



# **City of Grand Island**

**Tuesday, December 15, 2009**

**Council Session**

## **Item E4**

**Public Hearing on Easement Acquisitions for the Electric  
Transmission Line Project - St. Libory Loop**

**Staff Contact: Gary R. Mader**

# **Council Agenda Memo**

**From:** Gary R. Mader, Utilities Director  
Wesley Nespor, Asst. City Attorney/Purchasing

**Meeting:** December 15, 2009

**Subject:** Easement Acquisitions for the Transmission Line Project  
– St. Libory Loop

**Item #'s:** E-4

**Presenter(s):** Gary R. Mader, Utilities Director

## **Background**

The Electric Department has electric distribution substations connected at various distances along a 115 kV transmission loop. The loop generally runs along the outer edge of the urban area, providing power to the substations and providing power supply redundancy by use of the looped configuration. A map of the transmission system is attached for reference. Also attached is a more detailed map of the selected route for the new transmission line. Substations reduce voltage from the 115,000 volt level to 13,800 volts for distribution to individual customers across the City. Substations E, located north of Swift on the east side of the loop, and Substation F, located north of Menards on the west side of the loop, are the newest substations. They were placed in initial service in 2001, and completed in 2007.

Power generation and regional interconnections to Nebraska Public Power District (NPPD) are concentrated on the south and east side of the transmission system loop. The northern portion of the transmission loop has no interconnections. And while it can sustain a single line segment loss contingency, any additional failure could result in loss of several major substations, resulting in power loss to major portions of the City. With power plant and regional grid interconnections, the southern portion of the transmission loop has more redundancy.

Recognizing that the City is continuing to grow, that future transmission line construction will occur and that reliability improvement is always important, Substations E and F were constructed with provisions to accept additional 115 kV transmission interconnections. In the long range plan of the Electric Department, these substations are designed for new transmission interconnections as future load growth may require.

Advantage Engineering (AE) was contracted in 2006 to perform a Transmission and Substation System Study for the City of Grand Island Utilities Department (GIUD). Various alternatives and solutions were analyzed for the logical and economic expansion of GIUD's 115 kV transmission loop, power interconnections with NPPD, substations, distribution, and communications. The system study period was ten years (2006 – 2016) taking into account projected City expansion and load growth. When fully implemented, the major substation and transmission requirements should be satisfied through 2027.

The Transmission and Substation System Study was completed in 2007 and contained a detailed analysis of previous studies and reports; surrounding area power provider plans; state-wide planned improvements; contractual obligations; the City's comprehensive development plans; system capabilities and capacities; land use issues; and schedule related items. The study resulted in recommendations to expand GIUD's transmission system to serve load growth and assure reliability. The results of the Transmission and Substation System Study were initially presented to the Grand Island City Council on January 8, 2008.

One of the major system improvements identified in the Transmission and Substation System Study was the need for providing a second 115 kV power supply to GIUD's Substation F. In the study it was recommended that a new 115 kV line be constructed to connect the open 115 kV transmission bay at GIUD's Substation F to NPPD's St. Libory Junction northwest of the City. The new 115 kV line would be approximately seven miles in length and would require that GIUD select a route for the new line and obtain new transmission line easements necessary to construct the line. This new transmission line would improve the reliability of the entire GIUD transmission system by providing an additional connection to the regional electric grid, to the north.

A comprehensive field study was conducted of the area between the existing GIUD Substation F and the NPPD St. Libory Junction Substation site. As a result of the field analysis, five alternate routes were selected and evaluated for the project. The evaluation of each route included a technical evaluation, a land use evaluation, an environmental evaluation, and an economic evaluation.

At the April 21, 2008 City Council meeting, the Utilities Department and consulting engineers made a detailed presentation of the line route evaluation. And at the April 28, 2009 meeting, Council authorized proceeding with the project, including acquisition of the easements necessary to allow for line construction.

## **Discussion**

State law includes a number of requirements which must be met to acquire easements for power line construction. Johnson Appraisal, LLC of Lincoln, Nebraska was hired to complete appraisals for the easements needed for the new line. A certified letter was sent to each landowner notifying them of the proposed project, describing the property required for easements, providing a map of the proposed route and advising them of the date and time of the Public Hearing to be held on the project. Additionally, a Public

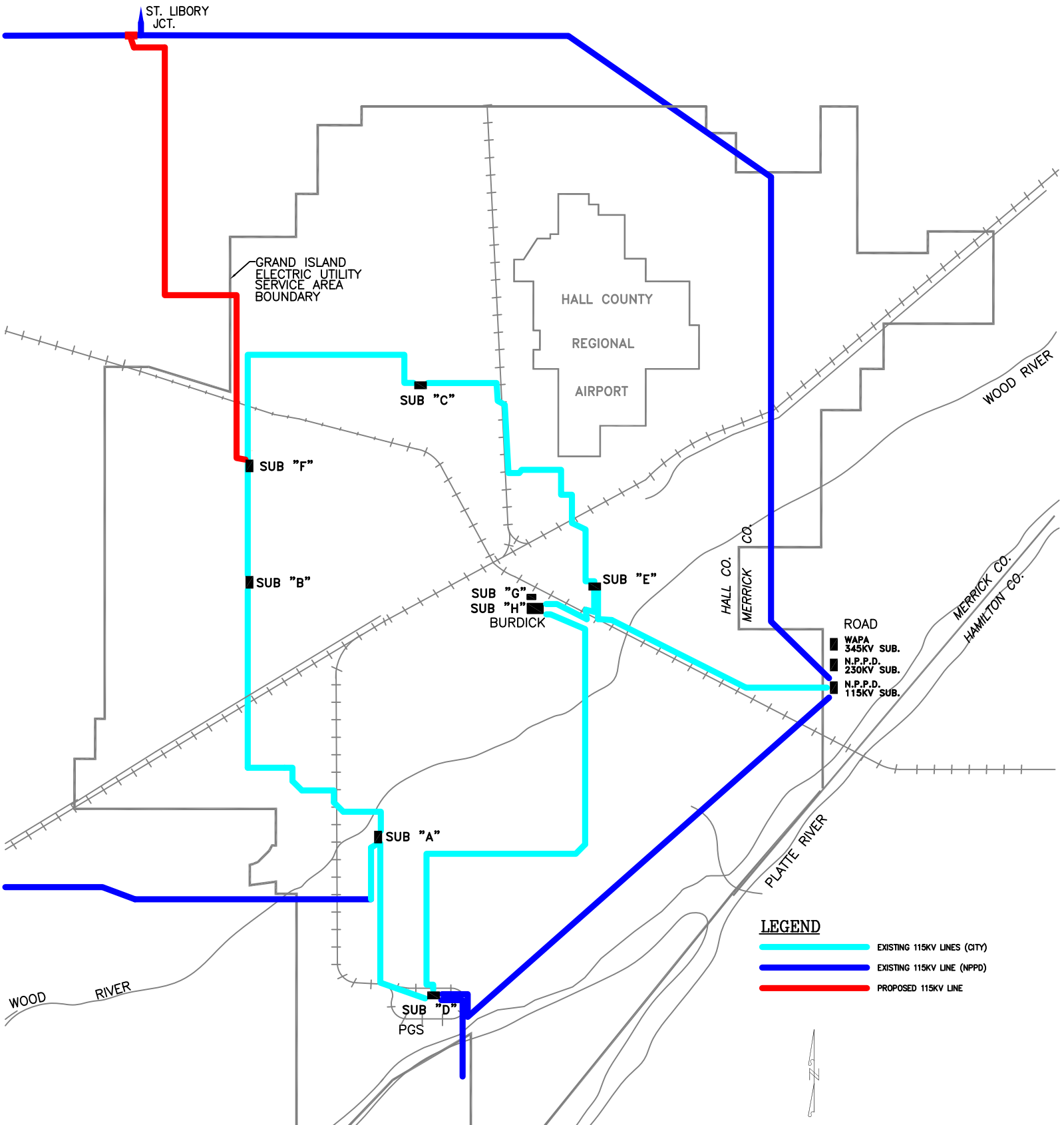
Notice was published in the *Grand Island Independent* on November 25, 2009. The Public Hearing is required to be held 30 days prior to the beginning of easement acquisition negotiations with landowners.

### **Alternatives**

State law requires the governing body to give notice to affected land owners and to hear and consider public comment prior to beginning negotiations but no action item is required at this time.

### **Recommendation**

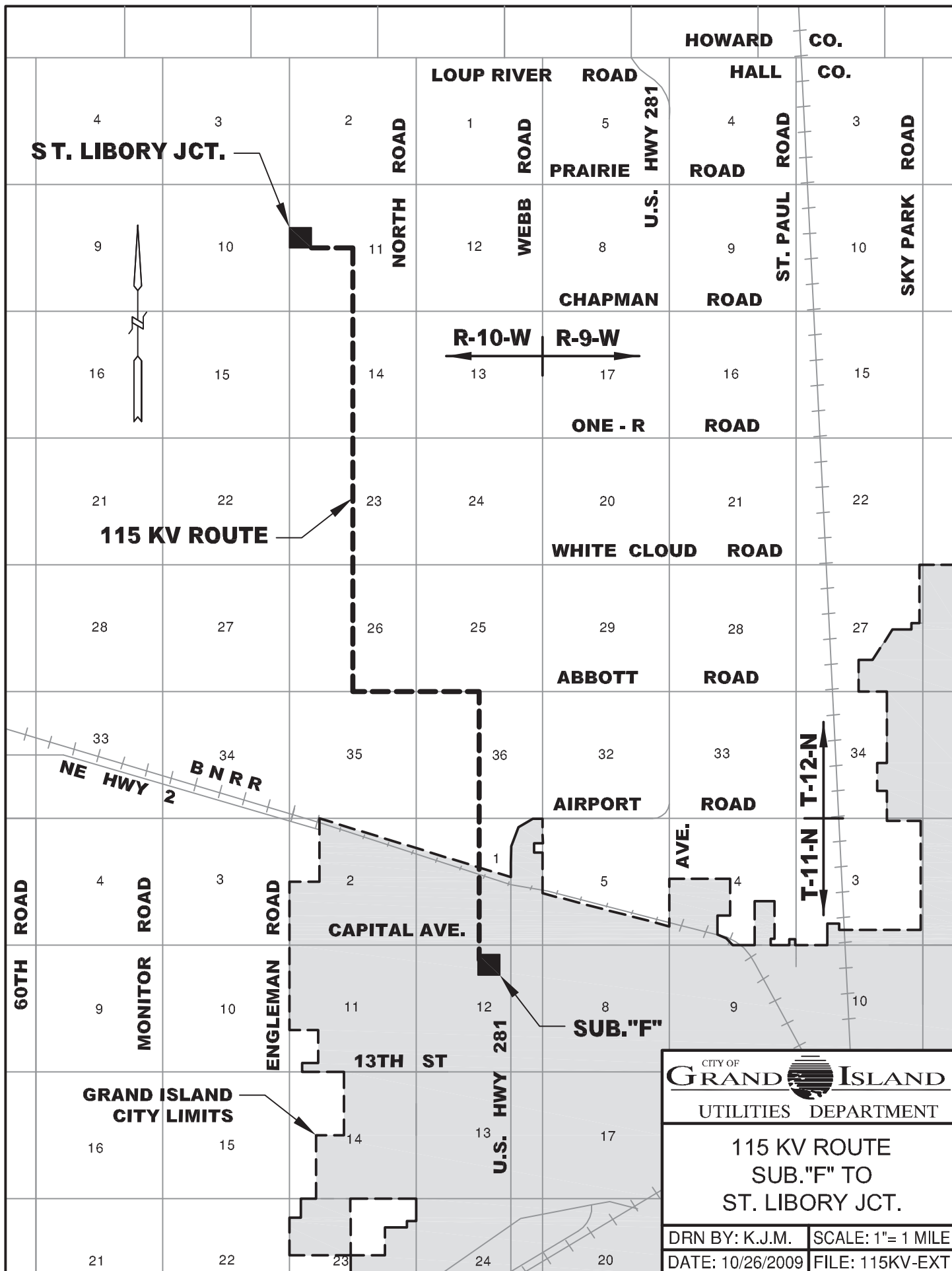
City Administration recommends that the Council conduct the legally required public hearing in order that the Utilities Department may proceed to initiate negotiations for easement acquisition as required for construction of the line.



**LEGEND**

- EXISTING 115KV LINES (CITY)
- EXISTING 115KV LINE (NPPD)
- PROPOSED 115KV LINE



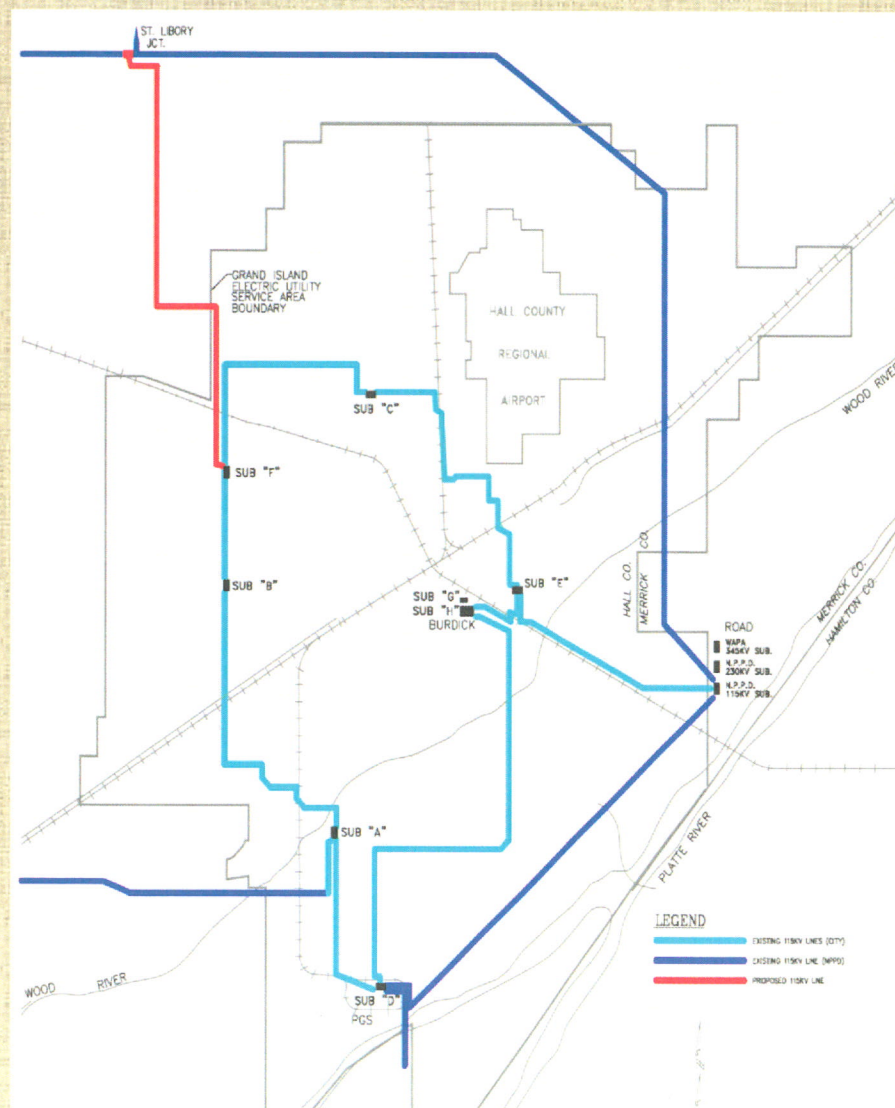




**Public Hearing Meeting For  
115 KV Transmission Line  
Substation "F" to St. Libory  
Junction**

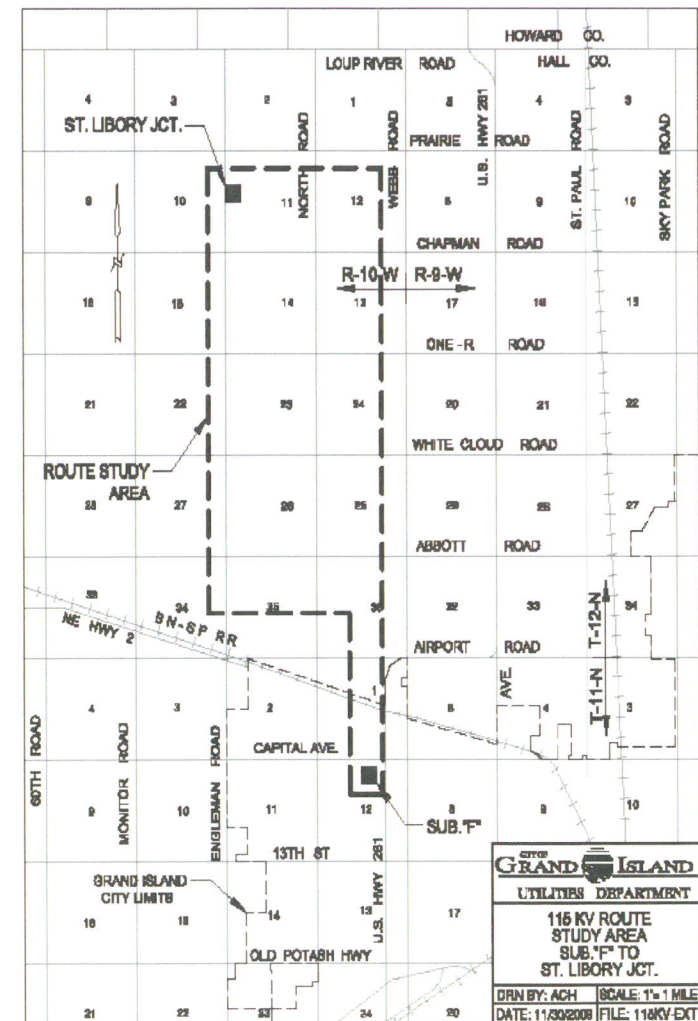
# The Need And Reasons For Building The Proposed 115 kV Transmission Line Substation "F" to St. Libory Junction

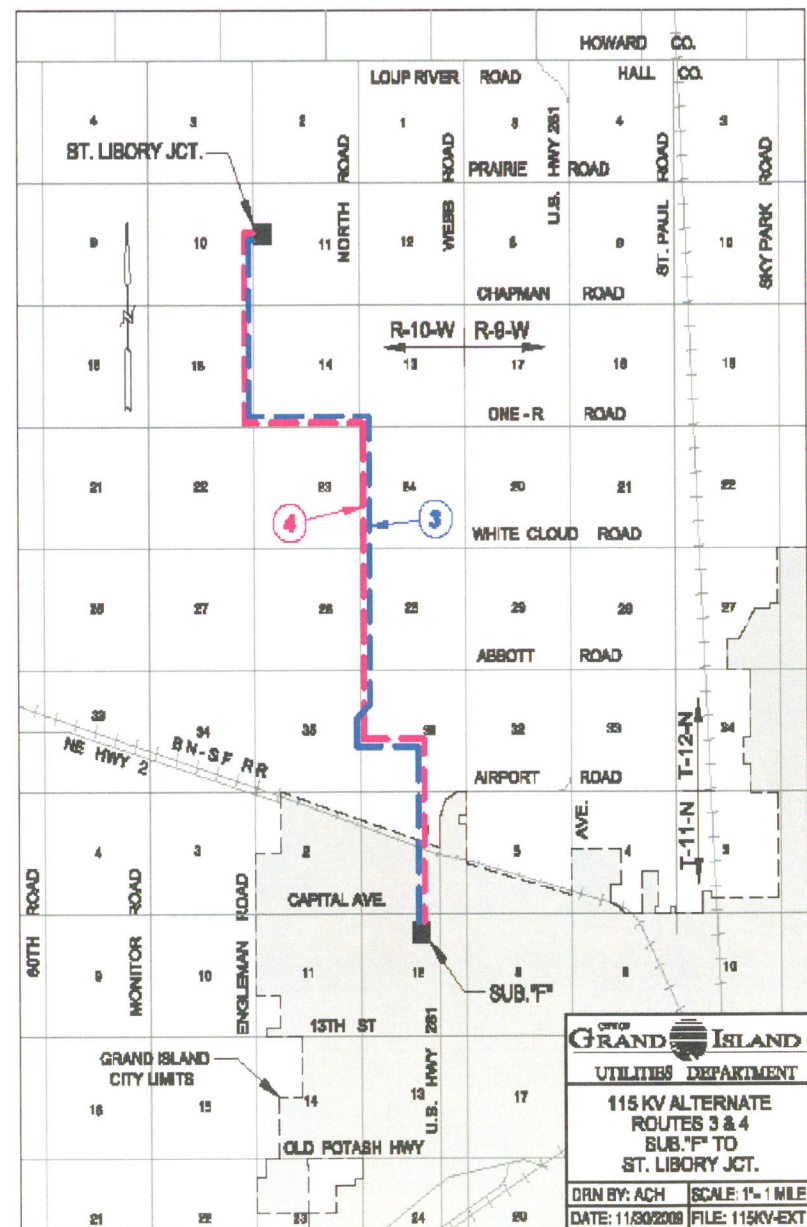
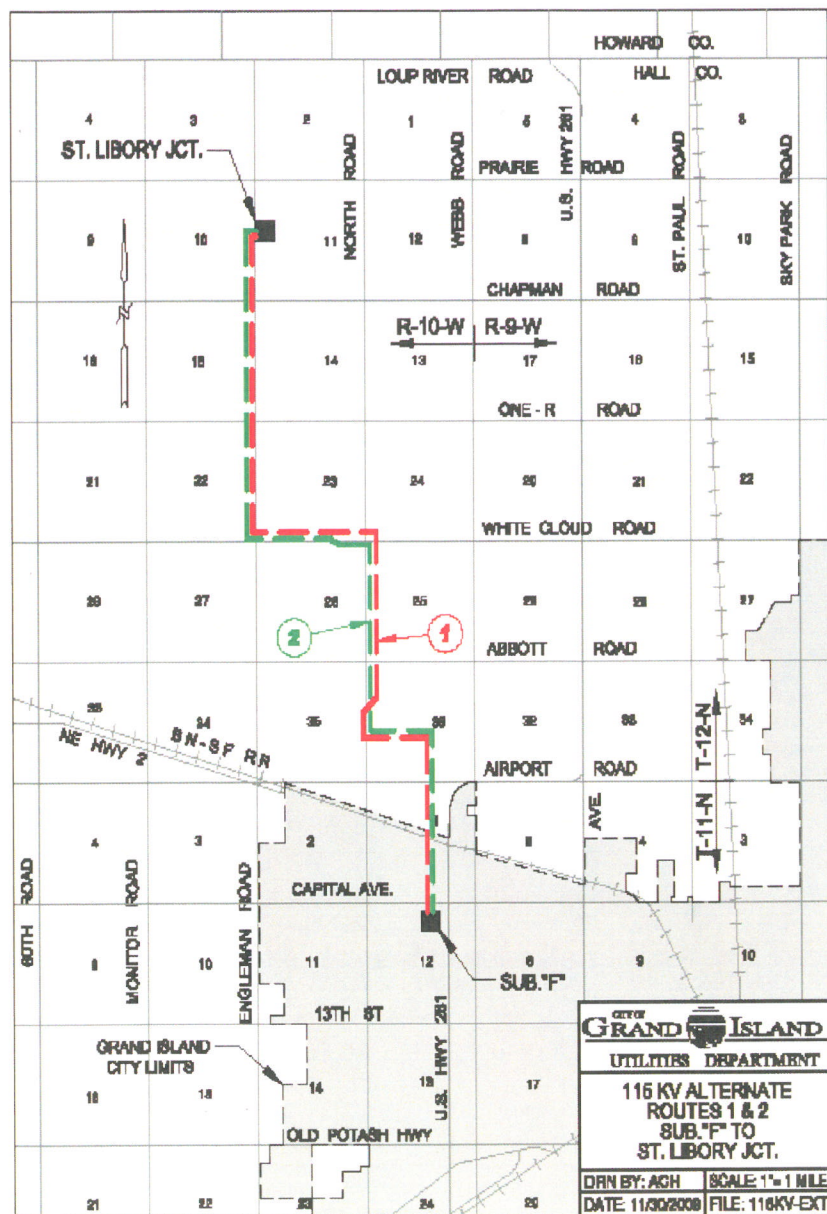
- A Transmission and Substation System Study was completed in 2007 which resulted in recommendations to expand the City's transmission system to serve load growth and assure reliability. The results of this study were presented to the Grand Island City Council on January 8, 2008.
- One of the system improvements identified in the Transmission and Substation System Study was the need for providing a second 115 kV power supply to the City's Substation "F" located on Capital Avenue on the northwest side of the City.
- The study recommended that a new 115 kV line be constructed to connect the open 115 kV transmission bay at the City's Substation "F" located on Capital Avenue to the Nebraska Public Power District (NPPD) St. Libory Junction located on Engleman Road northwest of the City.
- The proposed new line will be approximately 7 miles in length and would require that the City select a route for the new line and obtain new transmission line easements necessary to construct the line.
- The new transmission line will improve the reliability of the entire Grand Island transmission system by providing an additional connection to the regional electric grid to the north.
- The City plans to begin construction of this new transmission line in late 2010 or early 2011.

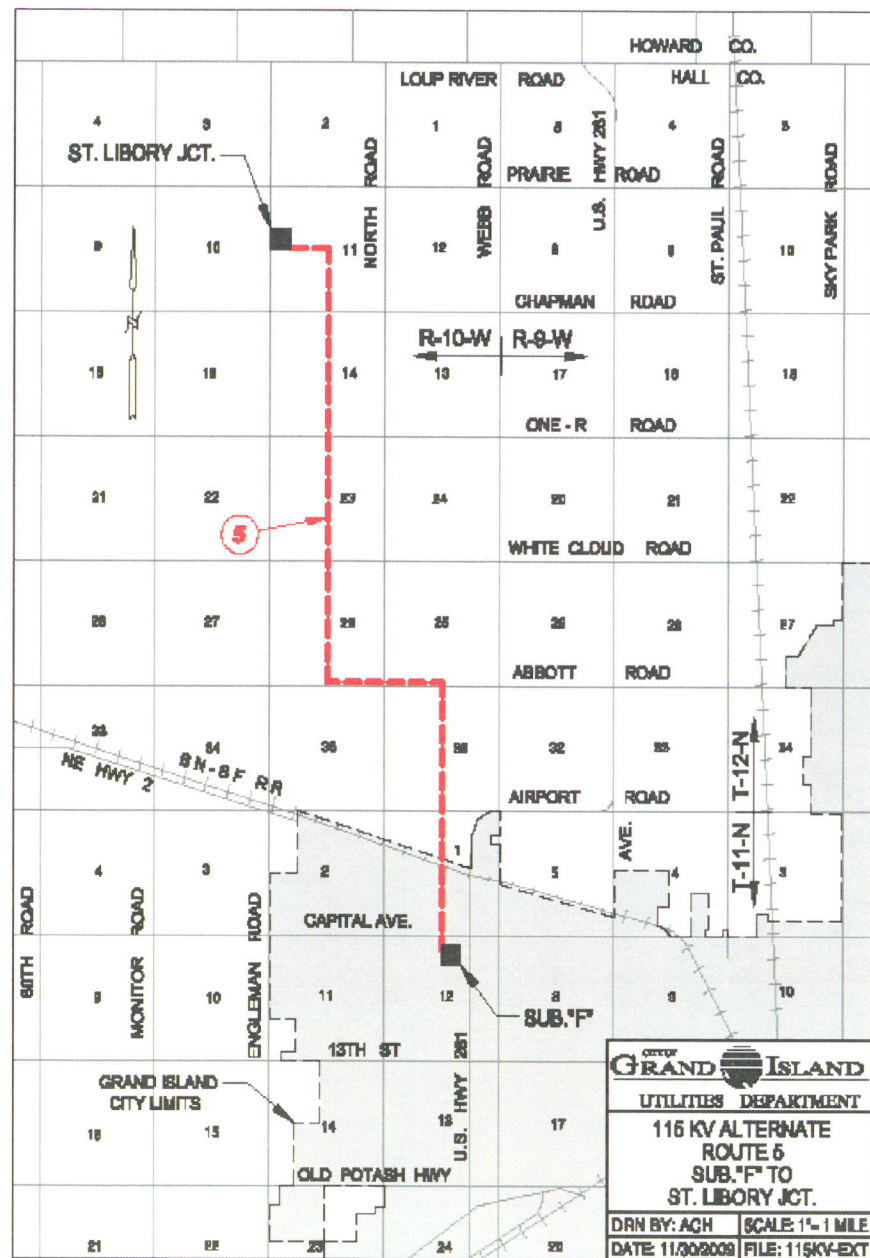


## Alternate Routes That Were Considered For The 115 kV Transmission Line

- A study area was identified for the selection of the alternate line routes to be considered for the new 115 kV line. The study area includes the line terminals for the City's Substation "F" located on Capital Avenue and the proposed new NPPD St. Libory Junction Substation to be constructed at the site of the existing switch station location on Engleman Road between Chapman Road and Prairie Road.
- Five possible alternate routes were identified in the Line Route Study. Alternate Routes 1, 2, 3, and 4 generally follow existing roads. Alternate Route 5 generally follows the half-section line between North Road and Engleman Road.
- The Line Route Study was presented and discussed in detail at the City Council Meeting on April 21, 2009.

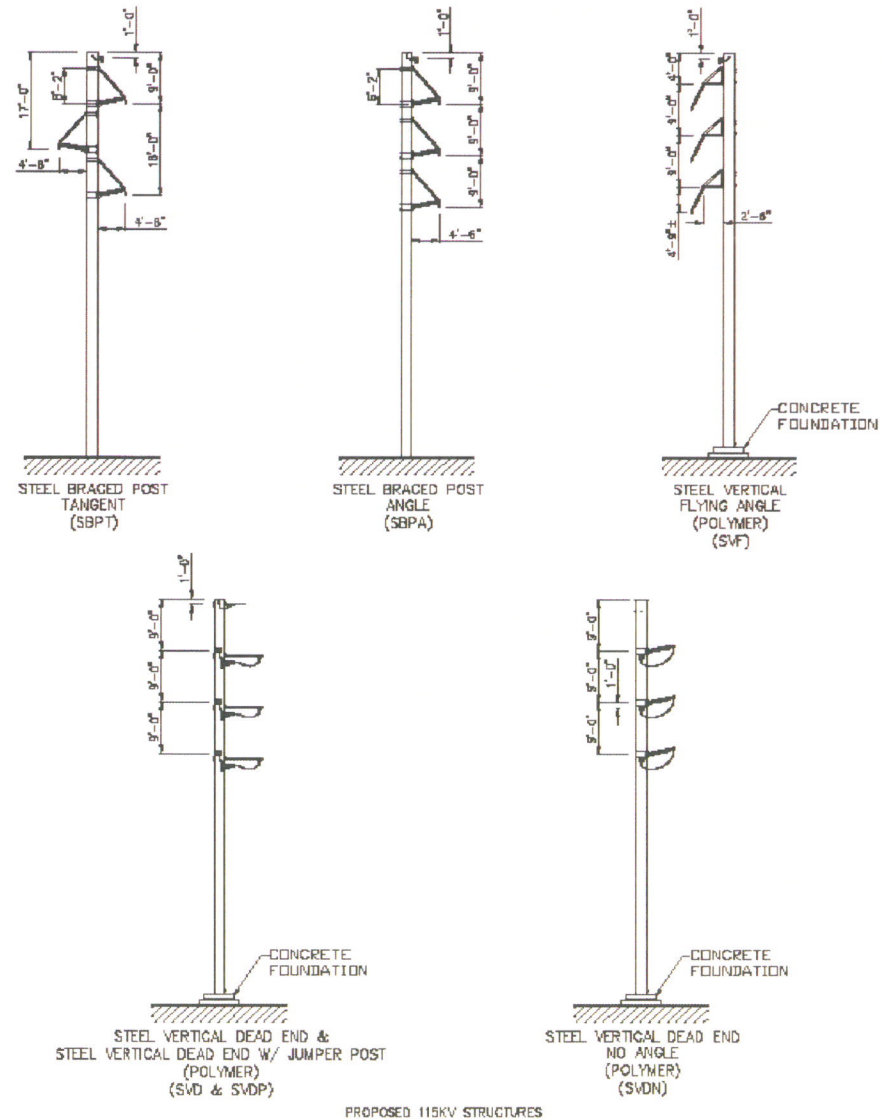






## Structure Types To Be Used To Construct The New 115 kV Transmission Line

- The new 115 KV line will be constructed using single pole steel structures.
- Typically the poles will be approximately 70 to 80 feet in height above ground and be spaced every 225 to 350 feet.
- The line poles will be approximately 3 feet in diameter and the corner and angle structures will include a round concrete foundation that is approximately 7 feet in diameter.
- All corner and angle structures will be self-supported structures eliminating the need for guy wires and anchors.
- The poles will support four (4) conductors.







## Evaluation and Cost Comparison Of The Alternate Routes Studied For The Line

Each of the alternate routes for the line were evaluated based on the following criteria:

1. Route Length
2. Number of angle structures required
3. Environmental impact
  - a. The number of homes within 500 feet of the line
  - b. The amount of trees to be removed
4. Cost of the right-of-way for new permanent easements
5. Total estimated cost to construct the line
6. Costs to relocate any existing lines or other facilities

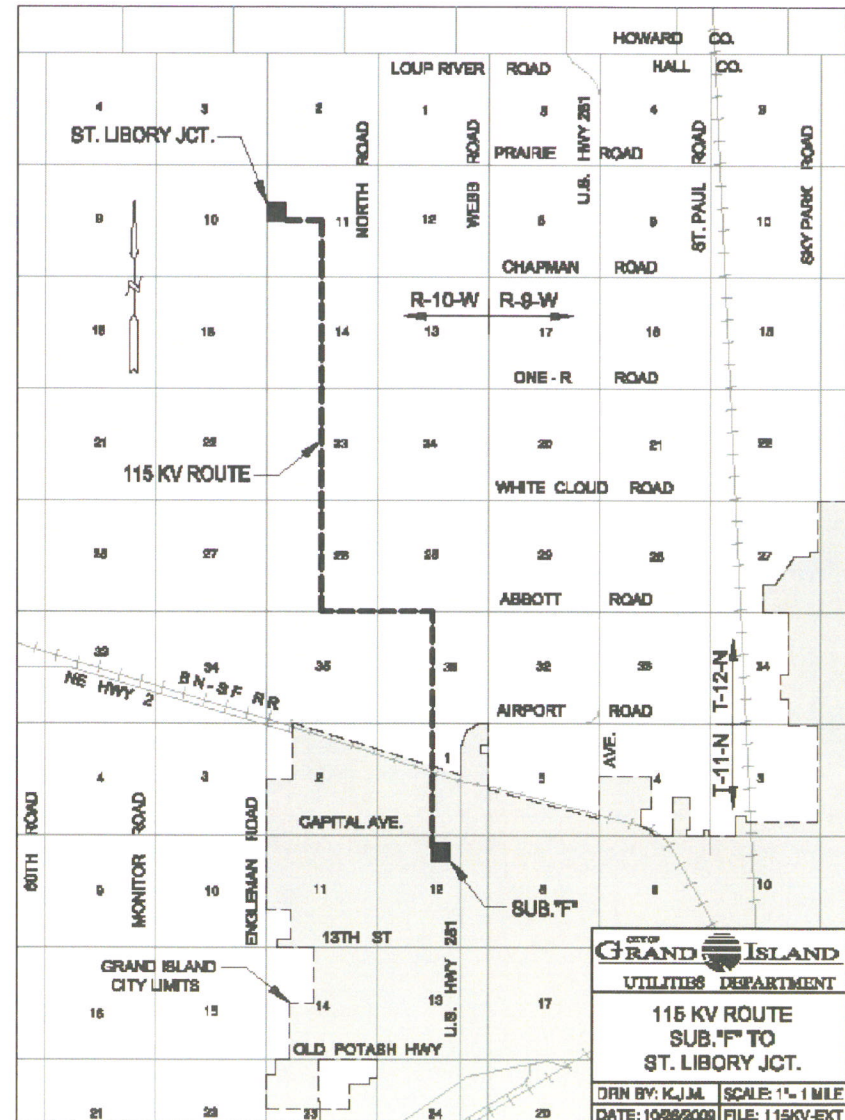
### COMPARISON OF COSTS FOR ALTERNATE ROUTES NEW 115 KV LINE - SUBSTATION "F" to ST. LIBORY JUNCTION

Route	Route Length - Miles	Total Number of Structures Required	Number of Angle Structures Required	No. of Homes Line Passes Within 500 Ft.	Total Estimated Route Cost
Route #1	7.05	138	10	10	\$7,123,673
Route #2	7.06	138	10	10	\$7,149,654
Route #3	7.05	138	10	11	\$7,124,673
Route #4	7.04	136	8	11	\$7,001,301
Route #5	7.03	136	8	1	\$6,975,914

## Route Selected For The New 115 KV Substation "F" To St. Libory Transmission Line

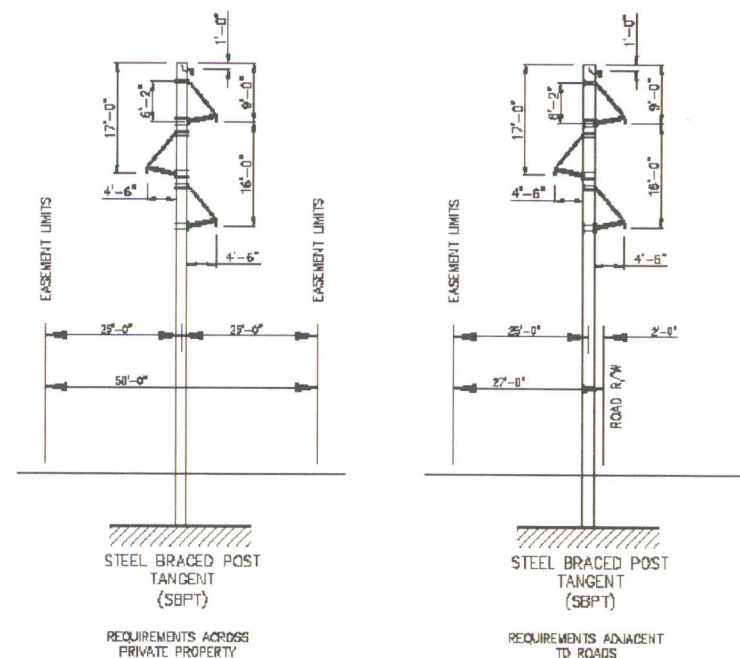
Based on the evaluation presented in the Line Route Study, it was recommended that the new 115 kV line be constructed along Alternate Route 5 for the following reasons:

1. This route is slightly shorter and more direct than the other routes.
2. This route requires the least number of angle structures.
3. This route passes near the least number of homes of any other route.
4. This route is estimated to cost less than the other four routes evaluated.



## Right-Of-Way Easement Requirements For The New Line

- A 50 foot wide right-of-way will be required where the line crosses private property.
- A 27 foot wide right-of-way will be required where the line is adjacent to existing road right-of-way.
- These right-of-way widths meet the safety requirements of the National Electric Safety Code (NESC) and are sufficiently wide to assure that the conductors will not swing outside the right-of-way under the extreme wind condition.
- Normal farming operations can continue inside the right-of-way with the exception of pivot irrigation crossing under the line. No structures are allowed inside the right-of-way.
- Easements are required from the landowners for each tract of land crossed by the route of the line.
- Easements include the rights to construct the line and for the line to occupy the right-of-way. Also included in the easement are the rights needed to maintain and repair the line in the future.
- Easements obtained include compensation in the form of a onetime payment for a permanent easement.



RIGHT-OF-WAY  
REQUIREMENTS  
115KV LINE  
SUB "F" TO  
ST. LIBORY JCT.

## **Right-of-Way Appraisal Process To Determine Easement Compensation Amount**

- **An independent real estate appraisal firm was hired by the City to determine the market value of the permanent easements needed to be acquired for the new 115 kV line.**
- **Johnson Appraisal, LLC of Lincoln, Nebraska provided this service to the City.**
- **The amount of compensation for each easement was based on the following items:**
  - 1. Market Data Comparisons of comparable sales in the immediate area**
  - 2. Soil classification and tillable classification of the the soil on the property**
  - 3. The estimated dollar value per acre of the property**
  - 4. The total number of acres included in the easement needed**
  - 5. The estimated impact on the value of the easement area due to the construction of the line**
  - 6. The estimate of any severance damages to the remainder of the property as a result of the acquisition of the easement**
  - 7. Payment for any damages that may occur as a result of construction activities**

## **Right-Of-Way Negotiations With Property Owners**

- **The City will use an independent outside firm to contact the property owners on behalf of the City to negotiate the easements needed for this project. Midwest Right of Way Services of Omaha, Nebraska will provide the right-of-way acquisitions services needed for this project.**
- **A right of way person from Midwest Right of Way Services will contact and meet with each affected property owner and discuss the easement needed for the line. A copy of the proposed easement document will be presented showing the easement needed and the amount offered by the City as compensation for the easement.**
- **Once an agreement is reached with each landowner and the easement document has been signed by the landowners and any lien holders, the document will be submitted to the City Council for approval and payment authorization.**
- **Should the City and a property owner not be able to reach a fair and reasonable agreement on an easement, the City may elect to use the right of eminent domain to acquire the easement. Property Owners shall have the right to be represented by an attorney and to negotiate and accept or reject the offer of damages which will be sustained by the proposed easement acquisition, and the right to require that such damages be determined pursuant to the procedures for acquisition by eminent domain.**

# Questions & Comments From The Public

