

Columbia City Council Work Session: Proposed Transmission Lines November 22, 2010

Questions and Answers from the City Council work session.

What does “no guarantee” that system will be more reliable mean? How frequently might outages occur? The primary reason for the addition of the transmission lines and the substation site is reliability. As our loads grow the utility needs to expand the transmission and substation system to maintain our current level of reliability. We will be statistically more reliable with building these additional transmission lines because they will be capable of handling more strain. No utility can guarantee electric service 100% of the time. There are times when things beyond the utility’s control like high winds, ice, squirrels, birds, etc. that can cause interruptions with our electric system.

Would the public response be better for 69 kilovolt lines instead of 161 kilovolt lines? Would it cost less? It is hard to tell if the public would like 69 kilovolt lines instead of a 161 kilovolt lines. There are many more miles of 69 kilovolts lines in the Columbia metropolitan area so a level of acceptability may already be established.

At lower voltages, larger conductors will be needed which would require a large support structure. The cost is not expected to be a deciding factor in using 69 kilovolt lines versus 161 kilovolt lines.

Boone Electric serves some areas in the city limits. Is Columbia paying for something that Boone Electric should be paying for? The Columbia and Boone Electric systems operate at different voltages and are separate systems. The proposed transmission lines have been suggested to address the needs of the Columbia system.

How much citizen dissatisfaction do you attribute to the proposed locations? Is a perimeter location better? Most of the citizen dissatisfaction can be attributed to the location of the lines. From a planning perspective it works better to put the lines on the perimeter and let growth move towards that perimeter. In this situation, the electric load growth has already happened inside the perimeter so there are some transmission line routes that need to be built in the city.

Is it cheaper to bury a 69 kilovolt line than 161 kilovolt line? Probably not. The savings gained through less insulation being required is usually offset by the larger conductor than is required for 69 kilovolt lines.

What are FERC and NERC? NERC is the National Electric Reliability Corporation. It was formed to promote the reliability and adequacy of bulk power transmission in the electric utility systems of North America. NERC oversees eight regional reliability entities and encompasses all of the interconnected power systems of the contiguous United States, Canada and a portion of Baja California in Mexico. With the passage of the Energy Policy Act of 2005, an "Electric Reliability Organization" was created to develop and enforce compliance with mandatory reliability standards in the U.S. This non-governmental "self-regulatory organization" was created in recognition of the interconnected and international nature of the bulk power grid. In 2006, NERC applied for and was granted this designation.

FERC is the Federal Energy Regulatory Commission. NERC's standards are mandatory through FERC enforcement throughout the United States and several provinces in Canada. Entities in the U.S. found to be in violation of a standard can be subject to fines of up to \$1 million per day per violation.

How will we fund the project? Large scale capital improvement projects are generally funded through voter approved bond issues so they can be paid for over time.

Have other utilities identified their maintenance costs for placing electric lines under ground? Columbia Water & Light has contacted several other utilities to gain perspective on reoccurring maintenance costs associated with underground high voltage transmission lines.

- Ameren Missouri: do not currently own/operate underground high voltage transmission lines.
- Associated Electric Cooperative: do not currently own/operate underground high voltage transmission lines.
- Mid American Energy: No formal maintenance plan due to lines being less than one mile.
- Alliant/ITC: No formal maintenance plan due to lines being less than one mile.
- City of Springfield, Illinois: No formal maintenance plan due to lines since the lines are short in length
- E. ON: Has a project similar in nature to the City of Columbia. E.ON is seeing underground project costs at just under \$10 million per mile in an urban setting. This is for solid dielectric cable being placed in deeply buried steel reinforced concrete duct banks. They were not anticipating any reoccurring maintenance procedures at this time.

Assumes Council will get cost information when staff comes up with a more definite proposal, are you considering using current easements? As part of the planning criteria, Columbia Water & Light tried to use existing easements when possible.

What's the anticipated date for a final Council decision?

Next 6 months:

- Continue to gather public comments
- Use SEGA to revise and select best routes
- Report to Council on matrix results & new route alternative (March 2011)
- Open House meetings with matrix results & new route alternative (April 2011)
- Gather comments on matrix results and new route alternative
- Review by Water & Light's Advisory Board
- Additional City Council Reports and Work Sessions

Next:1-2 Years

- Finalize transmission line routes
- Review by Water & Light's Advisory Board
- Additional public meetings as needed
- Final recommendation by Water & Light Advisory Board
- Public hearing before the Columbia City Council
- Decision by the Columbia City Council

What's the process after determining the routes? What gets built and in what order?

Until the routes have been decided it is hard to determine the construction phase. More information on the order of the construction phase will be available once a clearer idea of the line routes has emerged.

What will be done to shield nearby schools and businesses from health hazards? Safety of the community is part of the design of the lines and substations. If there are additional issues that come up, they will be addressed during the design, construction and operation phases.

Are there maintenance tasks you won't have, like tree trimming, if the transmission lines are underground? Currently the city spends \$3,600 per mile/year for line maintenance which mainly consists of the cost for poles and insulators. \$2,400 per mile/year is spent for vegetation maintenance along the transmission line right-of-way. This gives a combined maintenance cost of \$6,000 per mile per year. The differential in cost in overhead construction compared to underground construction is \$3,000,000 per mile based on \$750,000 per mile for overhead construction and \$3,750,000 per mile for underground construction. At \$6,000 per mile per year it would take five hundred years to realize a savings in maintenance costs if no maintenance is performed on underground sections.

What percentage of capacity is planned for current use and what percentage for growth?

These improvements are needed for the reliability of existing system and for reliability of future growth.

How long will this project provide a solution before we need more capacity? Based on the current growth projections, these improvements should allow us to continue to provide reliable electric service to our system for approximately 20 years

How does the cost to build compare to what we could save through energy conservation? Columbia Water & Light currently invests in energy efficiency and load management programs. The intention of these programs is to delay future expense for power supply and load service issues. While we do believe that these programs have the effect of limiting growth of electric system loads, the city continues to grow along with individual consumption.