e-dockets and searching for the year "12" and number "113" under "Docket Number". A link to the e-docket search page is [here](#).

17. What is the size of the proposed new Pomerleau substation?

- a. The substation would be contained within a 230' feet by 320' feet fenced area. The highest structure in the substation would be 85 feet tall. The structure stands 45 feet tall, with 25 foot extended columns and 15 foot long shield spikes.

18. Where would the new substation be located?

- a. The new substation would need to be located near the neighborhoods it would serve and near an existing transmission line that would feed it electricity. Xcel Energy identified the proposed site south of Schmidt Lake Road because it is located adjacent to an existing transmission corridor, an interstate freeway, and industrial land use. The nearest residential home is approximately 400 feet away and the substation would be visually screened from adjacent neighborhoods by over 100 feet of trees and/or industrial buildings. Additional plantings could be used to screen the new substation from view of the short section of trail located 200 to 300 feet southwest of the proposed site.

19. Would I see the new substation?

- a. The substation would be screened from residences by trees and/or industrial buildings. You would see the substation from I-494, Schmidt Lake Road and from the paved trail

that runs west of I-494. Additional plantings can be used to screen the proposed substation from the trail.

20. Do you own the land for the proposed substation?

- a. No, we would have to purchase land either from the City or from a private landowner.

21. What happens if you don't build a new substation at or near the Pomerleau Lake site?

- a. Without the new substation, we would need to build lines from the Parkers Lake Substation as proposed in Alternative B. Alternative B would add 6 miles of distribution lines compared to Alternative C. The Pomerleau Lake Substation not only provides a necessary upgrade near the Hollydale Substation area but it also provides an additional source for future distribution needs east of I-494. Without the new substation, longer new distribution lines would be needed east of I-494.

22. Is the proposed Pomerleau Lake substation in a wetland area?

- a. The proposed substation site is located adjacent to an existing transmission corridor, an interstate freeway and an industrial land use. The substation would be built in a location that would not affect any wetlands. The design of the substation would include storm water treatment features and other environmental enhancements such as tree plantings. In addition, if Xcel Energy purchased the entire city parcel, the remainder of the parcel outside of the substation footprint would remain undisturbed.

23. Can a capacitor bank be added to the Gleason Lake Substation and Parkers Lake Substation instead of building a new substation?

- a. Adding a capacitor bank to Parkers Lake Substation does not provide any benefit to the Transmission Area of Concern under the critical contingency because it is not located in the right area of the system nor would it improve the distribution issues east of Hollydale Substation. Adding a capacitor bank at Gleason Lake Substation does provide benefit to the transmission system but does not improve the distribution issues east of Hollydale Substation.
- b. The Parkers Lake to Gleason Lake line rebuild and Gleason Lake capacitor bank are part of the base assumptions for all options and would provide additional support for the transmission system. All alternatives were designed to provide equivalent near term performance and were compared in Section 8 of the Engineering Assessment.

24. Would the existing 69 kV line that is proposed to be re-energized on Alternative C, also be re-energized on the other proposed alternatives?

- a. No. Alternatives A and B do not propose to re-energize this line. The 69 kV line is only proposed to be re-energized on Alternative C.

25. What are pad-mounted transformers and why are they needed?

- a. Two of the proposed Plymouth-area power grid upgrade alternatives require pad-mounted transformers be installed. Alternatives A & B require approximately 12 pad-mounted transformers on each option.
- b. Potentially, one switching cabinet could also be installed for every pad-mounted transformer that is needed. The exact number of switching cabinets has not been determined for the Plymouth-area power grid upgrades, but the maximum needed would be one cabinet per pad-mounted transformer.

- c. The pad-mounted transformers change voltage to meet system needs. In the case of the Plymouth-area power grid upgrades, the pad-mounted transformers are needed to bring extra energy capacity on to the existing electric system. The current distribution system in the area is built mostly at 13.8 kV. By building the new 34.5 kV distribution lines, transformers are needed to convert the voltage down to 13.8 kV to deliver the power to homes and businesses.

26. What is the size of the pad-mounted transformers?

- a. 8.6 ft. high, 10.8 ft. wide, 10 ft. deep

27. Why are pad-mounted transformers not proposed for Alternative C?

- a. Pad-mounted transformers are not needed for Alternative C (re-energizing the existing 69 kV transmission line) because the transmission line brings a different way to convert the voltage down to 13.8 kV by feeding the power through the existing Hollydale Substation and distributing it back out through the two new 1.5 mile and one 0.3 mile 13.8 kV distribution lines.

Vegetation Management

28. What will happen to the trees in the area of the lines?

- a. If new overhead lines are built, trees may need to be removed or trimmed to provide adequate clearance. Likewise, if the existing 69kV line is re-energized, trees will have to be trimmed or removed in the existing easement area. A two-year tree pruning cycle would be used on the re-energizing of the existing 69 kV line alternative. A two-year cycle is less intrusive and requires less clearance than a normal four or five year cycle. It requires an 11-foot clearance between the transmission line conductor and vegetation be maintained at all times. Different types of vegetation grow at varying rates, requiring more or less pruning. The illustration below demonstrates tree trimming for the existing 69 kV line. [View illustration.](#)

29. What can I plant near power lines?

- a. Low growing vegetation is permissible under power lines. Xcel Energy can consult with you about vegetation that can be planted in the power line area.

What's next?

30. What are next steps in the process for approval?

- a. Xcel Energy will analyze and review public input and based on the analysis, may revise the alternatives, develop a new alternative or, if an alternative is seen to be supported by data and the public, we may present a proposed alternative.

31. Do you need approval from the Public Utilities Commission to construct these alternatives?

- a. No, but we will need permits and approvals from the City of Plymouth.

Construction Questions

32. When will construction be taking place? How long will it take?

- a. We do not yet have a construction schedule. We are evaluating alternatives and will know more scheduling details once an alternative is selected and approved.

33. Can you describe the construction process?

- a. Overhead distribution line construction includes digging holes and setting poles in them and installing guy wires to hold the poles at angle points in the line. Conductors are strung between poles. Underground construction includes either digging a trench and installing cables and/or concrete encased duct lines in the ground and refilling the trench or directional boring cables in the ground between two locations without disturbing the ground surface in between. Generally, the poles are placed first and then the crew comes back on installs the conductor.
The overall process can take several months for 4 miles of distribution line.

Underground, health and other

34. Is underground construction an option for the proposed electrical infrastructure in all three alternatives?

- a. The distribution facilities can be put underground, but according to our tariffs filed with the Public Utilities Commission (PUC), all distribution facilities will be overhead, unless there are right-of-way or physical constraint issues require underground construction. A City can also request for distribution facilities to be placed underground. [View Tariff.](#)

35. What is the cost for the alternatives and who pays for the cost of the project?

- a. Preliminary costs are detailed in the Engineering Assessment in Appendix D.
- b. Initial costs for all options are in the \$30 million range, however long term costs for Alternatives A and B would be much higher than Alternative C.
- c. The cost for these types of improvements are borne by Xcel Energy and passed along to all ratepayers. Xcel Energy and the City have an agreement where the City would pay the cost difference between overhead and underground installation of distribution facilities if the City requests underground installation when overhead installation is feasible. A rough cost estimate of the City's cost if all distribution lines were to be built underground is:
 - i. Alternative A – \$6.6 million
 - ii. Alternative B – \$8.5 million
 - iii. Alternative C – \$2.5 million

36. What are the health effects of the proposed electrical infrastructure?

- a. Over the past 40 years a large amount of scientific research has been conducted on EMF and health. Many leading public health authorities such as the U.S. National Institute of Environmental Health Sciences and the World Health Organization, among others, have examined the research in great detail. These authorities have concluded that exposure to EMF has not been shown to cause or contribute to any adverse health effects. For

example, the World Health Organization currently reports: “despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.”

EMF calculations for Alternatives A, B are located at [this link](#) on the Plymouth project website. EMF calculations for Alternative C are available [here](#) on the Plymouth project website. View [EMF fact sheet](#).

- b. The World Health Organization relies on science-based EMF exposure guidelines issued by international expert groups to identify low-level electromagnetic fields. Two international expert groups have issued such exposure guidelines, and in their expert opinions, no adverse health effects occur at levels below their guidelines. The international expert groups are the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The IEEE guidelines for EMF (magnetic fields) are 9,040 mG and the ICNIRP guidelines are 2,000 mG. The fields from the 69 kV line would be far below the ICNIRP guideline levels.

37. Does EMF affect sleep?

- a. Like many things we are exposed to in modern life, there often are some studies that report some adverse effects from the exposure. Accordingly, public health authorities look at the quality of the studies and the results of the studies as a whole, rather than just studies that claim to find effects, to see if the studies are well done and the results are consistent overall before reaching conclusions about whether the studies as a whole show an exposure actually causes an effect.
- b. There have only been a few studies on EMF and sleep quality. The most recent EMF-sleep study was done by researchers at Harvard Medical School and the University of Washington. <http://aje.oxfordjournals.org/content/160/3/224.full>. It considered the earlier studies and was designed to get more realistic data by 1) using an objective measure of sleep outcomes and 2) by doing the study in people’s homes rather than a laboratory. It found that EMF exposure had no effect on sleep.

38. What happens if none of the alternatives are built?

- a. The current electrical demand for energy in Plymouth exceeds the capabilities of the existing system. If additional facilities are not constructed, this will likely result in longer and more frequent outages in this area, especially during periods of peak demand.

39. What are the effects of transferring the distribution facilities to 34.5 kV?

- a. The vast majority of load in the Focused Study Area is served on distribution lines at 13.8 kV. However, due to the distance limitations of the 13.8 kV voltage class, the overloading issues on the distribution and transmission system are not able to be

effectively solved by 13.8 kV feeders from either of the perimeter substations studied (Parkers Lake and Pomerleau Lake). For this reason, 34.5 kV must be used to adequately distribute power in the area from either of these substations. Step-down transformers are needed to make the 34.5 kV feeders compatible with the existing 13.8 kV system in the area.

40. Is there a federal or state right-of-way width standard for a 69 kilovolt line?

- a. No, right-of-way width can vary depending on the design of the line and adjacent land use.

41. Please provide a copy of each distribution study completed since May 12, 2014 for any distribution option contemplated. With respect to each route eliminated in narrowing options to A, B and C, please explain reasons for elimination of such route, including production of all related documents, memoranda or other correspondence.

- a. The only study that has been completed by the Company since May 12, 2014 to research the distribution and transmission needs in Plymouth and alternatives to address those needs is the Plymouth and Medina Electric System Assessment (Electrical System Assessment) dated June 1, 2016. The report is posted on the Plymouth project website. Here is the full link to the report:

http://www.transmission.xcelenergy.com/staticfiles/xcel/Plymouth_and_Medina_Electrical_System_Assessment-Final_Complete.pdf

The Company has not determined final routes for Alternatives A, B, or C. The routes identified to date are preliminary and may change during final design.

42. For each option A, B and C, currently identified please provide the following:

1) Cost of each project, together with the Excel spreadsheet or any related documents supporting calculations;

- a. The cost for each alternative is provided in Appendix D of the Electrical Assessment.

2) The number of homes impacted, separately by types of impact including but not limited to impacts such as those impacted by new poles/lines;

- a. An approximate count of first row houses is presented in FAQ 12 and below. It is important to note that the routes are conceptual therefore accurate houses per distance are not yet possible. The house counts represent the number of first row homes and provide a comparative measure of residences for each alternative.
- b. A rough count of first row houses along each route is shown below.
 - i. Approximately 145 homes are along new line routes on Option A
 - ii. Approximately 98 homes are along new line routes on Option B
 - iii. Approximately 26 homes are along new line routes on Option C
 - iv. Approximately 85 homes along the existing 69kV line that would be re-energized in Option C

a) Impacted by additional lines on existing poles;

- a. None of the alternatives proposes to place new lines on existing poles.

b) Impacted by substations;

- a. The only new proposed substation would be near Schmidt Lake Road at I-494. This potential substation site was selected to avoid impacts to homes. As such it would not be directly visible from any homes due to existing vegetation screening by dense wooded land and/or the presence of industrial buildings. The number of homes measured to the preliminary substation site shown at the public is as follows:

c) **Houses within 400 feet** – 1

d) **Houses within 600 feet** – 1

e) **Houses within 1000 feet** - 19

f) Impacted by New transformers;

- a. Pad-mounted transformers can usually be accommodated in road right-of-way. Exact locations of pad-mounted transformers have not yet been determined therefore the number of homes cannot be measured.

g) Impacted by other distribution facilities.

- a. See Frequently Asked Questions (“FAQ”) No. 12 and above.

3) Any environmental impacts considered such as nearby wetlands, parks and walking paths;

- a. See FAQ No. 21. The proposed substation site is located adjacent to an existing transmission corridor, an interstate freeway and an industrial land use. The substation would be built in a location that would not affect any wetlands. The design of the substation would include storm water treatment features and other environmental enhancements such as tree plantings. In addition, if Xcel Energy purchased the entire city parcel, the remainder of the parcel outside of the substation footprint would remain undisturbed. While the potential substation site is located near Nature Canyon Park, there is no formal park use at the potential substation site. The land in this area appears to be used currently for surplus soil dumping. The distance from the proposed substation site to the nearest park use is approximately 270 feet measured to the nearest portion of a paved trail.

4) With respect to any other factors weighed in the selection process, identify the scores for each route.

- a. The routes are still preliminary but generally speaking, in selecting routes and locations for new electrical system infrastructure, Xcel Energy attempts to minimize human and environmental impacts. No scoring of alternatives was completed.

43. Please identify the factors to be weighed in determining the ultimate route to be selected by Xcel Energy and proposed to the Cities of Plymouth and/or Medina. Please also provide copies of any documents identifying or defining these factors for the Plymouth

Project.

- a. Xcel Energy is currently reviewing public comments and has yet to determine whether our next step includes proposing one of the currently presented alternatives. Xcel Energy does not have a prescribed list of factors that will be used to determine final routes for the alternative that is ultimately selected for construction. As stated above, in determining routes and locations for new electrical system infrastructure, Xcel Energy attempts to minimize human and environmental impacts.

44. Please explain why each of the proposed alternatives impacts neighborhoods other than those in western Plymouth that Xcel Energy believes have the current need for additional power, including the production of all related documents?

- a. The three proposed alternatives are intended to meet both the distribution and transmission needs of the Plymouth area. The area in need of distribution improvements is the Focused Study Area, depicted on page 13 (Figure 4.2) of the Electrical System Assessment. The demand for power within this 24-square mile area currently exceeds the capabilities of the existing electrical distribution facilities. In addition, there is a need on the transmission system to alleviate low voltage conditions on the transmission system serving the transmission area of concern. The transmission area of concern is depicted in Figure 4.3 on page 16 of the Electric System Assessment. The proposed infrastructure improvements proposed by Xcel Energy in these three alternatives are designed to address both the distribution and transmission needs in these two areas of concern.

45. Please identify which of the current proposed alternatives is the preferred alternative and why, including production of all related documents?

- a. Xcel Energy does not have a preferred alternative. We are currently reviewing public comments and have yet to determine whether our next step includes proposing one of the presented alternatives.

46. Please identify the expected date of Xcel Energy's decision on alternative ultimately constructed.

- a. At this time, we are still in the process of reviewing all of the public comments that we have received and do not know when we will make a decision regarding what alternative will ultimately be constructed.

47. Please provide Xcel Energy's expected construction commencement date, including whether any bids for such construction have yet been solicited.

- a. As we are still in the process of determining what alternative will be constructed, no construction commencement date has been set nor have construction bids been solicited.

48. Please provide the following information which was not contained in the Engineering Report posted on the Xcel Energy website regarding the Plymouth:

1. ***How the proposed plans will improve power reliability to Western Plymouth;***
 - a. See Section 8.0 of the Electrical System Assessment posted on the project website.
2. ***All reports, information and other considerations resulting from public outreach reports to area residents or surveys and responses regarding their thoughts and the impacts;***
 - a. We are currently compiling results of the public meeting held on May 25th. A summary of public input along with all comments received will be posted on the project website.
3. ***Information addressing concerns raised landowners, parties and other stakeholders about Hollydale preferred routes and plans that resulted in termination of the proposed project;***
 - a. This information about the Hollydale project is available on Minnesota Public Utilities Commission's edocket system in Docket No. E-002/ET-2/CN-12-113 (Certificate of Need) and Docket No. E-002/TL-11-152 (Route Permit). Documents related to each of these proceedings can be accessed on the Public Utilities Commission website edockets system at: <http://mn.gov/puc/> by clicking on e-dockets and searching for the year "12" and number "113" under "Docket Number" or by searching the year "11" and the number "152.". A link to the e-docket search page is [here](#).
4. ***An explanation of why the impacted homes from proposed routes A and C should be asked to shoulder the burden the for power generated to western Plymouth, including an explanation and all related documents that discuss whether any viable transmission and/or substation options exist in the Transmission Area of Concern as that term is defined in the Engineering Report:***
 - a. See FAQ 2. The three proposed alternatives are intended to meet both the distribution and transmission needs of the Plymouth area. The area in need of distribution improvements is the Focused Study Area, depicted on page 13 (Figure 4.2) of the Electrical System Assessment. The demand for power within this 24-square mile area currently exceeds the capabilities of the existing electrical distribution facilities. In addition, there is a need on the transmission system to alleviate low voltage conditions on the transmission system serving the Transmission Area of Concern. The Transmission Area of Concern is depicted in (Figure 4.3) on page 16 of the Electric System Assessment. The infrastructure improvements proposed by Xcel Energy in these three alternatives are designed to address both the distribution and transmission needs in these two areas of concern. (figures above)
5. ***Explain why one or more of the 7 substations in the Transmission Area of Concern cannot be upgraded or modified to meet distribution needs and improve margin for overload conditions instead of building a new substation***

approximately 1500 feet from an existing substation, including the production of all related documents;

- a. See FAQ 11. Using an existing substation typically requires major expansion and our only substation close enough to benefit the Focused Study Area with enough potential room is the Parkers Lake Substation. Expansion at Parkers Lake Substation is utilized in Alternative B.

6. Provide a comparison of performance between adding a capacitor bank to the Gleason Lake Substation and Parkers Lake Substation vs building a new substation approximately 1500 feet from the existing Plymouth Substation;

- a. See FAQ 22. Adding a capacitor bank to Parkers Lake Substation does not provide any benefit to the Transmission Area of Concern under the critical contingency because it is not located in the right area of the system nor would it improve the distribution issues east of Hollydale Substation. Adding a capacitor bank at Gleason Lake Substation does provide benefit to the transmission system but does not improve the distribution issues east of Hollydale Substation. The Parkers Lake to Gleason Lake line rebuild and Gleason Lake capacitor bank are part of the base assumptions for all options and would provide additional support for the transmission system. All alternatives were designed to provide equivalent near term performance and were compared in Section 8 of the Engineering Assessment.

7. Page 47 of the posted Xcel Engineering Report incorrectly asserts that Option C is the only option that supports re-energizing the Hollydale 69kV line but it is clear that Option B also allows this the line to be energized using the existing Plymouth Substation, please explain this inconsistent statement.

- a. See FAQ 23. Alternatives A and B do not propose to re-energize this line. The 69 kV line is only proposed to be re-energized on Alternative C.

47. Please identify and provide copies of cost estimates regarding the purchase of land for the proposed Pomerleau Substation.

- a. Xcel Energy has not discussed specifics of purchasing any substation land from the City of Plymouth since the Public Utilities Commission application was withdrawn in 2013.

48. Please identify and provide copies of any cost estimates for expanding the Parkers Lake substation.

- a. See Appendix D of the Electrical System Assessment posted on the project website.

49. Please provide information and copies of any correspondence, whether written or in electronic form, with the City of Plymouth and/or the City of Medina regarding the consideration of any of the 15 proposed options, the sale of land for a proposed new substation, or the impact on area residents.

- a. Correspondence from the City of Medina and the City of Plymouth that was submitted as part of the Hollydale Project Route Permit and Certificate of Need proceedings is provided here.
- 50. Please describe and provide copies of all related documents regarding whether any of the proposed alternatives meets or complies with the City of Plymouth's 2030 Plan, as developed by the City of Plymouth Planning Commission.**
- a. Table 2-1 of the City's Comprehensive Plan predicts a 20% increase in number of households, an 11% increase in population and a 26% increase in employment from 2006 to 2030. Improvements in the electric system would be required to provide reliable electric service to meet this future growth. Specific siting of electric utilities is not contemplated in the plan. The current Pomerleau Lake Substation site is identified as a site for a potential future park. If this site is selected, Xcel Energy will work with the City to accommodate park facilities along with the substation.
- 51. By route, please identify each and every permit or approval needed by any third party for each route option A, B and C.**
- a. We anticipate that we will need local approvals from the City of Plymouth but this will depend on the specific alternative that is selected for construction.
- 52. By route option A, B and C, please identify anticipated transmission investments made into the future and anticipated dates for such investments.**
- a. The future transmission and distribution facilities that are anticipated to be required for each alternative are set forth in Appendix D of the Electrical System Assessment along with their anticipated timing. As noted in the in the Electrical System Assessment, the timing of future facilities depends on the growth of electrical demand in both the Focused Study Area and the Transmission Area of Concern.
- 53. The posted Xcel report and the response to the FAQ does not provide quantified details or comparisons for how the proposed plans will improve power reliability;**
- a. See section 8.0 of the Electrical System Assessment posted on the project website.
- 54. The posted Xcel report identifies the Transmission Area of Concern but does not adequately explain why distribution and substation upgrades and modification cannot be made within this area versus impacting communities outside of the Transmission Area of Concern;**
- a. See FAQ 2. The three proposed alternatives are intended to meet both the distribution and transmission needs of the Plymouth area. The area in need of distribution improvements is the Focused Study Area, depicted on page 13 (Figure 4.2) of the Electrical System Assessment. The demand for power within this 24-square mile area currently exceeds the capabilities of the existing electrical distribution facilities. In addition, there is a need on the transmission system to alleviate low voltage conditions on the transmission system serving the Transmission Area of Concern. The Transmission Area of Concern is depicted in (Figure 4.3) on page 16 of the Electric System Assessment. The infrastructure improvements proposed by Xcel Energy in these three alternatives are designed to address both the distribution and transmission needs in these two areas of concern.

55. The posted Xcel report and the response to the FAQ does not provide environmental risk or wetland impact assessments;

- a. The proposed substation site is located adjacent to an existing transmission corridor, an interstate freeway and an industrial land use. The substation would be built in a location that would not affect any wetlands. The design of the substation would include storm water treatment features and other environmental enhancements such as tree plantings. In addition, if Xcel Energy purchased the entire city parcel, the remainder of the parcel outside of the substation footprint would remain undisturbed.
- b. Proposed distribution lines would be primarily be built in road right-of-way. Environmental impacts would be limited to tree trimming or removal as needed.

56. The posted Xcel report and the response to the FAQ does not adequately provide results of details from public outreach reports to area residents or surveys and responses regarding their thoughts and the impacts;

- a. We are currently compiling results of the public meeting held on May 25th. A summary of public input along with all comments received will be posted on the project website.

57. The posted Xcel report and the response to the FAQ fails to provide sufficient sub component detail for each option and does not provide confidence levels associated with far term projections, skewing the implied option comparisons;

- a. Appendix D does not show the line-by-line costs because of the trade secret content of transmission facility costs. Projections are discussed in sections 5.1.2 and 6.3 of the Electrical Assessment. Additionally, as discussed in section 7.1 and 7.2 of the Electrical Assessment, these projections affect the far term project components and are subject to the actual growth rate versus the projected forecasted growth rate.

58. The posted Xcel report and the response to the FAQ fails to supply sufficient responses to concerns raised by landowners, parties and other stakeholders about Hollydale preferred routes and plans that resulted in termination of the proposed project;

- a. See FAQ 4. In 2011, Xcel Energy and Great River Energy proposed to upgrade an existing 69 kV transmission line in Plymouth and Medina to a 115 kV line. Both companies participated in a Certificate of Need and Route Permit process before the Minnesota Public Utilities Commission that continued through 2013. This upgrade was proposed to meet distribution and transmission needs in the area allowing Xcel Energy to continue to reliably serve its customers. Due to lack of community acceptance of the proposed plan and the objections of legislators and other stakeholders, Xcel Energy and Great River Energy withdrew their applications in December, 2013 to begin working with stakeholders and to obtain consensus around an alternative electrical solution. The Hollydale law, introduced by legislators from the Plymouth area and passed by the legislature in 2013, and amended in 2014, strongly favored the use of distribution facilities rather than

constructing a new transmission line. Since November, 2014 Xcel Energy has been making the quarterly filings with the Commission, implementing new Demand Side Management (“DSM”) efforts, and it also has developed three alternative electric distribution system solutions, including one alternative that re-energizes an existing 69 kV line, to address electric reliability issues in the Plymouth area. [View alternatives.](#)

- b. The outcome of the Hollydale process was to encourage Xcel Energy to develop distribution-level alternatives to address the electrical needs of this area. All three alternatives proposed by the Company meet this objective. The Commission also encouraged the Company to conduct public outreach regarding any proposed alternative. The Company recently held two open houses to present the three options and collect public feedback. The Company is continuing these public outreach efforts by responding to questions and comments from the public. After we have taken the opportunity to carefully review all comments, we will re-evaluate the three alternatives and keep the community informed of our next steps.

59. The posted Xcel report and the response to the FAQ does not explain why one or more of the 7 substations in the Transmission Area of Concern cannot be upgraded or modified to meet distribution and/or transmission needs and improve margin for overload conditions instead of building a new substation approximately 1500 feet from an existing substation;

- a. See FAQ 11. Using an existing substation typically requires major expansion and our only substation close enough to benefit the Focused Study Area with enough potential room is Parkers Lake substation. Expansion at Parkers Lake is utilized in Alternative B.

60. Page 47 of the posted Xcel report incorrectly asserts that Option C is the only option that supports re-energizing the Hollydale 69kv line but it is clear that Opt B also allows this the line to be energized using the existing Plymouth Substation;

- a. See FAQ 23. Alternatives A and B do not propose to re-energize this line. The 69 kV line is only proposed to be re-energized on Alternative C.

61. The possible solutions identified in Section 6.4.2 in the posted Xcel report are not sufficiently addressed in the proposed options and does not compare and contrast the options of creating load transfers at Parkers Lake vs building a new substation approximately 1500 feet from an existing substation;

- a. Section 7 of the Electrical System Assessment combines the components from Section 6.4.2 into the three study alternatives. The three study alternatives are then compared in Section 8 of the Electrical System Assessment.

62. The posted Xcel report and the response to the FAQ does not explain why a new substation should be built 1500 feet from an existing substation;

- a. The existing substation that is located 1500 feet from the proposed Pomerleau Lake substation is the Plymouth substation, which does not serve Xcel Energy customers. The Plymouth substation is jointly owned by Wright-Hennepin Cooperative Electric

Association and Great River Energy. The already limited space at the Plymouth substation site will be used for capacity needs of Wright-Hennepin. The Focused Study Area map shown in this document and in Figure 4.2 of the Electrical System Assessment shows the border between Xcel Energy's service territory in the area, and Wright-Hennepin's service territory. Wright-Hennepin needs the capacity expansion available at the Plymouth substation to serve its customers generally north of the substation site. Xcel Energy needs capacity to serve its customers generally south of the substation site.

63. Figure 1.2, Evaluation and Comparison of System Alternatives, fails to illustrate impacts of building a substation in close proximity to a prized Plymouth wetland, park and playground.

c. View FAQ 17-21.