# City of Columbia

701 East Broadway, Columbia, Missouri 65201

Department Source: City Utilities - Water and Light
To: City Council
From: City Manager & Staff
Council Meeting Date: January 19, 2016
Re: Second Public Hearing on route selection for The Columbia Electric Transmission Line Project

## Executive Summary

In July 2013 a Public Hearing was held to select a route for The Columbia Electric Transmission Line Project from three options, Option A, Option B and Option B-2. At the conclusion of that Public Hearing, Option A was selected by Council and staff began working on design, funding and project details. In April 2015, Columbia voters approved a bond issue with a portion of its funds to finance this project. On September 30, 2015 an open house was held to review project design details with the public and collect feedback regarding locations of pole structures. Since that time, citizens have expressed concerns and confusion with the project as a whole and at the November 16, 2015 City Council meeting, Council decided to hold a second Public Hearing on the route options and asked for some additional details.

Staff still supports Option A because it solves the need for both the transmission and distribution capacity for the longest term with a single, cost effective solution.

Staff supports Option A for the following reasons:
•Solves the need for both the transmission and distribution capacity for the longest term with a single cost effective solution
•Transfers load to the 161 kV system and preserves current 69 kV capacity
•161 kV lines have more than double the power transmission capacity of 69 kV lines
•Does not require rebuilding of existing 69kV system
•Provides connections between 3 different import substations which is a more reliable & longer term solution
•Option B has four times the number of second contingency issues than Option A
•Has more existing easements than Option B
•Water & Light Advisory Board endorsed Option A without undergrounding options

## Discussion

Background:

After electricity is generated, substations step up the voltage to move bulk amounts of power long distances over transmission lines. The network of transmission lines and substations in the United States is known as the Bulk Electric System (BES). Transmission line voltages in the US include 765, 500, 345, 230, 161,138 and 115 kV levels. Columbia imports 90% of its power from its 161 kV assets. 69 kV and 34.5 kV lines, sometimes known as subtransmission, are typically used to move smaller amounts of power within regional areas as the City of Columbia does with its existing 69 kV ring. The City of Fulton

and the University of Missouri (MU) both have agreements with the City to import power through Coumbia's transmission system. Both entities have their ties to the system at the 69 kV level, which is approaching its capacity to reliabily provide electric service. Both the City of Fulton and MU pay for the use of the City's transmission system and the electricity they have delivered to them.

Where the electricity is needed by customers, substations step down the voltage to the local area's distribution system. The City of Columbia uses 13.8 kV as its distribution sytem and as of September 2015 it had 282 miles of overhead construction and 553 miles of underground construction. At a customer's facility, the distribution voltage is stepped down once more to their desired level. As planned, the distribution lines within the new transmission corridor will be placed underground.

Columbia is considered a Balancing Authority and Transmission Operator by federal electric reliability entities. The North America Electric Reliability Corporation (NERC) standards require that certain transmission outages cannot cause the overloading of any neighboring transmission elements and/or cause cascading outages. In 2007, a deficnency with the City's portion of the transmission system was identified. Solutions were reviewed with the City Council and included adding a new power plant in south Columbia, adding a second 161 kV transmission line to the City's Perche Creek substation or restricting electric load growth in south Columbia. At that time it was decided that a second 161 kV transmission line to the City's Perche Creek substation was the most acceptable solution.

In planning for future electric load growth in the southern portions of Columbia's electric service territory, staff engineers recommended building a new substation as part of this project. Addional information on this issue can be found in the NERC Requirements and Electric Load Reliability section of this memo. Staff developed a single, cost effective solution to address both the transmission and distribution capacity issues. The project would build a new 161 kV line from the City's Grindstone Substaion to its Perche Creek Substaion and build a new 161 kV substation attached to this new line. A redundant 161 kV line from Associated Electric Cooperative, Inc's (AECI) McBaine Substation would also attach to the new substation.

Project History and Public Outreach:

As outlined in Section 22-71 in the City's code of Ordinances, the City of Columbia's Public Improvement Process, PROPERTY OWNERS were invited, by mail, to FIVE Interested Parties meetings regarding the route selection process for the transmission line project. There was also an Interested Parties meeting held in September 2015 to review the first stage of line design including pole placement along Option A.

In October of 2010, letters were sent to 1,250 property owners near one of the ten suggested route options inviting them to attend one of three meetings. Since the list included property owners, Boone Electric customers were also notified during this process. Comments collected from those who owned property and lived in the area were used to formulate a selection matrix. This feedback was shared with the City Council at a work session in November 2010 and in April 2011. At that time, the route, now known as Option A was finalized. The City Council requested staff to explore other possible engineering solutions and place the 161 kV transmission line on the west side of town. Council also approved extending the contract for the engineering work to investigate this and the results are now known as Option B.

Throughout the entire transmission and substation process information about the transmission and substation project was continually updated on the City's website. Information that was presented to property owners and the Council can still be found on the website. A transmission project list-serve was established in 2010 for people to receive e-mailed updates about the project. Articles were included in the newsletter sent with utility bills and this project was heavily reported on by the local media.

In August 2011, the City Council received a report about eight possible route options for Option B. Any PROPERTY OWNER along any of the ten routes for Option A and the eight routes for Option B were notified of an Interested Parties meeting in September 2011. Letters were sent to 4,308 property owners. Since the list included property owners, Boone Electric customers were also notified during this process as well. Again, the feedback from the property owners living in the area were collected and put into a selection matrix. In August 2012, the City Council received a report about the route options for Option B so one route could be determined from the eight that were proposed. Option B-2 was suggested by staff at that time since the preferred route for Option B was close to city owned property.

In November 2012, any PROPERTY OWNER living along any of the 18 previously proposed routes were notified by mail that an Interested Parties meeting was being held to gather feedback on whether Option A, B or B-2 was most preferable. Letters were sent to 4,246 property owners and electric customers. The meeting was broadcasted live and rebroadcast on Columbia Access Television from the Stephens College campus.

In January 2013 a letter was sent to 39,500 Columbia Water & Light electric customers urging them to take a survey regarding this project since it involved the reliability of their electric system and they would be paying for the project through their electric rates. Input from entire Columbia electric customer base was not collected until this time. Before that, only property owners and customers in the area of the project provided route selection input. The purpose of the survey was to gather feedback for the City Council before the project's public hearing.

Different aspects of this project had been covered at City Council work sessions and meetings 14 times. During these Council meetings and the Interested Parties meetings, discussions on how high voltage transmission lines are used in the electric system were reviewed. There was information about overhead versus underground transmission lines and why undergrounding transmission lines are more expensive than burying distribution lines. Artist renderings of steel pole structures, both single and double circuited lines were available in presentations and on the City's website. Information and discussions regarding Electric and Magnetic Fields were provided throughout the entire process.

The Water & Light Advisory Board endorsed Option A being built overhead on June 12, 2013. Three City Council meetings were reserved for the public hearing on the final option selection and whether to build the lines overhead or underground. At the July 15, 2013 meeting, there were 17 people who testified. After Council discussion, Option A, built overhead, was approved by a vote of five to two.

From 2013 through 2015, customers and property owners within 150 feet of Option A were sent letters about surveying and soil sampling taking place along the Option A route. There were a total of five letters sent to these property owners during the months of October 2014, January 2015 and May 2015. Property owners were notified by phone of any work being conducted on their property. In April 2015, all Columbia voters were given the opportunity to vote on a bond issue for electric system improvements. Partial funding for the transmission lines and substation were included in the

approved bond issue.

For more details on the history of the project see Project History in the attachments.

Details on Decision Matrix for Option A:

In spring 2008 Sega, Inc. was hired by the City to help evaluate and select property for a new substation in the southern portion of the City's electric service territory and to conduct a route study to connect the substation to the 161 kV transmission system. The project was to build a new substation and to place it into the surrounding 161 kV transmission system and connect the City's Grindstone Substation, Perche Creek Substation and Associated Electric Cooperative Inc.'s McBaine Substation. The substation would also serve as a new source of capacity for the City's 13.8 kV distribution system in the southern portion of its electric service territiory. This is now what is known as Option A.

In a September 2009 Council work session SEGA presented its criteria for the transmission line route decision matrix. A grid of potential line routes was also reviewed. The evalution criteria catagories for the transmission line route decision matrix reviewed was as follows:
•Transmission line characteristics
•Buildings and other facilities near line (distance)
•Crossings
•Right of way characteristics
•Costs

The substation purchase was finialized in July of 2010 and staff began process for the route selection utilizing the initial route decision matrix mentioned above. The consultants divided the project into three different sections and proposed three to four different routes for each section to be further analyzed with the decision matrix. The routes were chosen using these criteria:
•Streets preferred over backyards and cross country
•Main roads preferred over side streets
•Commercial corridors preferred over residential
•Most direct route preferred (fewest angles in the route)

In October of 2010, letters were sent to 1,250 property owners near one of the ten suggested route options inviting them to attend one of three meetings. Comments collected from those who owned property and lived in the area were used to refine the decision matrix to identify the least objectionable route. Public input solicited at these meetings was used to identify public concerns associated with the proposed line routes and assign "Importance Factors" and "Weighting Factors" to be included in the decision matrix to ensure concerns identified by residents, during these meetings, were properly addressed in the selection of route options. Factors most commonly cited as being important to residents included the potential loss of property value, health and safety concerns, and environmental impacts.

To represent the "Importance Factors" in the decision matrix values from 10 to -10 were assigned to the detailed attributes of the evaluation criteria reviewed at the September 2009 Council work session. For example:

Because of the public's concern over property value, an "Importance Factor" of minus ten (-10) was assigned to houses within 0-100 feet of a proposed line route while a minus eight (-8) was assigned to

houses within 100-200 feet of a proposed line route. Because proximity of a house to one of the proposed routes is viewed negatively, the -10 assigned to houses within 100 feet of a route is given more influence on the results of the matrix than that of the -8 assigned to houses within 100-200 feet.

To represent the "Weighting Factors" in the decision matrix percentages from 5% to 40% were assigned to the evaluation criteria categories, such as "Costs" with a value 40%, to relate them to the public's comments and concerns. The least objectionable route for any particular category, as determined by the sum of the attributes for that particular category for that particular route, is assigned the entire percentage for that category. Lesser routes are assigned a fraction of that percentage based upon the sum of their attributes. For example:

Because of the public's concern over property value, the "Weighting Factor" for category "Buildings and other facilities near line (distance)" was assigned a value of 35% while category "Transmission line characteristics" was assigned a value of 5%. This gives the "Buildings and other facilities near line (distance)" category more influence on the results of the matrix than that of the "Transmission line characteristics" category.

This matrix was shared with the City Council at an April 2011 Council meeting. At this meeting the extension to SEGA's contract was approved and a similar route study was started for what is now known as Option B.

Details on Decision Matrix for Option B:

An open house meeting was held in October 2011 at Gentry Middle School to present all of the potential transmission line route alternatives for Option B prepared by SEGA, Inc. to the public. All PROPERTY OWNERs along any of the ten routes for Option A and the eight routes for Option B were notified of the Interested Parties meeting in September 2011. Letters were sent to 4,308 property owners. Input gathered from the public at this meeting was used to identify public preferences and concerns associated with the proposed line routes and to weight a new decision matrix. This matrix was utilized as a tool to rank all the presented alignment alternatives based on public input identified at the public meetings and to identify the public's preferred route of each transmission line for Option B.

Based on the public feedback received at the open house meetings for the Option B alignments, the evaluation criteria categories from the Option A matrix changed to the following:
- Proximity to residences
- Proximity to schools
- Costs
- Environmental concerns
- Proximity to businesses
- Proximity to recreation areas

The "Weighting Factors" for these categories changed values from Option A and were renamed "Public Feedback Rankings", as percentages, similar to the Option A matrix.

With the Option B matrix an additional factor was introduced known as the "Normalizing Factor" due to the rural nature and the proximity of the MKT trail to some of the proposed route alternatives. Also, the matrix utilized total lineal feet instead of number of instances for proximity to schools, proximity to environmental concerns, and proximity to recreation areas.

For proximity to residences and businesses, instances were counted and then multiplied by a "Normalizing Factor" to achieve a more uniform lineal feet comparison. As a result, each residence would impact the decision matrix exactly the same as every other residence, and likewise for businesses. This is to prevent under-representation of a cluster of several residences with relatively small properties, and over-representation by single residences with several thousand feet of affected property. All residences, whether they are 50 or 2,000 lineal feet contribute 200 feet towards the decision matrix.

The matrix calculates line preference ratings by adding the lineal feet of instances, multiplying that number by an "Importance Factor" and then by the "Public Feedback Rankings". For example: one house 0-100 feet from a proposed route would receive 200 lineal feet of instance, and that number would be multiplied by the "Importance Factor" (-10) and then by the "Public Feedback Rankings" (30%). So the total score of one house 0-100 feet is 200 x -10 x 30% = -600.

In August of 2012, the results of the Option B matrix along with a staff suggestion of Option B-2 were presented to the City Council. Because the decision matrix used to evaluate Option B alternatives was modified slightly from the one used in the evaluation of Option A alternatives, it is not useful to compare the numerical results of Option B to the numerical results of Option A.

Details on Decision Matrix for Selecting an Option:

In November 2012, a final Interested Parties meeting was held to gather feedback on whether Option A, B or B-2 was most preferable. 4,246 letters were sent out to property owners near any of the 18 suggested route options and they were urged to fill out an online survey. In January 2013 a letter was sent to 39,500 Columbia Water & Light electric customers urging them to take the survey regarding this project since it involved the reliability of their electric system and they would be paying for the project through their electric rates. 1,585 individual surveys were received representing 4% of Columbia Water & Light electric customers. The results of the survey were utilized to create a final decision matrix.

Based on the results of the survey the evaluation criteria categories for the final matrix changed to the following:
- Proximity to Residences
- Proximity to Day Cares, Schools, Churches, Hospitals, Nursing Homes
- Proximity to Environmental concerns
- Proximity to Recreation Areas
- Proximity to Businesses
- Costs

Two additional evaluation criteria categories, Reliable Electric Service and Longest Term Solution were included to help determine the least objectionable engineering solution for Options A, B and B-2. "Public Feedback Rankings" for this matrix were taken directly from the survey responses. Ranked in order, the "Public Feedback Rankings" are as follows:
16.2% - Reliable Electric Service
15.3% - Longest Term Solution
12.6% - Costs
12.5% - Proximity to Residences
11.8% - Proximity to Environmental concerns

11.7% - Proximity to Recreation Areas
11.3% - Proximity to Day Cares, Schools, Churches, Hospitals, Nursing Homes
8.6% - Proximity to Businesses

Similar to the matrices used for Options A and B an "Importance Factor" was also used with values from 10 to -10 and were assigned to the detailed attributes of the evaluation criteria. As with the Option B matrix a "Normalizing Factor" was used for proximity to residences and businesses. The "Normalizing Factor" is used to equally weight large estate homes with more standard size single family homes along the proposed routes. Each home is counted within the given setback and then that number is multiplied by the "Normalizing Factor", which was the average linear home property width along the routes. This weighting system better represented the impact to home owners. Example:

Option X has 10 homes within 100 feet of the route that have a property width of 200 linear feet each. Option X has a total of 2,000 linear feet of single family homes along Option X. The normalizing factor linear feet would also be 2,000 feet (10 homes X 200 feet/home = 2,000 feet).

Option Y has 3 estate homes within 100 feet of the route that have a property width of 1,000 feet each. Option Y has a total of 3,000 linear feet of single family homes along Option Y. The normalizing factor linear feet would be 600 feet (3 homes X 200 feet/home = 600 feet).

If only looking at linear footage of homes within 100 feet of the routes, Option X would be the better option even though it impacts 7 more homes. The normalizing factor approach shows that Option Y is the better option as far as affecting the fewest number of homes.

In calculating the results for each attribute of the Proximity to Residences and Proximity to Businesses evaluation criteria categories, the number of incidences multiplied by the "Normalizing Factor" multiplied by the "Importance Factor" multiplied by the "Public Feedback Ranking" equals the value for that attribute. An example for Houses within 0-100 feet of option B-2 along the McBaine to Perche Blue Line route as presented in the matrix is as follows:
Number of incidences (Houses) = 22
"Normalizing Factor" for houses = 200
"Importance Factor" Houses within 0-100 feet of line = -10
"Public Feedback Ranking" for Proximity to residences = 12.5%
Value = 22*200*-10*.125= -5500

Each attribute for a particular evaluation criteria category is calculated in a similar fashion. The attributes are then summed for a total for a given route. An example of the Proximity to Residences evaluation criteria category for the McBaine to Perche Blue Line route as presented in the matrix is as follows:
Houses 0-100 = -5,500
Houses 100-200 = -7,875
Multi-Family 0-100 = -5,000
Multi-Family 100-200 = -4,375
Total = -22,750

Each particular evaluation criteria category is summed to get the total for that evaluation criteria category. An example of the Proximity to Residences evaluation criteria category for Option B-2, the totals for the McBaine to Perche (Blue Line) route is added to the Mill Creek to Grindstone (Yellow

Line) and then is added to Mill Creek to Hinkson Creek (Red Line) as presented in the matrix is as follows:
McBaine to Perche (Blue Line) = -22,750
Mill Creek to Grindstone (Yellow Line) = 0
Mill Creek to Hinkson Creek (Red Line) = 0
Combined Total for the Proximity to Residences evaluation criteria category for Option B-2 = -22,750

Combined Totals for each evaluation criteria (excluding Cost, Reliable Electric Service and Longest Term Solution) categories are then summed for a Total Lineal Feet Public Impact score.

Costs are then used to calculate the Cost as a Negative Percent Impact of Total Line Feedback score. In the example for Option B-2, the total cost for the three lines is $11,267,466. This is 94% of the most expensive solution of $11,970,936 (Option A). 0.94 (94%) is then used as the Cost Comparison Adjustment. The Cost Comparison Adjustment is multiplied by the Public Feedback Ranking (12.6% for Cost) to get the Cost Comparison Adjustment Applied to Public Feedback of 0.119. The Cost Comparison Adjustment Applied to Public Feedback is then multiplied by the Average Lineal Feet Feedback Impact to get the Cost as a Negative Percent Impact of Total Line Feedback = -4,907. To get the Adjusted Cost Comparison total, the Total Lineal Feet Feedback Impact of -30,621 is added to the -4,907 to end up with -35,528.

In regards to the most reliable solution, there can only be one route. Similarly, there is only one route that is the longest-term solution. Therefore, if a route option is not the most reliable or is not the longest lasting alternative, then a factor of zero is applied. In the route selection matrix, Option A is the most reliable and will serve Columbia's needs for the longest term. Option B and B-2 are assigned a zero.

Decision Matrix Summary:

The decision matrix(ices) were developed to select the best routes for Option A and Option B by collecting feedback from those living within 250 feet of any of the 18 proposed routes. Although the selection matrix was used to compare Option A, B and B-2, it was not meant to be THE deciding factor for the City Council since the engineering solutions for Option A, B and B-2, are fundamentally different.

NERC Requirements and Electric Load Reliability:

The electric substation and transmission lines in the southern part of Columbia are being built for two reasons. One is to meet required federal reliability standards set by the North American Electric Reliability Corporation (NERC). The other is to reliably meet growing electric demand, which utilities refer to as "load."

NERC Requirements - The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the reliability of the bulk power system in North America. NERC develops and enforces reliability standards; annually assesses seasonal and long-term reliability; monitors the bulk power system through system awareness; and educates, trains, and certifies industry personnel. NERC sets standards for all transmission level utilities, which includes Columbia Water & Light, for planning their transmission infrastructure to assure a reliable nation-wide electric transmission grid. Columbia Water & Light must assess contingencies – loss of transmission system elements due to storms, accidents, sabotage, etc. – that could lead to an overload of other transmission system elements. NERC rules require Columbia Water & Light to plan and prepare for

future contingencies, as well as the consequences of each contingency. Columbia Water & Light's Engineering Division performed simulations to determine in what year a single contingency event could adversely affect the City of Columbia's electrical grid for transmission route Option's A, B, and B2.

The base model used for the simulations is the year 2020 summer model. This model was selected because it represents the most demanding load conditions and the most up to date transmission element data. To estimate future effects, all Columbia Water & Light loads were linearly increased based on the estimated annual summer load. The study assumed that all of the City's generation was available. Median load growth was estimated at 1.25%, which is a decrease from the 2% growth rate seen before the recession. Load growth could potentially return to the historic level of 2% as there are still undeveloped areas and constant redevelopment of existing areas within the Columbia Water & Light electric service territory.

Columbia's 161 and 69 kV transmission systems provide the transmission needs for the City of Fulton and University of Missouri-Columbia (MU) and are outlined in existing agreements. This project has no impact for the City of Fulton and its existing agreement. The current MU agreement allows for up to 40 megawatts of un-firm electric capacity for use by MU. MU generally meets its needs through their own local power plant. Under the current agreement, if MU imports electricity and there is not enough capacity available, MU would need to take corrective action like starting generation or shedding load. In planning for the future MU is requesting firm electric capacity of up to 60 megawatts or more delivered through the Columbia 69 kV system beginning in 2021. This firm capacity allows delivery through the Columbia system without MU having to add generation or shed load in the event of a first contingency event.

First Contingency Issues - A condition where a single contingency causes an overload of another transmission system element to more than 100% of its rating violates NERC standards. Model simulations suggest that first contingency overloads for Option A begin occurring in 2045 both with and without MU's firm capacity request. Because Option B continues to load the 69 kV system, simulations show that first contingency overloads begin occurring in 2036, without accounting for MU's firm capacity request. If MU's firm capacity request is accounted for, Option B model simulations show that first contingency overloads already appear in 2020. This means that Option B is NO LONGER a viable solution as it is currently proposed and accounting for MU's firm capacity request will require additional upgrades to the 69 kV system with Option B. If MU were to have a firm import capacity of 60 megawatts, Option A gives enough flexibility that no transmission system elements get overloaded in the foreseeable future. Option B however would NOT be an adequate long-term solution and import capacity and more transmission upgrades would need to be constructed in the near future.

Second Contingency Issues - Sometimes there is more than one contingency at a time such as an accident or storm causing two transmission system elements to go offline. These are referred to as "second contingencies." The modeling shows that if Option B is implemented, there are more than four times the number second contingencies that would result in an overload than if Option A were implemented. [See below] NERC rules allow Columbia Water & Light to shed electric load to handle second contingencies. This is what is referred to as rolling blackouts. In addition, second contingency problems could potentially become more pronounced in later years. Only year 2020 was modeled to determine second contingencies. In planning for second contingencies, the community needs to decide what type of risk to the reliability of the system is acceptable.

Both options result in meeting NERC's rules for single contingency planning; however, Option A would provide for the City's needs for substantially longer than Option B.

Electric System Reliability - The second reason the City needs a new substation and transmission lines is to reliably meet growing electric demand, which utilities refer to as "load." Electricity is different than other commodities because there is not a way to store large amounts of electricity. The electric supply needed at any one point in time has to be available where and when it is needed. Also, the electrical needs of a medical facility, for instance, are very different from those of a neighborhood. According to the City of Columbia's Community Development Department, the growth outlook for 2016 is for continued build out of existing planned and subdivided areas, with a strong focus on home building in the south region of Columbia and mixed use in the downtown. The subdivisions of Thornbrook, Creek Ridge, and Steeplechase Estates have been identified as areas of continued development. See Projecting Future Infrastructure map from the 2015 Annual Infrastructure Report in the appendix.

Both Options provide an electric load serving source in south Columbia in the form of the Mill Creek Substation. Option A puts the load on the 161 kV system. Option B puts the load on the 69 kV system. The transformer loading of the Grindstone, Hinkson Creek and Perche Creek substations is currently at critical levels. In designing a reliable electric system, capacity must be reserved to pick up system loading from other areas of the city in case high loads and/or problems with the distribution system occur. For this reason it is recommended that substations with two transformers not be loaded more than 50% and substations with three transformers not be loaded more than 66.6%. Historical loading is listed below.

| Year | Grindstone: 3 Transformers | Hinkson Creek: 3 Transformers | Perche Creek: 2 Transformers |
|---|---|---|---|
| 2007 | 41.5% | 67.6% | 61.8% |
| 2010 | 44.7% | 68.6% | 64.4% |
| 2015 | 48.6% | 64.2% | 72.0% |

The new Mill Creek Substation is planned to add capacity for meeting electric load serving reliability. Option A is projected to provide transmission support of the new substation needs until 2045 independent of the MU's firm capacity request. Because Option B continues to load the 69 kV system the new substation and MU's future needs will have to share the limited available 69KV system capacity. If MU's future needs are not considered, then Option B is projected to meet electric load reliability needs until 2036.

Option A

- Satisfies NERC requirements for first contingency problems until 2045
- Has 22 second contingency issues in 2020 modeling that could require load shedding, commonly referred to as rolling blackouts
- Preserves existing 69 kV transmission system capacity for future reliability concerns and load growth
- Supports planned 75 MW of distribution capacity, expandable to

Option B

- Satisfies NERC requirements for first contingency problems until 2036
- Has 93 second contingency issues in 2020 modelling that could require load shedding, commonly referred to as rolling blackouts
- Requires transmission upgrades and improvements to address future reliability concerns and load growth
- Supports 60 MW of distribution capacity, additional distribution capacity will

249 MW
• 161 kV Substation close to where electric load is needed

require future transmission upgrades
• 69 kV Substation close to where electric load is needed

Funding:

As of December 2015, $7.3 million has been encumbered on the substation and transmission project. The largest portion of this is for engineering design on line route studies, surveying, soil sampling, utility locates and determining pole locations. The cost for this work totals approximately $3.3 million and is detailed as follows:

| Description | $ Encumbered | $ Invoiced (Dec 2015) |
|---|---|---|
| Route Study | $155,000 | $155,000 |
| (60%)Transmission Line Design | $3,054,626 | $1,722,948 |
| Surveying | $7,500 | $7,500 |
| Geotechnical work | $18,400 | $8,115 |
| Utility Locating | $104,515 | $104,515 |
| TOTAL | $3,340,041 | $1,998,078 |

In addition to engineering design, equipment procurement began after the bond was approved and funding appropriated to this project. The cost for this work totals approximately $4.0 million and is detailed as follows:

| Description | $ Encumbered | $ Invoiced (Dec 2015) |
|---|---|---|
| 161 kV Substation structures and equipment | $757,647 | $0 |
| Protective relays | $10,314 | $5,157 |
| 13.8 kV Switchgear | $631,852 | $0 |
| 161 kV Transformers | $1,086,510 | $0 |
| Land Acquisition | $1,500,180 | $1,500,180 |
| Communication lines and equipment | $42,498 | $42,498 |
| TOTAL | $4,029,001 | $1,547,835 |

In the November 16, 2015 report to Council it was estimated that $5.6 million of the encumbered funds would be lost and would need to be re-budgeted. Since that time staff has analyzed its current contracts, worked with equipment vendors and reviewed invoicing for this project. This is reflected in the numbers above. It is estimated that $1.9 million of the $3.3 million for engineering design and $1.1million of the $4.0 million for 161 kV substation equipment would be lost if Option B is selected. Based on staff's revised numbers reflected above, it is estimated that $3.0 million would be lost if Option B or B-2 is selected. More money would need to be budgeted to re-do the preliminary engineering work to determine the pole structure locations for any other options selected. Based on the current contract for preliminary engineering design at least $3.0 million would be necessary. It is also important to note that starting over with a new route would delay the project by as much as two to three years.

An April 7, 2015 election was passed to fund electric system improvements associated with Option A. The transmission line route along Providence/Route K was not included in the bond issue project list. At this time the combination of the Mill Creek-Grindstone, Mill Creek-Perche lines provide the best cost/benefit value. The Mill Creek-McBaine line does provide future benefits and will be constructed with future revenue based on the following considerations:

• When modeling of the Mill Creek load shows an interconnection problem caused by transmission outages.
• When development of this line is needed to mitigate financial impacts on Columbia's energy flow leaving the MISO transmission area.
• If a 69 kV connection at Mill Creek substation is needed.
• If a Columbia Water & Light load serving substation south of the Mill Creek substation is needed.
• To enhance the reliability of the local bulk electric system.

Any changes to the transmission line route would impact the estimated financing needed. According to the Finance Department, changing to Option B will not impact the bonds sold for electric system improvements. Columbia voters, however, were given Option A as the description about the transmission line project being funded. Changing to Option B may degrade voter confidence for future bond issue.

Real Estate Impact:
National studies have been conducted to investigate the effect of transmission lines on property values. Findings indicate that there is a relatively small impact to property values attributed to the high voltage transmission line proximity, and that these effects tend to dissipate over time. Where these effects tend to be most pronounced is on vacant lands as opposed to improved properties. Overall, the general interpretation of these studies is that the presence of transmission lines is apparently not given sufficient weight by buyers and sellers of real estate to have a consistent, material impact on property values. As part of the land acquisition process of this project, the city intends to conduct a current regional High Voltage Transmission Line Study to assist in concluding the easement valuations for properties that will be affected by the Mill Creek Transmission Line Project.

Linear feet of different types of zoning for each transmission line route option are listed below. MP, OP zoning classifications have been included in the commercial footages and PUD zoning have been included in residential footages.
Option A: Agricultural - 17,600, Commercial- 23,760, Residential - 36,160
Option B: 161kV Line - Agricultural - 56,000, Commercial - 2,600, Residential- 24,000,
Option B-2: 69kV Line - (modeled as extension from existing infrastructure path) Agricultural - 2,200, Commercial - 10,500, Residential - 2,000

Electric and Magnetic Fields:

Electric and Magnetic Fields (EMF) are generated by the flow of electrons. Electric fields are established between points of different voltages and are measured in volts per meter. Magnetic fields are generated by electrons flowing in a conductor and are measured in milligauss. EMF are generated by electric lines as well as many other common household items.

According to the Environmental Protection Agency, "Much of the research about power lines and potential health effects is inconclusive. Despite more than two decades of research to determine whether elevated EMF exposure, principally to magnetic fields, is related to an increased risk of childhood leukemia, there is still no definitive answer. The general scientific consensus is that, thus far, the evidence available is weak and is not sufficient to establish a definitive cause-effect relationship."

Concerns were raised by citizens about the EMF from the 161 kV transmission line. The EMF drops over distance. Higher pole structures reduce the EMF more than shorter poles or placing the lines underground. Placing the lines over the center of the roadway also increases distances from

buildings near the transmission route. There are 137 buildings within 100 feet of the transmission line. (Breakdown by zoning: Agricultural – 4, Commercial – 19, Residential – 114).

Structures, Easements and Foundations:

The overall goal of building a transmission line that is safe for the public has many facets. One major factor is the material used for the transmission structures. Steel was selected for the pole material because of its outstanding track record for being reliable in not only the electric utility industry but virtually all other industries where strength and cost are important.

Steel structures are engineered with tight tolerances and specifications resulting in a reliable product. Using steel structures, the design was able to incorporate increased heights while not limiting the span length. Steel also allowed for the structures to be designed with long davit arms to hang the wires away from private property. Increasing the height of the structure provides additional clearance from wires for utility crews as well as others working around the line while it is energized.

Another benefit of raising the transmission line is the reduction of EMF's at the ground level due to EMF magnitude decreasing over distance. Wire clearances for wood and steel pole transmission lines are listed in Table 1 as well as shown in Figure 3. Increasing the height of wood poles is possible however at the expense of span length thus increasing the total quantity of structures.

Another item that was considered in the design of the transmission line was aesthetics. While aesthetics are subjective and sometimes difficult to gain consensus on, there are a couple of main principles that can be followed. One major principle is the line of sight of those in their vehicles driving down the street as well as the line of sight of someone inside of a building looking outside. Increasing the height of the structures and raising the minimum clearance of the wires allows for the line to be out of sight to an extent.

Easements are required for the transmission line anywhere there are structures as well as wire overhang (including when the wire is displaced by wind) over private property. The current design of the transmission line takes into account already existing utility easements where possible. This reduces the overall easements required for the construction of the transmission line.

The typical structure configuration for single circuit portions of the line were revised from the original rendering to incorporate davit arms to hang the wires out toward the roadway reducing overhang on the properties. Figure 2 shows a typical steel structure with the davit arms hanging out over the roadway. On a typical day with calm winds, the wires will hang over public road ROW. On days where the wind is gusting up to 90 mph (per IEEE NCES-C2), the wires, with few exceptions, will blow only over (within) the utility easement. Areas where the wires blow out past an existing easement are limited in quantity and will require additional easement to be purchased.

Another item that can impact the property is the size of the foundation on the particular property. Table 2 shows a preliminary count of approximate structure types and their respective foundation sizes for the transmission line. As shown in the table, approximately seventy-three percent of the structures are expected be tangent (no line angle) structures with a foundation diameter of approximately 3-5 feet. Another eleven percent of the structures on the line will be small angles with a foundation diameter of approximately 5-6 ft. Only two percent of the structures are expected to have foundation diameters larger than 8-ft. Figure 1 shows steel and wood poles side by side. While steel pole foundations will be larger than the wood pole itself, at line angle and deadends, wood

poles will require guy wires to support the structures. These structures have guy wires extending from the poles a length of approximately 60-80-ft. Figures 4 and 5 show a comparison of a wood vs steel angle structure.

## Fiscal Impact

Short-Term Impact: Partial funding for Option A was secured in a bond issue in April 2015 of which $36.1 million was designated for this project. The City has encumbered over $7 million for land acquisition, engineering design and equipment. $1.9 million (may increase for invoicing still in process) for engineering design specific to Option A and a portion of the $1.1 million for transformers specific to the 161 kV substation would be lost if Option B is selected. Long-Term Impact: Option A solves the need for additional transmission capacity until 2045. Depending on future substation capacity needs, including the request from MU, Option A will not require any additional transmission upgrades for the forseeable future. Depending on future substation capacity needs, including the request from MU, Option B will require additional funding for transmission upgrades in the near future.

## Vision & Strategic Plan Impact

Vision Impacts:
Primary Impact: Primary, Secondary Impact: Secondary, Tertiary Impact: Tertiary

Strategic Plan:
Primary Impact: Primary, Secondary Impact: Secondary, Tertiary Impact: Tertiary

Comprehensive Plan Impacts:
Primary Impact: Primary, Secondary Impact: Secondary, Tertiary Impact: Tertiary

## Legislative History

| Date | Action |
|---|---|
| 09/21/2009 | Work session for criteria of determining routes |
| 02/21/2010 | Project overview at work session |
| 03/2010 | Approved acquiring substation property |
| 11/22/2010 | Work session: review of public comments/EMF/undergrounding |
| 02/2011 | Report to Council re: feedback to determine route |
| 04/18/2011 | Report to Council re: feedback to determine route |
| 04/18/2011 | Council authorizes change to engineering contract for Option B |
| 08/1/2011 | Report on eight proposed routes for Option B |
| 08/20/2012 | Report on Option B feedback, staff suggested Option B-2 |
| 05/20/2013 | Report to Council with review of public feedback |

| | |
|---|---|
| 06/13/2013 | Work session w/ complete history of project |
| 07/1/2013 | Public Hearing to determine final route |
| 01/20/2015 | Work session to review website, hotline & other communication |
| 11/16/2015 | Report to Council on project history & request for 2nd public hearing on route |

## Suggested Council Action

Following the Public Hearing, direct staff to continue transmission line design work using the Option A route plan.

AT A GLANCE

# Columbia Water & Light's Electric Transmission and Substation Project

## HISTORICAL INFORMATION

**2007**
Need for substation & transmission identified

**Jan. 2009**
Interested Parties meeting for substation

**Sept. 2009**
Criteria for proposed transmission line routes reviewed at work session

**Feb. 2010**
Project overview at Council work session

**March 2010**
City Council approved acquiring substation property

**Oct. 2010**
Three Interested Parties meetings for ten proposed routes for Option A*

**Nov. 2010**
Work session-comments from area residents and EMF info. Council asked for another route option

**Feb. 2011**
Report with comments from Option A area residents and cost/details re: undergrounding lines

**April 2011**
Report to Council re: feedback reviewed to determine best route for Option A

**April 2011**
Council authorized engineering firm contract change to explore Option B

**Aug. 2011**
Report to the City Council on eight possible Option B routes

**Sept. 2011**
Interested Parties meeting with possible routes for Option B reviewed*

**Aug. 2012**
Report to the City Council on Option B route options & feedback from area residents. Option B-2 was suggested by staff for route on city-owned property

**Nov. 2012**
Interested Parties meeting – review of Option A & B*. EMF discussed

**Jan. 2013** Letter about project survey was sent to 39,500 Columbia Water & Light electric customers

**May 2013**
Report to Council – reviewed community feedback

**June 2013**
City Council work session – complete history of project

**July 2013**
City Council Public Hearing – Option A to be built overhead was decided

**2013 - 2015**
Customers/property owners & neighborhood/home owners associations within 150 feet of route notified of survey and soil sampling

**Jan. 2015**
Council work session - project website and hotline reviewed

**April 2015**
Bond election – included funding for transmission/substation

**Sept. 30, 2015**
Open House for transmission structure placements

2007 — 2009 — 2010 — 2011 — 2012 — 2013 — 2014 — 2015

CITY COUNCIL

INTERESTED PARTY MEETING/PUBLIC FEEDBACK

* Comments collected from those living in all the areas of the proposed routes

**Columbia Water & Light's Electric Transmission and Substation Project**

Historical Information

- 2007: Need for additional transmission and substation was identified.
- September 2009: Work session with the City Council on selection process for substation using the matrix selection criteria to create various routes.
- January 2009: Ten possible sites for a substation were identified and Interested Parties meeting for property owners in the area was held at Columbia Water & Light Administration.
- Spring 2009: Interested seller approached the city about selling land on Peach Court.
- Summer 2009: A property owner in the area requested other properties be investigated
- September 2009: Water and Light Advisory Board recommended to the City Council to acquire property on Peach Court site
- February 2010: Pre-Council work session describing factors associated with building a new electric substation and three new, 161 kV transmission lines
- March 2010: City Council approved Bill B54-10 adopting an ordinance to acquire Peach Ct. site for substation
- June 2010: Consulting engineering firm presented Columbia Water & Light staff with three or more alternate routes for each transmission line section
- July 2010: Purchase of substation property was completed
- October 2010: Three Interested Parties meetings were hosted at Rockbridge High School to introduce the public to the ten (with some small possible variations) proposed routes transmission line project. Letters were sent to property owners along the proposed routes and the event was covered in the local media. A different route was covered at each of these meetings. An engineer from Sega was available to talk to residents about electric and magnetic fields. Comments from customers/property owners and five to ten letters and e-mails were received each day in the weeks following the Interested Parties meeting. From this process, the public ranked these as the most favorable:
    - Streets preferred over backyards and cross country. Main roads preferred over side streets. Commercial corridors preferred over residential. Most direct route preferred (fewest angles in the route).
- Fall 2010: List-serv was created so those interested in the project could receive e-mail updates about the project.
- November 2010: City Council work session was held about substation and transmission lines were presented. Information about Electric and Magnetic Fields was presented. Questions and answers from this meeting were posted on the city's website and distributed to the City Council. At this meeting, the City Council requested that another option be considered which would include using 69 kilovolt lines on the outer portion of the city limits.
- February 2011: Pre-City Council meeting presentation. Comments from 450 people living in the areas of the three proposed routes were reviewed. (This was for what is now known as Option A) It was noted during the presentation that both Ameren and Associated Electric Cooperative did not own/operate any underground high voltage transmission lines. The cost of

undergrounding lines was also reviewed along with photos of what is involved in burying transmission lines

- April 2011: Transmission project report discussed at the City Council meeting. The report included how feedback from those living near the suggested routes was used to decide which of the three routes was the most favorable. At this time, a change order to the contract with the engineering firm was approved so another route study could be completed (Option B).
- July 2011: Report to the City Council on possible Option B routes. Four routes were identified for the McBaine to Perche Creek substations. There were four possible routes identified to insert Millcreek substation between the Grindstone and Hinkson Creek substations.
- September 2011: An Interested Parties meeting was held at Gentry Elementary School and a presentation of the identified routes for Option B was reviewed. An engineer from Sega was available to talk to residents about electric and magnetic fields. Property owners along any of the proposed routes for Option B and the property owners along the Option A route were sent a letter about the meeting. The meeting was also covered by the local media. Written comments from those owning property in the areas of Option A and Option B (all possible routes) were collected.
- August 2012: Report to the City Council on Option B route options. Input collected from the public at this meeting was used in developing the evaluation matrix used for determining the preferred alignments identified in this report. After the Interested Parties meeting for the Option "B" routes identified by Sega, Inc., staff identified another alternative route for the McBaine to Perche Creek 161 kV line where approximately 37% of the line could be constructed on city property. This alternative route is only for the 161KV line in Option "B" it is being referred to as Option B-2 which is approximately 22% longer than the preferred route identified in Option B and was not initially identified Sega Inc. because of the lack of existing rights of way and the excessive length of the route
- November 2012: An open house was held which included a presentation. Information about the need for the transmission project, Option A selection process, Option B selection process, the advantages and disadvantages from an engineering standpoint, undergrounding information and costs were reviewed. Electric and Magnetic Fields were discussed during the question and answer section of the meeting. A letter was sent to any of the interested parties identified during the selection process for Option A and Option B and the neighborhood/home owner associations. The meeting was held on the Stephens College campus so it could be rebroadcast on CAT TV for four weeks after the meeting. Attendees were urged to take the online survey or fill out the survey at the meeting. The local media reported on the event.
- January 2013: A letter was sent to 39,500 Columbia Water & Light electric customers urging them to take the online survey announced at the November open house. The letter was sent in case there were people who had not read about the project through the city's communication outlets or through local media coverage. Staff members felt it was important to have the community weigh in on the project before the City Council's Public Hearing deciding the route. This project involves the reliability of Columbia's electric system and all electric utility customers

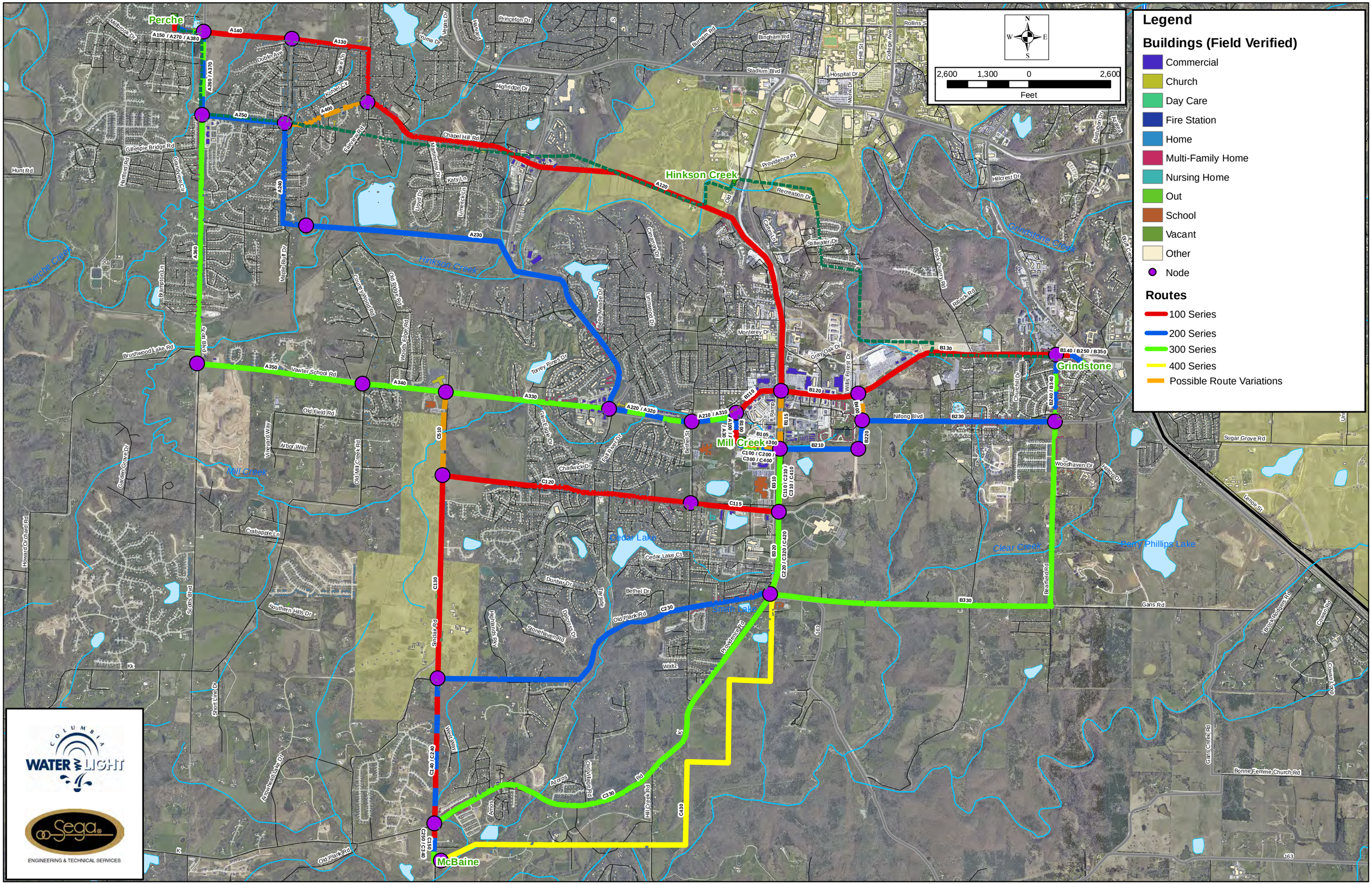
would be paying for the transmission project. The deadline for the survey was extended to February 1 and there were 1,500 responses to the survey.

- May 2013: A report to the City Council outlined the need for the project and considerable detail about the selection matrix and the results of the survey.
- June 2013: Presentation to the City Council at a work session included 88 slides since it included information from the beginning of the project.
- July 2013: City Council Public Hearing. Columbia Water & Light staff members made a presentation which was a shorter version of the information presented at the work session. There was a possibility that there would also be Public Hearings on August 5 and 19 if the amount of people wishing to speak was not possible to get through in one meeting. Seventeen people commented during the public hearing and there was a great deal of City Council questions and discussion. Option A, built overhead, was approved by a vote of five to two.
- January 2015: Council work session to review the website and hotline for the transmission line project.
- Late 2014: Columbia Water & Light staff members started compiling the list of bond funded project from the five year Capital Improvement Plan approved by the City Council each year. In discussions regarding the transmission project, it was decided that building the transmission lines along Grindstone, Nifong, Vawter School Road and Scott Boulevard, building a new substation and reconfiguring the current substations would take five years to complete. It was decided by staff that the transmission line route along Providence/Route K could not be completed in the five year funding period and other parts of the project were more critical. Although this portion of the project is not funded at this time, it will still need to be completed.
- Beginning in 2013 through 2015, customers, property owners and neighborhood/home owners associations within 150 feet of the transmission line corridor were notified by mail about surveying and soil sampling being completed along the route. Information in the City Source newsletter also provided information about the status of the project.
- April 2015: Every registered voter in Columbia was able to vote on an electric bond issue. The Boone County Clerk's office sent a sample ballot to registered voters in advance of the election date. Of the $63 million bond funds requested, $36.2 was set aside for the transmission project.

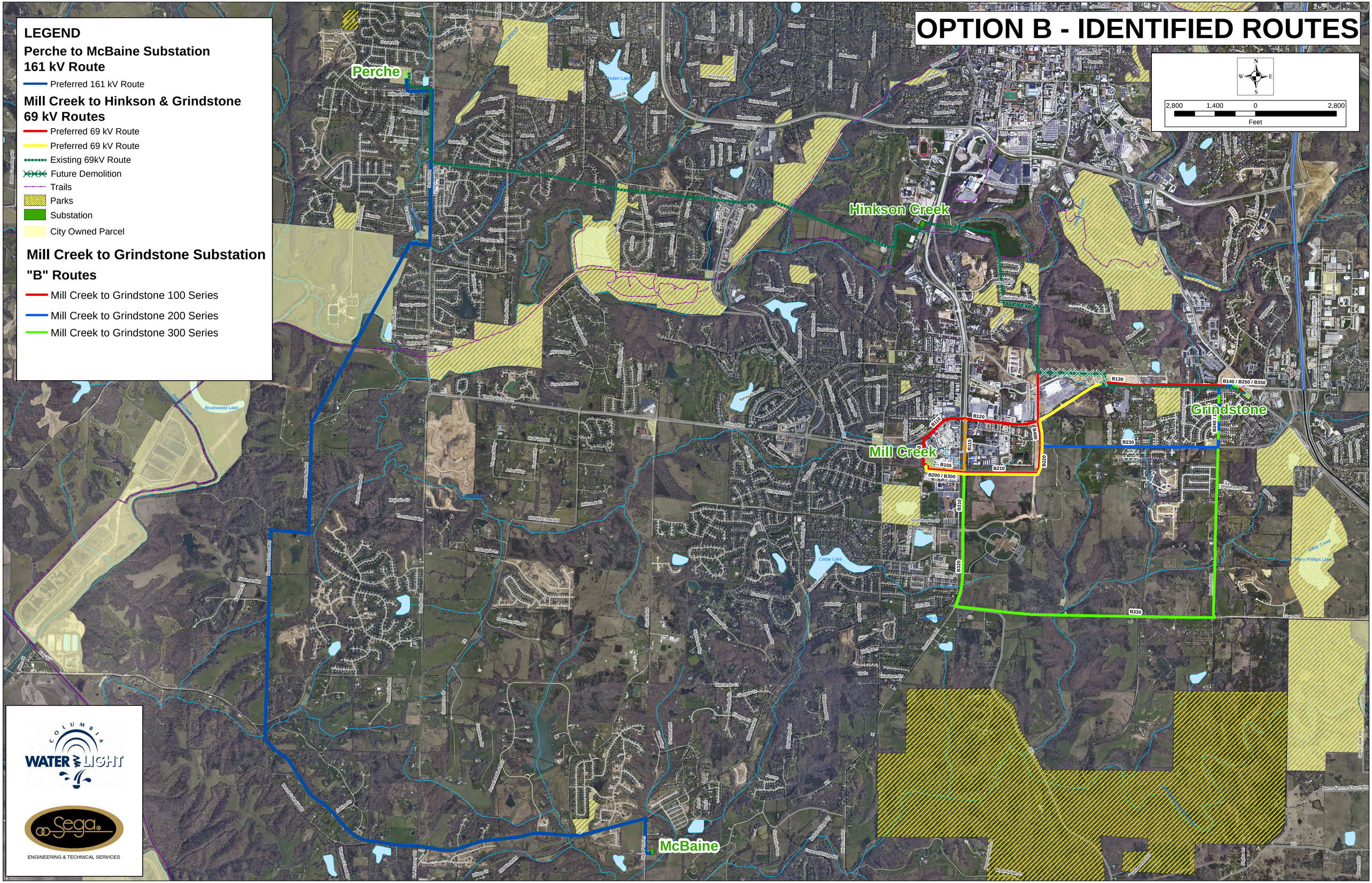
Public Communication Outlets

- Created in 2009,the GoColumbiaMo.com web page has the entire project history including presentations, memos to the City Council, feedback, artist renderings of the substation and transmission pole structures and where to get information about Electric and Magnetic Fields, etc.
- Starting in 2015 a website specific to the project was created: poweringcolumbia.com and a phone hotline.
- Press releases and meetings with reporters/editors to discuss the project details
- Local news media (Multiple stories from different media outlets since the Interested Parties meeting about the substation in 2009 to the present)

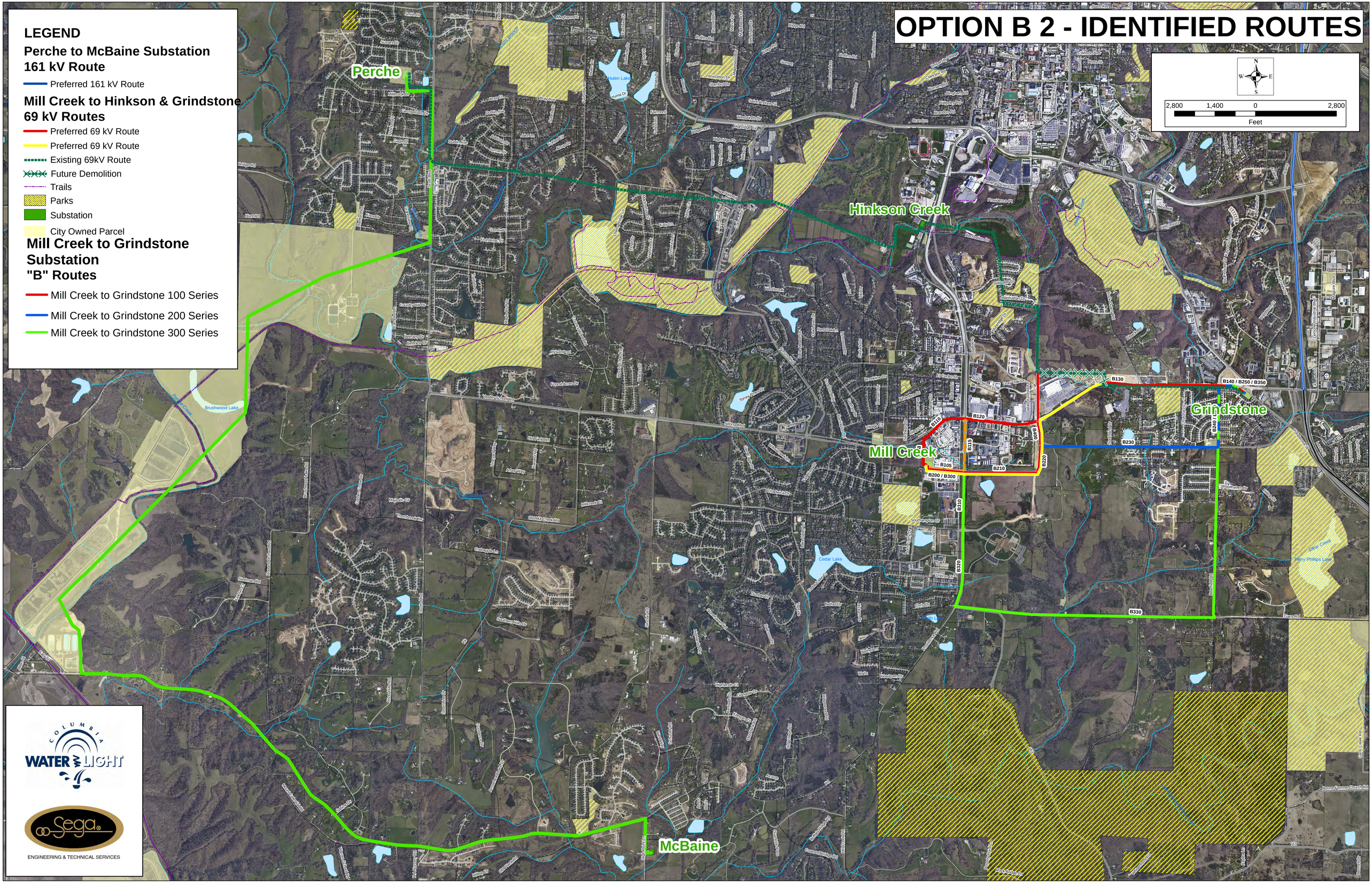
- Transmission line project list-serv (subscribe to e-mail updates, 14 updates have been sent to date)
- City Source newsletter
- Letters to property owners within 250 feet of any of the suggested routes for Option A and Option B were notified of an Interested Parties meeting and were encouraged to take an online survey. Letters were also sent to Columbia Water & Light electric customers in advance of the City Council public hearing to gather feedback.
- Neighborhood/Home Owner Associations were included in mailings
- Neighborhood Association newsletter from the Department of Community Development
- Public meeting notification process (online meeting calendar, bulletin board, etc)
- Preceding the electric bond issue in April 2015, thirteen civic groups were provided information about the transmission/substation project along with the other items where bond funding would be used. All local media outlets ran stories about the electric bond election.

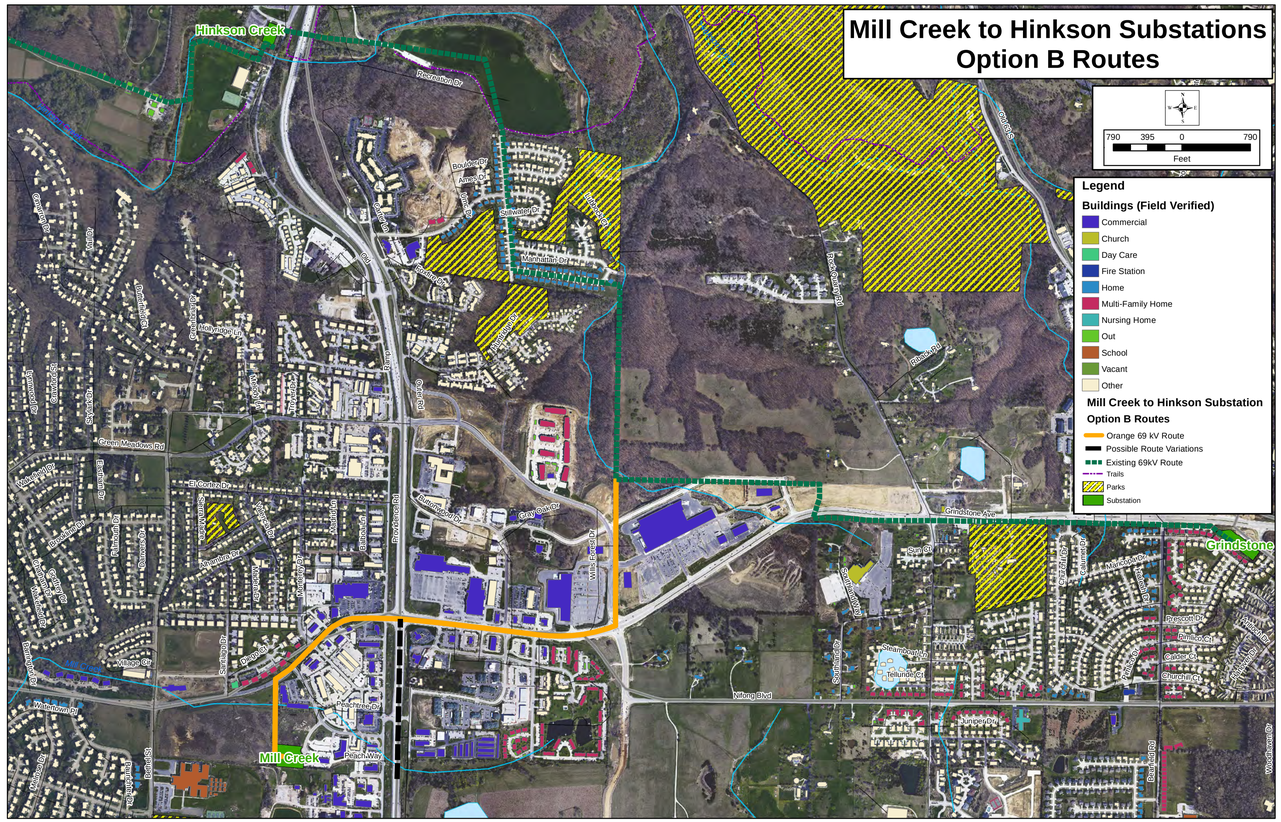

Legend
Buildings (Field Verified)
Commercial
Church
Day Care
Fire Station
Home
Multi-Family Home
Nursing Home
Out
School
Vacant
Other
Node
Routes
100 Series
200 Series
300 Series
400 Series
Possible Route Variations
N
W
E
S
2,600
1,300
0
2,600
Feet
Perche
Hinkson Creek
Grindstone
Mill Creek
McBaine
A150 / A270 / A380
A140
A130
A120
A250
A400
A230
A240
A260 / A370
A360
A350
A340
A330
A220 / A320
A210 / A310
B110
B120
B130
B140 / B250 / B350
B100
B115
B105
B300
B210
B220
B230
B240 / B340
B310
B320
C100 / C200 / C300 / C400
C110 / C210 / C310 / C410
C115
C120
C130
C230
C220 / C320 / C420
C330
C430
C410 / C220
C250 / C340
C150
C510
Perche Creek
Hinkson Creek
Grindstone Creek
Mill Creek
Cedar Lake
Clear Creek
Berry Phillips Lake
Hunt Rd
Millbrook Dr
Dublin Ave
Gillespie Bridge Rd
Brushwood Lake Rd
Vawter School Rd
Old Field Rd
Chapel Hill Rd
Princeton Dr
Highridge Dr
Stadium Blvd
Bingham Rd
Hospital Dr
Providence Pt
Recreation Dr
Stillwater Dr
Monterey Dr
Gray Oak Dr
Nifong Blvd
Sugar Grove Rd
Woodhaven Dr
Gans Rd
Bonne Femme Church Rd
Old Plank Rd
Southern Hills Dr
Crabapple Ln
Chadwick Dr
Cedar Lake Ct
Dunbar Dr
Bethel Dr
Waltz
Providence Rd
Stonehaven Rd
Highlands Way
Sinclair Rd
Scott Blvd
Bethel St
Hill St
College Ave
Rock Quarry Rd
Ribeck Rd
Hillcrest Dr
Churchill Dr
Bearfield Rd
Lemone St
Hillop Dr
Gans Creek Rd
Brookfield Rd
Cowan Rd
Grandview Dr
Howard Orchard Rd
Short Line Dr
Arrowhead Lake Dr
Arcos
Amos
Old Mage Rd
Hill Creek Rd
Vista Way
Vineyard Way
Arbor Way
Old Mill Creek Rd
Garden Grove Dr
Maple Bluff Dr
Brampton Ln
Heyford Rd
Grand View Cir
Fairview Rd
Yoller Cir
Jake Ln
Yuma Dr
Vegas Dr
Haverty
Burnam Rd
Hill St
Wink Dr
Rollins St
Auburn Dr
Aspen
Hillcrest Dr
Katy Ln
Lloyd Dr
Umarck Ln
Mainshure Dr
Camargo Dr
Cameron Ln
Bella Meade Dr
Lynnwood Dr
Torrey Pines Dr
Glen Eagle Dr
Fall Creek Dr
Old Ridge Rd
Country Wood Rd
Weeks Edge Rd
Bur Creek
163
Kk
K

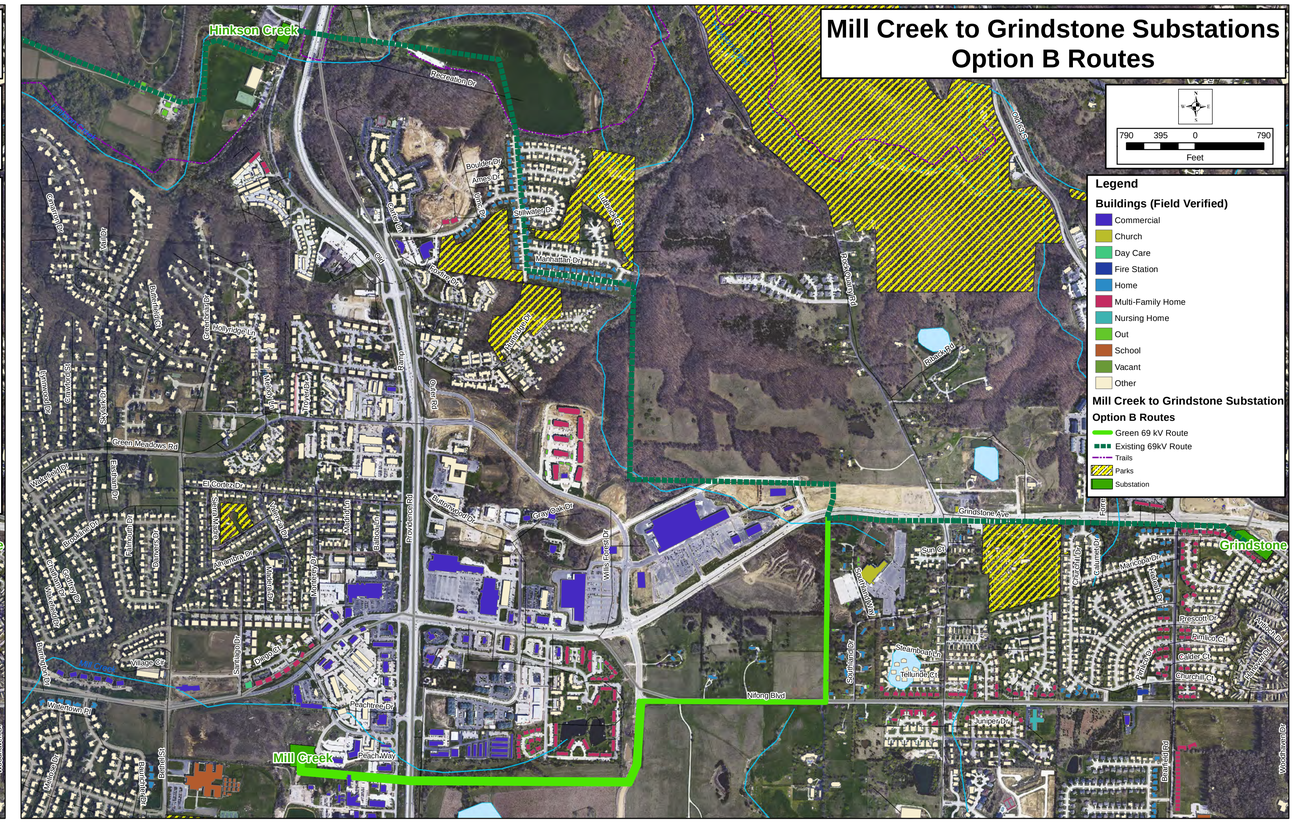
# OPTION B - IDENTIFIED ROUTES



# OPTION B 2 - IDENTIFIED ROUTES




Mill Creek to Hinkson Substations
Option B Routes
790 395 0 790
Feet
Legend
Buildings (Field Verified)
Commercial
Church
Day Care
Fire Station
Home
Multi-Family Home
Nursing Home
Out
School
Vacant
Other
Mill Creek to Hinkson Substation
Option B Routes
Orange 69 kV Route
Possible Route Variations
Existing 69kV Route
Trails
Parks
Substation
Hinkson Creek
Mill Creek
Grindstone


Mill Creek to Grindstone Substations
Option B Routes
790 395 0 790
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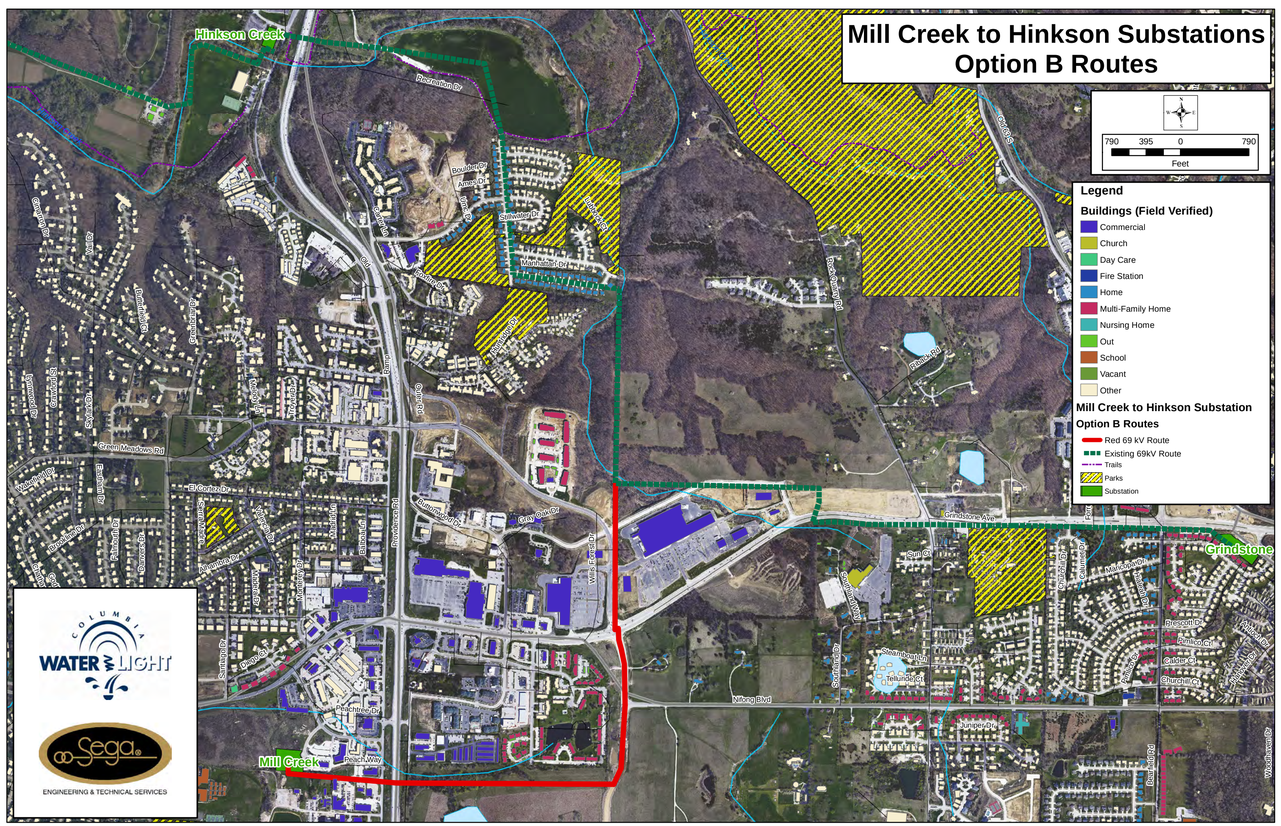
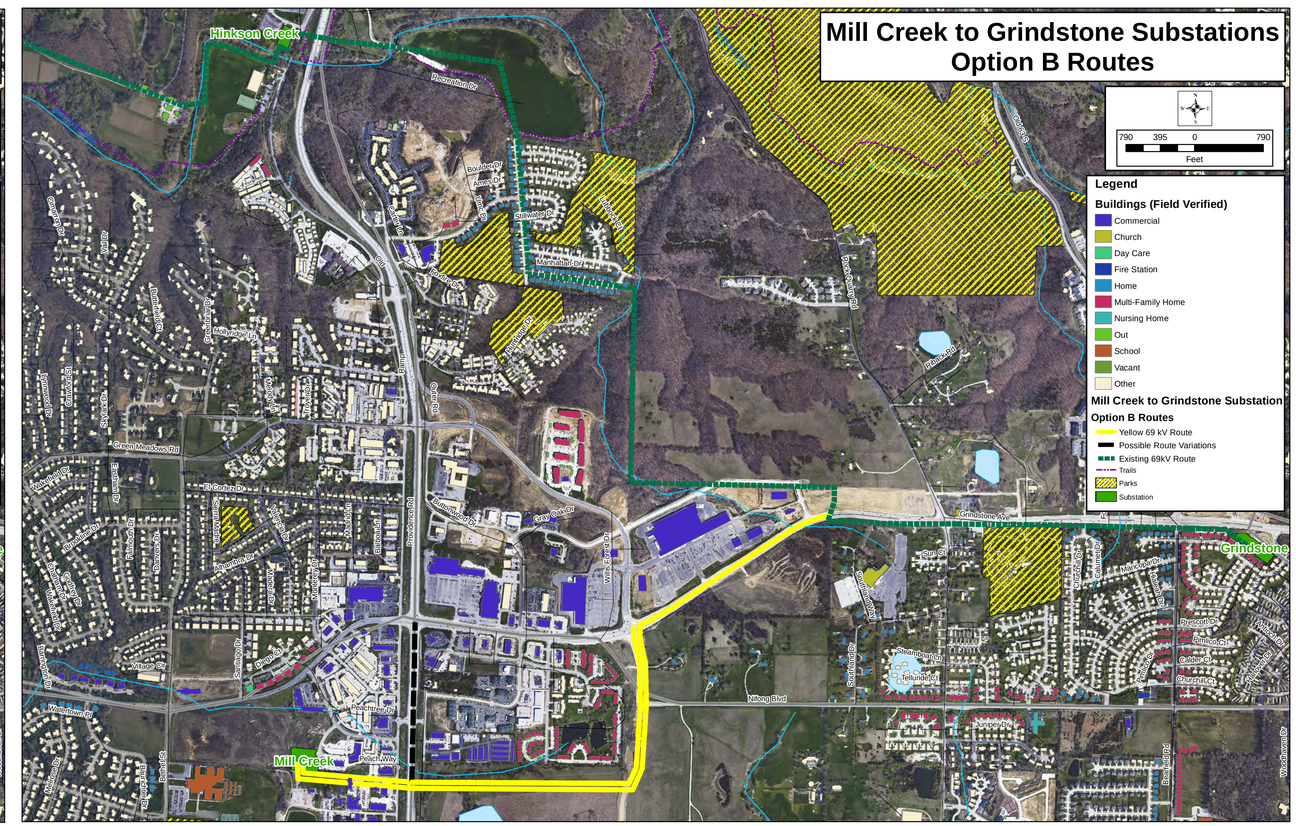
Buildings (Field Verified)
Commercial
Church
Day Care
Fire Station
Home
Multi-Family Home
Nursing Home
Out
School
Vacant
Other
Mill Creek to Grindstone Substation
Option B Routes
Green 69 kV Route
Existing 69kV Route
Trails
Parks
Substation
Hinkson Creek
Mill Creek
Grindstone


Mill Creek to Hinkson Substations
Option B Routes
790 395 0 790
Feet
Legend
Buildings (Field Verified)
Commercial
Church
Day Care
Fire Station
Home
Multi-Family Home
Nursing Home
Out
School
Vacant
Other
Mill Creek to Hinkson Substation
Option B Routes
Red 69 kV Route
Existing 69kV Route
Trails
Parks
Substation
Hinkson Creek
Mill Creek
Grindstone
COLUMBIA WATER & LIGHT
Sega
ENGINEERING & TECHNICAL SERVICES


Mill Creek to Grindstone Substations
Option B Routes
790 395 0 790
Feet
Legend
Buildings (Field Verified)
Commercial
Church
Day Care
Fire Station
Home
Multi-Family Home
Nursing Home
Out
School
Vacant
Other
Mill Creek to Grindstone Substation
Option B Routes
Yellow 69 kV Route
Possible Route Variations
Existing 69kV Route
Trails
Parks
Substation
Hinkson Creek
Mill Creek
Grindstone

# City of Columbia Water and Light
# Mill Creek - Perche Creek 161-kV Transmssion Line
# Route Selection Matrix

| Page 1<br>Evaluated Scores<br><br>(Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.) | Routes → | Mill Creek to Perche 100 Series (Red Route) | Mill Creek to Perche 200 Series (Blue Route) | Mill Creek to Perche 300 Series (Green Route) |
|---|---|---|---|---|
| | Segments → | A100, A110, A120, A130, A140, A150 | A200, A210, A220, A230, A240, A250, A260, A270 | A300, A310, A320, A330, A340, A350, A360, A370, A380 |
| **Evaluatiion Criteria** | **Importance** | **Scores** | | |
| **Transmission Line Characteristics** | 5 | % of evaluatiion | | |
| | | | | |
| Total Length * | 0 | 0.0 | 0.0 | 0.0 |
| Length Overhead | 0 | 0.0 | 0.0 | 0.0 |
| Length Underground * | 0 | 0.0 | 0.0 | 0.0 |
| Length Along Public Rights-of-Way | 5 | 4.1 | 4.7 | 5.0 |
| Length Along Private Rights-of-Way | -3 | -3.0 | -1.0 | -0.5 |
| Length Along Railroad | 10 | 0.0 | 0.0 | 0.0 |
| Length Parallel to Existing Lines | 5 | 2.4 | 2.5 | 5.0 |
| Length Double Circuit with 69-kV | 0 | 0.0 | 0.0 | 0.0 |
| Length Double Circuit with 161-kV | 0 | 0.0 | 0.0 | 0.0 |
| Distribution Overbuild * | 0 | 0.0 | 0.0 | 0.0 |
| Total Line Angles * | 0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | 3.5 | 6.2 | 9.5 |
| | | | | |
| **Buildings and Other Facilities Near Line (Distance** | 35 | % of evaluation | | |
| | | | | |
| Houses 0 - 100 feet | -10 | -10.0 | -5.9 | -3.7 |
| Houses 100-200 feet | -8 | -2.8 | -7.6 | -8.0 |
| Multi-Family 0 - 100 feet | -10 | -6.7 | -6.3 | -10.0 |
| Multi-Family 100 - 200 feet | -8 | -1.8 | -5.1 | -8.0 |
| Commercial Structures 0 - 100 feet | -5 | -5.0 | -1.3 | -3.8 |
| Commercial Structures 100 - 200 feet | -3 | -2.4 | -2.1 | -3.0 |
| Churches 0 - 100 feet | -2 | 0.0 | 0.0 | 0.0 |
| Churches 100 - 200 feet | -1 | -1.0 | -0.5 | -1.0 |
| Day Care 0 - 250 feet | -8 | -4.0 | -8.0 | -4.0 |
| Day Care 250 - 500 feet | -5 | 0.0 | 0.0 | 0.0 |
| Schools 0 - 250 feet | -10 | 0.0 | 0.0 | 0.0 |
| Schools 250 - 500 feet | -5 | 0.0 | 0.0 | -5.0 |
| Hospitals 0 - 100 feet | -5 | 0.0 | 0.0 | 0.0 |
| Hospitals 100 - 200 feet | -3 | 0.0 | 0.0 | 0.0 |
| Nursing Homes 0 - 100 feet | -5 | 0.0 | 0.0 | 0.0 |
| Nursing Homes 100 - 200 feet | -3 | 0.0 | 0.0 | 0.0 |
| Fire Station 0 - 100 feet | 0 | 0.0 | 0.0 | 0.0 |
| Fire Station 100 - 200 feet | 0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -33.8 | -36.7 | -46.4 |
| | | | | |
| **Crossings** | 10 | % of evaluation | | |
| | | | | |
| Parcels Along Public R/W | -5 | -5.0 | -5.0 | -5.0 |
| Parcels on Private Property | -10 | -10.0 | -5.4 | -4.1 |
| Road Crossings | | | | |
| Interstate Highways | -5 | 0.0 | 0.0 | 0.0 |
| Federal and State Numbered Highways | -5 | -5.0 | 0.0 | 0.0 |
| Other County Roads | -1 | 0.0 | 0.0 | 0.0 |
| Railroads | -5 | 0.0 | 0.0 | 0.0 |
| Perennial Streams, Rivers or Lakes | -1 | -0.6 | -1.0 | -0.6 |
| Wetlands | -5 | -4.1 | -5.0 | -2.4 |
| City or County Parks | -10 | -6.7 | -10.0 | 0.0 |
| State or Federal Parks, Conservation Areas | -10 | 0.0 | 0.0 | 0.0 |
| Recreational Areas - Other | -2 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -31.4 | -26.4 | -12.2 |
| | | | | |
| | | | | |
| **Right-of-Way Characteristics** | 10 | % of evaluation | | |
| | | | | |
| Residential | -10 | -5.8 | -10.0 | -1.5 |
| Commercial/Industrial | -5 | -5.0 | -2.8 | -2.8 |
| Agricultural | 5 | 5.0 | 2.7 | 0.0 |
| Wooded/Forested | -2 | 0.0 | 0.0 | 0.0 |
| Existing R/W | 8 | 4.4 | 5.0 | 8.0 |
| Subtotal | | -1.4 | -5.1 | 3.7 |
| | | | | |
| **Costs** | 40 | % of evaluation | | |
| | | | | |
| Right-of-Way | -1 | -1.0 | -1.0 | -0.2 |
| Clearing | -1 | 0.0 | 0.0 | 0.0 |
| Construction | -10 | -10.0 | -9.9 | -9.5 |
| Subtotal | | -11.0 | -10.9 | -9.7 |
| | | | | |
| **Weighted Scores** | | | | |
| | | | | |
| Transmission Line Characteristics | 5 | 1.9 | 3.3 | 5.0 |
| Buildings and Other Facilities Near Line | 35 | -25.5 | -27.7 | -35.0 |
| Crossings | 10 | -10.0 | -8.4 | -3.9 |
| Right-of-Way Characteristics | 10 | -2.7 | -10.0 | 7.2 |
| Costs | 40 | -40.0 | -39.6 | -35.3 |
| **Total** | | -76.3 | -82.5 | -62.0 |
| **Delta** | | -14.3 | -20.5 | 0.0 |
| **Delta %** | | -17% | -25% | 0% |
| | | | | |

* Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" criteria. This avoids double evaluation of like criteria.

**Diagram H**

# City of Columbia Water and Light
# Mill Creek - Perche Creek 161-kV Transmssion Line
# Route Selection Matrix

| Page 2<br>Line Routes | Mill Creek to Perche<br>100 Series<br>(Red Route) | Mill Creek to Perche<br>200 Series<br>(Blue Route) | Mill Creek to Perche<br>300 Series<br>(Green Route) |
|---|---|---|---|
| Line Segments ➡ | A100, A110, A120, A130, A140, A150 | A200, A210, A220, A230, A240, A250, A260, A270 | A300, A310, A320, A330, A340, A350, A360, A370, A380 |
| | | | |
| **Transmission Line Characteristics** | | | |
| | | | |
| Total Length (feet) | 29430 | 29138 | 30205 |
| Length Overhead (feet) | 29430 | 29138 | 30205 |
| Length Underground (feet) | 0 | 0 | 0 |
| Length Along Public Rights-of-Way (feet) | 23995 | 27301 | 29286 |
| Length Along Private Rights-of-Way (feet) | 5435 | 1837 | 919 |
| Length Along Railroad (feet) | 0 | 0 | 0 |
| Length Parallel to Existing Lines (feet) | 13459 | 14021 | 27773 |
| Length Double Circuit with 69-kV (feet) | 11109 | 6595 | 3934 |
| Length Double Circuit with 161-kV (feet) | 0 | 0 | 0 |
| Distribution Overbuild (feet) | 0 | 0 | 0 |
| Total Line Angles (degrees) | 711 | 918 | 581 |
| | | | |
| | | | |
| **Buildings and Other Facilities Near Line (Distance from C/L)** | | | |
| | | | |
| Houses 0 - 100 feet | 92 | 54 | 34 |
| Houses 100-200 feet | 32 | 86 | 90 |
| Multi-Family 0 - 100 feet | 18 | 17 | 27 |
| Multi-Family 100 - 200 feet | 12 | 33 | 52 |
| Commercial Structures 0 - 100 feet | 8 | 2 | 6 |
| Commercial Structures 100 - 200 feet | 13 | 11 | 16 |
| Churches 0 - 100 feet | 0 | 0 | 0 |
| Churches 100 - 200 feet | 2 | 1 | 2 |
| Day Care 0 - 250 feet | 1 | 2 | 1 |
| Day Care 250 - 500 feet | 0 | 0 | 0 |
| Schools 0 - 250 feet | 0 | 0 | 0 |
| Schools 250 - 500 feet | 0 | 0 | 1 |
| Hospitals 0 - 100 feet | 0 | 0 | 0 |
| Hospitals 100 - 200 feet | 0 | 0 | 0 |
| Nursing Homes 0 - 100 feet | 0 | 0 | 0 |
| Nursing Homes 100 - 200 feet | 0 | 0 | 0 |
| Fire Station 0 - 100 feet | 0 | 0 | 0 |
| Fire Station 100 - 200 feet | 0 | 0 | 0 |
| | | | |
| | | | |
| **Crossings** | | | |
| | | | |
| Parcels Along Public R/W | 143 | 143 | 143 |
| Parcels on Private Property | 63 | 34 | 26 |
| Interstate Highways | 0 | 0 | 0 |
| Federal and State Numbered Highways | 2 | 0 | 0 |
| Other County Roads | 0 | 0 | 0 |
| Railroads | 0 | 0 | 0 |
| Perennial Streams, Rivers or Lakes | 7 | 12 | 7 |
| Wetlands (feet) | 269 | 326 | 158 |
| City or County Parks (feet) | 3827 | 5752 | 10 |
| State or Federal Parks, Conservation Areas (feet) | 0 | 0 | 0 |
| Recreational Areas - Other (Trails) (feet) | 0 | 0 | 0 |
| | | | |
| **Right-of-Way Characteristics** | | | |
| | | | |
| Residential (feet) | 3302 | 5715 | 877 |
| Commercial/Industrial (feet) | 2317 | 1295 | 1295 |
| Agricultural (feet) | 8389 | 4507 | 0 |
| Wooded/Forested (feet) | 0 | 0 | 0 |
| Existing R/W (feet) | 15419 | 17621 | 28033 |
| | | | |
| **Costs** | | | |
| | | | |
| Right-of-Way | $125,543 | $122,423 | $29,917 |
| Clearing | $0 | $0 | $0 |
| Construction | $5,193,693 | $5,153,731 | $4,923,665 |
| Total | $5,319,236 | $5,276,154 | $4,953,582 |
| Delta | $365,654 | $322,572 | $0 |
| Delta % | 7.38% | 6.51% | 0.00% |
| | | | |

**Diagram H**

# City of Columbia Water and Light
# Mill Creek - Grindstone 161-kV Transmssion Line
# Route Selection Matrix

| Page 1<br>Evaluated Scores<br><br>(Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.) | Routes → | Mill Creek to Grindstone 100 Series (Red Route) | Mill Creek to Grindstone 100B Series (Yellow/Red Route) | Mill Creek to Grindstone 200 Series (Blue Route) | Mill Creek to Grindstone 300 Series (Green Route) |
|---|---|---|---|---|---|
| | Segments → | B100, B110, B120, B130, B140 | B100, B105, B115, B120, B130, B140 | B200, B210, B220, B230, B240, B250 | B300, B310, B320, B330, B340, B350 |
| **Evaluatiion Criteria** | **Importance** | **Scores** | | | |
| **Transmission Line Characteristics** | 5 | | | | |
| | | | | | |
| Total Length * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Overhead | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Underground * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Along Public Rights-of-Way | 5 | 3.0 | 3.0 | 2.6 | 5.0 |
| Length Along Private Rights-of-Way | -3 | -0.7 | -1.7 | -2.8 | -3.0 |
| Length Along Railroad | 10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Parallel to Existing Lines | 5 | 1.0 | 1.4 | 2.5 | 5.0 |
| Length Double Circuit with 69-kV | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Double Circuit with 161-kV | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Distribution Overbuild * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Line Angles * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | 3.3 | 2.7 | 2.2 | 7.0 |
| | | | | | |
| **Buildings and Other Facilities Near Line (Distance** | 35 | | | | |
| | | | | | |
| Houses 0 - 100 feet | -10 | 0.0 | 0.0 | -10.0 | -5.7 |
| Houses 100-200 feet | -8 | -6.2 | -6.2 | -5.8 | -8.0 |
| Multi-Family 0 - 100 feet | -10 | -0.4 | 0.0 | -10.0 | -7.5 |
| Multi-Family 100 - 200 feet | -8 | -3.6 | -3.2 | -8.0 | -6.3 |
| Commercial Structures 0 - 100 feet | -5 | -5.0 | -4.4 | -2.5 | -2.5 |
| Commercial Structures 100 - 200 feet | -3 | -2.9 | -3.0 | -0.8 | -0.6 |
| Churches 0 - 100 feet | -2 | -2.0 | -2.0 | 0.0 | 0.0 |
| Churches 100 - 200 feet | -1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Day Care 0 - 250 feet | -8 | 0.0 | 0.0 | 0.0 | -8.0 |
| Day Care 250 - 500 feet | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Schools 0 - 250 feet | -10 | 0.0 | -3.3 | -3.3 | -10.0 |
| Schools 250 - 500 feet | -5 | 0.0 | 0.0 | 0.0 | -5.0 |
| Hospitals 0 - 100 feet | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Hospitals 100 - 200 feet | -3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nursing Homes 0 - 100 feet | -5 | 0.0 | 0.0 | -5.0 | 0.0 |
| Nursing Homes 100 - 200 feet | -3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fire Station 0 - 100 feet | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fire Station 100 - 200 feet | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -20.1 | -22.2 | -45.4 | -53.6 |
| | | | | | |
| **Crossings** | 10 | | | | |
| | | | | | |
| Parcels Along Public R/W | -5 | -1.6 | 0.0 | -5.0 | -4.4 |
| Parcels on Private Property | -10 | -2.5 | 0.0 | -7.5 | -10.0 |
| Road Crossings | | | | | |
| Interstate Highways | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Federal and State Numbered Highways | -5 | -1.7 | -1.7 | -1.7 | -5.0 |
| Other County Roads | -1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Railroads | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Perennial Streams, Rivers or Lakes | -1 | -0.8 | -1.0 | -0.2 | -0.6 |
| Wetlands | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| City or County Parks | -10 | 0.0 | 0.0 | 0.0 | 0.0 |
| State or Federal Parks, Conservation Areas | -10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Recreational Areas - Other | -2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -6.5 | -2.7 | -14.4 | -20.0 |
| | | | | | |
| | | | | | |
| **Right-of-Way Characteristics** | 10 | | | | |
| | | | | | |
| Residential | -10 | 0.0 | -10.0 | -10.0 | -10.0 |
| Commercial/Industrial | -5 | -2.1 | -2.5 | -5.0 | -1.0 |
| Agricultural | 5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Wooded/Forested | -2 | 0.0 | 0.0 | 0.0 | -2.0 |
| Existing R/W | 8 | 4.5 | 4.8 | 4.1 | 8.0 |
| Subtotal | | 2.5 | -7.7 | -10.9 | -5.0 |
| | | | | | |
| **Costs** | 40 | | | | |
| | | | | | |
| Right-of-Way | -1 | -0.4 | -0.6 | -1.0 | -0.5 |
| Clearing | -1 | 0.0 | 0.0 | 0.0 | -1.0 |
| Construction | -10 | -5.7 | -6.6 | -6.3 | -10.0 |
| Subtotal | | -6.0 | -7.1 | -7.3 | -11.5 |
| | | | | | |
| **Weighted Scores** | | | | | |
| | | | | | |
| Transmission Line Characteristics | 5 | 2.3 | 1.9 | 1.6 | 5.0 |
| Buildings and Other Facilities Near Line | 35 | -13.1 | -14.5 | -29.6 | -35.0 |
| Crossings | 10 | -3.3 | -1.3 | -7.2 | -10.0 |
| Right-of-Way Characteristics | 10 | 2.3 | -7.0 | -10.0 | -4.6 |
| Costs | 40 | -20.9 | -24.8 | -25.4 | -40.0 |
| **Total** | | -32.7 | -45.7 | -70.6 | -84.6 |
| **Delta** | | 0.0 | -13.0 | -37.9 | -51.9 |
| **Delta %** | | 0% | -15% | -45% | -61% |
| | | | | | |

* Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" crite
double evaluation of like criteria.

**Diagram H**

# City of Columbia Water and Light
# Mill Creek - Grindstone 161-kV Transmssion Line
# Route Selection Matrix

| Page 2<br>Line Routes | Mill Creek to Grindstone 100 Series (Red Route) | Mill Creek to Grindstone 100B Series (Yellow/Red Route) | Mill Creek to Grindstone 200 Series (Blue Route) | Mill Creek to Grindstone 300 Series (Green Route) |
|---|---|---|---|---|
| Line Segments ➡ | B100, B110, B120, B130, B140 | B100, B105, B115, B120, B130, B140 | B200, B210, B220, B230, B240, B250 | B300, B310, B320, B330, B340, B350 |
| **Transmission Line Characteristics** | | | | |
| Total Length (feet) | 12835 | 14341 | 14071 | 24060 |
| Length Overhead (feet) | 12835 | 14341 | 14071 | 24060 |
| Length Underground (feet) | 0 | 0 | 0 | 0 |
| Length Along Public Rights-of-Way (feet) | 11856 | 12006 | 10216 | 19990 |
| Length Along Private Rights-of-Way (feet) | 979 | 2335 | 3855 | 4070 |
| Length Along Railroad (feet) | 0 | 0 | 0 | 0 |
| Length Parallel to Existing Lines (feet) | 4450 | 6294 | 11159 | 22095 |
| Length Double Circuit with 69-kV (feet) | 4058 | 4058 | 0 | 0 |
| Length Double Circuit with 161-kV (feet) | 0 | 0 | 0 | 0 |
| Distribution Overbuild (feet) | 0 | 0 | 0 | 0 |
| Total Line Angles (degrees) | 229 | 388 | 494 | 499 |
| **Buildings and Other Facilities Near Line (Distance fr** | | | | |
| Houses 0 - 100 feet | 0 | 0 | 14 | 8 |
| Houses 100-200 feet | 14 | 14 | 13 | 18 |
| Multi-Family 0 - 100 feet | 2 | 0 | 52 | 39 |
| Multi-Family 100 - 200 feet | 19 | 17 | 42 | 33 |
| Commercial Structures 0 - 100 feet | 8 | 7 | 4 | 4 |
| Commercial Structures 100 - 200 feet | 19 | 20 | 5 | 4 |
| Churches 0 - 100 feet | 1 | 1 | 0 | 0 |
| Churches 100 - 200 feet | 0 | 0 | 0 | 0 |
| Day Care 0 - 250 feet | 0 | 0 | 0 | 1 |
| Day Care 250 - 500 feet | 0 | 0 | 0 | 0 |
| Schools 0 - 250 feet | 0 | 1 | 1 | 3 |
| Schools 250 - 500 feet | 0 | 0 | 0 | 1 |
| Hospitals 0 - 100 feet | 0 | 0 | 0 | 0 |
| Hospitals 100 - 200 feet | 0 | 0 | 0 | 0 |
| Nursing Homes 0 - 100 feet | 0 | 0 | 1 | 0 |
| Nursing Homes 100 - 200 feet | 0 | 0 | 0 | 0 |
| Fire Station 0 - 100 feet | 0 | 0 | 0 | 0 |
| Fire Station 100 - 200 feet | 0 | 0 | 1 | 0 |
| **Crossings** | | | | |
| Parcels Along Public R/W | 26 | 0 | 83 | 73 |
| Parcels on Private Property | 3 | 0 | 9 | 12 |
| Interstate Highways | 0 | 0 | 0 | 0 |
| Federal and State Numbered Highways | 1 | 1 | 1 | 3 |
| Other County Roads | 0 | 0 | 0 | 0 |
| Railroads | 0 | 0 | 0 | 0 |
| Perennial Streams, Rivers or Lakes | 4 | 5 | 1 | 3 |
| Wetlands (feet) | 0 | 0 | 0 | 0 |
| City or County Parks (feet) | 0 | 0 | 0 | 0 |
| State or Federal Parks, Conservation Areas (feet) | 0 | 0 | 0 | 0 |
| Recreational Areas - Other (Trails) (feet) | 0 | 0 | 0 | 0 |
| **Right-of-Way Characteristics** | | | | |
| Residential (feet) | 0 | 543 | 543 | 543 |
| Commercial/Industrial (feet) | 1315 | 1577 | 3154 | 655 |
| Agricultural (feet) | 0 | 0 | 0 | 0 |
| Wooded/Forested (feet) | 0 | 0 | 0 | 2591 |
| Existing R/W (feet) | 11520 | 12221 | 10374 | 20271 |
| **Costs** | | | | |
| Right-of-Way | $18,113 | $29,201 | $50,923 | $25,424 |
| Clearing | $0 | $0 | $0 | $2,974 |
| Construction | $2,167,699 | $2,514,119 | $2,410,388 | $3,833,447 |
| Total | $2,185,812 | $2,543,320 | $2,461,311 | $3,861,845 |
| Delta | $0 | $357,509 | $275,499 | $1,676,033 |
| Delta % | 0.00% | 16.36% | 12.60% | 76.68% |

**Diagram H**

# City of Columbia Water and Light
# Mill Creek - McBaine 161-kV Transmssion Line
# Route Selection Matrix

| Page 1<br>Evaluated Scores<br><br>(Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.) | Routes → | Mill Creek to McBaine 100 Series (Red Route) | Mill Creek to McBaine 200 Series (Blue Route) | Mill Creek to McBaine 300 Series (Green Route) | Mill Creek to McBaine 400 Series (Yellow Route) |
|---|---|---|---|---|---|
| | Segments → | C100, C110, C115, C120, C130, C140, C150 | C200, C210, C220, C230, C240, C250, C260 | C300, C310, C320, C330 | C400, C410, C420, C430, C440 |
| **Evaluatiion Criteria** | **Importance** | **Scores** | | | |
| **Transmission Line Characteristics** | 5 | | | | |
| | | | | | |
| Total Length * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Overhead | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Underground * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Along Public Rights-of-Way | 5 | 4.9 | 3.7 | 5.0 | 1.2 |
| Length Along Private Rights-of-Way | -3 | -1.1 | -1.4 | -0.2 | -3.0 |
| Length Along Railroad | 10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Parallel to Existing Lines | 5 | 3.7 | 3.9 | 5.0 | 1.2 |
| Length Double Circuit with 69-kV | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Length Double Circuit with 161-kV | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Distribution Overbuild * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Line Angles * | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | 7.5 | 6.1 | 9.8 | -0.6 |
| | | | | | |
| **Buildings and Other Facilities Near Line (Distance** | 35 | | | | |
| | | | | | |
| Houses 0 - 100 feet | -10 | -10.0 | -5.1 | -6.6 | -0.9 |
| Houses 100-200 feet | -8 | -8.0 | -3.2 | -3.5 | -0.3 |
| Multi-Family 0 - 100 feet | -10 | -10.0 | -10.0 | -0.6 | 0.0 |
| Multi-Family 100 - 200 feet | -8 | -3.1 | -7.0 | -8.0 | 0.0 |
| Commercial Structures 0 - 100 feet | -5 | -3.3 | -3.3 | -5.0 | -3.3 |
| Commercial Structures 100 - 200 feet | -3 | -2.6 | -3.0 | -2.6 | -1.5 |
| Churches 0 - 100 feet | -2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Churches 100 - 200 feet | -1 | 0.0 | -1.0 | 0.0 | 0.0 |
| Day Care 0 - 250 feet | -8 | 0.0 | -8.0 | -8.0 | -8.0 |
| Day Care 250 - 500 feet | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Schools 0 - 250 feet | -10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Schools 250 - 500 feet | -5 | -2.5 | -5.0 | -5.0 | -5.0 |
| Hospitals 0 - 100 feet | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Hospitals 100 - 200 feet | -3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nursing Homes 0 - 100 feet | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nursing Homes 100 - 200 feet | -3 | -3.0 | 0.0 | 0.0 | 0.0 |
| Fire Station 0 - 100 feet | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fire Station 100 - 200 feet | 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -42.6 | -45.6 | -39.2 | -19.0 |
| | | | | | |
| **Crossings** | 10 | | | | |
| | | | | | |
| Parcels Along Public R/W | -5 | -5.0 | -3.7 | -4.1 | -1.0 |
| Parcels on Private Property | -10 | -5.9 | -7.4 | -1.5 | -10.0 |
| Road Crossings | | | | | |
| Interstate Highways | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Federal and State Numbered Highways | -5 | -2.5 | -5.0 | -3.8 | -3.8 |
| Other County Roads | -1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Railroads | -5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Perennial Streams, Rivers or Lakes | -1 | 0.0 | -0.5 | -0.5 | -1.0 |
| Wetlands | -5 | -0.4 | 0.0 | 0.0 | -5.0 |
| City or County Parks | -10 | 0.0 | 0.0 | 0.0 | 0.0 |
| State or Federal Parks, Conservation Areas | -10 | 0.0 | 0.0 | 0.0 | 0.0 |
| Recreational Areas - Other | -2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal | | -13.8 | -16.6 | -9.9 | -20.7 |
| | | | | | |
| | | | | | |
| **Right-of-Way Characteristics** | 10 | | | | |
| | | | | | |
| Residential | -10 | -10.0 | -9.3 | -2.6 | -2.6 |
| Commercial/Industrial | -5 | -5.0 | -5.0 | -5.0 | -5.0 |
| Agricultural | 5 | 5.0 | 0.0 | 0.0 | 0.0 |
| Wooded/Forested | -2 | -0.5 | -0.7 | 0.0 | -2.0 |
| Existing R/W | 8 | 5.3 | 6.0 | 8.0 | 2.1 |
| Subtotal | | -5.2 | -8.9 | 0.4 | -7.5 |
| | | | | | |
| **Costs** | 40 | | | | |
| | | | | | |
| Right-of-Way | -1 | -1.0 | -0.6 | -0.1 | -0.9 |
| Clearing | -1 | -0.2 | -0.4 | 0.0 | -1.0 |
| Construction | -10 | -10.0 | -9.5 | -8.2 | -9.8 |
| Subtotal | | -11.2 | -10.4 | -8.4 | -11.7 |
| | | | | | |
| **Weighted Scores** | | | | | |
| | | | | | |
| Transmission Line Characteristics | 5 | 3.8 | 3.1 | 5.0 | -0.3 |
| Buildings and Other Facilities Near Line | 35 | -32.7 | -35.0 | -30.1 | -14.5 |
| Crossings | 10 | -6.7 | -8.0 | -4.8 | -10.0 |
| Right-of-Way Characteristics | 10 | -5.8 | -10.0 | 0.4 | -8.4 |
| Costs | 40 | -38.4 | -35.6 | -28.6 | -40.0 |
| **Total** | | -79.8 | -85.5 | -58.0 | -73.3 |
| **Delta** | | -21.8 | -27.5 | 0.0 | -15.2 |
| **Delta %** | | -25% | -32% | 0% | -18% |
| | | | | | |

* Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" crit
double evaluation of like criteria.

**Diagram H**

# City of Columbia Water and Light
# Mill Creek - McBaine 161-kV Transmssion Line
# Route Selection Matrix

| Page 2<br>Line Routes | Mill Creek to McBaine 100 Series (Red Route) | Mill Creek to McBaine 200 Series (Blue Route) | Mill Creek to McBaine 300 Series (Green Route) | Mill Creek to McBaine 400 Series (Yellow Route) |
|---|---|---|---|---|
| **Line Segments ➡** | **C100, C110, C115, C120, C130, C140, C150** | **C200, C210, C220, C230, C240, C250, C260** | **C300, C310, C320, C330** | **C400, C410, C420, C430, C440** |
| | | | | |
| **Transmission Line Characteristics** | | | | |
| | | | | |
| Total Length (feet) | 26699 | 23773 | 20695 | 24682 |
| Length Overhead (feet) | 26699 | 23773 | 20695 | 24682 |
| Length Underground (feet) | 0 | 0 | 0 | 0 |
| Length Along Public Rights-of-Way (feet) | 19067 | 14144 | 19339 | 4680 |
| Length Along Private Rights-of-Way (feet) | 7632 | 9629 | 1356 | 20002 |
| Length Along Railroad (feet) | 0 | 0 | 0 | 0 |
| Length Parallel to Existing Lines (feet) | 14424 | 15142 | 19339 | 4680 |
| Length Double Circuit with 69-kV (feet) | 0 | 0 | 0 | 0 |
| Length Double Circuit with 161-kV (feet) | 0 | 0 | 0 | 0 |
| Distribution Overbuild (feet) | 0 | 0 | 0 | 0 |
| Total Line Angles (degrees) | 487 | 716 | 618 | 746 |
| | | | | |
| | | | | |
| **Buildings and Other Facilities Near Line (Distance fr** | | | | |
| | | | | |
| Houses 0 - 100 feet | 47 | 24 | 31 | 4 |
| Houses 100-200 feet | 60 | 24 | 26 | 2 |
| Multi-Family 0 - 100 feet | 18 | 18 | 1 | 0 |
| Multi-Family 100 - 200 feet | 9 | 20 | 23 | 0 |
| Commercial Structures 0 - 100 feet | 4 | 4 | 6 | 4 |
| Commercial Structures 100 - 200 feet | 7 | 8 | 7 | 4 |
| Churches 0 - 100 feet | 0 | 0 | 0 | 0 |
| Churches 100 - 200 feet | 0 | 1 | 0 | 0 |
| Day Care 0 - 250 feet | 0 | 1 | 1 | 1 |
| Day Care 250 - 500 feet | 0 | 0 | 0 | 0 |
| Schools 0 - 250 feet | 0 | 0 | 0 | 0 |
| Schools 250 - 500 feet | 1 | 2 | 2 | 2 |
| Hospitals 0 - 100 feet | 0 | 0 | 0 | 0 |
| Hospitals 100 - 200 feet | 0 | 0 | 0 | 0 |
| Nursing Homes 0 - 100 feet | 0 | 0 | 0 | 0 |
| Nursing Homes 100 - 200 feet | 1 | 0 | 0 | 0 |
| Fire Station 0 - 100 feet | 0 | 0 | 1 | 0 |
| Fire Station 100 - 200 feet | 0 | 0 | 0 | 0 |
| | | | | |
| | | | | |
| **Crossings** | | | | |
| | | | | |
| Parcels Along Public R/W | 129 | 96 | 107 | 25 |
| Parcels on Private Property | 16 | 20 | 4 | 27 |
| Interstate Highways | 0 | 0 | 0 | 0 |
| Federal and State Numbered Highways | 2 | 4 | 3 | 3 |
| Other County Roads | 0 | 0 | 0 | 0 |
| Railroads | 0 | 0 | 0 | 0 |
| Perennial Streams, Rivers or Lakes | 0 | 3 | 3 | 6 |
| Wetlands (feet) | 92 | 0 | 0 | 1110 |
| City or County Parks (feet) | 0 | 0 | 0 | 0 |
| State or Federal Parks, Conservation Areas (feet) | 0 | 0 | 0 | 0 |
| Recreational Areas - Other (Trails) (feet) | 0 | 0 | 0 | 0 |
| | | | | |
| **Right-of-Way Characteristics** | | | | |
| | | | | |
| Residential (feet) | 2093 | 1939 | 546 | 546 |
| Commercial/Industrial (feet) | 263 | 263 | 263 | 263 |
| Agricultural (feet) | 6488 | 0 | 0 | 0 |
| Wooded/Forested (feet) | 4652 | 6556 | 0 | 18646 |
| Existing R/W (feet) | 13203 | 15015 | 19886 | 5227 |
| | | | | |
| **Costs** | | | | |
| | | | | |
| Right-of-Way | $85,707 | $52,906 | $11,143 | $75,351 |
| Clearing | $5,340 | $7,525 | $0 | $21,403 |
| Construction | $4,198,305 | $3,973,513 | $3,454,631 | $4,127,633 |
| Total | $4,289,352 | $4,033,945 | $3,465,774 | $4,224,386 |
| Delta | $823,578 | $568,171 | $0 | $758,613 |
| Delta % | 23.76% | 16.39% | 0.00% | 21.89% |
| | | | | |

**Diagram H**

**City of Columbia Water and Light**
**Perche Creek - McBaine 161-kV Transmssion Line (Option B)**
**Route Selection Matrix**

| | Public Feedback Ranking | Importance Factor (See Note) | GREEN LINE | | | RED LINE | | | RED-ORANGE-GREEN LINE | | | RED-BLUE-GREEN LINE | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Proximity to Residences** | 30.0% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Houses 0-100 | | -10 | 15 | 200 | -9,000 | 5 | 200 | -3,000 | 15 | 200 | -9,000 | 16 | 200 | -9,600 |
| Houses 100-200 | | -5 | 94 | 200 | -28,200 | 44 | 200 | -13,200 | 81 | 200 | -24,300 | 54 | 200 | -16,200 |
| Multi-Family 0-100 | | -10 | 24 | 200 | -14,400 | 42 | 200 | -25,200 | 40 | 200 | -24,000 | 40 | 200 | -24,000 |
| Multi-Family 100-200 | | -5 | 43 | 200 | -12,900 | 16 | 200 | -4,800 | 22 | 200 | -6,600 | 21 | 200 | -6,300 |
| Nursing homes 0-100 | | -10 | 0 | 200 | 0 | 0 | 200 | 0 | 0 | 200 | 0 | 0 | 200 | 0 |
| Nursing homes 100-200 | | -5 | 0 | 200 | 0 | 0 | 200 | 0 | 0 | 200 | 0 | 0 | 200 | 0 |
| **Proximity to Residences TOTALS** | | | | | **-64,500** | | | **-46,200** | | | **-63,900** | | | **-56,100** |
| **Proximity to Schools** | 19.3% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Day care 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Day Care 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Schools 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Schools 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| **Proximity to Schools TOTALS** | | | | | **0** | | | **0** | | | **0** | | | **0** |
| **Proximity to Environmental Concerns** | 13.1% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Wooded/forested crossed | | -10 | 2336 | | -3,060 | 11054 | | -14,481 | 0 | | 0 | 0 | | 0 |
| Streams 0-200 | | -10 | 200 | | -262 | 600 | | -786 | 1100 | | -1,441 | 1100 | | -1,441 |
| Conservation areas crossed | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Wetlands crossed | | -10 | 156 | | -204 | 2446 | | -3,204 | 691 | | -905 | 196 | | -257 |
| Agricultural property crossed | | 3 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| **Proximity to Environmental Concerns TOTALS** | | | | | **-3,527** | | | **-18,471** | | | **-2,346** | | | **-1,698** |
| **Proximity to Recreation Areas** | 11.5% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Parks 0-100 | | -10 | 1050 | | -1,208 | 424 | | -488 | 424 | | -488 | 424 | | -488 |
| Parks 100-200 | | -5 | 1347 | | -775 | 424 | | -244 | 1058 | | -608 | 424 | | -244 |
| Trails 0-100 | | -10 | 12 | | -14 | 12 | | -14 | 12 | | -14 | 12 | | -14 |
| Trails 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 100-200 | | -5 | 0 | | 0 | 541 | | -311 | 541 | | -311 | 541 | | -311 |
| **Proximity to Recreation Areas TOTALS** | | | | | **-1,996** | | | **-1,056** | | | **-1,421** | | | **-1,056** |
| **Proximity to Businesses** | 12.4% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Commercial structures 0-100 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 | 1 | 500 | -310 | 1 | 500 | -310 |
| Commercial structures 100-200 | | -2 | 7 | 500 | -868 | 1 | 500 | -124 | 4 | 500 | -496 | 4 | 500 | -496 |
| Churches 0-100 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 |
| Churches 100-200 | | -2 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 0-100 | | -10 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 100-200 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 | 0 | 500 | 0 |
| **Proximity to Businesses TOTALS** | | | | | **-868** | | | **-124** | | | **-806** | | | **-806** |
| **TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT** | | | | | **-70,890** | | | **-65,851** | | | **-68,473** | | | **-59,660** |
| **AVERAGE LINEAL FEET FEEDBACK IMPACT** | -68370.81 | | | | | | | | | | | | | |
| **COST** | 13.7% | | | | $6,526,142 | | | $8,343,663 | | | $7,767,692 | | | $7,084,854 |
| **COST COMPARISON ADJUSTMENT (Highest cost is 1)** | | | | | 0.78 | | | 1.00 | | | 0.93 | | | 0.85 |
| **COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK** | | | | | 0.11 | | | 0.14 | | | 0.13 | | | 0.12 |
| **COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.** | | | | | **-7,326** | | | **-9,367** | | | **-8,720** | | | **-7,954** |
| **TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON** | | | | | **-78,217** | | | **-75,218** | | | **-77,193** | | | **-67,614** |

**Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.**

DIAGRAM C

# City of Columbia Water and Light
# Mill Creek - Hinkson Creek 69-kV Transmssion Line (Option B)
# Route Selection Matrix

| | Public Feedback Ranking | Importance Factor (See Note) | ORANGE LINE | | | RED LINE | | |
|---|---|---|---|---|---|---|---|---|
| **Proximity to Residences** | 30.0% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Houses 0-100 | | -10 | 0 | 200 | 0 | 0 | 200 | 0 |
| Houses 100-200 | | -5 | 0 | 200 | 0 | 0 | 200 | 0 |
| Multi-Family 0-100 | | -10 | 3 | 200 | -1800 | 0 | 200 | 0 |
| Multi-Family 100-200 | | -5 | 5 | 200 | -1500 | 0 | 200 | 0 |
| Nursing homes 0-100 | | -10 | 0 | 200 | 0 | 0 | 200 | 0 |
| Nursing homes 100-200 | | -5 | 0 | 200 | 0 | 0 | 200 | 0 |
| **Proximity to Residences TOTALS** | | | | | **-3300** | | | **0** |
| | | | | | | | | |
| **Proximity to Schools** | 19.3% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Day care 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Day Care 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Schools 0-100 | | -10 | 0 | | 0 | 600 | | -1158 |
| Schools 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| **Proximity to Schools TOTALS** | | | | | **0** | | | **-1158** |
| | | | | | | | | |
| **Proximity to Environmental Concerns** | 13.1% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Wooded/forested crossed | | -10 | 449 | | -588.19 | 0 | | 0 |
| Streams 0-200 | | -10 | 100 | | -131 | 0 | | 0 |
| Conservation areas crossed | | -10 | 0 | | 0 | 0 | | 0 |
| Wetlands crossed | | -10 | 0 | | 0 | 100 | | -131 |
| Agricultural property crossed | | 3 | 0 | | 0 | 0 | | 0 |
| **Proximity to Environmental Concerns TOTALS** | | | | | **-719.19** | | | **-131** |
| | | | | | | | | |
| **Proximity to Recreation Areas** | 11.5% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Parks 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Parks 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Trails 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Trails 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| **Proximity to Recreation Areas TOTALS** | | | | | **0** | | | **0** |
| | | | | | | | | |
| **Proximity to Businesses** | 12.4% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Commercial structures 0-100 | | -5 | 9 | 500 | -2790 | 5 | 500 | -1550 |
| Commercial structures 100-200 | | -2 | 16 | 500 | -1984 | 6 | 500 | -744 |
| Churches 0-100 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 |
| Churches 100-200 | | -2 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 0-100 | | -10 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 100-200 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 |
| **Proximity to Businesses TOTALS** | | | | | **-4774** | | | **-2294** |
| | | | | | | | | |
| **TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT** | | | | | **-8793.19** | | | **-3583** |
| | | | | | | | | |
| **AVERAGE LINEAL FEET FEEDBACK IMPACT** | -6188.095 | | | | | | | |
| | | | | | | | | |
| **COST** | 13.7% | | | | $1,652,173 | | | $1,493,798 |
| **COST COMPARISON ADJUSTMENT (HIGHEST cost is 1)** | | | | | 1.00 | | | 0.90 |
| **COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK** | | | | | 0.14 | | | 0.12 |
| **COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.** | | | | | **-848** | | | **-767** |
| **TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON** | | | | | **-9641** | | | **-4350** |

**Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.**

DIAGRAM D

# City of Columbia Water and Light
# Mill Creek - Grindstone 69-kV Transmssion Line (Option B)
# Route Selection Matrix

| | Public Feedback Ranking | Importance Factor (See Note) | GREEN LINE | | | YELLOW LINE | | |
|---|---|---|---|---|---|---|---|---|
| **Proximity to Residences** | 30.0% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Houses 0-100 | | -10 | 1 | 200 | -600 | 0 | 200 | 0 |
| Houses 100-200 | | -5 | 4 | 200 | -1200 | 0 | 200 | 0 |
| Multi-Family 0-100 | | -10 | 0 | 200 | 0 | 0 | 200 | 0 |
| Multi-Family 100-200 | | -5 | 0 | 200 | 0 | 0 | 200 | 0 |
| Nursing homes 0-100 | | -10 | 0 | 200 | 0 | 0 | 200 | 0 |
| Nursing homes 100-200 | | -5 | 0 | 200 | 0 | 0 | 200 | 0 |
| **Proximity to Residences TOTALS** | | | | | **-1800** | | | **0** |
| | | | | | | | | |
| **Proximity to Schools** | 19.3% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Day care 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Day Care 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Schools 0-100 | | -10 | 600 | | -1158 | 600 | | -1158 |
| Schools 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| **Proximity to Schools TOTALS** | | | | | **-1158** | | | **-1158** |
| | | | | | | | | |
| **Proximity to Environmental Concerns** | 13.1% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Wooded/forested crossed | | -10 | 0 | | 0 | 0 | | 0 |
| Streams 0-200 | | -10 | 100 | | -131 | 100 | | -131 |
| Conservation areas crossed | | -10 | 0 | | 0 | 0 | | 0 |
| Wetlands crossed | | -10 | 100 | | -131 | 100 | | -131 |
| Agricultural property crossed | | 3 | 0 | | 0 | 0 | | 0 |
| **Proximity to Environmental Concerns TOTALS** | | | | | **-262** | | | **-262** |
| | | | | | | | | |
| **Proximity to Recreation Areas** | 11.5% | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Parks 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Parks 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Trails 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Trails 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 0-100 | | -10 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 100-200 | | -5 | 0 | | 0 | 0 | | 0 |
| **Proximity to Recreation Areas TOTALS** | | | | | **0** | | | **0** |
| | | | | | | | | |
| **Proximity to Businesses** | 12.4% | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Commercial structures 0-100 | | -5 | 4 | 500 | -1240 | 4 | 500 | -1240 |
| Commercial structures 100-200 | | -2 | 4 | 500 | -496 | 8 | 500 | -992 |
| Churches 0-100 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 |
| Churches 100-200 | | -2 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 0-100 | | -10 | 0 | 500 | 0 | 0 | 500 | 0 |
| Hospitals 100-200 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 |
| **Proximity to Businesses TOTALS** | | | | | **-1736** | | | **-2232** |
| | | | | | | | | |
| **TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT** | | | | | **-4956** | | | **-3652** |
| | | | | | | | | |
| **AVERAGE LINEAL FEET FEEDBACK IMPACT** | -4304 | | | | | | | |
| | | | | | | | | |
| **COST** | 13.7% | | | | $1,652,173 | | | $1,493,798 |
| **COST COMPARISON ADJUSTMENT (HIGHEST cost is 1)** | | | | | 1.00 | | | 0.90 |
| **COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK** | | | | | 0.14 | | | 0.12 |
| **COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.** | | | | | **-590** | | | **-533** |
| **TOTAL LINE SCORE INCLUDING ADJUSTED COST COMPARISON** | | | | | **-5546** | | | **-4185** |

**Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.**

DIAGRAM E

**City of Columbia Water and Light**
**Option A vs. Option B**
**Route Selection Matrix**

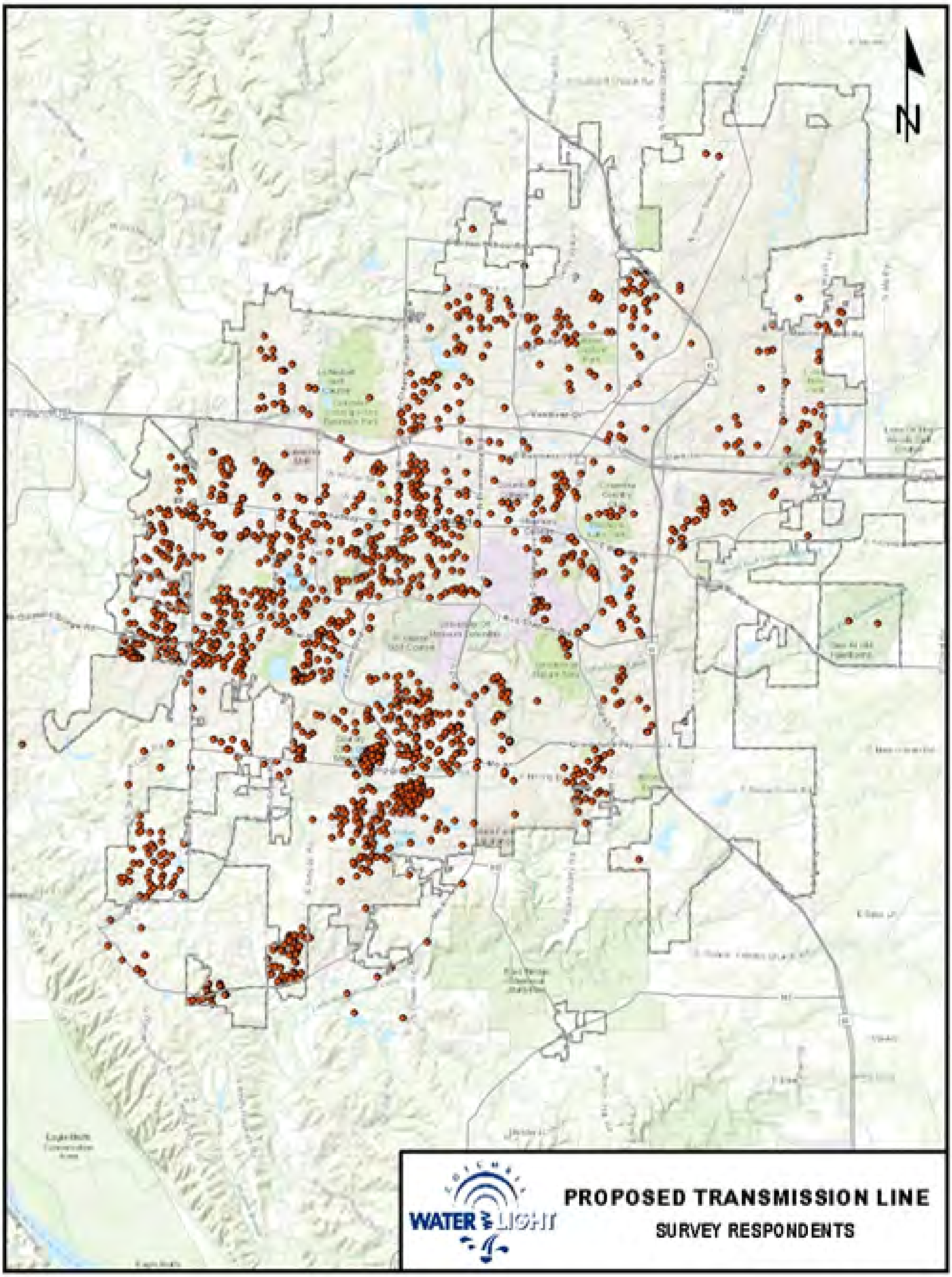
| | | | Perche - McBaine 161-kV Option B | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | GREEN LINE | | | RED LINE | | | RED-ORANGE-GREEN LINE | | |
| -41,378 | Public Feedback Ranking | Importance Factor (See Note) | | | | | | | | | |
| **Proximity to Residences** | **12.5%** | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Houses 0-100 | | -10 | 15 | 200 | -3,750 | 5 | 200 | -1,250 | 15 | 200 | -3,750 |
| Houses 100-200 | | -5 | 94 | 200 | -11,750 | 44 | 200 | -5,500 | 81 | 200 | -10,125 |
| Multi-Family 0-100 | | -10 | 24 | 200 | -6,000 | 42 | 200 | -10,500 | 40 | 200 | -10,000 |
| Multi-Family 100-200 | | -5 | 43 | 200 | -5,375 | 16 | 200 | -2,000 | 22 | 200 | -2,750 |
| **Proximity to Residences TOTALS** | | | | | **-26,875** | | | **-19,250** | | | **-26,625** |
| **Proximity to Day Cares, Schools, Churches, Hospitals, Nursing Homes** | **11.3%** | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Day care 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Day Care 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Schools 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Schools 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Churches 0-100 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Churches 100-200 | | -2 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Hospitals 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Hospitals 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Nursing homes 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Nursing homes 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| **Proximity to Schools TOTALS** | | | | | **0** | | | **0** | | | **0** |
| **Proximity to Environmental Concerns** | **11.8%** | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Wooded/forested crossed | | -10 | 2336 | | -2,756 | 11054 | | -13,044 | 0 | | 0 |
| Streams 0-200 | | -10 | 200 | | -236 | 600 | | -708 | 1100 | | -1,298 |
| Conservation areas crossed | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Wetlands crossed | | -10 | 156 | | -184 | 2446 | | -2,886 | 691 | | -815 |
| Agricultural property crossed | | 3 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| **Proximity to Environmental Concerns TOTALS** | | | | | **-3,177** | | | **-16,638** | | | **-2,113** |
| **Proximity to Recreation Areas** | **11.7%** | | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| Parks 0-100 | | -10 | 1050 | | -1,229 | 424 | | -496 | 424 | | -496 |
| Parks 100-200 | | -5 | 1347 | | -788 | 424 | | -248 | 1058 | | -619 |
| Trails 0-100 | | -10 | 12 | | -14 | 12 | | -14 | 12 | | -14 |
| Trails 100-200 | | -5 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 0-100 | | -10 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Other recreation areas 100-200 | | -5 | 0 | | 0 | 541 | | -316 | 541 | | -316 |
| **Proximity to Recreation Areas TOTALS** | | | | | **-2,031** | | | **-1,075** | | | **-1,446** |
| **Proximity to Businesses** | **8.6%** | | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| Commercial structures 0-100 | | -5 | 0 | 500 | 0 | 0 | 500 | 0 | 1 | 500 | -215 |
| Commercial structures 100-200 | | -2 | 7 | 500 | -602 | 1 | 500 | -86 | 4 | 500 | -344 |
| **Proximity to Businesses TOTALS** | | | | | **-602** | | | **-86** | | | **-559** |
| **TOTAL LINEAL FEET PUBLIC FEEDBACK IMPACT** | | | | | **-32,684** | | | **-37,049** | | | **-30,743** |
| **AVERAGE LINEAL FEET FEEDBACK IMPACT** | | -29,611 | | | | | | | | | |
| **COST** | 12.6% | | | | $6,526,142 | | | $8,343,663 | | | $7,767,692 |
| **COST COMPARISON ADJUSTMENT (Highest cost is 1)** | | | | | 0.77 | | | 0.98 | | | 0.91 |
| **COST COMPARISON ADJUSTED APPLIED TO PUBLIC FEEDBACK** | | | | | 0.10 | | | 0.12 | | | 0.12 |
| **COST AS A NEGATIVE PERCENT IMPACT OF TOTAL LINE FEEDBACK.** | | | | | **-2,865** | | | **-3,663** | | | **-3,411** |
| **LINE SCORE INCLUDING ADJUSTED COST COMPARISON** | | | | | **-35,550** | | | **-40,712** | | | **-34,154** |
| **Reliable Electric Service** | 16.2% | | | | | | | | | | |
| **Longest-Term Solution** | 15.3% | | | | | | | | | | |
| **TOTAL SCORE INCLUDING RELIABILITY AND LONG-TERM SOLUTION** | 100.0% | | | | -35,550 | | | -40,712 | | | -34,154 |

**Note: (Importance factors range from -10 to +10, with negative values indicating negative characteristics and positive values indicting positive characteristics.**

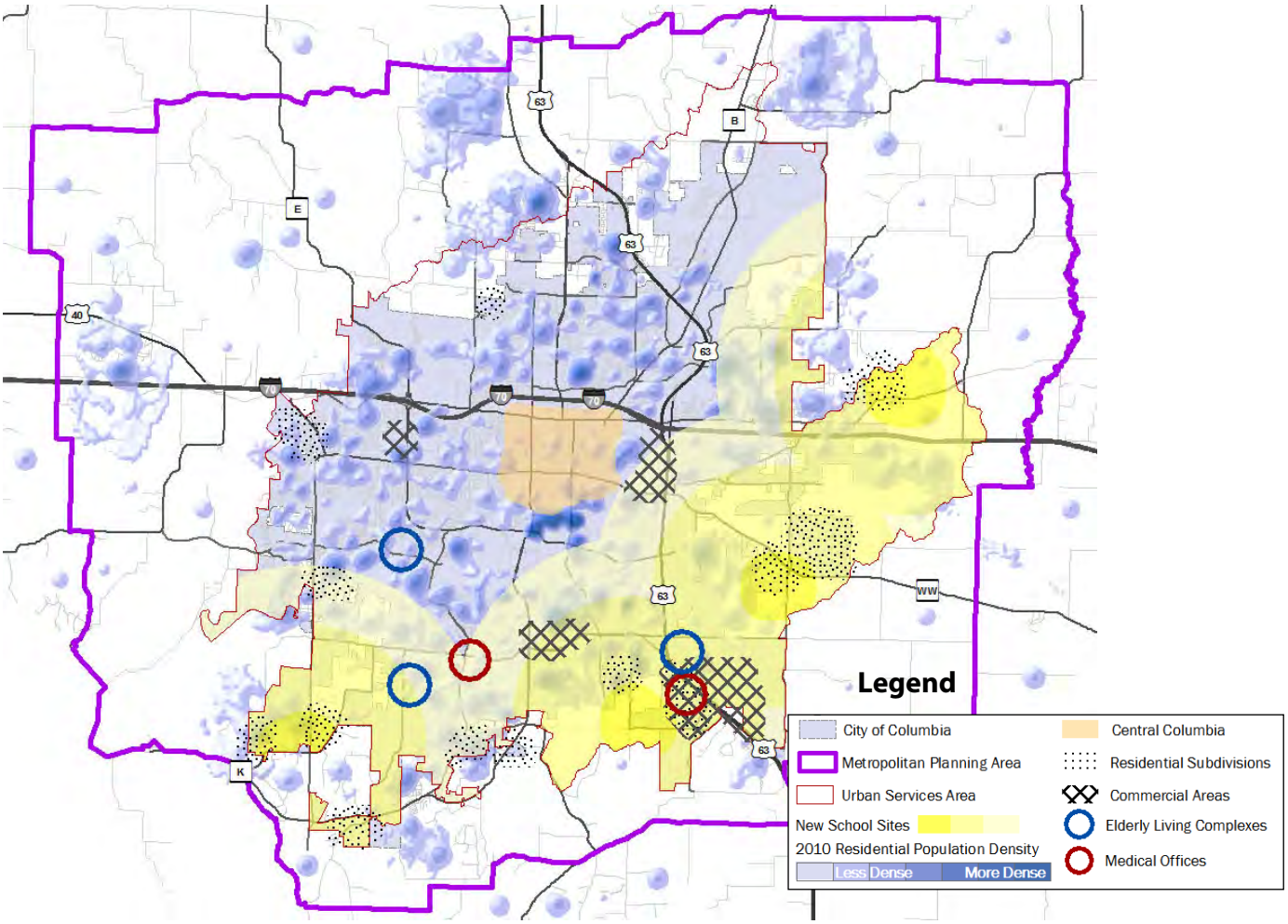
| | | | | | | Mill Creek - Grindstone 69-kV Transmssion Line (Option B) | | | | | | Mill Creek - Hinkson Creek 69-k | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Option B-2 Blue Line** | | | **RED-BLUE-GREEN LINE** | | | **GREEN LINE** | | | **YELLOW LINE** | | | **ORANGE LINE** | | |
| **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| 22 | 200 | -5,500 | 16 | 200 | -4,000 | 1 | 200 | -250 | 0 | 200 | 0 | 0 | 200 | 0 |
| 63 | 200 | -7,875 | 54 | 200 | -6,750 | 4 | 200 | -500 | 0 | 200 | 0 | 0 | 200 | 0 |
| 20 | 200 | -5,000 | 40 | 200 | -10,000 | 0 | 200 | 0 | 0 | 200 | 0 | 3 | 200 | -750 |
| 35 | 200 | -4,375 | 21 | 200 | -2,625 | 0 | 200 | 0 | 0 | 200 | 0 | 5 | 200 | -625 |
| | | **-22,750** | | | **-23,375** | | | **-750** | | | **0** | | | **-1,375** |
| **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 600 | | -708 | 600 | | -708 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| | | **0** | | | **0** | | | **-708** | | | **-708** | | | **0** |
| **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| 1,702 | | -2,008 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 449 | | -530 |
| 1,600 | | -1,888 | 1100 | | -1,298 | 100 | | -118 | 100 | | -118 | 100 | | -118 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 1,758 | | -2,074 | 196 | | -231 | 100 | | -118 | 100 | | -118 | 0 | | 0 |
| 14,769 | | 5,228 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| | | **-743** | | | **-1,529** | | | **-236** | | | **-236** | | | **-648** |
| **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** | **Lineal feet of instance** | | **Total impact** |
| 424 | | -496 | 424 | | -496 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 424 | | -248 | 424 | | -248 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 36 | | -42 | 12 | | -14 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 400 | | -468 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 400 | | -234 | 541 | | -316 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| | | **-1,488** | | | **-1,075** | | | **0** | | | **0** | | | **0** |
| **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** | **Count of Instance** | **Normalizing Factor** | **Total impact** |
| 1 | 500 | -215 | 1 | 500 | -215 | 4 | 500 | -860 | 4 | 500 | -860 | 9 | 500 | -1,935 |
| 6 | 500 | -516 | 4 | 500 | -344 | 4 | 500 | -344 | 8 | 500 | -688 | 16 | 500 | -1,376 |
| | | **-731** | | | **-559** | | | **-1,204** | | | **-1,548** | | | **-3,311** |
| | | **-25,712** | | | **-26,538** | | | **-2,898** | | | **-2,492** | | | **-5,333.82** |
| | | $8,497,379 | | | $7,084,854 | | | $1,652,173 | | | $1,493,798 | | | $1,652,173 |
| | | | | | 0.83 | | | 0.19 | | | 0.18 | | | 0.19 |
| | | | | | 0.11 | | | 0.02 | | | 0.02 | | | 0.02 |
| | | | | | **-3,111** | | | **-725** | | | **-656** | | | **-725** |
| | | | | | **-29,649** | | | **-3,623** | | | **-3,148** | | | **-6,059** |
| | | | | | -29,649 | | | -3,623 | | | -3,148 | | | -6,059 |

| :V Transmssion Line (Option B) | | | Mill Creek - Grindstone (Option A) | | | Mill Creek - Perche (Option A) | | | Mill Creek - McBaine (Option A) | | | Summar | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RED LINE | | | RED LINE | | | GREEN LINE | | | GREEN LINE | | | McBaine-Perche Blue | Mill Creek - Grindstone Yellow |
| Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Total impact | Total impact |
| 0 | 200 | 0 | 0 | 200 | 0 | 34 | 200 | -8,500 | 31 | 200 | -7,750 | -5,500 | 0 |
| 0 | 200 | 0 | 14 | 200 | -1,750 | 90 | 200 | -11,250 | 26 | 200 | -3,250 | -7,875 | 0 |
| 0 | 200 | 0 | 2 | 200 | -500 | 27 | 200 | -6,750 | 1 | 200 | -250 | -5,000 | 0 |
| 0 | 200 | 0 | 19 | 200 | -2,375 | 52 | 200 | -6,500 | 23 | 200 | -2,875 | -4,375 | 0 |
| | | **0** | | | **-4,625** | | | **-33,000** | | | **-14,125** | **-22,750** | **0** |
| Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Total impact | Total impact |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 200 | | -118 | 200 | | -118 | 0 | 0 |
| 600 | | -708 | 0 | | 0 | 600 | | -708 | 0 | | 0 | 0 | -708 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 400 | | -236 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 800 | | -189 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| | | **-708** | | | **-236** | | | **-1,015** | | | **-118** | **0** | **-708** |
| Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Total impact | Total impact |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | -2,008 | 0 |
| 0 | | 0 | 200 | | -236 | 350 | | -413 | 150 | | -177 | -1,888 | -118 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 100 | | -118 | 0 | | 0 | 158 | | -186 | 0 | | 0 | -2,074 | -118 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 5,228 | 0 |
| | | **-118** | | | **-236** | | | **-599** | | | **-177** | **-743** | **-236** |
| Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Lineal feet of instance | | Total impact | Total impact | Total impact |
| 0 | | 0 | 0 | | 0 | 10 | | -12 | 10 | | -12 | -496 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | -248 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | -42 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | -468 | 0 |
| 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | -234 | 0 |
| | | **0** | | | **0** | | | **-12** | | | **-12** | -1,488 | 0 |
| Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Count of Instance | Normalizing Factor | Total impact | Total impact | Total impact |
| 5 | 500 | -1,075 | 8 | 500 | -1,720 | 6 | 500 | -1,290 | 6 | 500 | -1,290 | -215 | -860 |
| 6 | 500 | -516 | 19 | 500 | -1,634 | 16 | 500 | -1,376 | 7 | 500 | -602 | -516 | -688 |
| | | **-1,591** | | | **-3,354** | | | **-2,666** | | | **-1,892** | **-731** | **-1548** |
| | | **-2,417** | | | **-8,451** | | | **-37,292** | | | **-16,324** | **-25,712** | **-2492** |
| | | $1,493,798 | | | $2,454,343 | | | $5,590,202 | | | $3,926,391 | $8,497,379 | $1,493,798 |
| | | 0.18 | | | 0.29 | | | 0.66 | | | 0.46 | | |
| | | 0.02 | | | 0.04 | | | 0.08 | | | 0.06 | | |
| | | **-656** | | | **-1,078** | | | **-2,455** | | | **-1,724** | | |
| | | **-3,073** | | | **-9,529** | | | **-39,746** | | | **-18,048** | | |
| | | | | | 2253 | | | 9400 | | | 4268 | 0 | 0 |
| | | | | | 2128 | | | 8878 | | | 4031 | 0 | 0 |
| | | -3,073 | | | -5,147 | | | -21,469 | | | -9,748 | | |

| y (Option B-2) | | Summary (Option B) | | | | Summary (Option A) |
|---|---|---|---|---|---|---|
| **Mill Creek - Hinckson Red** | **Combined Total** | **Perche - McBaine Red-Blue-Green** | **Mill Creek - Grindstone Yellow** | **Mill Creek - Hinckson Red** | **Combined Total** | **Combined Total** |
| **Total impact** | | **Total impact** | **Total impact** | **Total impact** | | |
| 0 | -5,500 | -4,000 | 0 | 0 | -4,000 | -16,250 |
| 0 | -7,875 | -6,750 | 0 | 0 | -6,750 | -16,250 |
| 0 | -5,000 | -10,000 | 0 | 0 | -10,000 | -7,500 |
| 0 | -4,375 | -2,625 | 0 | 0 | -2,625 | -11,750 |
| **0** | **-22,750** | **-23,375** | **0** | **0** | **-23,375** | **-51,750** |
| **Total impact** | | **Total impact** | **Total impact** | **Total impact** | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | -236 |
| -708 | -1,416 | 0 | -708 | -708 | -1,416 | -708 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | -236 |
| 0 | 0 | 0 | 0 | 0 | 0 | -189 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **-708** | **-1,416** | **0** | **-708** | **-708** | **-1,416** | **-1,369** |
| **Total impact** | | **Total impact** | **Total impact** | **Total impact** | | |
| 0 | -2,008 | 0 | 0 | 0 | 0 | 0 |
| 0 | -2,006 | -1,298 | -118 | 0 | -1,416 | -826 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -118 | -2,310 | -231 | -118 | -118 | -467 | -186 |
| 0 | 5,228 | 0 | 0 | 0 | 0 | 0 |
| **-118** | **-1,097** | **-1,529** | **-236** | **-118** | **-1,883** | **-1,012** |
| **Total impact** | | **Total impact** | **Total impact** | **Total impact** | | |
| 0 | -496 | -496 | 0 | 0 | -496 | -23 |
| 0 | -248 | -248 | 0 | 0 | -248 | 0 |
| 0 | -42 | -14 | 0 | 0 | -14 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | -468 | 0 | 0 | 0 | 0 | 0 |
| 0 | -234 | -316 | 0 | 0 | -316 | 0 |
| 0 | **-1,488** | -1,075 | 0 | 0 | **-1,075** | **-23** |
| **Total impact** | | **Total impact** | **Total impact** | **Total impact** | | |
| -1075 | -2,150 | -215 | -860 | -1,075 | -2,150 | -4,300 |
| -516 | -1,720 | -344 | -688 | -516 | -1,548 | -3,612 |
| **-1591** | **-3,870** | **-559** | **-1,548** | **-1,591** | **-3,698** | **-7,912** |
| **-2417** | **-30,621** | **-26,538** | **-2,492** | **-2,417** | **-31,447** | **-62,067** |
| $1,493,798 | $ 11,484,975.00 | $ 7,084,854.00 | $ 1,493,798.00 | $ 1,493,798.00 | $ 10,072,450.00 | $ 11,970,936.00 |
| | 0.96 | | | | 0.84 | 1 |
| | 0.121 | | | | 0.106 | 0.126 |
| | **-5,002** | | | | **-4,387** | **-5,214** |
| | **-35,623** | | | | **-35,834** | **-67,280** |
| 0 | 0 | 0 | 0 | 0 | 0 | 15,912 |
| 0 | 0 | 0 | 0 | 0 | 0 | 15,028 |
| | **-35,623** | | | | **-35,834** | **-36,341** |


N
WATER & LIGHT
PROPOSED TRANSMISSION LINE
SURVEY RESPONDENTS

# PROJECTING FUTURE INFRASTRUCTURE




Real estate activity - the buying and selling of property, including decisions to invest and build - is generally not something that the City directly controls. Through infrastructure planning, scheduling and construction of public improvements, however, the City indirectly influences these decisions. Land use plans, the zoning ordinance, and the subdivision regulations further express the City's policies regarding location and intensity of development, and the infrastructure required to connect services to new lots as they are created.

In 2016 there are a number of projects "in the pipeline." Some form of preliminary approval - a site plan, a subdivision plan, or land disturbance permits - is an indication that development will follows.

The place for urban style development is central Columbia. South of downtown, the U Centre development has broken ground and will be under construction in the new year. Located on Providence and Turner just 500 feet from the MU campus, the development consists of aprtments for students and a parking structure. A six story mixed use building is underway at Ninth & Elm where the new Shakespeare's Pizza will re-locat. Though not firm, City staff are hearing of interest in additional housing units and possibly a hotel in the downtown. A number of building owners in the downtown have indicated an interest in expansions of existing buildings.

In 2016 there will be continued residential building activity in many parts of Columbia, with particular emphasis on the south and southwest sides of the City. A new elementary school site off Rolling Hills Road in the Vineyards Subdivision may induce more home buildings in the East Columbia Area, including Old Hawthorne, which began 10 years ago and continues to add homes. Improvement of Scott Boulevard and the Southwest elementary school near Thornbrook is stimulating additional residential activity in subdivisions such as Creek Ridge, Steeplechase Estates, Wydham Ridge, The Gates and Copperstone.

Other ares: The Somerset Village development near Battle High School is likely to begin some residential construction in 2016. To the north, the large Vanderveen Estates subdivision is adding a phase on its west side (renamed Willow Falls). New commercial buildings are expected on the east and west sides of town in established commercial centers; west of Stadium Boulevard and in the Conley Road area for example. A number of housing complexes for the elderly have been completed in 2015 or are in progress such as Bedford Place along Nifong and assisted living the Heritage Village area; the latter involves extension of Southampton Drive to Sinclair Road. Medical offices and clinics are underway in the Boone Hospital south campus at Nifong and Forum and in the Discovery development at Discovery Parkway and U.S. 63.

**In Summary:** The out look for 2016 is for the continued build out of existing planned and subdivided areas, with a strong focus on home building in the southern region of Columbia and mixed use in the downtown.

10/03/2009

10/03/2009

10/03/2009

EXISTING - GRINDSTONE PARKWAY AND SANDMAN LANE

PROPOSED 161-KV LINE - GRINDSTONE PARKWAY AND SANDMAN LANE

EXISTING - GRINDSTONE PARKWAY AND SANDMAN LANE

# PROPOSED 161-KV LINE - GRINDSTONE PARKWAY AND SANDMAN LANE

EXISTING - W NIFONG BLVD AND SINCLAIR RD

PROPOSED 161-KV LINE - W NIFONG BLVD AND SINCLAIR RD

EXISTING & PROPOSED (FOR COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD

EXISTING - W NIFONG BLVD AND SINCLAIR RD

# PROPOSED 161-KV LINE - W NIFONG BLVD AND SINCLAIR RD

# EXISTING & PROPOSED (FOR COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD

EXISTING - W NIFONG BLVD AND SINCLAIR RD
(LOOKING WEST)

NEW - W NIFONG BLVD AND SINCLAIR RD
(LOOKING WEST)

EXISTING & NEW (COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD (LOOKING WEST)

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. -
EXISTING DISTRIBUTION AND 69-KV LINE

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. -
NEW DOUBLE CIRCUIT 161-KV & 69-KV

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. - EXISTING AND NEW DOUBLE CIRCUIT
161-KV & 69-KV
(FOR COMPARISON ONLY)

**SCOTT BLVD AND W SOUTHVIEW DR -**
**EXISTING DISTRIBUTION AND PROPOSED 161-KV TRANSMISSION LINE**
**(FOR COMPARISON ONLY)**

**SCOTT BLVD AND W SOUTHVIEW DR -
EXISTING DISTRIBUTION LINE**

**SCOTT BLVD AND W SOUTHVIEW DR -
NEW TRANSMISISON LINE**

EXISTING - GRINDSTONE PARKWAY AND SANDMAN LANE

PROPOSED 161-KV LINE - GRINDSTONE PARKWAY AND SANDMAN LANE

EXISTING - GRINDSTONE PARKWAY AND SANDMAN LANE

# PROPOSED 161-KV LINE - GRINDSTONE PARKWAY AND SANDMAN LANE

EXISTING - W NIFONG BLVD AND SINCLAIR RD

PROPOSED 161-KV LINE - W NIFONG BLVD AND SINCLAIR RD

EXISTING & PROPOSED (FOR COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD

EXISTING - W NIFONG BLVD AND SINCLAIR RD

# PROPOSED 161-KV LINE - W NIFONG BLVD AND SINCLAIR RD

# EXISTING & PROPOSED (FOR COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD

EXISTING - W NIFONG BLVD AND SINCLAIR RD
(LOOKING WEST)

NEW - W NIFONG BLVD AND SINCLAIR RD
(LOOKING WEST)

EXISTING & NEW (COMPARISON ONLY) - W NIFONG BLVD AND SINCLAIR RD (LOOKING WEST)

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. -
EXISTING DISTRIBUTION AND 69-KV LINE

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. -
NEW DOUBLE CIRCUIT 161-KV & 69-KV

GRINDSTONE PKWY, WEST OF S ROCK QUARRY RD. - EXISTING AND NEW DOUBLE CIRCUIT
161-KV & 69-KV
(FOR COMPARISON ONLY)

**SCOTT BLVD AND W SOUTHVIEW DR -**
**EXISTING DISTRIBUTION AND PROPOSED 161-KV TRANSMISSION LINE**
**(FOR COMPARISON ONLY)**

**SCOTT BLVD AND W SOUTHVIEW DR -
EXISTING DISTRIBUTION LINE**

**SCOTT BLVD AND W SOUTHVIEW DR -
NEW TRANSMISISON LINE**

**Transmission corridor in Chesterfield, MO**
**On Clarkson Road by Marquette High School**

| Option A - Wood vs. Steel Comparison | Steel Str's | Wood Str's |
|---|---|---|
| Typical Span Length | 500 | 300 |
| Structures per mile | 11 | 18 |
| Structure Quantity | 127 | 212 |
| Clearance above ground | 45-ft | 25-ft |

12 miles

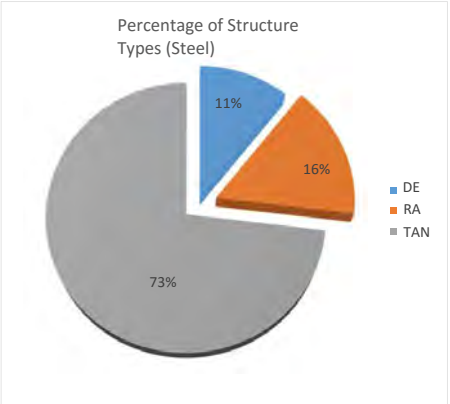
1. Preliminary values
2. Wood poles limited on height due to availability and strength.

Table 1

Table 2

Option A - Steel vs. Wood Pole Construction
Quantities include line segments Perche to Mill Creek and Mill Creek to Grindstone

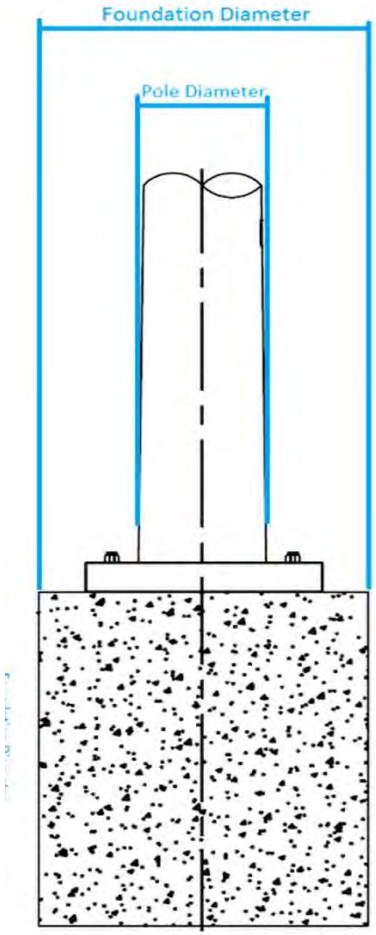
| | Steel | | | | Wood | | | |
|---|---|---|---|---|---|---|---|---|
| Structure Type | Foundation Diameter (ft) | Pole Diameter (ft) | ~ Qty. | % of Structure in Line | ~Pole Qty | Pole Diameter (ft) | Guy Anchors | % of Structure in Line |
| Tangent | 4-5 | 2.25-3 | 68 | 73% | 120 | 1.5-2 | 0 | 83% |
| Small Angle | 5-6 | 2.5-3 | 10 | 11% | 10 | 1.5-2 | 4 | 7% |
| Large Angle | 7-8 | 3-5 | 5 | 5% | 5 | 1.5-2 | 4 | 3% |
| Deadend | 7-8 | 4-5 | 8 | 9% | 8 | 1.5-2 | 8-12 | 6% |
| Large Deadend | 9-10 | 4-6 | 2 | 2% | 2 | 1.5-2 | 12 | 1% |
| | | Total Structures | 93 | Total Wood Structures | 145 | | | |



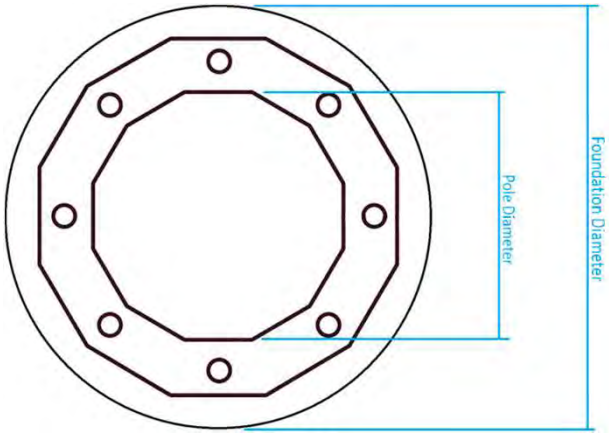

Steel Poles
Wire clearance for steel structure line: ~45-ft
Typical span length for steel pole line: 500-ft

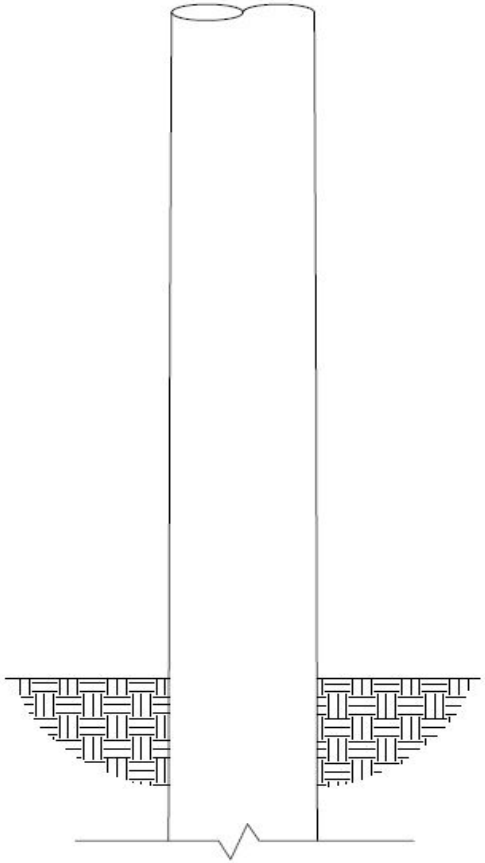
Wood Poles
Wire Clearance for wood structure line: ~25-ft (RUS Minimum clearance over roads = 23'-6")
Typical span length for wood pole line: 300-ft

Figure 1




Steel Pole Foundation Detail



Wood pole foundation detail

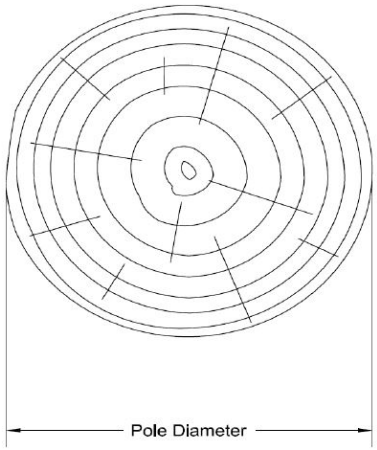
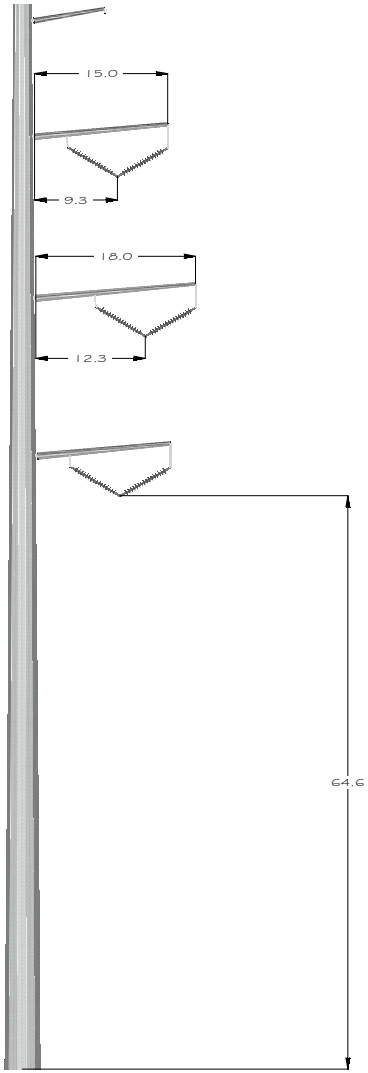
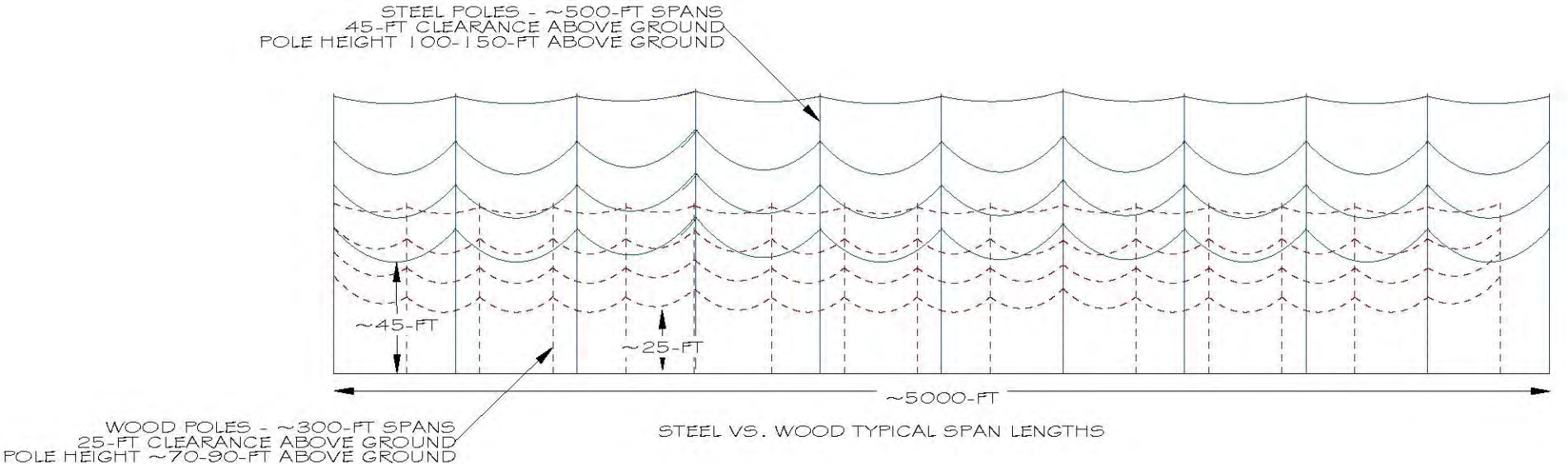


Figure 2



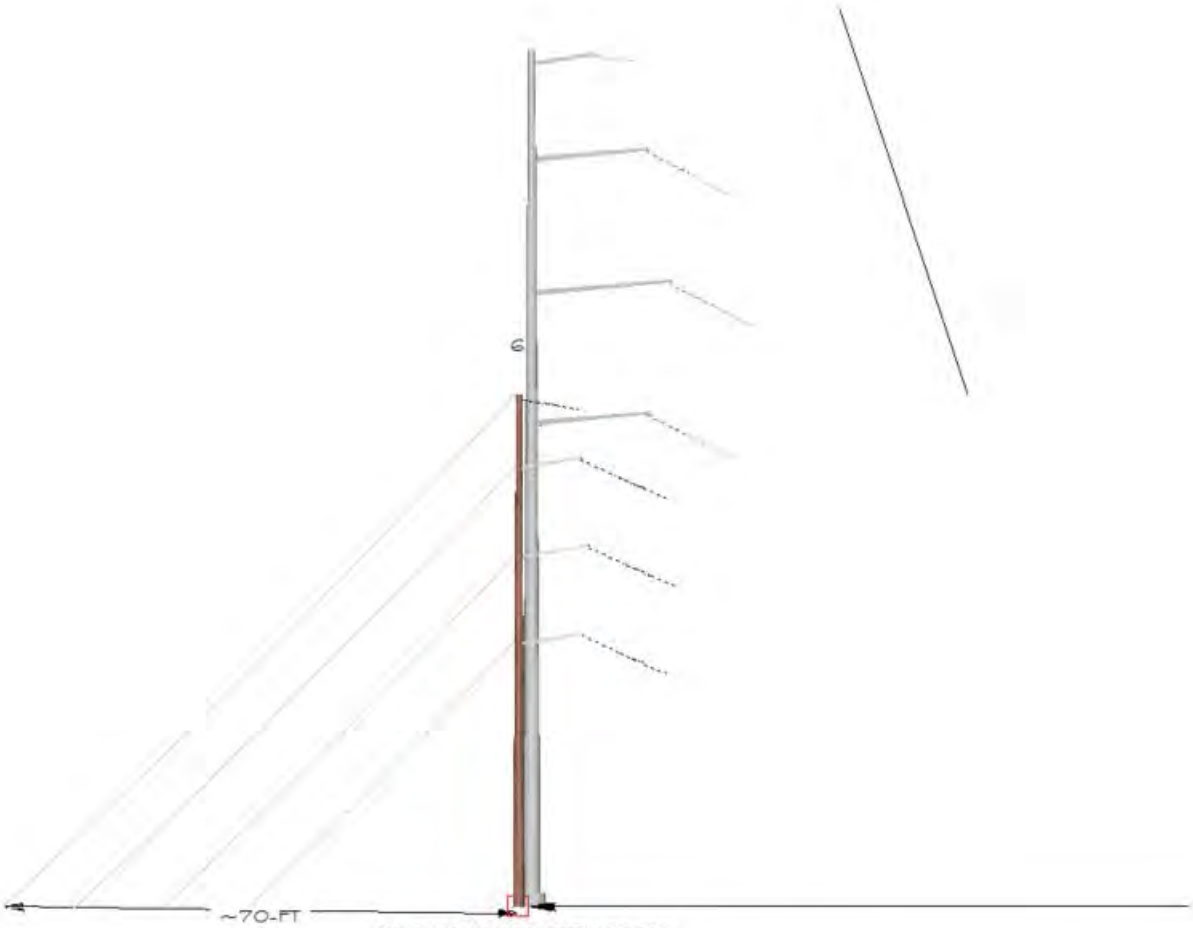

Longitudinal

Figure 3




STEEL VS. WOOD TYPICAL SPAN LENGTHS

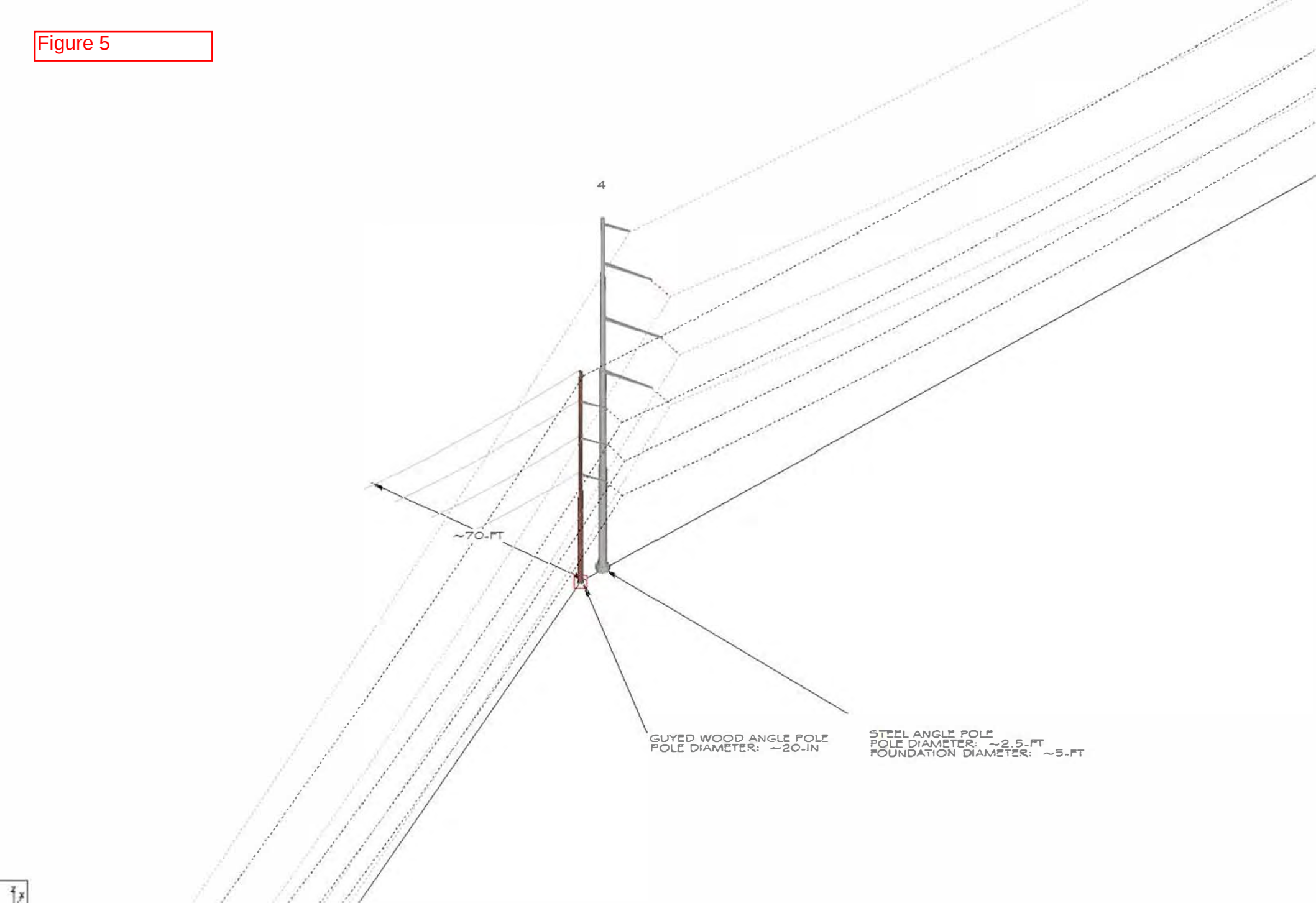
Figure 4




TYPICAL ANGLE STRUCTURE
WOOD VS. STEEL POLE DIAMETER

STEEL POLE FOUNDATION DIAMETER: ~4-5-FT (48-60-IN)
WOOD POLE DIAMETER: ~20-24-IN
WOOD POLE GUYS: ~60-80-FT

Figure 5


4
~70-FT
GUYED WOOD ANGLE POLE
POLE DIAMETER: ~20-IN
STEEL ANGLE POLE
POLE DIAMETER: ~2.5-FT
FOUNDATION DIAMETER: ~5-FT

# The Columbia Electric Transmission Line Project
# Pubic Hearing Communications Plan

**DATE/TIME/LOCATION**

**Public Hearing - Tuesday, January 19, 2016**

**7:00 p.m.**

**City Hall Council Chambers**

**COMMUNICATION VEHICLES**

The following materials will notify the community of the public hearing:

**Project Updates Ribbon**

The updates section on the PoweringColumbia.com homepage will be updated the week of November 30 to include basic information about the public hearing.

**Letters**

Two mailings will take place. The mailing list for each will include all CWL electric customers in the community, property owners who live within 250 ft. of either side of the option A, B or B-2 routes, and homeowners and neighborhood association contacts. Mailings will be in letter format and packaged in CWL envelopes.

- Mailing #1
  - Mailing date is the week of Monday, December 14.
  - Will include general information about the public hearing and what the community can expect to learn about the project at the meeting.
- Mailing #2
  - Mailing date is Monday, January 11.
  - Will include a reminder of the public hearing and what the community can expect to learn about the project at the meeting.
  - Along with recipients listed on mailing list #1, constituents who have inquired about the project through the hotline, website or open house comment form will be included in mailing #2.
    - Mailing options: Property owners within 250 ft. of the Option A, B and B-2 routes could be sent letter #2 via a certified letter
    - Letter #2 will also be hand-delivered to local managers of corporation-owned businesses along Option A, B and B-2 routes. These are businesses that are along these routes but may not receive the mailed letter because utility bills and other

correspondence to property owners are sent to a corporate office in a different location. This includes approximately 300 businesses.

**Homeowners and Neighborhood Associations**

- A public hearing announcement will be sent to all homeowners and neighborhood associations, along the Option A, B and B-2 routes, for posting on their social media pages and emailing to their internal lists.
    - Announcement will be emailed the week of December 14.
- A public hearing announcement will be sent to the Office of Neighborhood Services for inclusion on their social media pages and their January newsletter.
    - Announcement will be emailed the week of December 147.

**Interested Organizations and Groups**

- Columbia Public Schools, Friends of MKT Trail, Boone County Government

- A public hearing announcement will be sent to these groups for posting on their social media pages and/or emailing to their internal lists.
    - Announcement will be emailed the week of December 14.

**Social Media**

- Columbia Water & Light Facebook and Twitter posts
    - Post public hearing information once per week beginning the week of January 4.
- City of Columbia Facebook and Twitter posts
    - Post public hearing information once per week beginning the week of January 4.

**Transmission Line Project Listserv through CWL**

- A public hearing announcement will be sent to this listserv during the week of January 11.

**City Channel**

- Onscreen announcement graphic to post during the week of January 11.

**Project Information Line (Hotline)**

- The hotline voicemail message will be updated to include public hearing information week of November 30.

**Media Alert**

- A media alert will be distributed by CWL on Monday, January 11.

**News Release**

- A news release and supplemental materials will be distributed by CWL on Thursday, January 14

# The Columbia Electric Transmission Line Project

Open House 9/30/2015

Constituent Comment Collection

An Open House was conducted on Sept. 30, 2015, at Rock Bridge High School with the purpose of providing the public with the most recent information and answering questions pertaining to preliminary pole structure designs and pole placement along the approved transmission line route. The approved route (known as Option A) extends from the Perche Substation to the Grindstone Substation, running along Scott Blvd., W. Vawter School Rd., Nifong Blvd. and Grindstone Pkwy.

The public was asked to provide feedback and submit questions through a formal comment process from Sept. 29 through Oct. 18, 2015, with the intent of providing all submissions to the project team engineers and the City Council. Paper comment forms were provided to attendees of the Open House and at a separate presentation with the Mill Creek Elementary School PTA. Additionally, an online comment form was available on the project's website, www.PoweringColumbia.com. Comments and questions submitted separately through the Contact page of the website have also been collected and included. All comments and questions received during this collection period have been compiled and included here.

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Ros Shanker | 573-875-2035 | | Paper | 9/30/2015 | N | | N | | | | | I am glad you decided to make this presentation. The length of time and station were good. My suggestion is that you have a 5 minute meeting every .5 hour to reveal the general plan and invite questions. Sometimes this method helps the public because they can hear of other questions that they might not have thought of and thereby glean good info- Ros | | |
| 2 | Deb Faller | | debra.s.faller@gmail.com | Paper | 9/30/2015 | Y | 3500 Vawter School Rd | Y | Residence | CWL | | | We are pleased they won't be on our side of the road. | | |
| 3 | Lvonne Pineda | 573-445-9764 | jicapinedas@hotmail.com | Paper | 9/30/2015 | Y | 3300 W Vawter School Rd | Y | Residence | CWL | | | | | |
| 4 | Amy | | | Paper | 9/30/2015 | N | | N | | | not really | Needed overview presentation. No clear path to take and booths crowded. So hard to get to booths. Didn't have advantage of hearing others questions | Why not do option B which is less populated, cheaper | Too large | Why would you think it's ok to put these giant dangerous gargantuan eyesores in someone's yard. Why not put it in more rural routes. Obtrusive & we are already stressed out- who needs more electromagnetic energy which has been proven dangerous |
| 5 | Angela & Adam Boster | 573-4242592 | hands of healing touch@gmail | Paper | 9/30/2015 | Y | 39515 Forest Acres | Y | Residence | BEC | | | Unfair to homeowners in this route. Feels like we are backed in a corner | | Bullshit |
| 6 | Patricia Kowalski | 573-256-1295 | pmk700@aol.com | Paper | 9/30/2015 | Y | 700 New Market Place | Y | Residence | CWL | Y | I saw exactly where poles are being placed. The real estate (city person) confirmed that property values where these structures are built would be negatively affected- Thanks | I find is horrible that these poles are being put above ground in existing residential areas. This will decrease property values of our homes that we have worked hard to pay for. We researched diligently 16 years ago when we purchased our home. We looked to avoid this very thing. Now we are having it planted right near our home | WAY TOO Large! it'll be an eyesore to existing homes | This is a travesty to existing homes. These lines could be buried in existing residential areas! Or this could be taken a different route to avoid existing residential areas!<br>I don't know how the city planners have the conscious to do this to property owners |
| 7 | Paul Bax | 573-239-0898 | paul00bax@gmail.com | Paper | 9/30/2015 | Y | 2801 Pine Tree Lane | Y | Residence | BEC | Y | I was able to have discussions with city staff, hired engineers, real estate folks & the public | I am satisfied with the explanations I received this evening. It is positive that there will be less poles. The size of the new poles and EMFs are concerns. I voted for option B and that is my comment | They are ugly, but I don't know what else could be used... I voted for option B | I'm strongly considering selling my home. The EMF research provided is dated. However, I'd feel bad for whoever would buy my home. The city should have chosen a lesser populated route. Thanks. |
| 8 | Pat Fowler | 573-256-6891 | | paper | 9/30/2015 | N | | N | | | | | As a ratepayer I am concerned that we chose a combination of a reasonable cost and taking mitigating steps to alleviate the concerns of parents and the seniors (and their adult children who care for them) along the route. | | |
| 9 | Susie Ailor | 573-886-2880 | ailors@health.missouri.edu | Paper | 9/30/2015 | N | | N | | | | Was troubling that the presentation at individual tables/ handouts were misleading | Should not be close to this many schools- feel that the council was not properly educated. Drawing of Mill Creek Elementary and its exposure potentially is misleading. Shows the building being rarely exposed, but playground is at the street with definite increase. Families will have an increase at home and at school for their children | | Not 'in line' with good health and the community as a whole. Feel council was misled if not, they do not consider the potential harm for children a concern it should be |
| 10 | Edgar I Ailor III, M.D. | 573-42400850 | ailorphotography@aol.com | paper | 9/30/2015 | N | | N | | | | | This route currently planned for a 161-KV Transmission line following Vawter School Rd & W Nifong goes right by Mill Creek School. The Graph showing the exposure to the electromagnetic field provided by Sega Inc. shows the north wall of the Mill Creek school electromagnetic exposure at .1 milligauss. What it doesn't show is the PLAYGROUND for Mill Creek is 50-75' from the transmission line with (from their graph) a 1.25-2 milligauss exposure. Our communities children & grand children are at that school 8 hours/day 5 days a week. There's evidence for the world health organization and NIH and other sources of an incidence for childhood leukemia with higher EMF exposure. We do not want a high voltage transmission line near our schools. We have to reconsider the route. A is not the best option | | |
| 11 | Detelina Marinova | | detelinam@hotmail.com | Paper | 9/30/2015 | N | 3212 West Creek | Y | Residence | | N | I felt it was a one way conversation. Citizens did not have a chance to voice their objections. | Route B needs to be adopted. Given the adverse effects of EMF and huge impact on residential, schools and pre-schools along route A<br>Incomplete info on health effects was given to the public on City website (EPA & utilities) and to the city council when they voted (according to minutes). Route A was most expensive as well | | Route B is cheaper, LESS developed and goes by NO schools |
| 12 | Carolyn Hawks | 573-268-8543 | ccardon@aol.com | Paper | 9/30/2015 | N | | Y | Both | CWL | N | | My objection is the selection of Option A. Option B goes by NO schools, much less dense population. I feel the city did not address the health issues, the forums were not publicized enough. There has been much new scientific research since the vote and I believe we should have a revote | | |
| 13 | Melinda Jenne | 573-356-3332 | melindajenne@gmail.com | Paper | 9/30/2015 | N | 3660 Scott Blvd | N | | | | | PLEASE RETHINK OPTION B! NO SCHOOLS NO DENSELY POPULATED NEIGHBORHOODS 3 MILLION CHEAPER | | |
| 14 | Nancy & Dennis Palmer | 573-864-8454 | dennis@costalelectric.net | Paper | 9/30/2015 | Y | 3908 Barrington Dr | Y | Business | BEC | | | We are concerned with the pole 26 location | | |
| 15 | Earl & Kathy Bryant | 573-442-1041 | kbryant@centrytel.net | Paper | 9/30/2015 | Y | 3909 Barrington Dr | Y | Residence | CWL | Y | | I love that they are going on the south side of Nifong by our house. Thank you for not putting a pole in my bedroom | | |
| 16 | Mary Dodds & Stan McCarthy | 573-442-0167 | tropstan@yahoo.com | Paper | 9/30/2015 | Y | Bedford walk | Y | Residence | CWL | N | Powerline is only part of the construction in the area | Will the area be like the Business Loop and be an eyesore and have to move lines again? | | Need to coordinate with the proposed road expansion the city has planned<br>Video speed needs to be slowed down |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | Jennifer James | 573-289-3044 | tjennifer@mchsi.com | Paper | 10/5/2015 | N | 2605 Pine Tree Ln | N | Residence | CWL | Y | I've attended many meetings in regard to this project. I'm frustrated that we are spending to bury utilities on the north side of nifong. Now if we are going to bury utilities spend the $ to bury these. | I am concerned with the inconclusive studies and unknowns in relation to health and safety. I am concerned with the devaluation of properties along the path especially the north side of bedford walk and of the aesthetic consequences to a road that is still relatively attractive traveling west on nifong from providence. | | In earlier meetings and in customer surveys primary concerns for determining the route leaned heavily toward long term reliable power trying to stay as far from residential as possible, environment & aesthetic and cost. Other than the reliable power, we seem to have abandoned the remainder of the primary goals of the project. This is disappointing and misleading. People on the north side of nifong purchased their property knowing there was a sizeable dedicated utility corridor. Their property values reflected that, the people on the southside did not. |
| 18 | Mardy and Lisa Eimers | 573-673-3099 | mardyeimers@gmail.com | Paper | 10/5/2015 | Y | 3903 Deerfoot Way | Y | Residence | CWL | | | Option B and B2 do not affect schools, residences etc. and costs above the same, actually less. Yes life expectancy is less in B and B2 but it is certainly worth it given the health risks of A | | |
| 19 | Matthew Hayes | 573-356-1964 | matthew.hayes@brightstarcare.com | Paper | 10/5/2015 | Y | 4101 Watertown Pl | Y | Residence | BEC | | | Boone Electric Co-op customers were not sent surveys however the route goes right through their service area. These customer should have a vote in this especially the ones where the route is going. | | |
| 20 | Niki Kriete | 578-808-5721 | snkriete@gmail.com | Online | 9/30/2015 | Y | 205 E. Nifong | Y | Residence | CWL | Y | The open house was informative and gave us more of an idea of what to expect (worse than we first thought, the poles are larger). I don't really feel like your input really mattered as the representatives answering questions pretty much said that the pole placement would not be changing much. Also, two weeks is not enough time to consider the impact this will have on our property values. | There is room/easement on the north side of the Nifong/Bethel to Nifong/Forum area to run the lines next to mostly commercial properties. Properties in the Bedford Walk subdivision will be within fall distance of the poles. Mature trees buffering the traffic on Nifong will likely be cut down to run these lines. Properties values will be greatly affected. Typically, poles of this size are placed in a 100 foot easement. These poles will be stuck in a 10 foot easement. | We will have a pole in our backyard that is within fall distance of our house, comprising the safety of my children and our home. Having a pole behind our home will also make it more difficult to sell our home in the future as federal loans for homes with large power poles such as these will need to be reviewed by HUD. | |
| 21 | Jay Lindner | 573-446-5500 | jay@forumgroup.com | Online | 9/30/2015 | Y | | Y | Business | CWL | Did not attend | | Would like to know why the route has to cross Nifong to the north side for 2 poles between Peachtree drive and Providence before crossing back to the south side | | |
| 22 | Teresa Thornbrook | | nbheim@hotmail | Online | 10/1/2015 | | 4307 Montpelier Place | | | | | | For once.....will the city please listen to the people!!!! We are trying to build back the trust from our city council members and the community members. If you disregard what the residents are saying it will only build deeper wounds and hateful feelings. Please think of others for once and don't put the electric service above ground and don't put it by the schools!! | | |
| 23 | Jessica L. Bax | 573-397-2046 | jessica.letourneur@gmail.com | Online | 10/1/2015 | | 4502 Avondale Place | | | | | | Please consider burying the proposed power lines that will be installed near Mill Creek Elementary. I am the parent of a Mill Creek child and am concerned about the health of my child and other children and adults in the area being affected by above-ground lines. | | |
| 24 | Amy de Jong | 573-999-0028 | adejong@gocolumbiamo.com | Online | 10/1/2015 | Y | | Y | Residence | CWL | Y | I didn't see very many happy faces at the Open House! | The poles are in my neighbors on Watertown Place backyard. It is ridiculous to place them next to residential areas when there are commercial properties across the street.<br>The proposed pole placement will significantly affect property values in Bedford Walk. | | |
| 25 | JR Lawless | 573-443-8871 | jr.lawless@edwardjones.com | Online | 10/5/2015 | N | 3909 Deerfoot Way | Y | Business | CWL | Did not attend | | This pole placement is immediately outside my office. I will not continue to do business at this location unless this pole placement is moved across the street. I am very disappointed in your organization concerning this issue. Not only will I have to move locations due to this line placement, it will ruin the aesthetic view of a major economic hub in this town. There are always alternatives and placing the largest, most powerful lines down a major thoroughfare is not only short cited but shows incredibly incompetent long term planning. My guess is this has been an issue to years and to blame the federal requirements on the decision to place this line down nifong is irresponsible. There is no doubt this will affect my business and force a very costly move. I can't imagine Clayton MO ever using the excuse of a federal mandate to place similar lines down Skinker blvd.... I have informed my landlord that we will be forced to move as my firm will not allow its employees to work directly under these lines. I would imagine that Columbia power and light would not cover the lawsuits that would be inevitable. | | |
| 26 | Dieter Duff | 573-529-1818 | deiterduff@gmail.com | Online | 10/5/2015 | Y | | N | | | Y | | | | My wife and I, along with numerous other people, hope the city council will reconsider the route of the high voltage transmission line. We understand the need to upgrade and plan for the future, but why place these lines through developed residential areas when other options exist? Studies about potential health risks are not conclusive, and we would rather our family not be at risk. Additionally, our property value is almost certain to be affected negatively. |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Hannah Nichols | | nicholshm@health.missouri.edu | Online | 10/6/2015 | | | | | | | | | | I am writing to you to urge you to reconsider the planned route for high voltage power lines voted on by Council in 2013. It is my feeling that Columbia Water and Light did not provide adequate information to Council, disregarding the marked disadvantages of potential health risks (particularly to a number of school age children from Rock Bridge to Mill Creek) as well as substantial invasion on existing residential areas and businesses. Both Option B and Option B-2, as formerly proposed, offered a less expensive alternative on land already owned by the city. It also would substantially reduce the adverse impact on our citizens. Please take this under advisement. We ask for a revote. Thank you.<br>Sincerely,<br>Hannah Nichols |
| 28 | Karin Carratura | (573) 256-1392 | karylew@gmail.com | Online | 10/7/2015 | N | | N | | | N | | I have children at Mill Creek Elementary. I would like to know, when another viable option is not located next to a school, why the current plan was selected. I understand you have access to studies that do not link these power lines to health issues. I also know there are studies that say it is a risk. Why take this risk with our children's lives, when another way is a valid option? Please revisit this. Ask the public again if they think it is worth risking the health of our children. Give them all the information and the potential drawback and see what they would support. | No | |
| 29 | Karin Carratura | (573) 256-1392 | karylew@gmail.com | Online | 10/8/2015 | N | | N | | | N | | Can you, with a clear conscience, promise my children that attend Mill Creek are not at risk due to the placement of those wires by their playground? Are you ready to answer to them if you are wrong? | No | |
| 30 | Julie Allen | 866.661.4473 | robphotoimage@gmail.com | Online | 10/8/2015 | N | | N | | | | | Please consider routing the power away from the schools. | No | |
| 31 | Annette Robbins | 573-289-1118 | comfortablecottage1@gmail.com | Online | 10/8/2015 | N | | N | | | Y | | The EMF is too great to be around schools. Look at the research. Be brave and do the right thing | No | |
| 32 | Michelle Lally | 573.356.4262 | michellecox5@hotmail.com | Online | 10/8/2015 | N | 5203 Thornbrook Pkwy | N | | | Did not attend | I was unaware of the Open House and would love another opportunity to learn more about this, it's effects on the community, especially schools as my children attend RBHS, learn about "option B", and ask questions.<br>Thank you! | I would like more information about the proposed pole placement and more information about alternatives. | No | |
| 33 | Kelly Durante | (573) 882-5131 | durantek@missouri.edu | Online | 10/8/2015 | Y | 1317 Sedona Villas Dr. | Y | Residence | CWL | Did not attend | | I absolutely oppose plan B, which would bring high-power lines very close to my house at 5203 Thornbrook Pkwy. I prefer underground lines, then plan B-2, then plan A. Please do NOT go with plan B. | No | I absolutely oppose plan B, which would bring high-power lines very close to my house at 5203 Thornbrook Pkwy. I prefer underground lines, then plan B-2, then plan A. Please do NOT go with plan B. |
| 34 | David Allen | 573-443-4656 | prentallen@mchsi.com | Online | 10/8/2015 | Y | 1318 Sedona Villas Dr. | Y | Residence | CWL | Y | | No | No | The route chosen (Option A) passes by many residences and business on Nifong creating both a possible health risk and an ascetic eyesore. The alternative Option B not only does neither of those things but is also less expensive. Current scientific findings make the health risk more likely. For that reason alone the city council should revisit the plan. |
| 35 | David Allen | 573-443-4657 | prentallen@mchsi.com | Online | 10/8/2015 | Y | | Y | Residence | CWL | Y | | No | No | The proposed route (Option A) does not properly take into consideration possible health risks and aesthetic considerations while Option B poses neither of these problems and is also less expensive to construct than Option A.<br>Recent scientific studies indicate that health risk of high power transmission lines are more probable than previously thought. For that reason alone, the city council should reconsider the plan. |
| 36 | Brooke Hoffman | (217) 779-6605 | Spencbr3@hotmail.com | Online | 10/8/2015 | N | | Y | Residence | BEC | Did not attend | | Not okay to have by young children on playground at Mill Creek | No | |
| 37 | Jill Orr | 573-424-9507 | orrjill@hotmail.com | Online | 10/8/2015 | N | 4512 Kirkdale Dr | N | | | Y | | I do not feel it is safe to have these high voltage power lines placed in such a highly trafficked area - especially near Mill Creek School - when it seems clear there is another option. | No | |
| 38 | Shelly Blevins | | jsablevins@midamerica.net | Online | 10/8/2015 | | 2504 St. Regis Ct | | | | | | | | Please don't choose plan A. So scary that it goes nearby all those schools and preschools. I have children in those schools that HAVE to be there all day! If there is ANY possible health risk, it's not worth it! Plus our property values are going to go down because no one is going to want to buy a house in our area! We are willing to pay the extra cost for an alternate route!! Please, we are begging you to consider other options besides the route down Nifong! |
| 39 | Rob Wolverton | 573-999-6551 | robwolverton@anthonyproperty.com | Online | 10/8/2015 | | Cornerstone Ct. | | | | | | | | I do not believe the route discussion should be re-opened and Council should stay with the plan chosen. |
| 40 | Drew Clark | | drew.hamish.clark@gmail.com | Online | 10/8/2015 | | 3261 S Greenfield Ct | | | | | | | | I think this is a terrific idea. With all of the new construction going on in Columbia, I can only assume we are running up against the limits of the available electricity we would have (without risking brown/blackouts.) This seems like an excellent step to safeguarding my ability to make pop tarts with my air conditioning going full blast. |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
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| **41** | David Barnard | | dave.barnard@hotmail.com | Online | 10/6/2015 | | | | | | | | | | Thank you for the very informative website. I live near the transmission line route so this is helpful. Looks like a good plan. |
| **42** | Neil and Jenny Brothers | 817-2984 | tennis37@chartner.net | Online | 10/8/2015 | N | | Y | Residence | CWL | Did not attend | | Yes | No | We live a few blocks from the route , I work right along the route, and our three kids go to school at Mill Creek. We are very concerned these power lines are going in so close to us and to several schools and businesses, mostly for the possible health risks. We are also concerned about property values and the fact that this option is more expensive and the other option affects far fewer people and is more rural. The best option would be to choose a route where there are no schools or neighborhoods . If they do have to go by neighborhoods and schools, why can't the lines be buried along that path? The health of our citizens of Columbia should be the number one concern in a decision like this. |
| **43** | Mark and Christina Richardsc | 573-447-2097 | richardson1222@gmail.com | Online | 10/8/2015 | N | | N | | | | | Yes, we are highly concerned about the proposed placement going over, through, around near our children's elementary school, Mill Creek Elementary. This seems terribly wrong and quite disturbing that it has passed as a viable option for where to place these poles. We are worried about our children--we have 3 currently in attendance at this school. We are worried about our teachers and staff. | No | |
| **44** | Brenna Schmardebeck | 801-376-4976 | bschmard@gmail.com | Online | 10/8/2015 | N | | N | | | Did not attend | | My children attend Mill Creek Elementary. I am very concerned about having high voltage power lines so close to so many children. Study after study shows the negative effects they can have and the increased odds of getting childhood leukemia with such exposure. I am confused that the city would choose as option A, a plan that puts a cancer causing eyesore right through the middle of a nice residential area. Please make the responsible choice and protect our children!!! There is another option; it may not be perfect, but it reduces exposure and long term effects. | No | I am sorry I did not attend the open house. We are relatively new to Columbia (just bought a house here!) and I didn't know about this until some people were talking about the meeting a day later. I have since updated myself on the situation and would like to make my opinion known. |
| **45** | Melinda Jenne | 573-356-3332 | melindajenne@gmail.com | Online | 10/8/2015 | N | | N | | | Y | | How are you going to place poles when you don't even have a plan for the road expansion. Water and Light said there was not a finalized road expansion map. | These are absolutely massive! They will ruin the look of our town. Fast forward 20 years, the South of Columbia will probably be the middle of Columbia. Please don't put these right down main roads, PLEASE RETHINK OPTION B! | I have attended open houses in the past month. We realized a lot of us never heard of this project because we are Boone electric customers. Please reconsider Option B. It is cheaper, it doesn't go over schools, it won't cut through several densely populated neighborhoods and it won't ruin the look of our town. It is not too late! |
| **46** | Nicole Bormann | 573-303-4563 | nicole.bormann@gmail.com | Online | 10/8/2015 | N | | N | | | Did not attend | | No | While I understand that growth of a city is never something a city can completely foresee, it seems short-sighted to have not assumed a need for such a power grid before this. That said, placing the lines DIRECTLY ON the same land that most residents send their children for the entire day seems completely insane. It is known that there are negative health effects from continuous exposure to such power lines. I have young children who will attend Mill Creek Elementary very soon and am appalled that this is something that the city is planning. Move the lines further south where the properties/schools have yet to develop so as to avoid this scenario down the line. Seems short sighted to say the least. STRONGLY OPPOSED and will be sure to request fellow parents to voice their concern. | Was just made aware of this proposal today. Not sure how this is something that wasn't made a bigger deal sooner, but welcome the opportunity to discuss further. Time to rethink this plan. |
| **47** | Zach Clark | 573-823-1350 | zrck99@gmail.com | Online | 10/8/2015 | N | 4903 Fall Brook Drive | N | | | Did not attend | | No | No | I'm very grateful for the proactive approach that the city is taking in order to keep the electrical grid reliable. Please proceed with the upgrades as quickly as possible. |
| **48** | Dawn Orr | | dawn@edorr.com | Online | 10/8/2015 | | 3604 Ridgeview Drive | | | | | | | | The city council needs to look at option B for power line placement. The residents of Columbia were not aware of the council's vote for option a. Many homes and schools will be affected by this. Please reconsider! |
| **49** | Julie Hendrix | 314-922-4511 | juliehendrix@mac.com | Online | 10/8/2015 | | | Y | Residence | BEC | | | Our house is possibly one of the closest properties to this project along the entire route! We are adamantly against this due to the health risks to us and our 8 year old son and the kids that play in the neighborhood right along the path of these powerlines! In addition, we've been told by experts that our home value will decline by at least 30%. This is unacceptable when other alternatives (option B) are cheaper and away from developed neighborhoods and schools. Our son also attends Mill Creek Elementary where he at risk to additional exposure to the high voltage lines. | They are large and intrusive to our property. | Our house is possibly one of the closest properties to this project along the entire route! We are adamantly against this due to the health risks to us and our 8 year old son and the kids that play in the neighborhood right along the path of these powerlines! In addition, we've been told by experts that our home value will decline by at least 30%. This is unacceptable when other alternatives (option B) are cheaper and away from developed neighborhoods and schools. Our son also attends Mill Creek Elementary where he at risk to additional exposure to the high voltage lines. |
| **50** | Marisa Hagler | 573-808-6096 | marisahagler@gmail.com | Online | 10/9/2015 | N | | Y | Residence | BEC | Did not attend | | I do not want this near my child's school and near our home! | No | It seems to me that Option B should definitely be the way to go! Let's think about our children! |

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| **51** | Jennifer Roderique | 573-219-5195 | JENNY80EV@GMAIL.COM | Online | 10/9/2015 | N | 3809 Timber Run Drive | Y | Residence | BEC | Did not attend | | I am writing to you to urge you to reconsider the planned route for high voltage power lines voted on by Council in 2013. It is my feeling that Columbia Water and Light did not provide adequate information to Council, disregarding the marked disadvantages of potential health risks (particularly to a number of school age children from Rock Bridge to Mill Creek) as well as substantial invasion on existing residential areas and businesses. Both Option B and Option B-2, as formerly proposed, offered a less expensive alternative on land already owned by the city. It also would substantially reduce the adverse impact on our citizens. Please take this under advisement. We ask for a revote. Thank you. | No | |
| **52** | Russell crane | 573 4246823 | Russelc61@gmail.com | Online | 10/9/2015 | Y | 3701 Hunter Valley Drive | N | | | N | | This has already been decided. We've been down this road before. There is no need to change the agreed upon route. | No | This fight should be shelved. |
| **53** | Jason and Sarah Swindle | 573-815-0994 | swin1@me.com | Online | 10/11/2015 | Y | 3505 Ridgeview Drive | N | | | Did not attend | | Good afternoon. My wife and I are residents of Spring Creek subdivision (phase 1) and we'd like to voice our concern over the path of the recommended transmission line route. We have two children who attend Mill Creek and we own property not too far from the route.<br><br>First, we are thankful for your service to our city. We realize that the city attempted to garner feedback and public discussion about this project several years ago, but as we have learned over the past few months, it appears the city's approach was flawed and potentially misleading.<br><br>Our dissatisfaction primarily is this: potential health concerns have been acknowledged by city officials (so why risk even one child's health!?) and there IS an alternative, cheaper route with far less disruption.<br><br>Here is a summary of our concerns:<br>• Health and safety of:<br>* Children in the 5 schools and daycares next to the route.<br>* Residents in homes along the route.<br>* Elderly in the various retirement communities built along the route<br>• NIH-referenced research studies show an increased risk of adverse health concerns, such as childhood leukemia, from exposure to EMF emitted from high voltage power lines.<br>• Home values in an entire neighborhood can be negatively impacted. We in Spring Creek have already seen been socked once with the redistricting of school boundaries (e.g., per numerous real estate agents, potential buyers mark our neighborhood off the list when they discover they must drive their kids all the way to Jefferson Middle School)<br>• The aesthetics of these poles that will be 5-8 foot wide and 75-150' tall over established neighborhoods and roadways<br>• Plans to eventually widen Nifong have not been laid out, and therefore the pole placements could need to be relocated when the road project comes to fruition.<br><br>Given the problems presented above, it would be an abomination to not push forward with Option B.<br>Option B was estimated to cost less, and would avoid many of the concerns that citizens have expressed.<br>• Estimated to be the least expensive route<br>• More rural route, which is more typical placement for high voltage lines<br>• No schools in its path<br>• Dramatically smaller residential exposure<br>• Preferred public route according to the City's Decision Matrix<br>• Future development can be planned around the lines, rather than lines being dropped into established neighborhoods<br><br>Thank you for your attention to this important matter. | | |
| **54** | Ron Usovsky | 573-489-8781 | ronusovsky@hotmail.com | Online | 10/11/2015 | Y | 4304 Watertown Place | Y | Residence | BEC | Did not attend | | These poles will be placed in homeowners backyards. | No | We are truly concerned about the children at Millcreek School, Gentry School and the several Daycares along the route. The risk to the many adults along the route is also unknown. If there is a more rural route to take the lines, why was that not decided upon? This will also adversely affect property values along each side of the transmission lines. How far in dollars and distance this decreased valuation occurs is questionable but as you know, once the blight starts it can continue far and wide.<br>Since the research regarding exposure to EMF is inconclusive but involves some health risk, the city will be involved in multiple lawsuits regarding health issues experienced along the route.<br>If this transmission line placement comes to fruition, I would expect and will fight for a substantial reduction in our property taxes.<br>This transmission line has the ability to negatively affect a multitude of Columbia residents quality of life. This is a poor choice for the routing and needs to be revisited and improved upon. |
| **55** | Vicky Elliot | | vle@burnsitech.com | Online | 10/11/2015 | | 3604 Ridgeview Drive | | | | | | | | My husband and I decided to retire in Columbia after careers in education and law enforcement in smaller communities. We felt comfortable that the home we purchased in a family friendly neighborhood would be a good investment. We had researched many communities and decided that Columbia exemplified progressive attitudes and offered a lot of amenities found in large cities, while preserving a lot of green space esthetics with the many parks and trails.<br>We attended a forum a couple of years ago when Columbia Water & Light first presented plans for the expansion into the southern part of the city. We agreed with most of the attendees at the time that the power lines needed to be buried, to protect the home values and attractiveness of the area. We are very disappointed that no elected official or city employee seems to value our area residents' concerns. We understand this is a more expensive option but we are willing to pay more to protect our home's value.<br>Vicky Elliott |

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| **56** | Kent & Julie Hendrix | 573-673-6974 | Kent.hendrix@me.com | Online | 10/11/2015 | Y | | Y | Residence | BEC | N | I attended and was talked down to by almost every representative there. The power and light people have their mind made up and could care less what the people along the route think. It's a shame. So much for a democracy. The will of the people is not being followed in regards to the route. The city wants to just take the path of least resistance at the cost of health risk and home values. | I believe that the less expensive options that stay away from schools, hospitals and multiple neighborhood residences should be revisited. Less impact on the residential area at less of a cost and less chance of any exposure to children no matter what the current known risk is or isn't should be the #1 priority of the route. | I believe placing the poles down Nifong and Vawter school now or in the future is shortsighted. Taking into account the drop in home value and the fact that a road expansion that will happen in the future isn't even a consideration when looking at the route. | |
| **57** | Pat Hays | 573-442-9033 | pathays25@hotmail.com | Online | 10/12/2015 | N | 3000 Trailside Drive Columb | N | | | Did not attend | | This seems to be a very dangerous plan for our children and residents. I also feel the way the initial questionnaire was put to the public was very sneaky. This was certainly handled in a hush hush manner, knowing that the public would not like it. These lines need to be installed in a rural, sparsely populated area, NOT over and VERY NEAR our children. This is a common sense decision. Please do not install theses lines down Nifong Road. The long term effects on our children will be disastrous, and on your shoulders. Find an alternate route!!!!!! Do your research!!!!!! | They do not need to be this large!!!!!!!! | Please DO NOT install these lines!!!!!! |
| **58** | Sarah Schneider | 660-888-9946 | sschneider1981@icloud.com | Online | 10/12/2015 | Y | 3813 Woods Edge Rd | Y | Residence | BEC | Did not attend | Thank you for soliciting feedback and taking the concerns of Columbia residents seriously. | The proposed route (Option A) would negatively impact my neighborhood, other neighborhoods on the route, and Mill Creek Elementary. Having these lines near us and our children could create potential health risks and aesthetically will impact our home values. I believe it is a bad idea for the future of this area of Columbia to build the lines as proposed.I would be in favor of Option B, which would do a much better job steering clear of established neighborhoods and schools. It is a superior choice for our community! | I believe the pole structure is fine as long as the route is amended to Option B (outside of established areas). | |
| **59** | Dan Davis | (573) 268-8894 | dandavis33@icloud.com | Online | 10/12/2015 | Y | | Y | Residence | CWL | Did not attend | | It's stupid and idiotic. Thanks. | No | Don't do this please. Thank you. |
| **60** | Carol Heffner | (660) 651-4085 | heffnercj@missouri.edu | Online | 10/12/2015 | N | | N | | | Did not attend | | I am very concerned about the proximity to both Gentry and Mill Creek Elementary. In my opinion there is too much conflicting information to make a decision about the safety of the EMF to these children who will be forced 5 days a week for 8+ hours a day to be in this proximity. Being wrong about the health affects of this 10-20 years from now is not worth the risk. It appears that option 2 was the most cost effective and also, unless I am reading the stats wrong also received the best least favorable score. I am not sure why the additional comments seemed to favor option A so highly but it could be a biased sampling. I personally know some parents who live in Cascades who were upset a few years ago that this would be going through their backyards...but other than that I didn't hear much information. I am very concerned about the potential for ill effects for my daughter who is a second grader at MCE and will attend Gentry. Please reconsider the options that will keep our public school children the most safe in their school. | No | I am in favor of option 2 or 2b. |

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| **61** | Renee Munns | 573-874-9982 | reneemunns@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | Y | it was not that beneficial. To have contracted out the work and have those people talk to the public was disappointing. It felt like no one from the city was there to hear concerns. Each table had a different conversation going on at the same time. Anyone with concerns was not able to hear the concerns of others. Maybe that was the plan. I don't think it lead to any productive discussion. Sort of just "here's the information, sorry you can't do anything about it" No one can explain why Option B was chosen over A. If the project is going to cost so much, why does the entire city of Columbia not need to vote on it for some sort of bond? Are all residents going to have an increase in their electric bill? | I feel Option B should have been the best option as far as safety, cost, least disruptive to daily life (homes and schools along route), Nifong is a vital road to Columbia, why (with all the other traffic issues) would a major route be chosen for this sort of construction project? Nifong residents, businesses, schools, and other structures will be crippled by traffic during the construction period and the effects of the lines could be felt for a lifetime after. The risk to people's health, decreasing property value and overall aesthetics is not worth choosing option A. | They are huge! What is that going to do to the value of anything located on Nifong? It is no wonder they are usually placed along highways and in places where no one lives! | it was not that beneficial. To have contracted out the work and have those people talk to the public was disappointing. It felt like no one from the city was there to hear concerns. Each table had a different conversation going on at the same time. Anyone with concerns was not able to hear the concerns of others. Maybe that was the plan. I don't think it lead to any productive discussion. Sort of just "here's the information, sorry you can't do anything about it" No one can explain why Option B was chosen over A. If the project is going to cost so much, why does the entire city of Columbia not need to vote on it for some sort of bond? Are all residents going to have an increase in their electric bill? I feel Option B should have been the best option as far as safety, cost, least disruptive to daily life (homes and schools along route), Nifong is a vital road to Columbia, why (with all the other traffic issues) would a major route be chosen for this sort of construction project? Nifong residents, businesses, schools, and other structures will be crippled by traffic during the construction period and the effects of the lines could be felt for a lifetime after. The risk to people's health, decreasing property value and overall aesthetics is not worth choosing option A. |
| **62** | Jennifer Griffith | 573-443-3693 | jfer1975@centurytel.net | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | I think in addition to the health concerns of it being along routes where all of my kids go to school they will also be an eyesore. Plus, why in God's name would you go through the middle of a residential area when you can go through a less developed area. | | City Council needs to highly consider option B2. I totally get wanting to go with the option that last the longest but I think we need to take into account it is ridiculous to go through a residential area. |
| **63** | Jenny Anderson | 573-424-0409 | andersonjennyr@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | Did not attend | | Please reconsider option B for these pole placements. I feel that we as the customer were not informed properly about this and don't want these lines going by the schools our kids attend and businesses that we frequent regularly. Not to mention what a huge eye sore this is going to be right through a major part of our city!! It's not worth the health risk to our community especially children and the elderly | | |
| **64** | Julie Allen | 573-825-4252 | julieaorson@gmail.com | Online | 10/12/2015 | N | | N | | | | | I urge the city and C W&L to use option B for pole placement on this project. It takes a less populated route and does not go by two major schools. | | |
| **65** | Jessica Hoffman | 573-619-3865 | hoffmanjes135@gmail.com | Online | 10/12/2015 | Y | | Y | Residence | BEC | Y | | PLEASE, PLEASE, PLEASE do not place these along such a heavily traveled area including an elementary school! Route K is the option for placement. | | Please do not place these down Nifong. If there is a less traveled and less expensive route - that should be the option to select. |
| **66** | Larry Freesemann | 573-445-6577 | laryfreeseman@gmail.com | Online | 10/12/2015 | N | 2605 Pine Tree LN | N | | | Did not attend | | I have lived near these type of poles for electric transmission. They ran along the interstate and in industrial areas not along residential areas which concerns me. I would hope the city is forward thinking and would widen the roads to accommodate the current traffic and future growth from Providence to Scott on NIfong and Vawter School Rd. Once these poles are in place it becomes even more difficult to expand the roads. Slowing and reducing growth in Southwest Columbia and tax revenue for the city. | I understand transmission lines and the size of the poles to carry the electrical. Placement in residential areas is a concern for people and property values. | If the poles are to be installed I would like to see the roads widened to carry the current and future traffic. along the route. Roads expansion would be even more difficult once the poles are installed. Please consider 4 lane road expansion from Providence to Scott Blvd. |

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| 67 | Mardy T Eimers | 573-673-3099 | mardyeimers@gmail.com | Online | 10/12/2015 | N | 4109 Watertown Pl | N | | | Y | | No | | Thanks for scheduling the open house at Mill Creek Elementary School; it was very, very helpful. My concerns about the power line placement are the following:<br>1. Health of residents, walkers/runners/bikers/drivers, elementary school kids: the studies that would cited were old and not up-to-date. There are more recent studies that suggest correlations with health effects. Other routes affected few people and cost about the same. Sure, life-expectancy not quite as high but worth the trade-off.<br>2. The survey was sent to many in Columbia who don't live in the area or even close to the area, so they have little concern as to where the line goes. Citizens' opinions who would be impacted the most were counted the same as those who live in north Columbia, for example. This does not make sense to me.<br>3. I believe those who responded to survey were mislead. Nothing was said about the size, magnitude, potential dangers, etc. of the lines. This is not being transparent. Citizens, even citizens along the route did not understand the size and magnitude of poles or potential health risks. Please consider revising the survey and who receives it.<br>4. I also think the Council was mislead. They received information from the perspective of electrical engineers, which is important, but not the only perspective. What about the human side of decisions? What about serious consideration of the other options--which frankly made a lot of sense and appeared to impact negatively fewer citizens.<br>5. The lines and poles will look terrible, especially down a street that looks reasonably good all things considered.<br>Thanks for giving us a forum to respond and thanks for the open house. I feet all intentions are good |
| 68 | Dennis Crouch | 573-289-6361 | dcrouch@gmail.com | Online | 10/12/2015 | Y | | Y | Residence | CWL | Did not attend | | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. I also don't understand what this will do to sidewalks. | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. |
| 69 | Samantha States | 573-864-3190 | samstates@centurytel.net | Online | 10/12/2015 | N | 3405 Ridgeview Drive | N | | | Y | | I would not like the high voltage lines to go on this route. My kids attend mill creek elementary & I'm concerned about the health concerns with high voltage lines. I attended one of the meetings & think one of the other routes, which were less expensive to run would be a better option. I also think they would look horrible along Nifong, not to mention the loss in property value for the surrounding neighborhoods. | They are too industrial and bulky for Nifong. They would decrease property value along this route. | |
| 70 | Frank Aten | (314) 496-6357 | fjaten@gmail.com | Online | 10/12/2015 | Y | 3405 Ridgeview Drive | N | | | N | | No | No | There is absolutely no reason option A should have been chosen versus option B. The entire process was a fraud on the citizens. Boone Co Op customers along the route receive no information prior. The citizens who chose option A also chose to have it buried if that was the option (questions were separate and deceptively presented. The 20+ year life versus 15-20 year life of Option A vs Option B is 1) statistically insignificant and 2) on a discounted CF basis makes B the best choice. For the city to put at risk the health and and wealth (housing values that will depreciate considerably) for a more expensive option that residents either were not given proper disclosure is criminal. |
| 71 | Elizabeth Aten | 314-496-6367 | Epaten@gmail.com | Online | 10/12/2015 | Y | | N | | | Y | | EMF's are dangerous to humans.<br>These poles should be run through nonresidential areas.<br>Why would you impact children's lives this way? Why would a city take that kind of insane RISK? | These poles need to be twice the distance tall or buried in a concrete culvert underground. | The Engineering company taxpayer money paid for submitted this plan which the City Engineering Department approved and submitted to the City Council as THEIR recommendation. Screw Plan B which is the choice of taxpayers. Stupid sheep have no clue about the dangers to life and property values and that's the way Government wants it.<br>The City is breeding great distrust and negative feelings it may never recover from. The first cluster of cancer and it's a massive class action suit. |
| 72 | Karen Carratura | (573) 256-1392 | Karylew@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | No | Please take into account the aesthetic of the neighborhoods that these poles will be invading when deciding on placement and size of the poles. | Please seek further input before breaking ground on this project. |
| 73 | Sara Gay | 574-424-6350 | saragayfamily@gmail.com | Online | 10/12/2015 | N | | N | | | Did not attend | | I am concerned about the health risks first and foremost to anyone in homes or schools/businesses along the route. Secondly, I think this will be an aesthetic nightmare and will lower property values along the route. | Yes, see previous | |
| 74 | Megan Keicher | 573-639-0998 | Megan.keicher@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | I believe it's a horrible idea, I can't understand why the most populated and expensive route was chosen! | No | |
| 75 | Karen Grieshaber | 573-446-1380 | grieshaberk@att.net | Online | 10/12/2015 | N | 4004fall ridge dr | N | | | Did not attend | | This proposal drops these poles in a highly populated area. Not only will they be putting homeowners at risk, they will be blocks from schools and nursing homes. There has to be a better way that doesn't put our children, elderly and taxpayers in harms way. | No | |
| 76 | Randy tschiggfrie | 573-446-4755 | Rantsc@centurytel.net | Online | 10/13/2015 | Y | Bedford Walk neighborhood - 4306 Champlain Ct | Y | Residence | BEC | Did not attend | | The placement of the lines needs to be reconsidered. The appearance of the structures is not good and will affect property values. | Extremely large and they are an eyesore | |

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| 77 | Jill Kyle | 573-443-7914 | jill.kyle@usfoods.com | Online | 10/13/2015 | N | 3603 Birch Bank Ct | Y | Residence | CWL | Did not attend | | Concerned about the health risk and safety for Option A. Home values will definitely go down. At some point Nifong will need to be widen due to increase traffic. Option B is less expensive, will affect less residential homes and health risk. Option B is the best choice for Columbia | Underground the lines | |
| 78 | David & Barbara Anderson | (573) 355-4248 | barbandave1@gmail.com | Online | 10/13/2015 | Y | 3711 Woodrail on the Green | N | | | | | Because these are high voltage lines, we do feel option B would be a better choice to<br>avoid the proximity to the schools, children in the area, and day cares.<br>Please reconsider. | No | |
| 79 | Jess L NEWKIRK | (573) 808-3014 | Jessnewkirk@hotmail.com | Online | 10/13/2015 | Y | | Y | Residence | CWL | Did not attend | | Please use option B as it will save money as Nifong is widen in the future, and impact less of the current population than along the other option. | No | How short sighted to build, option a and within a short period of time have to move again for proposed Nifong improvements. |
| 80 | Sara Fougere | (573) 999-1654 | fougere@centurytel.net | Online | 10/13/2015 | N | 3907 Deerfoot Way | Y | Residence | CWL | Did not attend | | This is a danger to citizens and an eye sore for our community! | So ugly! | |
| 81 | Gene Austin | 660-988-2060 | gene.trumanbsu@gmail.com | Online | 10/13/2015 | Y | 3006 Ballard Mill Dr. | N | | | Y | | I realize the time for feedback on the route is past and funds have already been spent doing soil samples, etc for the pole placement along this route. However, I would hope the city would listen to the concerned citizens that oppose this route that goes along neighborhoods, schools, churches and retirement homes. I attended the CP&L meeting at Mill Creek on Oct 5 and several issues were raised.<br>1. The survey results that was presented to the council included was from a survey that very few people along the route took part in and with an overall response that was very low - <3% of those surveyed I believe. Also, I do not recall getting a survey and the people that did, said they received it the week before Christmas. I believe that is really poor planning if that is the case. Also, the survey did not really clarify what was really happening. I know for those involved in the project transmission lines (the words used in the survey) means the high power lines that are being installed. Until I started researching, I did not know that name symbolized something different that the distribution lines that are already in my backyard.<br>2. The research provided on the effects of EMF is extremely dated. This was immediately noticed at the MCE meeting and pointed out. Referencing that old of research does not seem wise to me since there have been significant research since 1997 (date of research provided) some of which says there is a correlation between EMF and various health issues in people.<br>3. I realize going around the city will cost more in the long run. From the report given at MCE by CP&L personnel, the initial cost is a little lower but it will not address our electrical distribution needs for as long (10-20 years vice >20 years) so the overall cost to get to the same place will be higher. I also discovered that burying these high power cables is not a very good option either - due to heat and frequent splicing of cables. That was helpful information. I still believe the other route is a better option even if it will be more expensive in the long run. It will minimize the potential health impact along the Option A route - even though some do not believe this is a concern - as well as any loss of property value because of these lines. I found several recent cases where people won settlements with power companies because they lost property value. It just seems the possibility of that along with possible health issues and potential lawsuits that could result makes it unwise to use option A vice an option that takes it around the city. In the end, it may be much more costly to use Option A than the other options.<br>Thank you. | | |
| 82 | Jenny Chism | (618) 530-0990 | jenny.chism@gmail.com | Online | 10/13/2015 | Y | 4101 | N | | | Did not attend | | There is a major health concern regarding the placement of these poles. There are too many schools and neighborhoods near this placement route. | There must be a better alternative. | Please do not ruin the landscape of this community, but more importantly, please consider the long-term health of its members. |
| 83 | Judy Hunter | 573-234-1840 | sisjr60@gmail.com | Online | 10/13/2015 | Y | 2605 Pine Tree Lane | N | | | | | No | No | |
| 84 | Lisa Eimers | 573-234-1114 | lisaeimers2@gmail.com | Online | 10/13/2015 | Y | 4101 Southrn Pine Ct. | Y | Residence | BEC | Y | | My comments are broader than pole placement; my feeling is that this project is being pushed through way too quickly and without enough resident input. | No | The conversation absolutely needs to continue with regard to the many options available, such as burying the lines. There is no reason this should be decided on our behalves, when the payment it would result in annually would come from us, anyway. We should have a say in how it's decided, especially if we're the ones who would pay for it. I don't perceive I am alone in the willingness to consider paying more to have them buried if indeed this is the best route. |
| 85 | Orville Hunter | 573-234-1840 | hunterj.huntero@gmail.com | Online | 10/13/2015 | Y | | Y | Residence | BEC | Did not attend | | Electromagnetic fields are a suspected carcinogen. The extremely high voltage line near an elementary school is a potential cause of childhood cancer, which we must guard against. | No | |
| 86 | Abbey Upton | (573) 214-3280 | aupton@cpsk12.org | Online | 10/13/2015 | N | 4102 Roxbury Place | N | | | N | | I work at Mill Creek Elementary and am very concerned about my students being near these poles/wires. | No | |
| 87 | Jack&Valerie Reiske | 573-442-9821 | Vreiske@gmail.com | Online | 10/13/2015 | Y | | Y | Residence | CWL | Did not attend | | The chosen route would affect property values. The lines are near a school. | No | |
| 88 | Christy Flood | 573-447-8070 | cflood@phillipshardy.com | Online | 10/13/2015 | N | 3609 Blue Cedar Ln. | Y | Residence | CWL | Did not attend | | As a parent of children who currently, and will in the future, attend both Mill Creek Elementary and Gentry Middle School, I have the following concerns with the chosen route (Option A):<br>• Health and safety of the children in the many schools and daycares along the route.<br>• Health and safety of residents in homes along the route.<br>• NIH-referenced research studies show an increased risk of adverse health concerns, such as childhood leukemia, from exposure to EMF emitted from high voltage power lines.<br>• Home values in the surrounding areas neighborhood can be negatively impacted.<br>• Plans to eventually widen Nifong have not been laid out, and therefore the pole placements could need to be relocated when the road project comes to fruition.<br>• Health and safety of the elderly in the various retirement communities built along the route.<br>• The aesthetics of these poles that will be 5-8 foot wide and 75-150' tall over established neighborhoods and roadways.<br><br>I urge both City Power & Light and the City Council to consider the route proposed in Option B which was estimated to cost less, and would avoid many of the concerns I, among other citizens, have expressed. The route proposed in Option B is a better solution because of the following:<br>• No schools in its path.<br>• Dramatically smaller residential exposure.<br>• More rural route, which is more typical placement for high voltage lines.<br>• Estimated to be the least expensive route.<br>• Preferred public route according to the City's Decision Matrix.<br>• Future development can be planned around the lines, rather than lines being dropped into established neighborhoods.<br>Most important to me, ABOVE ANYTHING, is the health and safety of my children. I feel that the proposed installation of high voltage power lines along the route in Option A is an UNNECESSARY risk to the health and safety of my children. Please reconsider the route proposed in Option B for the installation of high voltage power lines in southwest Columbia. | | |
| 89 | Debbie Taylor | 573-864-3380 | debbie.taylor0130@gmail.com | Online | 10/13/2015 | Y | 2708 Pine Tree Lane | Y | Residence | CWL | Did not attend | | Placement comments:<br>Please consider Option B - this neighborhood and elementary school is not the place for these lines!<br>Option B was estimated to cost less, and would avoid many of the concerns that citizens have expressed.<br>· No schools in its path<br>· Dramatically smaller residential exposure<br>· More rural route, which is more typical placement for high voltage lines<br>· Estimated to be the least expensive route<br>· Preferred public route according to the City's Decision Matrix<br>· Future development can be planned around the lines, rather than lines being dropped into established neighborhoods | No | |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **90** | Tamara Stam | 573-446-8457 | stamtamara@gmail.com | Online | 10/13/2015 | N | | N | | | Did not attend | | This route (Plan A) along Nifong Boulevard is connected to beautiful homes and properties close to Mill Creek Elementary School and to an MKTrail entrance, and thus is used regularly by many pedestrians, i.e., school children, fitness walkers, joggers, and bicycles. Placement of large poles is not only potentially unhealthy to residents, but definitely would mar the beauty of the street that many people use to walk to school, church, the trail, and to neighbor's homes. It is exactly the wrong way to use this route aesthetically. Burial of the lines makes much more sense aesthetically. Such a route used recreationally by many should be beautified, not uglified. | Burial is better. These poles are ugly and would mar the beauty of Nifong Boulevard. | It would be better to bury those lines. |
| **91** | Joe Rivera | 573.673.1500 | jrivera@machens.com | Online | 10/13/2015 | N | 2800 Woodberry Court | Y | Residence | CWL | Did not attend | | Knowing the health risks especially to children why would you even consider placing the route by an elementary school or dense population. I just moved to the neighborhood near the route and did not know about the open house. | same as above | |
| **92** | Susan Nordberg | 445-5646 | snordberg@cpsk12.org | Online | 10/13/2015 | Y | | Y | Residence | BEC | Did not attend | | I wish the council would reconsider placing these poles so relatively close to schools, retirement centers, peaceful neighborhoods and soon a branch of Boone Hospital. Surely, there are other alternatives to consider of the proposed placement of these poles. | They are so tall, and thick which will detract from the lovely nature environment running the length of Nifong. | Please be smart and keep the poles away from educational and residential buildings. |
| **93** | Mark Farnen | 573-424-1782 | mfarnen@mchsi.com | Online | 10/13/2015 | N | | N | | | Y | It was informative since this was the first time we got to see the whole pole placement suggestion. The staff was very polite and intelligent. However, there were several questions and issues that remain, so I don't want to say that I came away from the open house completely sarisfied with the answers. I have articulated many of those concerns in an earlier section of this comment form - and some are pretty serious. Also, in many instances, staff had to answer that "the question you asked can only be answered by the council". I do not know when that opportunity will present itself or if such a hearing has been scheduled so that this issue can get a full hearing with ALL council members in attendance and prepared to answer | <u>Property Owner Participation and The Process:</u> It is clear that property owners along or near the proposed transmission line route have been actively involved in this project and have expressed their support and concerns regarding the implementation of this project since at least 2010. To be clear, property owners from throughout the city, and in the areas where new transmission lines have been proposed, indicated that they agreed with the city that a reliable power source was needed and wanted; that the solution for providing that power should be a long term solution; and that the city should be conscious of costs. There were also a significant number of concerns expressed in the early stages of this process, and the process itself was incremental in nature and did not reflect the full impact of ANY proposed route in the early stages of discussion. There are three things that should be considered in this regard. First, when residents agreed to these broad "concepts" about new transmission lines, very few details were available. NO information was available from the city at the time of the first hearings about pole height; pole placement; pole spacing; exact route; impact on home and property values; associated health risks from electrical shock or EMF emissions or the plan to bury some existing lines, but not the high voltage lines. In essence, citizens were participating in a "blind" process whereby general concepts were discussed without full knowledge of the ultimate impact of those discussions being known. Secondly, many people who are in close proximity to proposed transmission line routes were not sent the surveys that are currently being cited in city presentations about the new transmission line routes. The reason is simple. Most surveys were distributed as an enclosure in city electric utility billing notices. Unfortunately, many people who are citizens of Columbia and who live in close proximity to the newly proposed route receive their power from Boone Electric, and never receive bills from the City of Columbia. It can be argued - and has been argued by city staff members – that this process was well publicized and all the information and surveys were available on the city website. While that may be true, let's consider the city's recent decision to spend $63,000 to distribute the City of Columbia's Citizen Handbook to all households in Columbia. One justification for this project was that "many people do not receive the newspaper and most people do not get their information about the city from the website', and that contacting citizens with this type of important information BY MAIL was justified and appropriate. The same justification could be made that the extra effort regarding contact of impacted neighbors should have and could have been made on a project of this magnitude and potential impact, regardless of whether or not the city ordinances require such notice by mail. Third, the criteria for choosing routes and pole locations seemed to change over time. Initially, the discussion about route selection focused on the concepts of long-term power solutions, reliable power and cost. Public concerns about proximity to residential structures (including apartment buildings), proximity to schools and churches, the aesthetic and environmental impact of transmission lines, and to a lesser extent, proximity to businesses were all raised during preliminary discussions. By the time a plan for power pole placement was revealed to the public, however, the criteria seemed to be much different. The NEW criteria listed on the City's website regarding route and pole placement are listed as follows: "working around underground utilities, location of street intersections; soil stability; easement rights/ space lengths between each pole." NONE of these criteria were discussed as requirements in earlier discussions – and apparently, the criteria that are of great importance to neighbors and landowners – specifically, proximity to existing residences, impacts on property values and aesthetics, health and safety – have been ignored or given little consideration when determining a detailed route and pole placement proposal.<br><br><u>Insufficient Notice:</u> It should be noted that the process of choosing a conceptual route spanned several years and consisted of many public meetings and discussions. However, the devil is often in the details, and a detailed map and description of how the proposed Option A route would be implemented and how it would impact various stakeholders was not made public until September 30 of this year. Preparation of this proposal took more than six months. It was presented "as is" online followed by an open house meeting at Rock Bridge High School. One other meeting for concerned citizens in the Mill Creek neighborhood was also held. The problem is, after months of preparation by city staff, the general public was given only 14 days to prepare a comprehensive response to this proposal, and the mechanism is primarily by means of comment cards distributed at the two public meetings held. For such a complex proposal, this amount of time is woefully insufficient and gives the impression that the current proposal is a done deal, regardless of the comments and criticisms that may be received in this short window of time. A plan and expenditure of public funds of this magnitude should be entitled to a complete and fair hearing and public vetting – including a debate and discussion that involves the ultimate decision makers on this question and with the ability of the general public to have time to request and receive answers regarding the most fundamental concerns expressed.<br><br><u>Disadvantages Of The Current Proposal:</u> In its report to the City Council, city staff indicated that the route selection known as Option A had "NO DISADVANTAGES". It is clear that this statement is not | | |
| **94** | kelly gunter | (573) 219-9161 | kellygunter@mac.com | Online | 10/14/2015 | N | 5203 Thornbrook Pkwy--(potentially VERY close to plan B route) | Y | Residence | BEC | | | I do not want these placed along Nifong. There are too many families that live along the route and with all of the negative impact this will have health and otherwise, this is not the best placement. | No | Please rethink the placement and do what is best for the community and families that live in this area. Don't just pick the cheapest option. |
| **95** | Bill Durante | (573) 882-3886 | durantew@missouri.edu | Online | 10/14/2015 | Y | | Y | Residence | CWL | Did not attend | | I do not want lines near my house, so I am firmly against plan B. Underground, plan A or plan B2 are all equally acceptable to me. | No | I do not want lines near my house, so I am firmly against plan B. Underground, plan A or plan B2 are all equally acceptable to me. |
| **96** | Debra Carcamo | (314) 956-5234 | demagruder@hotmail.com | Online | 10/14/2015 | N | 3606 Ridgeview Dr | Y | Residence | CWL | Did not attend | | I've been told that you are considering a plan B which will bring the poles very close to my neighborhood, Thornbrook. I do not want these poles near my neighborhood because I am concerned about the health of my children and resale value of my home. | Please consider burying the poles. | |
| **97** | Chris Ashton | 573-999-6964 | christopher_ashton@us.aflac.com | Online | 10/14/2015 | | 1215 Tartan Place | | | | | | | | I understand the plan is to take the high voltage power lines directly down Vawter School Road which basically puts a pole in my backyard. I've been advised the impact on my home value as well as those in the Spring Creek neighborhood will be negatively affected by 20%-50%. Obviously I don't want that but this neighborhood provides a sizeable tax base for the city so decreasing Property values isn't good for anyone. There are also differing opinions on health concerns living near high voltage and this plan not only puts us at risk but also Mill Creek Elementary School.<br><br>All of this seems unnecessary because I know there are three options and the other two put the High Voltage lines through more rural areas that don't immediately affect existing homes and schools. The other options will also provide the ability to develop housing plans around the lines, reducing the negative effect. |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **98** | Kimberly Hughes | | kimandbert@gmail.com | Online | 10/14/2015 | | 1307 Lea Verde Ct | | | | | | | | I am disgusted how this option A was slid under the table past our citizens in this area as well as how this was presented to the City Council. Even your art renderings give a false impression. This issue should be brought back in front of the City of Columbia and its affected citizens and businesses in a fair and unbiased manner. The optional route B is more cost effective and considering your mapping plots, the most appropriate for this type of transmission line. |
| **99** | Mike Hogan | (573) 228-8253 | mhogan@cpsk12.org | Online | 10/14/2015 | | 3803 Blue Cedar Lane | | | | | | | | Have talked by telephone to Connie and Jeff White regarding route by my house. Was suggested that I also submit concerns through this means.<br>Drainage issues around Structure 54 where drain pipe exists.<br>Talked about working with residents who are directly affected by construction regarding fixing any issues that may arise on property from new power line construction.<br>Would like to ask to reconsider placement of poles from South Side on this route section and put on North Side where current distribution lines are located as more space between poles and road exists than on South Side. Went to Open House at RBHS, was told that I could use device to check current EMF levels but have not been contacted, please call. Thank you |
| **100** | Nancy | (573) 882-9522 | nancelator3@gmail.com | Online | 10/14/2015 | Y | | Y | Residence | CWL | | | I feel very strongly about the close placement of these poles being in close proximity to more than one elementary school and subdivisions with many children; there are known health implications especially to children; seems that option B would be better. | No | |
| **101** | Stacey Dennis | 573-673-8567 | Staceydennis06@hotmail.com | Online | 10/15/2015 | N | | Y | Residence | BEC | Y | | This project needs to take an alternate route away from the mill creek elementary school and existing homes! | No | I learned that the project in its entirety was not presented to the city counsel and placing these poles close to schools pose a threat to our children! |
| **102** | Sounak Chakraborty | (573) 823-6974 | sounakc@gmail.com | Online | 10/16/2015 | N | | Y | Residence | CWL | Did not attend | | Please stick with option A. That is the best route you have chosen. I heard some residents of Mill Creek are trying to lobby to move to Option B route but that will be a very poor choice. | No | |
| **103** | Amanda Miller | 573-489-7394 | mandymill@gmail.com | Online | 10/16/2015 | N | | N | | | Did not attend | | No | No | I am extremely frustrated with the attempts by some to re-open discussion concerning the transmission line route. I live in the Cascades and my home is one that backs to Route K. We went through this process over two years ago in a well-publicized public comment process. I still believe that the option that was chosen better fits the City's stated preference for routing through commercial areas rather than residential. In addition, those of us in the Cascades (and I would think many along Route K) are not even City electric customers. It seems many residents of Columbia want reliable power, but want the transmission lines that supply it to be someone else's problem. Thank you for this opportunity to provide comment. |
| **104** | John Glascock (as communicated to Laura Nauser & passed on to Tad Johnson) | | | | | | | | | | | | | | 2 poles, one right outside of Jeff Smith's retirement project and one near Kent in Springcreek subdivision second or third house going west -- can we move the poles? |
| **105** | Jamie Duggab | | colinjam1@icloud.com | Online | 10/16/2015 | | Thornbrook Rdg | | | | | | | | In regards to the new high voltage power lines, please do not allow plan B to happen!! This will place these lines within eyesight of my home and literally in people's backyards that live in the Steeplechase Subdivision! Plan B2 or A is a much better option!! |
| **106** | Debra Carcamo | (314) 956-5234 | demagruder@hotmail.com | Online | 10/16/2015 | | Misty Grove Ct | | | | | | | | Please consider option B2 for the new high voltage power lines. Our community does not want those power lines near our neighborhood or the new school. They could be hazardous to our health and they will effect resale value of our homes. Please consider option B2, not B. |
| **107** | Kristi Gregg | 573-289-7623 | greggk@missouri.edu | Online | 10/16/2015 | | 5423 steeplechase drive | | | | | | | | I would like for you to consider routes A or B-2. My son is very upset that families are being put at risk for these new power lines. Route B is not desirable. |
| **108** | Michael Hall | (573) 999-7821 | mmhall@columbiacivilengineering.com | Online | 10/16/2015 | | 4805 Garden Grove dr | | | | | | | | I wanted to make a point to CW&L in SUPPORT of the current option A route for the high voltage power line. From an engineering (I am a local civil engineer and NOT a CW&L or City employee) standpoint<br><br>1. the plans are 30% done<br>2. there is no ROW acquisition with the option a route. The Mill Creek folks keep saying option b is cheaper, but there is no easement acquisition in those figures!<br>3. In addition, we need people to know that with option B, CW&L will need a 60-100' wide easement. Finally, the 69 kV route noted on option b connects to a station that was installed in the late 60's and would be out of capacity almost upon installation (i.e. throwing good money after bad).<br>Thank you for consideration |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
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| **109** | Teri Smith | (573) 424-8896 | teririnkesmith@gmail.com | Online | 10/18/2015 | | | | | | | | | | I am confused about the new power lines. It is my understanding option A was approved but there are many conversations about the mill creek PTA working on petitions to change the plans. Can you please update me on this? I am not in favor of Option B as it affects homeowners. I agree option A is not great either but a decision was made. Is it feasible they will change their minds due to this petition?<br><br>Thank you. There is a lot of misinformation floating around south Columbia. |
| **110** | Cary Colbert | 573-442-4240 | carycolbert@centurylink.net | Online | 10/8/2015 | N | | Y | Residence | CWL | Did not attend | | All options have not been properly considered not have property value effects and most importantly safety concerns. | No | This needs to be revisited and the more rural route needs to be strongly considered! |

**Landowner Inquiry Report**
12/16/2015

| On Route/ Off Route | Route Segement | Contact Type | Structure Numbers | Tract Number | Tract Name | Contact | Address | Parcel | Number of Contacts | Dates of Contact | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| On Route | Highway 163 to Rock Quarry Road | Call In | | MCG-7N-2745 | Corporation of the EPIS | Corporation of the EPIS | | 1691200010210001 | 1 | N/A | |
| Off Route | | Call In | | N/A | Crouch, Carol | Carol Crouch | 919 Marcassin Dr | | 1 | 12-12-2014 | 12-12-2014 DCB Landowner called with concerns about pole location on Scoot Blvd. W/S resolved call by providing information to the LO |
| Off Route | | Call In | | N/A | Linder, Jay | Jay Linder | | | 1 | 10-09-2015 | 10-09-2015 DCB Landowner wanted to know why the route crosses Nifong to the North for two poles the crosses back to the south side of Nifong. LO was vistied by Dan Clark. LO was not there at the time and Dan explained to the assistant that we were trying |
| Off Route | | Call In | | N/A | Nicholas, Mark | Mark Nicholas | 10200 SW Greenburg Rd | | 1 | 09-17-2015 | 09-17-2015 DCB Mark called wanting to speak to Sega about possibly being the supplier for the materials to build the poles. Unknown if this has been resolved. |
| Off Route | | Call In | | N/A | Hogan, Michael | Mike Hogan | 1307 Lea Verde Ct | | 1 | 10-06-2015 | 10-06-2015 DCB Landowner called and wanted to know more about the project. He is not happy where it is going and prefers it to be on the other side of the road. City resolved call and Sega to Follow up on engineering issues. |
| Off Route | | Call In | | N/A | Mashburn, Paul | Paul Mashburn | 1322 Willow Creek Lane | | 1 | 02-15-2015 | 02-15-2015 DCB Landowner called and had questions on pole locations, height and width of poles and EMF issues. W/S handled the call and it seems to be resolved , but seems to not be happy with the answers unless the poles are on the North side of the road |
| Off Route | | Call In | | N/A | Evans, Linda | Linda Evans | 5200 Claybrook Ct | | 1 | 08-17-2015 | 08-17-2015 DCB Landowner called and had concerns on if the substation will be close to her home. W/S resolved call by providing information on when construction would begin. LO was also interested in attending the open house and wanted information. |
| Off Route | | | | N/A | White, Florence | Florence White | | | 1 | 12-14-2015 | 12-14-2015 DCB WS emailed Florence on December 16, 2015 10a.m. Resolved for now. |
| Off Route | | Call In | | N/A | Ridenhour, Cory | Cory Ridenhour | 5565 Waterfron Dr | | 1 | 10-30-2015 | 10-30-2015 DCB Landowner called and wanted some information to put together to fight the misinformation being spread around. Dan Clark spoke to LO about the project and options and also provided literature on EMF. Dan promised to bring LO an EMF meter on 11/2. City to follow up. |
| Off Route | | Call In | | N/A | McGuire, Jim | Jim McGurie | | | 1 | 10-30-2015 | |
| Off Route | | Call In | | N/A | Rockbridge Meadows Apartments | Dan | | | 1 | 10-14-2015 | 10-14-2015 DCB Landowner called and had some questions about pole placement since he couldn't make the open house. LO was informed that structure 69 is just outside his property and appears to be in the utility easment. W/S resolved call |
| Off Route | | Website Input | | N/A | Fallis, Kim | Kim Fallis | | | 2 | 10-18-2015 , 10-08-2015 | 10-18-2015 Landowner emailed again and wanted to know the new electrical load capaicty being supplied to Option A. LO was informed that it was best to meet and discuss the information with the City. Uknown status of the meeting. 10-08-2015 DCB Landowner called and had questions regarding the voltage of the power line, rate increase and substation security. LO was informed of the rate increase structure and that security of the substations. W/S resolved |
| Off Route | | Call In | | N/A | Shah, Audrey | Audrey Shah | | | 1 | 10-223-2015 | 10-23-2015 DCB Landowner wants information about the poles. LO was given information and directions to the website on the project. City resolved |
| Off Route | | Call In | | N/A | Brinks Construction | Katrina | | | 1 | 10-13-2015 | 10-13-2015 DCB Landowner wanted to know if the City was going to put bids out for the construction of the poles. Connie informed the LO to go to the website to put in a bid. City resolved |
| Off Route | | Website Input | | N/A | Munns, Renee | Renee Munns | | | 1 | 10-15-2015 | 10-15-2015 DCB Landowner emailed and questioned why the city would pick a major road for this project, rate increases and bonds. LO was informed through email. W/S resolved |
| Off Route | | Call In | | N/A | Marinova, Detelina | Detelina Marinova | 4107 Nashua Ct | | 1 | 08-17-2015 | 08-17-2015 DCB Landowner called, but it was inaudible. W/S has tried to call back 4 times and was unable to reach the LO. |
| Off Route | | Website Input | | N/A | Red Oak Development | Red Oak Development | 3401 Broadway Businnes Park CT STE 105 | | 1 | 11-05-2015 | 11-05-2015 DCB Landowner emailed the City about where the transmission line was going to be placed. Unknown if this has been resolved. |
| On Route | Perche Substation to Chapel Hill Road | Call In | | PMC-1W-0180 | Anderson, Charlotte L. | Ronald G. Anderson | 5312 Hiland Pkwy Main Address | 1641600010010001 | 1 | 07-22-2015 | 07-22-2015 DCB Landowner called and wanted to now why we were digging up her front yard. LO stated that she was never contacted about the project. W/S handled call and resolved issues. |
| On Route | Chapel Hill Road to Vawter School Road | Website Input | | PMC-2W-0910 | Larson Family Revocable Trust | Jon Frederick Larson | 4303 ESTHER LEE CT | 1670800010020001 | 1 | 10-29-2015 | 10-29-2015 DCB Landowner emailed inquiry and stated that LO was informed the lines would need redone/rearranged becaues they were not installed properly and LO is concerned about the digging. Dan Clark sent email to LO and explained that there might be some confusion and that the City does not need to rework any of the recently installed Boone Electric underground lines. City Resolved |
| On Route | Chapel Hill Road to Vawter School Road | Call In | 21 | PMC-2W-0950 | Robbins, Albert W & Sharon | Albert Robbins | 4300 N Pinebrook Ln | 1670829030010001 | 1 | 10-23-2015 | 10-23-2015 DCB Landowner was upset that the structure will be 20 ft. from his home. LO was informed that the property owners affected by the project will be compnesated based on market data. W/S resolved call |
| On Route | Chapel Hill Road to Vawter School Road | Call In | 22 | PMC-2W-1000 | Iselin, David D & Katherine | David Iselin | 4301 W BROOKVIEW CT | 1670829020010001 | 1 | 05-27-2015 | 05-27-2015 DCB LO called concerning damges on property. W/S handled call |
| On Route | Chapel Hill Road to Vawter School Road | Call In | | PMC-2W-1070 | Wheeler, Roy L & Bonnie E | Roy Wheeler | 503 E Nifong Blvd Ste 321 | 1670829000050001 | 1 | 10-06-2015 | 10-06-2015 DCB Landowner called and wanted to know where exatcly their property line is. LO was not able to make the open house. Connie spoke to LO and both agreed to would be easier to send LO a printed map. City resolved |
| On Route | Vawter School Road to Old Mill Creek Road | Call In | 35 | PMC-3N-1300 | Fisher, Henry K Jr | Henry Fisher Jr | 5808 Screaming Eagle | 1680100070350001 | 1 | 10-06-2015 | 10-09-2015 DCB Landowner called and tried to use the open house qeustionnaire on the website but the submit button did not work. LO's questions were on placement of poles and the disturbution lines. LO was informed that there are underground utilities on both sides of the road. Provided web link on the open house. LO did not reply back to email. W/S resolved |
| On Route | Old Mill Creek Road to Forum Boulevard | Website Input | | PMC-4S-2140 | Bax, Paul | Paul Bax | 2801 Pine Tree Ln | 1680000020700001 | 1 | 1/20/2015 | 01-20-2015 DCB Landowner wanted information if the line was going to be on the North or South side of Vawter School Blvd. LO was informed that pole placement has not ben determined at this time. W/S resolved call |
| On Route | Old Mill Creek Road to Forum Boulevard | Call In | | PMC-4S-2240 | Columbia School District | School | 1818 W Worley St | 1680000010010001 | 1 | 6/26/2015 | 06-26-2015 DCB Landowner called inquiring about honoring an agreement with Columbia Schools to bury the line that passes near the elementary schools. Per David Rodriguez response "Only commitment made by the City was to undergound/bury any overhead distru |

| ID | Name | Phone Number | Email | Submitted Paper or Online | Date Submitted | Do you own property along the route? | Address | Are you an electric customer along the route? | Business or Residence | CWL or BEC | Was the Open House on 9/30 informative, and did it provide you with a better understanding of the project? | Please explain your comments regarding the effectiveness of the Open House on 9/30. | Do you have comments about the proposed pole placement? Please explain. | Do you have comments about the proposed pole structure designs? Please explain. | Any other comments you'd like to make about The Columbia Electric Transmission Line Project? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Ros Shanker | 573-875-2035 | | Paper | 9/30/2015 | N | | N | | | | | I am glad you decided to make this presentation. The length of time and station were good. My suggestion is that you have a 1 minute meeting every .5 hour to reveal the general plan and invite questions. Sometimes this method helps the public because they can hear of other questions that they might not have thought of and thereby glean good info- Ros | | |
| 2 | Deb Faller | | debra.s.faller@gmail.com | Paper | 9/30/2015 | Y | 3500 Vawter School Rd | Y | Residence | CWL | | | We are pleased they won't be on our side of the road. | | |
| 3 | Lvonne Pineda | 573-445-9764 | jcapinedas@hotmail.com | Paper | 9/30/2015 | Y | 3300 W Vawter School Rd | Y | Residence | CWL | | | | | |
| 4 | Amy | | | Paper | 9/30/2015 | N | | N | | | not really | Needed overview presentation. No clear path to take and booths crowded. So hard to get to booths. Didn't have advantage of hearing others questions | Why not do option B which is less populated, cheaper | Too large | Why would you think it's ok to put these giant dangerous gargantuan eyesores in someone's yard. Why not put it in more rural routes. Obtrusive & we are already stressed out- who needs more electromagnetic energy which has been proven dangerous |
| 5 | Angela & Adam Boster | 573-4242592 | hands of healing touch@gmail | Paper | 9/30/2015 | Y | 39515 Forest Acres | Y | Residence | BEC | | | Unfair to homeowners in this route. Feels like we are backed in a corner | | Bullshit |
| 6 | Patricia Kowalski | 573-256-1295 | pmk700@aol.com | Paper | 9/30/2015 | Y | 700 New Market Place | Y | Residence | CWL | Y | I saw exactly where poles are being placed. The real estate (city person) confirmed that property values where these structures are built would be negatively affected- Thanks | I find is horrible that these poles are being put above ground in existing residential areas. This will decrease property values of our homes that we have worked hard to pay for. We researched diligently 16 years ago when we purchased our home. We looked to avoid this very thing. Now we are having it planted right near our home | WAY TOO Large! it'll be an eyesore to existing homes | This is a travesty to existing homes. These lines could be buried in existing residential areas! Or this could be taken a different route to avoid existing residential areas! I don't know how the city planners have the conscious to do this to property owners |
| 7 | Paul Bax | 573-239-0898 | paul00bax@gmail.com | Paper | 9/30/2015 | Y | 2801 Pine Tree Lane | Y | Residence | BEC | Y | I was able to have discussions with city staff, hired engineers, real estate folks & the public | I am satisfied with the explanations I received this evening. It is positive that there will be less poles. The size of the new poles and EMFs are concerns. I voted for option B and that is my comment | They are ugly, but I don't know what else could be used... I voted for option B | I'm strongly considering selling my home. The EMF research provided is dated. However, I'd feel bad for whoever would buy my home. The city should have chosen a lesser populated route. Thanks |
| 8 | Pat Fowler | 573-256-6891 | | paper | 9/30/2015 | N | | N | | | | | As a ratepayer I am concerned that we chose a combination of a reasonable cost and taking mitigating steps to alleviate the concerns of parents and the seniors (and their adult children who care for them) along the route. | | |
| 9 | Susie Ailor | 573-886-2880 | ailors@health.missouri.edu | Paper | 9/30/2015 | N | | N | | | | Was troubling that the presentation at individual tables/ handouts were misleading | Should not be close to this many schools- feel that the council was not properly educated. Drawing of Mill Creek Elementary and its exposure potentially is misleading. Shows the building being rarely exposed, but playground is at the street with definite increase. Families will have an increase at home and at school for their children | | Not 'in line' with good health and the community as a whole. Feel council was misled if not, they do not consider the potential harm for children a concern it should be |
| 10 | Edgar I Ailor III, M.D. | 573-42400850 | ailorphotography@aol.com | paper | 9/30/2015 | N | | N | | | | | This route currently planned for a 161-KV Transmission line following Vawter School Rd & W Nifong goes right by Mill Creek School. The Graph showing the exposure to the electromagnetic field provided by Sega Inc. shows the north wall of the Mill Creek school electromagnetic exposure at .1 milligauss. What it doesn't show is the PLAYGROUND for Mill Creek is 50-75' from the transmission line with (from their graph) a 1.25-2 milligauss exposure. Our communities children & grand children are at that school 8 hours/day 5 days a week. There's evidence for the world health organization and NIH and other sources of an incidence for childhood leukemia with higher EMF exposure. We do not want a high voltage transmission line near our schools. We have to reconsider the route. A is not the best option | | |
| 11 | Detelina Marinova | | detelinam@hotmail.com | Paper | 9/30/2015 | N | 3212 West Creek | Y | Residence | | N | I felt it was a one way conversation. Citizens did not have a chance to voice their objections. | Route B needs to be adopted. Given the adverse effects of EMF and huge impact on residential, schools and pre-schools along route A<br>Incomplete info on health effects was given to the public on City website (EPA & utilities) and to the city council when they voted (according to minutes). Route A was most expensive as well | | Route B is cheaper, LESS developed and goes by NO schools |
| 12 | Carolyn Hawks | 573-268-8543 | ccardon@aol.com | Paper | 9/30/2015 | N | | Y | Both | CWL | N | | My objection is the selection of Option A. Option B goes by NO schools, much less dense population. I feel the city did not address the health issues, the forums were not publicized enough. There has been much new scientific research since the vote and I believe we should have a revote | | |
| 13 | Melinda Jenne | 573-356-3332 | melindajenne@gmail.com | Paper | 9/30/2015 | N | 3660 Scott Blvd | N | | | | | PLEASE RETHINK OPTION B! NO SCHOOLS NO DENSELY POPULATED NEIGHBORHOODS 3 MILLION CHEAPER | | |
| 14 | Nancy & Dennis Palmer | 573-864-8454 | dennis@costalelectric.net | Paper | 9/30/2015 | Y | 3908 Barrington Dr | Y | Business | BEC | | | We are concerned with the pole 26 location | | |
| 15 | Earl & Kathy Bryant | 573-442-1041 | kbryant@centrytel.net | Paper | 9/30/2015 | Y | 3909 Barrington Dr | Y | Residence | CWL | Y | | I love that they are going on the south side of Nifong by our house. Thank you for not putting a pole in my bedroon | | |
| 16 | Mary Dodds & Stan McCarthy | 573-442-0167 | tropstan@yahoo.com | Paper | 9/30/2015 | Y | Bedford walk | Y | Residence | CWL | N | Powerline is only part of the construction in the area | Will the area be like the Business Loop and be an eyesore and have to move lines again? | | Need to coordinate with the proposed road expansion the city has planned<br>Video speed needs to be slowed down |
| 17 | Jennifer James | 573-289-3044 | tjennifer@mchsi.com | Paper | 10/5/2015 | N | 2605 Pine Tree Ln | N | Residence | CWL | Y | I've attended many meetings in regard to this project. I'm frustrated that we are spending to bury utilities on the north side of nifong. Now if we are going to bury utilities spend the $ to bury these. | I am concerned with the inconclusive studies and unknowns in relation to health and safety. I am concerned with the devaluation of properties along the path especially the north side of bedford walk and of the aesthetic consequences to a road that is still relatively attractive traveling west on nifong from providence. | | In earlier meetings and in customer surveys primary concerns for determining the route leaned heavily toward long term reliable power trying to stay as far from residential as possible, environment & aesthetic and cost. Other than the reliable power, we seem to have abandoned the remainder of the primary goals of the project. This is disappointing and misleading. People on the north side of nifong purchased their property knowing there was a sizeable dedicated utility corridor. Their property values reflected that, the people on the south side did not |
| 18 | Mardy and Lisa Eimers | 573-673-3099 | mardyeimers@gmail.com | Paper | 10/5/2015 | Y | 3903 Deerfoot Way | Y | Residence | CWL | | | Option B and B2 do not affect schools, residences etc. and costs above the same, actually less. Yes life expectancy is less in B and B2 but it is certainly worth it given the health risks of A | | |
| 19 | Matthew Hayes | 573-356-1964 | matthew.hayes@brightstarcare.com | Paper | 10/5/2015 | Y | 4101 Watertown Pl | Y | Residence | BEC | | | Boone Electric Co-op customers were not sent surveys however the route goes right through their service area. These customer should have a vote in this especially the ones where the route is going | | |
| 20 | Niki Kriete | 578-808-5721 | snkriete@gmail.com | Online | 9/30/2015 | Y | 205 E. Nifong | Y | Residence | CWL | Y | The open house was informative and gave us more of an idea of what to expect (worse than we first thought, the poles are larger). I don't really feel like your input really mattered as the representatives answering questions pretty much said that the pole placement would not be changing much. Also, two weeks is not enough time to consider the impact this will have on our property values. | There is room/easement on the north side of the Nifong/Bethel to Nifong/Forum area to run the lines next to mostly commercial properties. Properties in the Bedford Walk subdivision will be within fall distance of the poles. Mature trees buffering the traffic on Nifong will likely be cut down to run these lines. Properties values will be greatly affected. Typically, poles of this size are placed in a 100 foot easement. These poles will be stuck in a 10 foot easement. | We will have a pole in our backyard that is within fall distance of our house, comprising the safety of my children and our home. Having a pole behind our home will also make it more difficult to sell our home in the future as federal loans for homes with large power poles such as these will need to be reviewed by HUD. | |
| 21 | Jay Lindner | 573-446-5500 | jay@forumgroup.com | Online | 9/30/2015 | Y | | Y | Business | CWL | Did not attend | | Would like to know why the route has to cross Nifong to the north side for 2 poles between Peachtree drive and Providence before crossing back to the south side | | |
| 22 | Teresa Thornbrook | | nbheim@hotmail | Online | 10/1/2015 | | 4307 Montpelier Place | | | | | | For once.....will the city please listen to the people!!!! We are trying to build back the trust from our city council members and the community members. If you disregard what the residents are saying it will only build deeper wounds and hateful feelings. Please think of others for once and don't put the electric service above ground and don't put it by the sidewalk | | |
| 23 | Jessica L. Bax | 573-397-2046 | jessica.letourneur@gmail.com | Online | 10/1/2015 | | 4502 Avondale Place | | | | | | Please consider burying the proposed power lines that will be installed near Mill Creek Elementary. I am the parent of a Mill Creek child and am concerned about the health of my child and other children and adults in the area being affected by above-ground lines | | |
| 24 | Amy de Jong | 573-999-0028 | adejong@gocolumbiamo.com | Online | 10/1/2015 | Y | | Y | Residence | CWL | Y | I didn't see very many happy faces at the Open House! | The poles are in my neighbors on Watertown Place backyard. It is ridiculous to place them next to residential areas when there are commercial properties across the street.<br>The proposed pole placement will significantly affect property values in Bedford Walk. | | |
| 25 | JR Lawless | 573-443-8871 | jr.lawless@edwardjones.com | Online | 10/5/2015 | N | 3909 Deerfoot Way | Y | Business | CWL | Did not attend | | This pole placement is immediately outside my office. I will not continue to do business at this location unless this pole placement is moved across the street. I am very disappointed in your organization concerning this issue. Not only will I have to move locations due to this line placement, it will ruin the aesthetic view of a major economic hub in this town. There are always alternatives and placing the largest, most powerful lines down a major thoroughfare is not only short cited but shows incredibly incompetent long term planning. My guess is this has been an issue to years and to blame the federal requirements on the decision to place this line down nifong is irresponsible. There is no doubt this will affect my business and force a very costly move. I can't imagine Clayton MO ever using the excuse of a federal mandate to place similar lines down Skinker blvd.... I have informed my landlord that we will be forced to move as my firm will not allow its employees to work directly under these lines. I would imagine that Columbia power and light would not cover the lawsuits that would be inevitable. | | |

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| 26 | Dieter Duff | 573-529-1818 | deiterduff@gmail.com | Online | 10/5/2015 | Y | | N | | | Y | | | | | My wife and I, along with numerous other people, hope the city council will reconsider the route of the high voltage transmission line. We understand the need to upgrade and plan for the future, but why place these lines through developed residential areas when other options exist? Studies about potential health risks are not conclusive, and we would rather our family not be at risk. Additionally, our property value is almost certain to be affected negatively. |
| 27 | Hannah Nichols | | nicholshm@health.missouri.edu | Online | 10/6/2015 | | | | | | | | | | | I am writing to you to urge you to reconsider the planned route for high voltage power lines voted on by Council in 2013. It is my feeling that Columbia Water and Light did not provide adequate information to Council, disregarding the marked disadvantages of potential health risks (particularly to a numbe of school age children from Rock Bridge to Mill Creek) as well as substantial invasion on existing residential areas and businesses. Both Option B and Option B-2, as formerly proposed, offered a less expensive alternative on land already owned by the city. It also would substantially reduce the adverse impact on our citizens. Please take this under advisement. We ask for a revote. Thank you.<br>Sincerely,<br>Hannah Nichols |
| 28 | Karin Carratura | (573) 256-1392 | karylew@gmail.com | Online | 10/7/2015 | N | | N | | | N | | I have children at Mill Creek Elementary. I would like to know, when another viable option is not located next to a school, why the current plan was selected. I understand you have access to studies that do not link these power lines to health issues. I also know there are studies that say it is a risk. Why take this risk with our children's lives, when another way is a valid option? Please revisit this. Ask the public again if they think it is worth risking the health of our children. Give them all the information and the potential drawback and see what they would support. | No | | |
| 29 | Karin Carratura | (573) 256-1392 | karylew@gmail.com | Online | 10/8/2015 | N | | N | | | N | | Can you, with a clear conscience, promise my children that attend Mill Creek are not at risk due to the placement of those wires by their playground? Are you ready to answer to them if you are wrong? | No | | |
| 30 | Julie Allen | 866.661.4473 | robphotoimage@gmail.com | Online | 10/8/2015 | N | | N | | | | | Please consider routing the power away from the schools. | No | | |
| 31 | Annette Robbins | 573-289-1118 | comfortablecottage1@gmail.com | Online | 10/8/2015 | N | | N | | | Y | | The EMF is too great to be around schools. Look at the research. Be brave and do the right thing | No | | |
| 32 | Michelle Laily | 573.356.4262 | michellecox5@hotmail.com | Online | 10/8/2015 | N | 5203 Thornbrook Pkwy | N | | | Did not attend | I was unaware of the Open House and would love another opportunity to learn more about this, it's effects on the community, especially schools as my children attend RBHS, learn about "option B", and ask questions.<br>Thank you! | I would like more information about the proposed pole placement and more information about alternatives. | No | | |
| 33 | Kelly Durante | (573) 882-5131 | durantek@missouri.edu | Online | 10/8/2015 | Y | 1317 Sedona Villas Dr. | Y | Residence | CWL | Did not attend | | I absolutely oppose plan B, which would bring high-power lines very close to my house at 5203 Thornbrook Pkwy. I prefer underground lines, then plan B-2, then plan A. Please do NOT go with plan B | No | | I absolutely oppose plan B, which would bring high-power lines very close to my house at 5203 Thornbrook Pkwy. I prefer underground lines, then plan B-2, then plan A. Please do NOT go with plan B |
| 34 | David Allen | 573-443-4656 | prentallen@mchsi.com | Online | 10/8/2015 | Y | 1318 Sedona Villas Dr. | Y | Residence | CWL | Y | | No | No | | The route chosen (Option A) passes by many residences and business on Nifong creating both a possible health risk and an ascetic eyesore. The alternative Option B not only does neither of those things but is also less expensive. Current scientific findings make the health risk more likely. For that reason alone the city council should revisit the plan. |
| 35 | David Allen | 573-443-4657 | prentallen@mchsi.com | Online | 10/8/2015 | Y | | Y | Residence | CWL | Y | | No | No | | The proposed route (Option A) does not properly take into consideration possible health risks and aesthetic considerations while Option B poses neither of these problems and is also less expensive to construct than Option A.<br>Recent scientific studies indicate that health risk of high power transmission lines are more probable than previously thought. For that reason alone, the city council should reconsider the plan. |
| 36 | Brooke Hoffman | (217) 779-6605 | Spencbr3@hotmail.com | Online | 10/8/2015 | N | | Y | Residence | BEC | Did not attend | | Not okay to have by young children on playground at Mill Creek | No | | |
| 37 | Jill Orr | 573-424-9507 | orrjill@hotmail.com | Online | 10/8/2015 | N | 4512 Kirkdale Dr | N | | | Y | | I do not feel it is safe to have these high voltage power lines placed in such a highly trafficked area - especially near Mill Creek School - when it seems clear there is another option. | No | | |
| 38 | Shelly Blevins | | jsablevins@midamerica.net | Online | 10/8/2015 | | 2504 St. Regis Ct | | | | | | | | | Please don't choose plan A. So scary that it goes nearby all those schools and preschools. I have children in those school that HAVE to be there all day! If there is ANY possible health risk, it's not worth it! Plus our property values are going to go down because no one is going to want to buy a house in our area! We are willing to pay the extra cost for an alternate route!! Please, we are begging you to consider other options besides the route down Nifong! |
| 39 | Rob Wolverton | 573-999-6551 | robwolverton@anthonyproperty.com | Online | 10/8/2015 | | Cornerstone Ct. | | | | | | | | | I do not believe the route discussion should be re-opened and Council should stay with the plan chosen. |
| 40 | Drew Clark | | drew.hamish.clark@gmail.com | Online | 10/8/2015 | | 3261 S Greenfield Ct | | | | | | | | | I think this is a terrific idea. With all of the new construction going on in Columbia, I can only assume we are running up against the limits of the available electricity we would have (without risking brown/blackouts.) This seems like an excellen step to safeguarding my ability to make pop tarts with my air conditioning going full blast. |
| 41 | David Barnard | | dave.barnard@hotmail.com | Online | 10/6/2015 | | | | | | | | | | | Thank you for the very informative website. I live near the transmission line route so this is helpful. Looks like a good plan. |
| 42 | Neil and Jenny Brothers | 817-2984 | tennis37@chartner.net | Online | 10/8/2015 | N | | Y | Residence | CWL | Did not attend | | Yes | No | | We live a few blocks from the route , I work right along the route, and our three kids go to school at Mill Creek. We are very concerned these power lines are going in so close to us and to several schools and businesses, mostly for the possible health risks. We are also concerned about property values an the fact that this option is more expensive and the other option affects far fewer people and is more rural. The best option would be to choose a route where there are no schools or neighborhoods . If they do have to go by neighborhoods and schools, why can't the lines be buried along that path? The health of our citizens of Columbia should be the number one concern in a decision like this. |
| 43 | Mark and Christina Richardson | 573-447-2097 | richardson1222@gmail.com | Online | 10/8/2015 | N | | N | | | | | Yes, we are highly concerned about the proposed placement going over, through, around near our children's elementary school, Mill Creek Elementary. This seems terribly wrong and quite disturbing that it has passed as a viable option for where to place these poles. We are worried about our children--we have 3 currently in attendance at this school. We are worried about our teachers and staff. | No | | |
| 44 | Brenna Schmardebeck | 801-376-4976 | bschmard@gmail.com | Online | 10/8/2015 | N | | N | | | Did not attend | | My children attend Mill Creek Elementary. I am very concerned about having high voltage power lines so close to s many children. Study after study shows the negative effects they can have and the increased odds of getting childhood leukemia with such exposure. I am confused that the city would choose as option A, a plan that puts a cancer causing eyesore right through the middle of a nice residential area. Please make the responsible choice and protect our children!!! There is another option; it may not be perfect, but it reduces exposure and long term effects. | No | | I am sorry I did not attend the open house. We are relatively new to Columbia (just bought a house here!) and I didn't know about this until some people were talking about the meeting a day later. I have since updated myself on the situation and would like to make my opinion known. |
| 45 | Melinda Jenne | 573-356-3332 | melindajenne@gmail.com | Online | 10/8/2015 | N | | N | | | Y | | How are you going to place poles when you don't even have a plan for the road expansion. Water and Light said there was not a finalized road expansion map. | These are absolutely massive! They will ruin the look of our town. Fast forward 20 years, the South of Columbia will probably be the middle of Columbia. Please don't put these right down main roads, PLEASE RETHINK OPTION B! | | I have attended open houses in the past month. We realized a lot of us never heard of this project because we are Boone electric customers. Please reconsider Option B. It is cheaper, it doesn't go over schools, it won't cut through several densely populated neighborhoods and it won't ruin the look of our town. It is not too late! |
| 46 | Nicole Bormann | 573-303-4563 | nicole.bormann@gmail.com | Online | 10/8/2015 | N | | N | | | Did not attend | | No | While I understand that growth of a city is never something a city can completely foresee, it seems short-sighted to have not assumed a need for such a power grid before this. That said, placing the lines DIRECTLY ON the same land that most residents send their children for the entire day seems completely insane. It is known that there are negative health effects from continuous exposure to such power lines. I have young children who will attend Mill Creek Elementary very soon and am appalled that this is something that the city is planning. Move the lines further south where the properties/schools have yet to develop so as to avoid this scenario down the line. Seems short sighted to say the least. STRONGLY OPPOSED and will be sure to request fellow | | Was just made aware of this proposal today. Not sure how this is something that wasn't made a bigger deal sooner, but welcome the opportunity to discuss further. Time to rethink this plan. |
| 47 | Zach Clark | 573-823-1350 | zrck99@gmail.com | Online | 10/8/2015 | N | 4903 Fall Brook Drive | N | | | Did not attend | | No | No | | I'm very grateful for the proactive approach that the city is taking in order to keep the electrical grid reliable. Please proceed with the upgrades as quickly as possible. |

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| 48 | Dawn Orr | | dawn@edorr.com | Online | 10/8/2015 | | 3604 Ridgeview Drive | | | | | | | | The city council needs to look at option B for power line placement. The residents of Columbia were not aware of the council's vote for option a. Many homes and schools will be affected by this. Please reconsider |
| 49 | Julie Hendrix | 314-922-4511 | juliehendrix@mac.com | Online | 10/8/2015 | | | Y | Residence | BEC | | | Our house is possibly one of the closest properties to this project along the entire route! We are adamantly against this due to the health risks to us and our 8 year old son and the kids that play in the neighborhood right along the path of these powerlines! In addition, we've been told by experts that our home value will decline by at least 30%. This is unacceptable when other alternatives (option B) are cheaper and away from developed neighborhoods and schools. Our son also attends Mill Creek Elementary where he at risk to additional exposure to the high voltage lines. | They are large and intrusive to our property. | Our house is possibly one of the closest properties to this project along the entire route! We are adamantly against this due to the health risks to us and our 8 year old son and the kids that play in the neighborhood right along the path of these powerlines! In addition, we've been told by experts that our home value will decline by at least 30%. This is unacceptable when other alternatives (option B) are cheaper and away from developed neighborhoods and schools. Our son also attends Mill Creek Elementary where he at risk to additional exposure to the high voltage lines. |
| 50 | Marisa Hagler | 573-808-6096 | marisahagler@gmail.com | Online | 10/9/2015 | N | | Y | Residence | BEC | Did not attend | | I do not want this near my child's school and near our home! | No | It seems to me that Option B should definitely be the way to go! Let's think about our children |
| 51 | Jennifer Roderique | 573-219-5195 | JENNY80EV@GMAIL.COM | Online | 10/9/2015 | N | 3809 Timber Run Drive | Y | Residence | BEC | Did not attend | | I am writing to you to urge you to reconsider the planned route for high voltage power lines voted on by Council in 2013. It is my feeling that Columbia Water and Light did not provide adequate information to Council, disregarding the marked disadvantages of potential health risks (particularly to a numbe of school age children from Rock Bridge to Mill Creek) as well as substantial invasion on existing residential areas and businesses. Both Option B and Option B-2, as formerly proposed, offered a less expensive alternative on land already owned by the city. It also would substantially reduce the adverse impact on our citizens. Please take this under advisement. We ask for a revote. Thank you. | No | |
| 52 | Russell crane | 573 4246823 | Russelc61@gmail.com | Online | 10/9/2015 | Y | 3701 Hunter Valley Drive | N | | | N | | This has already been decided. We've been down this road before. There is no need to change the agreed upon route. | No | This fight should be shelved. |
| 53 | Jason and Sarah Swindle | 573-815-0994 | swin1@me.com | Online | 10/11/2015 | Y | 3505 Ridgeview Drive | N | | | Did not attend | | Good afternoon. My wife and I are residents of Spring Creek subdivision (phase 1) and we'd like to voice our concern over the path of the recommended transmission line route. We have two children who attend Mill Creek and we own property not too far from the route.<br><br>First, we are thankful for your service to our city. We realize that the city attempted to garner feedback and public discussion about this project several years ago, but as we hav learned over the past few months, it appears the city's approach was flawed and potentially misleading.<br><br>Our dissatisfaction primarily is this: potential health concerns have been acknowledged by city officials (so why risk even on child's health!?) and there IS an alternative, cheaper route with far less disruption.<br><br>Here is a summary of our concerns:<br>• Health and safety of:<br>* Children in the 5 schools and daycares next to the route.<br>* Residents in homes along the route.<br>* Elderly in the various retirement communities built along the route<br>• NIH-referenced research studies show an increased risk of adverse health concerns, such as childhood leukemia, from exposure to EMF emitted from high voltage power lines.<br>• Home values in an entire neighborhood can be negatively impacted. We in Spring Creek have already seen been socke once with the redistricting of school boundaries (e.g., per numerous real estate agents, potential buyers mark ou | | |
| 54 | Ron Usovsky | 573-489-8781 | ronusovsky@hotmail.com | Online | 10/11/2015 | Y | 4304 Watertown Place | Y | Residence | BEC | Did not attend | | These poles will be placed in homeowners backyards. | No | We are truly concerned about the children at Millcreek School, Gentry School and the several Daycares along the route. The risk to the many adults along the route is also unknown. If there is a more rural route to take the lines, why was that not decided upon?<br>This will also adversely affect property values along each side of the transmission lines. How far in dollars and distance this decreased valuation occurs is questionable but as you know, once the blight starts it can continue far and wide.<br>Since the research regarding exposure to EMF is inconclusive but involves some health risk, the city will be involved in multiple lawsuits regarding health issues experienced along th route.<br>If this transmission line placement comes to fruition, I would expect and will fight for a substantial reduction in our property taxes.<br>This transmission line has the ability to negatively affect a multitude of Columbia residents quality of life. This is a poor choice for the routing and needs to be revisited and improved upon. |
| 55 | Vicky Elliot | | vle@burnsitech.com | Online | 10/11/2015 | | 3604 Ridgeview Drive | | | | | | | | My husband and I decided to retire in Columbia after careers i education and law enforcement in smaller communities. We felt comfortable that the home we purchased in a family friendly neighborhood would be a good investment. We had researched many communities and decided that Columbia exemplified progressive attitudes and offered a lot of amenities found in large cities, while preserving a lot of green space esthetics with the many parks and trails.<br>We attended a forum a couple of years ago when Columbia Water & Light first presented plans for the expansion into the southern part of the city. We agreed with most of the attendee at the time that the power lines needed to be buried, to protect the home values and attractiveness of the area. We are very disappointed that no elected official or city employee seems to value our area residents' concerns. We understand this is a more expensive option but we are willing to pay more to protect our home's value.<br>Vicky Elliott |
| 56 | Kent & Julie Hendrix | 573-673-6974 | Kent.hendrix@me.com | Online | 10/11/2015 | Y | | Y | Residence | BEC | N | I attended and was talked down to by almost every representative there. The power and light people have their mind made up and could care less what the people along the route think. It's a shame. So much for a democracy. The will of the people is not being followed in regards to the route. The city wants to just take the path of least resistance at the cost of health risk and home values. | I believe that the less expensive options that stay away from schools, hospitals and multiple neighborhood residences should be revisited. Less impact on the residential area at less of a cost and less chance of any exposure to children no matte what the current known risk is or isn't should be the #1 priority of the route. | I believe placing the poles down Nifong and Vawter school now or in the future is shortsighted. Taking into account the drop in home value and the fact that a road expansion that will happen in the future isn't even a consideration when looking at the route. | |
| 57 | Pat Hays | 573-442-9033 | pathays25@hotmail.com | Online | 10/12/2015 | N | 3000 Trailside Drive Columbia, MO 65203 | N | | | Did not attend | | This seems to be a very dangerous plan for our children and residents. I also feel the way the initial questionnaire was put t the public was very sneaky. This was certainly handled in a hush hush manner, knowing that the public would not like it. These lines need to be installed in a rural, sparsely populated area, NOT over and VERY NEAR our children. This is a common sense decision. Please do not install theses lines down Nifong Road. The long term effects on our children will be disastrous, and on your shoulders. Find an alternate route!!!!! Do your responsibility | They do not need to be this large!!!!!!! | Please DO NOT install these lines!!!!!! |
| 58 | Sarah Schneider | 660-888-9946 | sschneider1981@icloud.com | Online | 10/12/2015 | Y | 3813 Woods Edge Rd | Y | Residence | BEC | Did not attend | Thank you for soliciting feedback and taking the concerns of Columbia residents seriously. | The proposed route (Option A) would negatively impact my neighborhood, other neighborhoods on the route, and Mill Creek Elementary. Having these lines near us and our children could create potential health risks and aesthetically will impact our home values. I believe it is a bad idea for the future of this area of Columbia to build the lines as proposed.I would be in favor of Option B, which would do a much better job steering clear of established neighborhoods and schools. It is a superior choice for our community! | I believe the pole structure is fine as long as the route is amended to Option B (outside of established areas). | |
| 59 | Dan Davis | (573) 268-8894 | dandavis33@icloud.com | Online | 10/12/2015 | Y | | Y | Residence | CWL | Did not attend | | It's stupid and idiotic. Thanks. | No | Don't do this please. Thank you. |

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| 60 | Carol Heffner | (660) 651-4085 | heffnercj@missouri.edu | Online | 10/12/2015 | N | | N | | | Did not attend | | I am very concerned about the proximity to both Gentry and Mill Creek Elementary. In my opinion there is too much conflicting information to make a decision about the safety of the EMF to these children who will be forced 5 days a week for 8+ hours a day to be in this proximity. Being wrong about the health affects of this 10-20 years from now is not worth the risk. It appears that option 2 was the most cost effective and also, unless I am reading the stats wrong also received the best least favorable score. I am not sure why the additional comments seemed to favor option A so highly but it could be a biased sampling. I personally know some parents who live in Cascades who were upset a few years ago that this would be going through their backyards...but other than that I didn't hear much information. I am very concerned about the potential for ill effects for my daughter who is a second grader at MCE and will attend Gentry. Please reconsider the options that will keep our public school children the most safe in their school. | No | I am in favor of option 2 or 2b. |
| 61 | Renee Munns | 573-874-9982 | reneemunns@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | Y | it was not that beneficial. To have contracted out the work and have those people talk to the public was disappointing. It felt like no one from the city was there to hear concerns. Each table had a different conversation going on at the same time. Anyone with concerns was not able to hear the concerns of others. Maybe that was the plan. I don't think it lead to any productive discussion. Sort of just "here's the information, sorry you can't do anything about it" No one can explain why Option B was chosen over A. If the project is going to cost so much, why does the entire city of Columbia not need to vote on it for some sort of bond? Are all residents going to have an increase in their electric bill? | I feel Option B should have been the best option as far as safety, cost, least disruptive to daily life (homes and schools along route), Nifong is a vital road to Columbia, why (with all the other traffic issues) would a major route be chosen for this sort of construction project? Nifong residents, businesses, schools, and other structures will be crippled by traffic during the construction period and the effects of the lines could be felt for a lifetime after. The risk to people's health, decreasing property value and overall aesthetics is not worth choosing option A. | They are huge! What is that going to do to the value of anything located on Nifong? It is no wonder they are usually placed along highways and in places where no one lives! | it was not that beneficial. To have contracted out the work and have those people talk to the public was disappointing. It felt like no one from the city was there to hear concerns. Each table had a different conversation going on at the same time. Anyone with concerns was not able to hear the concerns of others. Maybe that was the plan. I don't think it lead to any productive discussion. Sort of just "here's the information, sorry you can't do anything about it" No one can explain why Option B was chosen over A. If the project is going to cost so much, why does the entire city of Columbia not need to vote on it for some sort of bond? Are all residents going to have an increase in their electric bill? I feel Option B should have been the best option as far as safety, cost, least disruptive to daily life (homes and schools along route), Nifong is a vital road to Columbia, why (with all the other traffic issues) would a major route be chosen for this sort of construction project? Nifong residents, businesses, schools, and other structures will be crippled by traffic during the construction period and the effects of the lines could be felt for a lifetime after. The risk to people's health, decreasing property value and overall aesthetics is not worth choosing option A. |
| 62 | Jennifer Griffith | 573-443-3693 | jfer1975@centurytel.net | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | I think in addition to the health concerns of it being along routes where all of my kids go to school they will also be an eyesore. Plus, why in God's name would you go through the middle of a residential area when you can go through a less developed area | | City Council needs to highly consider option B2. I totally get wanting to go with the option that last the longest but I think we need to take into account it is ridiculous to go through a residential area. |
| 63 | Jenny Anderson | 573-424-0409 | andersonjennyr@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | Did not attend | | Please reconsider option B for these pole placements. I feel that we as the customer were not informed properly about this and don't want these lines going by the schools our kids attend and businesses that we frequent regularly. Not to mention what a huge eye sore this is going to be right through a major part of our city!! It's not worth the health risk to our community especially children and the elderly | | |
| 64 | Julie Allen | 573-825-4252 | julieaorson@gmail.com | Online | 10/12/2015 | N | | N | | | | | I urge the city and C W&L to use option B for pole placement on this project. It takes a less populated route and does not go by two major schools. | | |
| 65 | Jessica Hoffman | 573-619-3865 | hoffmanjes135@gmail.com | Online | 10/12/2015 | Y | | Y | Residence | BEC | Y | | PLEASE, PLEASE, PLEASE do not place these along such a heavily traveled area including an elementary school! Route K is the option for placement | | Please do not place these down Nifong. If there is a less traveled and less expensive route - that should be the option to select. |
| 66 | Larry Freesemann | 573-445-6577 | laryfreeseman@gmail.com | Online | 10/12/2015 | N | 2605 Pine Tree LN | N | | | Did not attend | | I have lived near these type of poles for electric transmission. They ran along the interstate and in industrial areas not along residential areas which concerns me. I would hope the city is forward thinking and would widen the roads to accommodate the current traffic and future growth from Providence to Scott on Nifong and Vawter School Rd. Once these poles are in place it becomes even more difficult to expand the roads. Slowing and reducing growth in Southwest Columbia and tax revenue for the city. | I understand transmission lines and the size of the poles to carry the electrical. Placement in residential areas is a concern for people and property values. | If the poles are to be installed I would like to see the roads widened to carry the current and future traffic. along the route. Roads expansion would be even more difficult once the poles are installed. Please consider 4 lane road expansion from Providence to Scott Blvd. |
| 67 | Mardy T Eimers | 573-673-3099 | mardyeimers@gmail.com | Online | 10/12/2015 | N | 4109 Watertown Pl | N | | | Y | | No | | Thanks for scheduling the open house at Mill Creek Elementary School; it was very, very helpful. My concerns about the power line placement are the following:<br>1. Health of residents, walkers/runners/bikers/drivers, elementary school kids: the studies that would cited were old and not up-to-date. There are more recent studies that suggest correlations with health effects. Other routes affected few people and cost about the same. Sure, life-expectancy not quite as high but worth the trade-off.<br>2. The survey was sent to many in Columbia who don't live in the area or even close to the area, so they have little concern as to where the line goes. Citizens' opinions who would be impacted the most were counted the same as those who live in north Columbia, for example. This does not make sense to me.<br>3. I believe those who responded to survey were mislead. Nothing was said about the size, magnitude, potential dangers etc. of the lines. This is not being transparent. Citizens, even citizens along the route did not understand the size and magnitude of poles or potential health risks. Please consider revising the survey and who receives it.<br>4. I also think the Council was mislead. They received information from the perspective of electrical engineers, which is important, but not the only perspective. What about the human side of decisions? What about serious consideration of the other options--which frankly made a lot of sense and appeared to impact negatively fewer citizens.<br>5. The lines and poles will look terrible, especially down a street that looks reasonably good all things considered.<br>Thanks for giving us a forum to respond and thanks for the open houses. I feel all intentions are ooo. |
| 68 | Dennis Crouch | 573-289-6361 | dcrouch@gmail.com | Online | 10/12/2015 | Y | | Y | Residence | CWL | Did not attend | | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. I also don't understand what this will do to sidewalks. | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. | These appear to be overly close to residential zones. I would propose that you bury the lines when next to existing residential. |
| 69 | Samantha States | 573-864-3190 | samstates@centurytel.net | Online | 10/12/2015 | N | 3405 Ridgeview Drive | N | | | Y | | I would not like the high voltage lines to go on this route. My kids attend mill creek elementary & I'm concerned about the health concerns with high voltage lines. I attended one of the meetings & think one of the other routes, which were less expensive to run would be a better option. I also think they would look horrible along Nifong, not to mention the loss in property value for the surrounding neighborhoods. | They are too industrial and bulky for Nifong. They would decrease property value along this route. | |
| 70 | Frank Aten | (314) 496-6357 | fjaten@gmail.com | Online | 10/12/2015 | Y | 3405 Ridgeview Drive | N | | | N | | No | No | There is absolutely no reason option A should have been chosen versus option B. The entire process was a fraud on the citizens. Boone Co Op customers along the route receive no information prior. The citizens who chose option A also chose to have it buried if that was the option (questions were separate and deceptively presented. The 20+ year life versus 15-20 year life of Option A vs Option B is 1) statistically insignificant and 2) on a discounted CF basis makes B the best choice. For the city to put at risk the health and and wealth (housing values that will depreciate considerably) for a more expensive option that residents either were not given proper disclosure is criminal. |
| 71 | Elizabeth Aten | 314-496-6367 | Epaten@gmail.com | Online | 10/12/2015 | Y | | N | | | Y | | EMF's are dangerous to humans.<br>These poles should be run through nonresidential areas.<br>Why would you impact children's lives this way? Why would a city take that kind of insane RISK? | These poles need to be twice the distance tall or buried in a concrete culvert underground. | The Engineering company taxpayer money paid for submitted this plan which the City Engineering Department approved and submitted to the City Council as THEIR recommendation. Screw Plan B which is the choice of taxpayers. Stupid sheep have no clue about the dangers to life and property values and that's the way Government wants it.<br>The City is breeding great distrust and negative feelings it may never recover from. The first cluster of cancer and it's a massive class action suit. |
| 72 | Karen Carratura | (573) 256-1392 | Karylew@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | No | Please take into account the aesthetic of the neighborhoods that these poles will be invading when deciding on placement and size of the poles | Please seek further input before breaking ground on this project. |
| 73 | Sara Gay | 574-424-6350 | saragayfamily@gmail.com | Online | 10/12/2015 | N | | N | | | Did not attend | | I am concerned about the health risks first and foremost to anyone in homes or schools/businesses along the route. Secondly, I think this will be an aesthetic nightmare and will lower property values along the route | Yes, see previous | |
| 74 | Megan Keicher | 573-639-0998 | Megan.keicher@gmail.com | Online | 10/12/2015 | N | | Y | Residence | CWL | N | | I believe it's a horrible idea, I can't understand why the most populated and expensive route was chosen | No | |
| 75 | Karen Grieshaber | 573-446-1380 | grieshaberk@att.net | Online | 10/12/2015 | N | 4004fall ridge dr | N | | | Did not attend | | This proposal drops these poles in a highly populated area. Not only will they be putting homeowners at risk, they will be blocks from schools and nursing homes. There has to be a better way that doesn't put our children, elderly and taxpayers in harms way. | No | |

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| 76 | Randy tschiggfrie | 573-446-4755 | Rantsc@centurytel.net | Online | 10/13/2015 | Y | Bedford Walk neighborhood - 4306 Champlain Ct | Y | Residence | BEC | Did not attend | | The placement of the lines needs to be reconsidered. The appearance of the structures is not good and will affect property values | Extremely large and they are an eyesore | |
| 77 | Jill Kyle | 573-443-7914 | jill.kyle@usfoods.com | Online | 10/13/2015 | N | 3603 Birch Bank Ct | Y | Residence | CWL | Did not attend | | Concerned about the health risk and safety for Option A. Home values will definitely go down. At some point Nifong will need to be widen due to increase traffic. Option B is less expensive, will affect less residential homes and health risk. Option B is the best choice for Columbia | Underground the lines | |
| 78 | David & Barbara Anderson | (573) 355-4248 | barbandave1@gmail.com | Online | 10/13/2015 | Y | 3711 Woodrail on the Green | N | | | | | Because these are high voltage lines, we do feel option B would be a better choice to avoid the proximity to the schools, children in the area, and day cares. Please reconsider | No | |
| 79 | Jess L NEWKIRK | (573) 808-3014 | Jessnewkirk@hotmail.com | Online | 10/13/2015 | Y | | Y | Residence | CWL | Did not attend | | Please use option B as it will save money as Nifong is widen in the future, and impact less of the current population than along the other option | No | How short sighted to build, option a and within a short period of time have to move again for proposed Nifong improvements |
| 80 | Sara Fougere | (573) 999-1654 | fougere@centurytel.net | Online | 10/13/2015 | N | 3907 Deerfoot Way | Y | Residence | CWL | Did not attend | | This is a danger to citizens and an eye sore for our community | So ugly! | |
| 81 | Gene Austin | 660-988-2060 | gene.trumanbsu@gmail.com | Online | 10/13/2015 | Y | 3006 Ballard Mill Dr. | N | | | Y | | I realize the time for feedback on the route is past and funds have already been spent doing soil samples, etc for the pole placement along this route. However, I would hope the city would listen to the concerned citizens that oppose this route that goes along neighborhoods, schools, churches and retirement homes. I attended the CP&L meeting at Mill Creek on Oct 5 and several issues were raised.<br>1. The survey results that was presented to the council included was from a survey that very few people along the route took part in and with an overall response that was very low - <3% of those surveyed I believe. Also, I do not recall getting a survey and the people that did, said they received it the week before Christmas. I believe that is really poor planning if that is the case. Also, the survey did not really clarify what was really happening. I know for those involved in the project transmission lines (the words used in the survey) means the high power lines that are being installed. Until I started researching, I did not know that name symbolized something different that the distribution lines that are already in my backyard.<br>2. The research provided on the effects of EMF is extremely dated. This was immediately noticed at the MCE meeting and pointed out. Referencing that old of research does not seem wise to me since there have been significant research since 1997 (date of research provided) some of which says there is a correlation between EMF and various health issues in people.<br>3. I realize going around the city will cost more in the long run. From the report given at MCE by CP&L personnel, the initial cost is a little lower but it will not address our electrical distribution needs for as long (10-20 years vice >20 years) so the overall cost to get to the same place will be higher. I also | | |
| 82 | Jenny Chism | (618) 530-0990 | jenny.chism@gmail.com | Online | 10/13/2015 | Y | 4101 | N | | | Did not attend | | There is a major health concern regarding the placement of these poles. There are too many schools and neighborhoods near this placement route | There must be a better alternative. | Please do not ruin the landscape of this community, but more importantly, please consider the long-term health of its members. |
| 83 | Judy Hunter | 573-234-1840 | sisjr60@gmail.com | Online | 10/13/2015 | Y | 2605 Pine Tree Lane | N | | | | | No | No | |
| 84 | Lisa Eimers | 573-234-1114 | lisaeimers2@gmail.com | Online | 10/13/2015 | Y | 4101 Southrn Pine Ct. | Y | Residence | BEC | Y | | My comments are broader than pole placement; my feeling is that this project is being pushed through way too quickly and without enough resident input. | No | The conversation absolutely needs to continue with regard to the many options available, such as burying the lines. There is no reason this should be decided on our behalves, when the payment it would result in annually would come from us, anyway. We should have a say in how it's decided, especially if we're the ones who would pay for it. I don't perceive I am alone in the willingness to consider paying more to have them buried if indeed this is the best route. |
| 85 | Orville Hunter | 573-234-1840 | hunterj.huntero@gmail.com | Online | 10/13/2015 | Y | | Y | Residence | BEC | Did not attend | | Electromagnetic fields are a suspected carcinogen. The extremely high voltage line near an elementary school is a potential cause of childhood cancer, which we must guard against | No | |
| 86 | Abbey Upton | (573) 214-3280 | aupton@cpsk12.org | Online | 10/13/2015 | N | 4102 Roxbury Place | N | | | N | | I work at Mill Creek Elementary and am very concerned about my students being near these poles/wires | No | |
| 87 | Jack&Valerie Reiske | 573-442-9821 | Vreiske@gmail.com | Online | 10/13/2015 | Y | | Y | Residence | CWL | Did not attend | | The chosen route would affect property values. The lines are near a school | No | |
| 88 | Christy Flood | 573-447-8070 | cflood@phillipshardy.com | Online | 10/13/2015 | N | 3609 Blue Cedar Ln. | Y | Residence | CWL | Did not attend | | As a parent of children who currently, and will in the future, attend both Mill Creek Elementary and Gentry Middle School, have the following concerns with the chosen route (Option A):<br>• Health and safety of the children in the many schools and daycares along the route.<br>• Health and safety of residents in homes along the route.<br>• NIH-referenced research studies show an increased risk of adverse health concerns, such as childhood leukemia, from exposure to EMF emitted from high voltage power lines.<br>• Home values in the surrounding areas neighborhood can be negatively impacted.<br>• Plans to eventually widen Nifong have not been laid out, and therefore the pole placements could need to be relocated when the road project comes to fruition.<br>• Health and safety of the elderly in the various retirement communities built along the route.<br>• The aesthetics of these poles that will be 5-8 foot wide and 75-150' tall over established neighborhoods and roadways.<br><br>I urge both City Power & Light and the City Council to consider the route proposed in Option B which was estimated to cost less, and would avoid many of the concerns I, among other citizens, have expressed. The route proposed in Option B is a better solution because of the following:<br>• No schools in its path.<br>• Dramatically smaller residential exposure.<br>• More rural route, which is more typical placement for high voltage lines.<br>• Estimated to be the least expensive route.<br>• Preferred public route according to the City's Decision Matrix | | |
| 89 | Debbie Taylor | 573-864-3380 | debbie.taylor0130@gmail.com | Online | 10/13/2015 | Y | 2708 Pine Tree Lane | Y | Residence | CWL | Did not attend | | Placement comments:<br>Please consider Option B - this neighborhood and elementary school is not the place for these lines!<br>Option B was estimated to cost less, and would avoid many of the concerns that citizens have expressed.<br>No schools in its path<br>Dramatically smaller residential exposure<br>More rural route, which is more typical placement for high voltage lines<br>Estimated to be the least expensive route<br>Preferred public route according to the City's Decision Matrix<br>Future development can be planned around the lines, rather than lines being dropped into established neighborhoods | No | |
| 90 | Tamara Stam | 573-446-8457 | stamtamara@gmail.com | Online | 10/13/2015 | N | | N | | | Did not attend | | This route (Plan A) along Nifong Boulevard is connected to beautiful homes and properties close to Mill Creek Elementary School and to an MKTrail entrance, and thus is used regularly by many pedestrians, i.e., school children, fitness walkers, joggers, and bicycles. Placement of large poles is not only potentially unhealthy to residents, but definitely would mar the beauty of the street that many people use to walk to school, church, the trail, and to neighbor's homes. It is exactly the wrong way to use this route aesthetically. Burial of the lines makes much more sense aesthetically. Such a route used recreationally by many should be beautified, not uglified. | Burial is better. These poles are ugly and would mar the beauty of Nifong Boulevard. | It would be better to bury those lines. |
| 91 | Joe Rivera | 573.673.1500 | jrivera@machens.com | Online | 10/13/2015 | N | 2800 Woodberry Court | Y | Residence | CWL | Did not attend | | Knowing the health risks especially to children why would you even consider placing the route by an elementary school or dense population. I just moved to the neighborhood near the route and did not know about the open house. | same as above | |
| 92 | Susan Nordberg | 445-5646 | snordberg@cpsk12.org | Online | 10/13/2015 | Y | | Y | Residence | BEC | Did not attend | | I wish the council would reconsider placing these poles so relatively close to schools, retirement centers, peaceful neighborhoods and soon a branch of Boone Hospital. Surely, there are other alternatives to consider of the proposed placement of these poles | They are so tall, and thick which will detract from the lovely nature environment running the length of Nifong. | Please be smart and keep the poles away from educational and residential buildings. |

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| 93 | Mark Farnen | 573-424-1782 | mfarnen@mchsi.com | Online | 10/13/2015 | N | | N | | | Y | It was informative since this was the first time we got to see the whole pole placement suggestion. The staff was very polite and intelligent. However, there were several questions and issues that remain, so I don't want to say that I came away from the open house completely sarisified with the answers. I have articulated many of those concerns in an earlier section of this comment form - and some are pretty serious. Also, in many instances, staff had to answer that "the question you asked can only be answered by the council". I do not know when that opportunity will present itself or if such a hearing has been scheduled so that this issue can get a full hearing with ALL council members in attendance and prepared to answer questions - much like the staff was required to do. That would be the best solution in terms of process. Is that a possibility. I would hate for this issue to be decided on an up or down vote before the council has the opportunity to look at multiple options again, now that details of the plan have been revealed. I also don't like the fact that residents of Columbia were only given 14 days to file comments in reaction to a plan that took 6 to 8 months for city staff to devise. | Properly Owner Participation and The Process:It is clear that property owners along or near the proposed transmission line route have been actively involved in this project and have expressed their support and concerns regarding the implementation of this project since at least 2010. To be clear, property owners from throughout the city, and in the areas where new transmission lines have been proposed, indicated that they agreed with the city that a reliable power source was needed and wanted; that the solution for providing that power should be a long term solution; and that the city should be conscious of costs. There were also a significant number of concerns expressed in the early stages of this process, and the process itself was incremental in nature and did not reflect the full impact of ANY proposed route in the early stages of discussion. There are three things that should be considered in this regard. First, when residents agreed to these broad "concepts" about new transmission lines, very few details were available. NO information was available from the city at the time of the first hearings about pole height; pole placement; pole spacing; exact route; impact on home and property values; associated health risks from electrical shock or EMF emissions or the plan to bury some existing lines, but not the high voltage lines. In essence, citizens were participating in a "blind" process whereby general concepts were discussed without full knowledge of the ultimate impact of those discussions being known. Secondly, many people who are in close proximity to proposed transmission line routes were not sent the surveys that are currently being cited in city presentations about the new transmission line routes. The reason is simple. Most surveys were distributed as an enclosure in city electric utility billing notices. Unfortunately, | | |
| 94 | kelly gunter | (573) 219-9161 | kellygunter@mac.com | Online | 10/14/2015 | N | 5203 Thornbrook Pkwy--(potentially VERY close to plan B route) | Y | Residence | BEC | | | I do not want these placed along Nifong. There are too many families that live along the route and with all of the negative impact this will have health and otherwise, this is not the best placement | No | Please rethink the placement and do what is best for the community and families that live in this area. Don't just pick the cheapest option. |
| 95 | Bill Durante | (573) 882-3886 | durantew@missouri.edu | Online | 10/14/2015 | Y | | Y | Residence | CWL | Did not attend | | I do not want lines near my house, so I am firmly against plan B. Underground, plan A or plan B2 are all equally acceptable to me. | No | I do not want lines near my house, so I am firmly against plan B. Underground, plan A or plan B2 are all equally acceptable to me. |
| 96 | Debra Carcamo | (314) 956-5234 | demagruder@hotmail.com | Online | 10/14/2015 | N | 3606 Ridgeview Dr | Y | Residence | CWL | Did not attend | | I've been told that you are considering a plan B which will bring the poles very close to my neighborhood, Thornbrook. I do not want these poles near my neighborhood because I am concerned about the health of my children and resale value of my home | Please consider burying the poles. | |
| 97 | Chris Ashton | 573-999-6964 | christopher_ashton@us.aflac.com | Online | 10/14/2015 | | 1215 Tartan Place | | | | | | | | I understand the plan is to take the high voltage power lines directly down Vawter School Road which basically puts a pole in my backyard. I've been advised the impact on my home value as well as those in the Spring Creek neighborhood will be negatively affected by 20%-50%. Obviously I don't want that but this neighborhood provides a sizeable tax base for the city so decreasing Property values isn't good for anyone. There are also differing opinions on health concerns living near high voltage and this plan not only puts us at risk but also Mill Creek Elementary School.<br><br>All of this seems unnecessary because I know there are three options and the other two put the High Voltage lines through more rural areas that don't immediately affect existing homes and schools. The other options will also provide the ability to develop housing plans around the lines, reducing the negative effect. |
| 98 | Kimberly Hughes | | kimandbert@gmail.com | Online | 10/14/2015 | | 1307 Lea Verde Ct | | | | | | | | I am disgusted how this option A was slid under the table past our citizens in this area as well as how this was presented to the City Council. Even your art renderings give a false impression. This issue should be brought back in front of the City of Columbia and its affected citizens and businesses in a fair and unbiased manner. The optional route B is more cost effective and considering your mapping plots, the most appropriate for this type of transmission line. |
| 99 | Mike Hogan | (573) 228-8253 | mhogan@cpsk12.org | Online | 10/14/2015 | | 3803 Blue Cedar Lane | | | | | | | | Have talked by telephone to Connie and Jeff White regarding route by my house. Was suggested that I also submit concerns through this means.<br>Drainage issues around Structure 54 where drain pipe exists. Talked about working with residents who are directly affected by construction regarding fixing any issues that may arise on property from new power line construction.<br>Would like to ask to reconsider placement of poles from South Side on this route section and put on North Side where current distribution lines are located as more space between poles and road exists than on South Side. Went to Open House at RBHS, was told that I could use device to check current EMF levels but have not been contacted, please call. Thank you |
| 100 | Nancy | (573) 882-9522 | nancelator3@gmail.com | Online | 10/14/2015 | Y | | Y | Residence | CWL | | | I feel very strongly about the close placement of these poles being in close proximity to more than one elementary school and subdivisions with many children; there are known health implications especially to children; seems that option B would be better. | No | |
| 101 | Stacey Dennis | 573-673-8567 | Staceydennis06@hotmail.com | Online | 10/15/2015 | N | | Y | Residence | BEC | Y | | This project needs to take an alternate route away from the mill creek elementary school and existing homes! | No | I learned that the project in its entirety was not presented to the city counsel and placing these poles close to schools pose a threat to our children! |
| 102 | Sounak Chakraborty | (573) 823-6974 | sounakc@gmail.com | Online | 10/16/2015 | N | | Y | Residence | CWL | Did not attend | | Please stick with option A. That is the best route you have chosen. I heard some residents of Mill Creek are trying to lobby to move to Option B route but that will be a very poor choice. | No | |
| 103 | Amanda Miller | 573-489-7394 | mandymill@gmail.com | Online | 10/16/2015 | N | | N | | | Did not attend | | No | No | I am extremely frustrated with the attempts by some to re-open discussion concerning the transmission line route. I live in the Cascades and my home is one that backs to Route K. We went through this process over two years ago in a well-publicized public comment process. I still believe that the option that was chosen better fits the City's stated preference for routing through commercial areas rather than residential. In addition, those of us in the Cascades (and I would think many along Route K) are not even City electric customers. It seems many residents of Columbia want reliable power, but want the transmission lines that supply it to be someone else's problem. Thank you for this opportunity to provide comment. |
| 104 | John Glascock(as communicated to Laura Nauser & passed on to Tad Johnson) | | | | | | | | | | | | | | 2 poles, one right outside of Jeff Smith's retirement project and one near Kent in Springcreek subdivision second or third house going west -- can we move the poles? |
| 105 | Jamie Duggab | | colinjam1@icloud.com | Online | 10/16/2015 | | Thornbrook Rdg | | | | | | | | In regards to the new high voltage power lines, please do not allow plan B to happen!! This will place these lines within eyesight of my home and literally in people's backyards that live in the Steeplechase Subdivision! Plan B2 or A is a much better option!! |
| 106 | Debra Carcamo | (314) 956-5234 | demagruder@hotmail.com | Online | 10/16/2015 | | Misty Grove Ct | | | | | | | | Please consider option B2 for the new high voltage power lines. Our community does not want those power lines near our neighborhood or the new school. They could be hazardous to our health and they will effect resale value of our homes. Please consider option B2, not B. |
| 107 | Kristi Gregg | 573-289-7623 | greggk@missouri.edu | Online | 10/16/2015 | | 5423 steeplechase drive | | | | | | | | I would like for you to consider routes A or B-2. My son is very upset that families are being put at risk for these new power lines. Route B is not desirable. |
| 108 | Michael Hall | (573) 999-7821 | mmhall@columbiacivilengineering.com | Online | 10/16/2015 | | 4805 Garden Grove dr | | | | | | | | I wanted to make a point to CW&L in SUPPORT of the current option A route for the high voltage power line. From an engineering (I am a local civil engineer and NOT a CW&L or City employee) standpoint<br><br>1. the plans are 30% done<br>2. there is no ROW acquisition with the option a route. The Mill Creek folks keep saying option b is cheaper, but there is no easement acquisition in those figures!<br>3. In addition, we need people to know that with option B, CW&L will need a 60-100' wide easement. Finally, the 69 kV route noted on option b connects to a station that was installed in the late 60's and would be out of capacity almost upon installation (i.e. throwing good money after bad).<br>Thank you for consideration |

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| **109** | Teri Smith | (573) 424-8896 | teririnkesmith@gmail.com | Online | 10/18/2015 | | | | | | | | | | I am confused about the new power lines. It is my understanding option A was approved but there are many conversations about the mill creek PTA working on petitions to change the plans. Can you please update me on this? I am not in favor of Option B as it affects homeowners. I agree option A is not great either but a decision was made. Is it feasible they will change their minds due to this petition?<br><br>Thank you. There is a lot of misinformation floating around south Columbia. |
| **110** | Cary Colbert | 573-442-4240 | carycolbert@centurylink.net | Online | 10/8/2015 | N | | Y | Residence | CWL | Did not attend | | All options have not been properly considered not have property value effects and most importantly safety concerns. | No | This needs to be revisited and the more rural route needs to be strongly considered! |
| **111** | Michael Hardy | (573) 875-6509 | hardymi@missouri.edu | Paper | 9/30/2015 | Y | 3810 Blue Cedar Lane | Y | Residence | CWL | Y | I appreciated the opportunity to see both the route and pole design. It was nice to be able to bring home handouts and maps to study more closely. Your representatives did a good job of handling a bunch of tough questions. | Not so much about the poles, but I'm concerned about the route of the new 161 kv transmission lines as they run next to homes and schools. | | I am still very concerned about health risks associated with the proposed 161 kv line running past Mill Creek Elementary. It really seems the City could do some sort of measures to help keep these lines just a little further away from not only the school, but homes along the route. |