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STATE CORPORATION COMMISSION

MAR 14 2011

Susan Delaney

11-ITCE-644-MS

DIRECT TESTIMONY

OF

SALVATORE FALCONE

ON BEHALF OF ITC GREAT PLAINS, LLC

I. INTRODUCTION

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Q: Please state your name and business address.

A: Salvatore Falcone, and I work at 11401 Lamar in Overland Park, Kansas.

Q: By whom and in what capacity are you employed?

A: I work for Black & Veatch as a senior environmental engineer and permitting manager. I also perform routing studies for our transmission line clients.

Q: Please describe your educational background and professional experience.

A: I have a bachelor’s degree in engineering science, majoring in mechanical engineering and a master’s degree in business administration, majoring in finance. I am a registered professional engineer in Kansas and Missouri. I have worked as an environmental engineer for twenty-eight years.

Q: Have you provided testimony in prior regulatory proceedings?

A: Yes, I have. I have testified before the Kansas Corporation Commission (“KCC”) on behalf of ITC Great Plains. Specifically, I appeared before the KCC in Docket Nos. 09-ITCE-729-MIS and 10-ITCE-557-MIS, testifying on transmission routing.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to describe the process used to determine the proposed route for the transmission line from Spearville south to a new substation in Clark County, then east to a new substation near Medicine Lodge in Barber County (the “V-Plan”).

1 alternatives, the next step was to drive the routes. I accompanied a routing specialist and
2 senior biologist on the trip and we drove approximately 900 miles in the V-Plan study
3 area. We evaluated the preliminary route locations, noted where residences, buildings
4 and sensitive habitats were located, observed and noted the wildlife in the study area, and
5 adjusted our routes accordingly. After the target area for the Clark County substation site
6 was relocated to the northwest, we conducted another route reconnaissance trip.

7 Black & Veatch also sent letters with study area maps covering the V-Plan to the
8 Kansas Department of Agriculture, Kansas Department of Health and Environment,
9 Kansas Department of Transportation, Kansas Department of Wildlife and Parks, Kansas
10 State Historical Society, United States Army Corps of Engineers, United States
11 Department of Agriculture's Natural Resources Conservation Service, United States
12 Department of the Interior - Fish and Wildlife Service and the Nature Conservancy.
13 These letters asked for the agencies' input and comments on resources or concerns (such
14 as threatened or endangered species) within the study areas. These agencies were also
15 asked to provide information on federal, state or local permits that may be required to
16 construct the line. A summary of the responses received is provided in Section C of
17 Exhibit 1.

18 **Q: Did you receive feedback from the state and federal agencies?**

19 A: Yes, we did, and we used that feedback to inform our subsequent route selection work.
20 For example, the response we received from the Kansas Department of Health and
21 Environment provided us information on the locations of municipal landfills in the study
22 area. We used that information to ensure that all of our preliminary routes avoided those
23 areas.

1 **Q: What were the route alternatives that were offered to the public for comment?**

2 A: Appendix A to Exhibit 1 is the map of the route alternatives on which ITC Great Plains
3 sought comment at public open houses in Dodge City, Medicine Lodge and Greensburg.
4 It has since been updated and the most recent route alignments are provided in the Route
5 Selection Study report, which is contained in the filing to the Commission.

6 **Q: How were landowners informed of ITC Great Plains' intent to construct a new line?**

7 A: Once the revised preliminary routes were determined, ITC Great Plains used property
8 ownership data from each county to identify the landowners within 1,000 feet of the
9 center line of each of the potential routes. ITC Great Plains sent a letter to each
10 landowner to advise that ITC was proposing to construct a new high voltage line near
11 his/her property and inviting each of them to one of three open houses. The dates, times
12 and locations of the open houses were identified in the letter. ITC also issued news
13 releases prior to the open houses. A copy of the form invitation letter is attached to my
14 testimony as **Exhibit 2**.

15 **Q: Did public input have any bearing on the siting process?**

16 A: Yes. The information obtained from the landowners was very important and helped
17 identify issues that had not been identified through the field reconnaissance, agency
18 contacts and aerial mapping. Public input resulted in many more revisions to the routes.

19 For example, modifications to the preliminary routes were required to address:

- 20 • Homes in the study area that were not identified and located initially;
- 21 • Future residential and commercial development;
- 22 • New oil or gas wells that were not installed as of the date of aerial
23 photography;

- Center pivot irrigation structures that did not show on aerial photos or were not observed initially during the field reconnaissance.

As a result of this input and our follow-up activities, Black & Veatch refined the routing options for the V-Plan.

A quantitative analysis of land use data, public input and engineering criteria were employed in the final evaluation of the route alternatives. The evaluation resulted in the selection of ITC Great Plains' preferred route for the project. The route selection process is addressed in detail in Section 4.0 of the Route Selection Study.

Q: Please provide more detail regarding the selection of the preferred route.

A: ITC Great Plains and Black & Veatch had established and refined criteria for evaluating routing alternatives during the Phase I and Phase II process of siting the KETA line. We used the same methodology for the V-Plan. The specific alignment of potential routes was based in large part on avoiding occupied structures and sensitive resources that might be adversely affected by the construction, maintenance and operation of a transmission line. The primary routing concerns were residences, businesses, wells (gas, oil or water), towers, center pivot irrigation systems, parks, cemeteries and protected species and their habitats.

In most of the study area, there were several routing alternatives available. Much of the study area is sparsely populated and it afforded many options for siting new transmission lines. The selection of specific routes was made to provide a manageable basis for the discussion of route characteristics and preferences. Black & Veatch developed a comparative resource inventory for the alternative routes developed for the

1 V-Plan. The comparative resource inventory contains inventories of features and
2 characteristics identified within and along each of the routes.

3 The weighted score values at the bottom of Table 4-3.1 in Exhibit 1 represent the
4 result of efforts to quantify land use along each route using land data embedded in the
5 state of Kansas GIS maps of the area and factoring in cost-related data by counting the
6 number of angle structures and crossings. Low scores are better than higher scores in the
7 Table and the proposed route is usually the route which scored the lowest, or best. The
8 length of each type of land use or a number of angle structures or crossings is multiplied
9 by its assigned weight and the products are added to arrive and crossings are shown in
10 Table 4-3.2 in Exhibit 1. For the Clark County to Medicine Lodge portion of the project,
11 the preferred route was the best-scoring, technically viable route. The route with the
12 overall lowest score was not technically viable once it was discovered to be too close to
13 an airstrip used by crop dusters. This is another instance where discussions with
14 landowners have an effect on the route selection process.

15 The assignment of weights in the Table is based on the desirability of types of
16 land for construction of transmission lines. Therefore areas which are the most barren and
17 have the fewest obstacles are generally the best prospects for construction and have the
18 lowest scores. With respect to residences, the nearness of the routes to residences has
19 been addressed in three ways in the Route Selection Study. The first way was
20 accomplished through desktop work with online aerial photography and also through
21 direct observations in the field in August 2010 and October 2010. These efforts
22 confirmed that no residence would be closer than 500 feet to any of the proposed lines.
23 The second way, which is reflected in the scoring, is contained in the “developed” land

1 use categories, which are defined as areas characterized by varying percents of
2 constructed materials (e.g. asphalt, concrete, buildings, etc.). The third way, also
3 reflected in the scoring, is in the number of angles. On the routes contained in the Route
4 Selection Study, many of the angles placed in the lines were done to avoid residences, as
5 well as businesses, institutional buildings, or environmentally sensitive areas.

6 **Q: Which route was selected as the Proposed Route for which ITC Great Plains seeks**
7 **approval in this docket?**

8 A: The Proposed Route identified for the project is composed of Route 9 from Spearville to
9 Clark County and Route 42 from Clark County to Medicine Lodge, a map of which is
10 attached to my testimony as **Exhibit 3**. It is a combination of fifteen individual route
11 segments and was developed after the public meetings and in consideration of the input
12 we received from landowners.

13 **Q: How wide will the right-of-way be for the proposed line?**

14 A: The nominal width of the right-of-way will be 200 feet. This width would accommodate
15 any of the structures and spans being considered for this project. The structures and
16 conductors would normally be located in the center of the right-of way.

17 **Q: Will landowners be able to use the land in which the line will be constructed?**

18 A: Yes. The landowners' use of the land will be subject to the easement granted to ITC
19 Great Plains. Typically, the landowners will be able to use the line right-of-way for any
20 agricultural or other purpose that does not interfere with the rights granted to ITC Great
21 Plains under the easement. No new structures will be permitted in any part of the right-
22 of-way. In non-agricultural areas, trees and brush in the right-of-way will be trimmed
23 and removed.

1 **Q: Will ITC Great Plains obtain easements for the right-of-way in which the line will**
2 **be constructed?**

3 A: Yes. Easements will be obtained from the landowners prior to the construction of the
4 proposed line. Landowners will also be compensated for all damages, including crop
5 losses that are directly attributable to the construction of the proposed line.

6 **Q: Please describe the environment in which the line was sited.**

7 A: A description of the soils, climate, hydrological resources, biological resources, and land
8 uses are included the Route Selection Study as Exhibit 1. At least 90% of each route is in
9 either agricultural land or in grassland, most of which is suitable for pasture. Most of the
10 streams and rivers in the study area are small and flow to the south or southeast. Large
11 stands of trees are rare, with most trees found near streams and rivers. The study area is
12 home to many species of plants and animals and these are described in the report.

13 **Q: Is there any other information you would like to provide?**

14 A: I'd like to conclude by stating that ITC Great Plains, in addition to directing Black &
15 Veatch to find routes with the least impact to residents and the environment, has made a
16 concerted effort to communicate with environmental agencies, inform landowners in the
17 study area, ask for their comments and concerns, and then respond to those concerns with
18 route changes wherever they are technically and economically feasible. In doing so, I
19 believe that the Proposed Route adequately addresses the objectives of the project and
20 minimizes overall impacts to landowners and the environment.

21 **Q: Does this complete your testimony?**

22 A: Yes, it does.

VERIFICATION

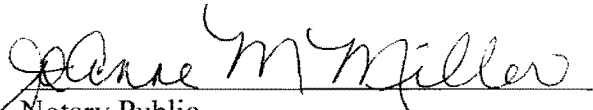
STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

I, Salvatore Falcone, of lawful age, being duly sworn upon my oath state that I have read the above and foregoing Testimony and, upon information and belief, state that the matters therein appearing are true and correct.



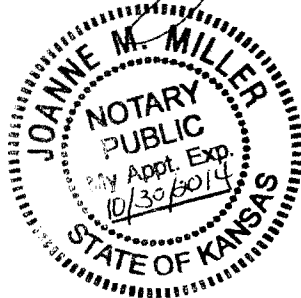
Salvatore Falcone

SUBSCRIBED AND SWORN to before me on this 14th day of March, 2011.



Notary Public

My commission expires:
10/30/2014



STATE CORPORATION COMMISSION

MAR 14 2011

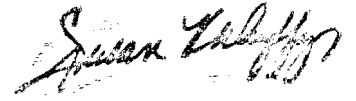


Exhibit 1

Direct Testimony of
Salvatore Falcone
ITC Great Plains, LLC

Route Selection Study



Route Selection Study

V-Plan 345 kV Transmission Line Project Spearville to Clark County to Medicine Lodge

Prepared by:

**Black & Veatch Corporation
Overland Park, Kansas**

And

**ITC Great Plains
Topeka, Kansas**

March 2011

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1.0 Introduction

ITC Great Plains, LLC (ITC), a subsidiary of ITC Holdings Corporation, is proposing the construction of a new 345,000 volt (345 kV), double-circuit transmission line between Spearville, Kansas and Medicine Lodge, Kansas, with an intermediate substation in northern Clark County, Kansas. The entire project is approximately 121 miles in length, with approximately 35 miles from Spearville to the Clark County Substation site and approximately 86 miles from that site to Thistle Substation near Medicine Lodge.

This project is commonly referred to as the “V-Plan” for its original shape on a map of the Southwest Power Pool’s (SPP) 2010 priority projects. In this document, it will be referred to as either the “V-Plan” or the “Project”. The Project is entirely within the state of Kansas and consists of the expansion of an existing 345 kV substation at Spearville, construction of a new 345 kV substation near Bloom (Clark County Substation), construction of a new 345 kV substation near Medicine Lodge (Thistle Substation), and the construction of a new 345 kV, double-circuit transmission line connecting the three substations. The existing Sunflower Electric Cooperative, Inc. Spearville Substation north of Spearville, Kansas will be expanded to include two new 345 kV line terminals which would serve as the northern terminus of the Project. The new Clark County Substation would be located in the northwest quarter of the northeast quarter of Section 6, Township 30 South, Range 23 West approximately 1.5 miles southeast of Bloom. The new Thistle Substation would be located in the north half of the northeast quarter of Section 1, Township 32 South, Range 11 West approximately six miles east of Medicine Lodge., and one mile south of the existing ITC Flat Ridge Substation. Figure 1-1 shows the V-Plan routing study area, from the beginning to the end of the route analysis process, and the locations of the three substations.

The proposed transmission line will be a double circuit line designed for a capacity of 1,800 MVA per circuit. The substation equipment ratings will be 3,000 amperes. The lines will be built primarily with self supporting tubular steel monopoles with a vertical davit arm configuration (Figure 1-2). Other structure types may be utilized for special situations, such as long-span crossings or heavy angles. The transmission line conductors will be arranged in a two conductor bundle per phase. Two overhead ground wires will be located at the top of the structures. The structures will utilize I-string insulator assemblies for tangent and small angle structures. Typical span lengths will be approximately 900 feet. Structure placement and span lengths will be adjusted in cultivated fields, if possible, to minimize interference with the operation of

existing or proposed center pivot irrigation systems. A new 200 foot wide easement will be required for the Project.

ITC retained the services of Black & Veatch Corporation (Black & Veatch) as an independent consultant to provide the following services:

- Assist ITC in developing a preferred route and alternate routing options between the Spearville, Clark County, and Thistle substations.
- Conduct a general environmental and engineering review of the potential routing options.
- Identify permits and formal approvals required for the routes.

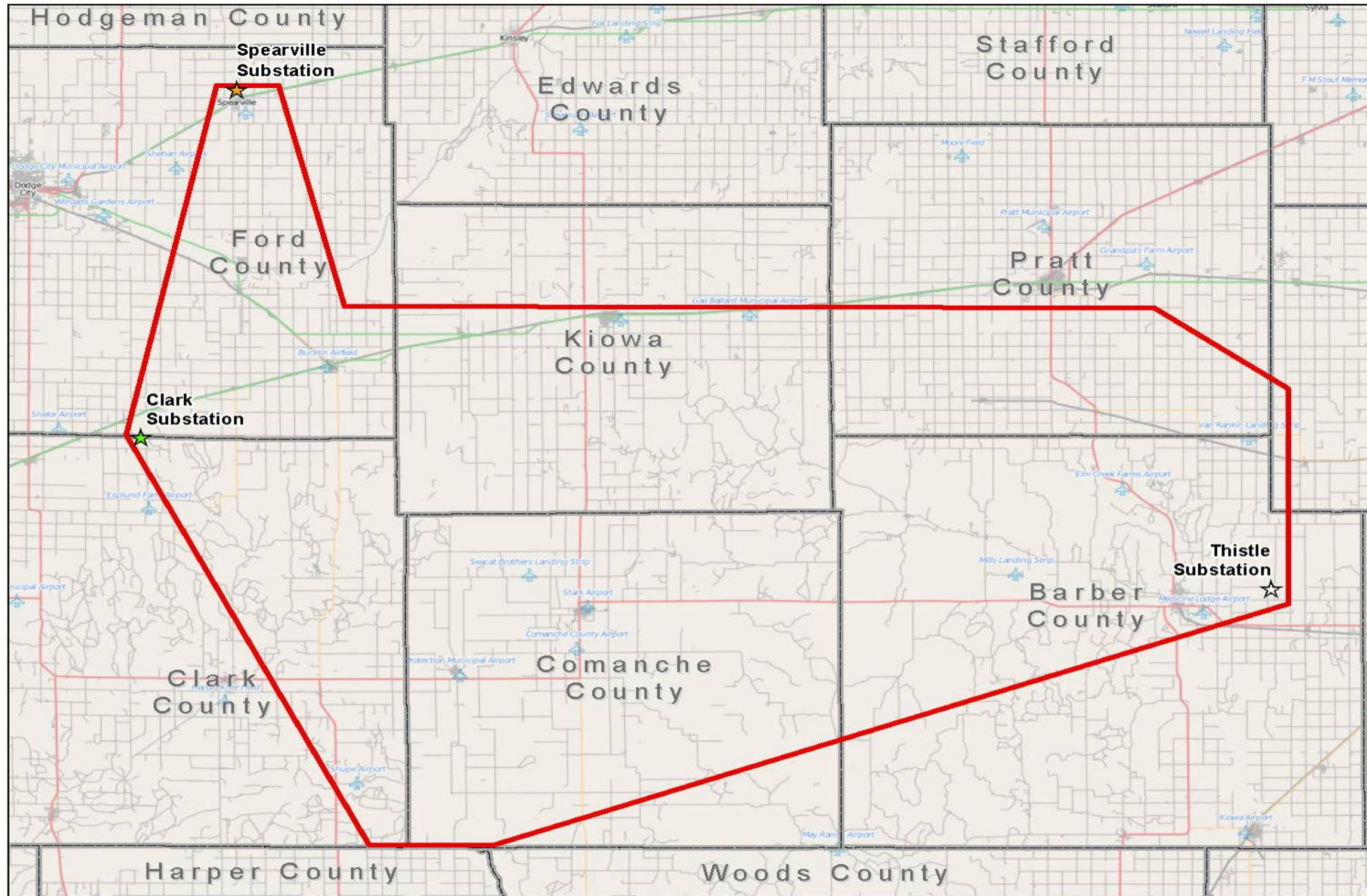


Figure 1-1
V-Plan Study Area

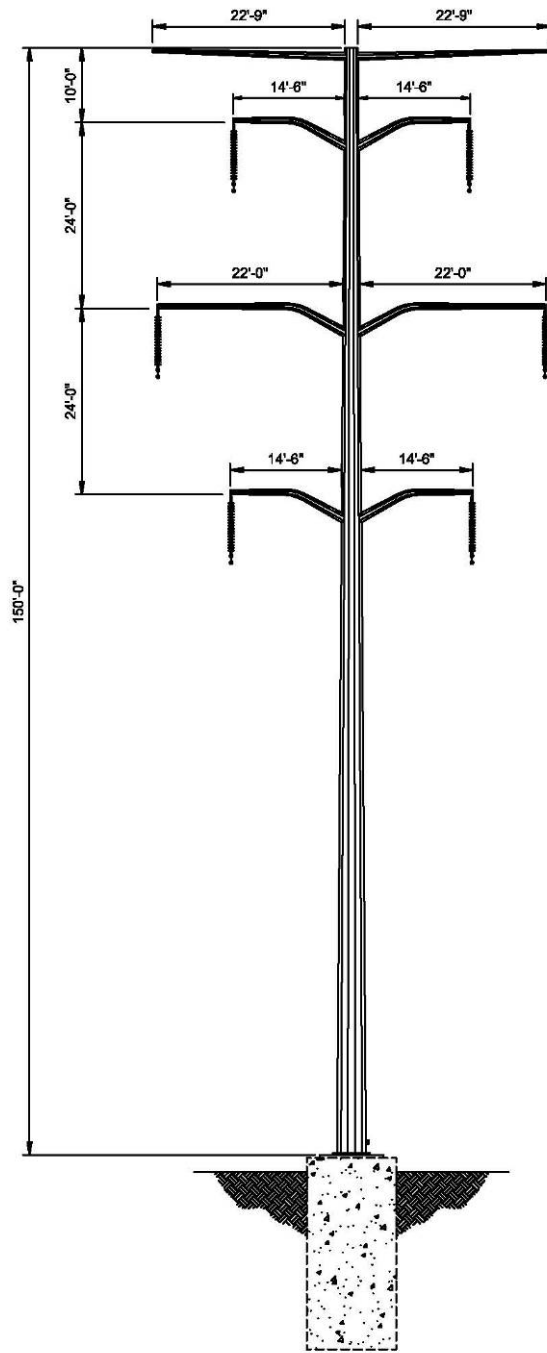


Figure 1-2
Typical 345 kV Double-Circuit Structure

2.0 Project Purpose and Need

In 2009, the SPP Board of Directors authorized implementation of the recommendations in a Synergistic Planning Project Team's (SPPT) report. The recommendations were for creating a reliable and cost-effective transmission system for the SPP region. One major recommendation was the development of Priority Projects. SPP identified, evaluated, and recommended projects intended to reduce grid congestion, and better integrate SPP's east and west regions. SPP staff and outside consultants conducted engineering and economic analyses to assess a number of factors, including construction costs, wind power production, system losses, impacts to reliability, and local and environmental impacts. The analyses resulted in the identification of six Priority Projects that would achieve the strategic goals articulated in the 2009 SPPT report. One of these projects, the Spearville-Comanche-Medicine Lodge-Wichita double-circuit 345 kV transmission line, is the subject of this routing study report. SPP issued a Notice to Construct (NTC) to ITC for the Spearville-Comanche-Medicine Lodge portion of this project.

The overall project will provide an economic benefit to the state of Kansas by providing enhanced access to markets for the wind generation in the western third of the state, both existing and proposed. It will also provide economic benefits to Kansas and the region by reducing constraints on the interface between the east and west portions of the SPP region, allowing for more efficient usage of economical generation. The overall project is also an approved part of an SPP expansion plan to improve the transmission grid in the SPP service area.

3.0 Route Selection Process

Black & Veatch has performed or participated in several activities associated with the development of routing options for the Project. These include:

- Preliminary desktop route mapping
- Field examination of the proposed routes
- Environmental evaluation
- Revised desktop route mapping
- Route modifications.
- Agency contacts and data collection.
- Initial local stakeholder and landowner contacts
- Public meetings and subsequent landowner contacts

Using the information obtained from these activities, final route delineations were determined and are presented in this report.

3.1 Preliminary Desktop Route Mapping

At the outset of routing activities for this project, and before specifying routing alternatives on a map, the endpoints were identified and located. For this Project, the existing Spearville Substation was fixed as the northwest terminus and the existing ITC Flat Ridge Substation was fixed as the initial eastern terminus, although a new site was selected for the eastern terminus later in the process. A third substation site, at a location somewhere in Comanche County or Clark County, had to be identified.

Consideration was first given to sites in extreme southwest Comanche County near the Oklahoma border, but early contacts with state and federal environmental agencies indicated that a route from this area to the Flat Ridge Substation near Medicine Lodge was problematic due to the necessity of traversing the Red Hills (also known as Gypsum Hills) portion of the state. The Red Hills are a region of rolling hills, mesas, and canyons, containing large tracts of native prairie, in south central Kansas from just north of the Oklahoma border to southeast Kiowa County. This area is considered a scenic area, an ecologically significant area, and habitat for sensitive species, including the Lesser Prairie Chicken (LPC).

In an effort to keep most of the proposed transmission line out of the Red Hills, three other locations for the new, southwestern substation site were investigated. The southernmost of the three (Substation South) was located about three miles south of the town of Sitka in southeastern Clark County. Another (Substation Central) was located about ten miles north of Sitka in eastern Clark County and a third site (Substation North)

was located about five miles south of Bucklin in extreme southeast Ford County. Each of these three sites could yield routes that would avoid the heart of the Red Hills area while still being located near areas of high wind power potential in southwest Kansas. From these three sites, the initial desktop routing work was performed.

Later in the routing process, after additional meetings and consultations with federal and state agencies, it became apparent that the above substation locations would no longer be advantageous. For reasons primarily having to do with environmental issues, SPP redefined the Project with the line to Oklahoma coming from the eastern end of the route near Medicine Lodge instead of from Clark County. The Clark County Substation site could now be moved further west to address potential environmental concerns while still achieving the objective of fostering wind farm development. Potential substation sites were sought in an area near Bloom, where US 54 Highway would provide good access for construction and operation. After a review of the topography and access for more than a dozen sites in the area, a site was selected. It is located on the south side of the Ford-Clark County line, approximately 1.5 miles southeast of Bloom. From this site, additional desktop routing work was performed.

Black & Veatch used the spatial analysis tool within the ESRI[®] ArcGIS suite of tools to identify potential routes after constraints and avoidance areas were identified. By varying the constraints from one GIS (Geographic Information Systems) analysis to another, multiple routes between fixed points (substations) were obtained. Once obtained, these very preliminary routing options were imported into online aerial photography tools including, but not limited to, MapQuest[®], Google[™] Earth, and Bing[™] Maps. For each portion of the study area, the site with the best photographic quality or the most recent image was used. Using online aerial photography, the desktop examination of routing options was done by centering approximately one square mile of area at a time on the computer screen, searching the photograph for the presence of houses, businesses, cemeteries, center pivot irrigation systems, and other items to avoid, and zooming in for more details when necessary. Wherever potential obstructions were observed, revisions to the GIS-generated routes were made on screen.

Once this on-line proofing process was completed for all of the route alternatives initially generated by the GIS analysis, paper maps were created. These were used for the route reconnaissance work to be described later. Maps of the entire Project area were also included in consultation request letters sent to environmental agencies.

3.2 Agency Contacts and Data Collection

Environmental data that could be pertinent to the location and environmental evaluation of the preliminary routing options were gathered for the following:

- Federal and state threatened and endangered (listed), candidate, and proposed plant and animal species and habitats, as well as Species In Need of Conservation (SINC).
- Wetlands and navigable waters of the United States.
- State park locations.
- Known and recorded historic and archaeological sites.

Black & Veatch contacted federal, state and local agencies as part of data collection and environmental consultation. The objective of making the contacts is the identification of issues of concern for the agencies after their review of the Project and the determination of the permits and approvals that will be required. The results of these contacts are summarized in Section 5.5 of this report. Copies of the letters received from the agencies are contained in Appendix D, Agency Responses to Requests for Consultation.

3.3 Field Investigations

Black & Veatch performed an initial environmental field review of the preliminary routing options on August 25 through 28, 2010. Following routing revisions that included changes in the Clark County Substation location, a second field review was conducted on October 25 through 28, 2010. Three Black & Veatch professionals: a routing specialist, an environmental route selection specialist, and an ecologist, performed these field reviews. The team reviewed the routes for constructability potential, avoidance areas, and for the presence of wetlands and protected species habitats. Observations were made primarily by vehicle and occasionally on foot at accessible road crossings, public access points, and from roads, railroads and pipelines that parallel or cross the routing options.

Field observations were made to verify information previously interpreted from aerial photography, satellite imagery and composite topographic maps or to call attention to areas where new alignments were needed. The field observations also provided current information relative to new land use activity in recent months. Handwritten notes of areas of possible concern were placed on hard copies of the aerial photographs in the field and then transcribed for clarity before being presented to Black & Veatch GIS personnel for development of the route maps that accompany this report.

3.4 Environmental Evaluations

Black & Veatch conducted an environmental evaluation of the project area and each of the preliminary routing options. Consideration was given to potential impacts

from construction and operation of the proposed 345 kV transmission line to the observed existing environment.

The Project area surveyed, including both the August and October field reviews, covered parts of Barber, Clark, Comanche, Ford, Kiowa, and Pratt Counties in Kansas (see Figure 1-1). The project includes two major line portions, one between Spearville and the Clark County Substation in Clark County, and the other between the Clark County Substation and the Thistle Substation site near Medicine Lodge in Barber County. The northwestern terminus is near Spearville, Kansas, the southeastern terminus is at the Thistle Substation northeast of Medicine Lodge. The proposed Clark County Substation is in Clark County near the Ford-Clark county line.

Using aerial photography and GIS-based environmental data coupled with field observations, Black & Veatch conducted an environmental evaluation of each of the preliminary routing alternatives. Areas of possible concern were noted on copies of the aerial photography to improve the alternative routes and aid in determining a preferred route. This initial evaluation focused on extant natural resources in the project area, primarily surface water crossings (e.g., streams, canals and ditches), wetlands, major plant communities, observed wildlife species, and possible listed species habitat. While not strictly under legal protections, species listed as candidate or proposed species at the federal level or SINC at the state level also were evaluated if observed in the project vicinity. Consideration for potential impacts from construction and operation of the proposed 345 kV transmission line to wetlands and listed species at state and federal levels was the primary concern, with a strong focus on routing alternatives that avoid direct impacts to these resources.

3.4.1 Physiographic Setting

The project area lies in the Southwestern Tablelands and Central Great Plains ecoregions (Chapman et al., 2001). During the Permian Period, several thousand feet of brick-red shales, siltstone, sandstones and gypsum were deposited in the Southwestern Tablelands ecoregion. Erosion exposed these deposits giving the region a characteristic red butte and mesa appearance. Unlike most adjacent ecoregions, little of this region is in cropland and much of its elevated tableland area is in sub-humid grassland and semiarid rangeland. The region has many spring-fed streams, these being predominately sandy-bottomed, and the water is harder (mineralized) than in the adjacent regions. Within this ecoregion, two subregions are present in the project area; Cimarron Breaks and the Flat Tablelands and Valleys region. Irregular, dissected slopes, bluffs and red gypsum buttes typify the Cimarron Breaks. Cedar hills prairie and bluestem-grama prairie are the dominant natural vegetation with Eastern Redcedar (*Juniperus virginiana*) tending to be

more prevalent in fire-protected areas, such as in creek bottoms. Rangeland and grassland are the dominant land use, with cattle grazing throughout the area.

The Flat Tablelands and Valleys region is more level than the irregular slopes of the adjacent Cimarron Breaks region. Soils are silty alluvium and sandier than the reddish-brown silts and loams of the Cimarron Breaks. Natural vegetation in this region consists of Sandsage prairie in sites with sandy or well drained soils. Floodplain woodlands are dominated by Plains Cottonwood (*Populus deltoides* ssp. *monilifera*), Black Willow (*Salix nigra*) and Peach-Leaf Willow (*Salix amygdaloides*). Hackberry (*Celtis occidentalis*), Green Ash (*Fraxinus pennsylvanica*) and American Elm (*Ulmus americana*) are locally common, especially in the eastern part of the region. On flat tabletops, the dominant modern land use is crops with rangeland in uncropped areas, particularly in the Cimarron River valley.

The Central Great Plains were once vast grasslands, dominated by a mixture of shortgrass and tallgrass prairie with scattered low trees and shrubs. Much of this region is now cropland, marking the eastern limit of the major winter wheat growing area of the United States. High salinity from subsurface salt deposits and leaching is present in some streams, ponds or wetlands. Subregions present within the project area are Great Bend Sand Prairie, Prairie Tableland and Rolling Plains and Breaks.

The Great Bend Sand Prairie portion of the Central Great Plains ecoregion includes undulating to rolling sand plains. Windblown sand (loess), sandy outwash and dunes are the dominant landforms, originally supporting a native plant community largely composed of sand prairie bunchgrasses. Wetlands, wet meadows and sedge meadows once were abundant between rolling hills in level areas, most associated with prairie streams that now flow only in spring or for short periods following larger precipitation events. Much of this ecoregion has been converted to agricultural uses, either for growing crops in relatively level areas, or rangeland and pasture in areas unsuitable for conventional tillage. Center pivot irrigation is used to a greater degree than in surrounding regions. Drainage in most of the area has been modified to favor agriculture, although larger streams were not extensively channelized and these meander naturally within functional floodplains.

Prairie Tableland is distinguished by its flat lowland topography. The loess and alluvial deposits support extensive agriculture with Winter Wheat (*Triticum aestivum*) and Grain Sorghum (*Sorghum bicolor* ssp. *bicolor*) being the dominant crops grown. The area is underlain by shale, gypsum and salt from ancient Permian seas, most notably the Hutchinson salt member, and the northern area contains the alluvial Equus beds, an important aquifer. Only a small portion of this ecoregion, about four miles, is crossed by the project, just north of the Flat Ridge Substation.

The Rolling Plains and Breaks ecoregion historically was a mixed grass prairie which included Big Bluestem (*Andropogon gerardii*), Little Bluestem (*Schizachyrium scoparium*), Blue Grama (*Bouteloua gracilis*), Side-Oats Grama (*Bouteloua curtipendula*), and Western Wheatgrass (*Pascopyrum smithii*). Floodplain forest occurs in patches along major riparian corridors. The modern land use is a mosaic of cropland and rangeland, with cropland on level areas and rangeland on the breaks. The silty, well drained, deep, and moderately permeable soils formed in loess on uplands. The dissected plains have broad, undulating to rolling ridge-tops. In Kansas, this region contains extensive oil deposits and oil wells are fairly common.

Most of the project area is a broad mix of grassland (rangeland, pasture and fallow) and actively cultivated agricultural fields. Some fallow areas may also be Conservation Reserve Program (CRP) areas, set-asides for wildlife habitat. The agricultural crops present are primarily Corn (*Zea mays*), Winter Wheat (*Triticum aestivum*), Sorghum (*Sorghum bicolor*) or Grain Sorghum and hay or straw (various grasses). Fallow fields generally are inhabited by a variety of old-field species, such as ragweed (*Ambrosia* spp.), pigweed (*Amaranthus* spp.), Canadian Horseweed (*Conyza canadensis*), Lamb's Quarters (*Chenopodium album*), Pinkweed (*Polygonum pensylvanicum*) and Yellow Foxtail (*Setaria pumila*). These and other old-field, weedy or ruderal species also are abundant along road edges, fencelines between fields, and other disturbed or neglected areas. Some of the fallow fields have been planted with a mixture of cool-season and warm-season grasses and are likely to be CRP parcels. When present, these latter areas were classified as fallow if planting was recent or as rangeland if the planting was fully developed.

3.4.2 Wetlands

Wetlands in the project area were evaluated using a combination of aerial photography review and on-site observations. While this rapid assessment methodology can reveal many wetland areas, the level of resolution is low and additional fieldwork would be needed to fully evaluate wetland boundaries and the potential for a given wetland area to be regulated.

Wetlands generally are present in level areas below bluffs, along streams, and in low-lying areas with poor drainage. Although not strictly speaking wetlands, also included are stock ponds and streams (rivers, creeks, etc.). Most ponds were excavated in low areas or were formed by obstructing surface flow to create an impoundment. These constructed ponds generally serve as a water source for cattle and some wildlife species.

Specific wetland types observed in the project area consist primarily of emergent wetlands (wetlands with rooted vegetation that stands above the water surface). Aquatic

bed wetlands (wetlands dominated by submerged aquatic vegetation) also are frequent. In most cases, because of the requirement for line construction to avoid sharp elevation changes over short distances, wetlands would be spanned without any direct impacts because they are in low-lying locations, often below ridgelines that are desirable for structure locations. However, location of construction access roads must consider wetlands because these areas can be inadvertently disturbed by construction equipment. Based on this initial review, none of the wetlands observed will be impacted by construction access because better alternative construction access routes are available. Additional detailed investigation during the siting process will aid in developing access routes that avoid sensitive natural resources, such as wetlands.

3.4.3 Wildlife and Wildlife Habitats

Woodlots are small stands of trees (i.e., less than 40 acres) that occur mainly in moist areas (e.g., riparian zones associated with streams), on soils considered poor for agriculture or slopes too steep for farm machinery. Few are dense enough to qualify as forest and none is large enough to represent habitat for wildlife species requiring a deep interior (generally roadless woodland of 500 acres or more with a minimum distance from any edge of 300 feet). Some small stands are in low areas and a few of these may be associated with wetlands or in stream floodplains. In most cases the only migratory pathway is not a corridor (i.e., woodlots generally are isolated from each other by farmland or rangeland), requiring wildlife to traverse fields or other open areas, which may represent an obstacle for some species (e.g., salamanders).

Wildlife habitat associated with the project area principally consists of open mixed grassland and agricultural land. Urbanized areas are far apart and most development is limited to farmsteads with a residence, barn or sheds and other outbuildings. Unimproved roads traverse portions of the project area, most often in a grid pattern with adjustments in locations where soils or other conditions prohibit roads. Portions of the project area are located adjacent to or intersect riparian areas associated with streams. Many streams appear to be ephemeral or intermittent and were dry during the site reconnaissance. Streambeds in many of these dry streams were fully vegetated, further confirming the infrequent flows. Constructed ponds dot the landscape, mainly on rangeland, a few with associated wetland vegetation downstream of the pond outfall or where seepage through a dike may occur. Most of these ponds were constructed for livestock watering, but they are likely to be used by some wildlife species, such as deer.

Wildlife observed during the site reconnaissance (Table 3.4-1) were primarily generalist species; that is, those capable of exploiting grazed grassland or scattered

woodlots and able to meet their needs in these areas. The dominant plant communities are mixed grass prairie (rangeland) and agricultural lands, which are heavily disturbed by cultivation. The tables below present wildlife and plant species observed during the routing study. Because wildlife encounters are dependent on time of day, weather conditions, available cover, season, availability and quality of forage, Table 3.4-1 should not be considered a comprehensive determination of the wildlife present. However, the table is representative of the common and dominant species present in the project area.

Table 3.4-1 Wildlife Species Observed in the V-Plan Project Area			
English Name	Latin Name	State Status	Federal Status
Birds			
Cooper's Hawk	<i>Accipiter cooperii</i>	--	--
Great Egret	<i>Ardea alba</i>	--	--
Great Blue Heron	<i>Ardea herodias</i>	--	--
Canada Goose	<i>Branta canadensis</i>	--	--
Red-tailed Hawk	<i>Buteo jamaicensis</i>	--	--
Red-shouldered Hawk	<i>Buteo lineatus</i>	--	--
Turkey Vulture	<i>Cathartes aura</i>	--	--
Killdeer	<i>Charadrius vociferus</i>	--	--
Northern Harrier	<i>Circus cyaneus</i>	--	--
Northern Flicker	<i>Colaptes auratus</i>	--	--
American Crow	<i>Corvus brachyrhynchos</i>	--	--
Prairie Falcon	<i>Falco mexicanus</i>	--	--
American Kestrel	<i>Falco sparverius</i>	--	--
Greater Roadrunner	<i>Geococcyx californianus</i>	--	--
Barn Swallow	<i>Hirundo rustica</i>	--	--
Mississippi Kite	<i>Ictinia mississippiensis</i>	--	--
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	--	--
Wild Turkey	<i>Meleagris gallopavo</i>	--	--
Ring-necked Pheasant	<i>Phasianus colchicus</i>	--	--
Field Sparrow	<i>Spizella pusilla</i>	--	--
Eastern Meadowlark	<i>Sturnella magna</i>	--	--
Western Meadowhawk	<i>Sturnella neglecta</i>	--	--
European Starling	<i>Sturnus vulgaris</i>	--	--
Western Meadowhawk	<i>Sympetrum occidentale</i>	--	--
Tree Swallow	<i>Tachycineta bicolor</i>	--	--
Scissor-tail Flycatcher	<i>Tyrannus forficatus</i>	--	--
Eastern Kingbird	<i>Tyrannus tyrannus</i>	--	--
Mourning Dove	<i>Zenaida macroura</i>	--	--
Mammals			
Coyote	<i>Canis latrans</i>	--	--
White-tailed Deer	<i>Odocoileus virginianus</i>	--	--
Eastern Cottontail	<i>Sylvilagus floridanus</i>	--	--

English Name	Latin Name	State Status	Federal Status
Red Fox	<i>Vulpes vulpes</i>	--	--
Domestic Cattle	<i>Bos taurus</i>	--	--
Reptiles			
Bullsnake	<i>Pituophis catenifer sayi</i>	--	--
Amphibians			
American Toad	<i>Bufo americanus</i>	--	--
Insects			
Plains Lubber	<i>Brachystola magna</i>	--	--
Carolina Locust	<i>Dissostereira carolina</i>	--	--
Familiar Bluet	<i>Enallagma civile</i>	--	--

Common Name	Scientific Name*	Federal Status	State Status
Velvetleaf	<i>Abutilon theophrasti</i>	--	--
Drummond's onion	<i>Allium drummondii</i>	--	--
Green Amaranth	<i>Amaranthus hybridus</i>	--	--
Rough Amaranth	<i>Amaranthus retroflexus</i>	--	--
Common Ragweed	<i>Ambrosia artemisiifolia</i>	--	--
Leadplant	<i>Amorpha canescens</i>	--	--
Big Bluestem	<i>Andropogon gerardii</i>	--	--
Sand Bluestem	<i>Andropogon hallii</i>	--	--
Western Sagewort	<i>Artemisia campestris ssp. caudata</i>	--	--
Sand Sagebrush	<i>Artemisia filifolia</i>	--	--
Marsh Milkweed	<i>Asclepias incarnata</i>	--	--
Common Milkweed	<i>Asclepias syriaca</i>	--	--
Burningbush	<i>Bassia scoparia</i>	--	--
Sideoats Gramma	<i>Bouteloua curtipendula</i>	--	--
Blue Grama	<i>Bouteloua gracilis</i>	--	--
Smooth Brome	<i>Bromus inermis</i>	--	--
Japanese Brome	<i>Bromus japonicus</i>	--	--
Pecan	<i>Carya illinoensis</i>	--	--
Northern Catalpa	<i>Catalpa speciosa</i>	--	--
Partridge Pea	<i>Chamaecrista fasciculata</i>	--	--
Lamb's Quarters	<i>Chenopodium album</i>	--	--
Bull Thistle	<i>Cirsium vulgare</i>	--	--
Canada Horseweed	<i>Conyza canadensis</i>	--	--
Silky Dogwood	<i>Cornus amomum</i>	--	--
Flowering Dogwood	<i>Cornus florida</i>	--	--
Gray Dogwood	<i>Cornus racemosa</i>	--	--
Bermuda Grass	<i>Cynodon dactylon</i>	--	--
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	--	--

Common Name	Scientific Name*	Federal Status	State Status
Barnyard Grass	<i>Echinochloa crusgalli</i>	--	--
Wild Canada Rye	<i>Elymus canadensis</i>	--	--
Snow-on-the-mountain	<i>Euphorbia marginata</i>	--	--
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	--	--
Annual Sunflower	<i>Helianthus annuus</i>	--	--
Sawtooth Sunflower	<i>Helianthus grosseserratus</i>	--	--
Black Walnut	<i>Juglans nigra</i>	--	--
Eastern Redcedar	<i>Juniperus virginica</i>	--	--
Osage Orange	<i>Maclura pomifera</i>	--	--
White Mulberry	<i>Morus alba</i>	--	--
Eastern Prickly-pear	<i>Opuntia humifusa</i>	--	--
Switchgrass	<i>Panicum virgatum</i>	--	--
Timothy	<i>Phleum pratense</i>	--	--
Pokeweed	<i>Phytolacca americana</i>	--	--
Heartsease	<i>Polygonum lapathifolium</i>	--	--
Pennsylvania Smartweed	<i>Polygonum pennsylvanicum</i>	--	--
Eastern Cottonwood	<i>Populus deltoides</i>	--	--
Lombardy Poplar	<i>Populus nigra</i>	--	--
Quaking Aspen	<i>Populus tremuloides</i>	--	--
Floatingleaf Pondweed	<i>Potamogeton natans</i>	--	--
European Buckthorn	<i>Rhamnus cathartica</i>	--	--
Smooth Sumac	<i>Rhus glabra</i>	--	--
Black Locust	<i>Robinia pseudoacacia</i>	--	--
Common Arrowhead	<i>Sagittaria latifolia</i>	--	--
Black Willow	<i>Salix nigra</i>	--	--
Lanceleaf Sage	<i>Salvia reflexa</i>	--	--
Tall Fescue	<i>Schedonorus phoenix</i>	--	--
Meadow Fescue	<i>Schedonorus pratensis</i>	--	--
Little Bluestem	<i>Schizachyrium scoparium</i>	--	--
a ragwort	<i>Senecio</i> sp.	--	--
Giant Foxtail	<i>Setaria faberi</i>	--	--
Yellow Foxtail	<i>Setaria pumila</i>	--	--
a catchfly	<i>Silene</i> sp.	--	--
Rosinweed	<i>Silphium integrifolium</i>	--	--
Prairie Dock	<i>Silphium terebinthinaceum</i>	--	--
Canada Goldenrod	<i>Solidago canadensis</i>	--	--
Indian Grass	<i>Sorghastrum nutans</i>	--	--
Grain Sorghum (Milo)	<i>Sorghum bicolor</i> spp. <i>bicolor</i>	--	--
Johnson Grass	<i>Sorghum halepense</i>	--	--
Prairie Cordgrass	<i>Spartina pectinata</i>	--	--
Poison Ivy	<i>Toxicodendron radicans</i>	--	--
Narrow-leaved Cattail	<i>Typha angustifolia</i>	--	--
Broad-leaved Cattail	<i>Typha latifolia</i>	--	--
American Elm	<i>Ulmus americana</i>	--	--

Common Name	Scientific Name*	Federal Status	State Status
Siberian Elm	<i>Ulmus pumila</i>	--	--
Common Mullein	<i>Verbena thapsus</i>	--	--
Missouri Ironweed	<i>Vernonia missurica</i>	--	--
Yucca	<i>Yucca</i> sp.	--	--

* Species nomenclature generally follows *Flora of the Great Plains* (McGregor, et al., 1986)

3.4.4 Endangered and Threatened Species

Table 3.4-3 lists the species listed as threatened or endangered at federal or state levels, federal candidate or proposed species or SINC at the state level. Many of these species are at the extreme limits of their range in south-central Kansas, which is a partial explanation for their listing status. Some are affected by conversion of grassland to row crops, while others require grassland of a particular height or density (e.g., Bobolink). While these habitats are present in the project area, most are small in extent or they are fragmented by roads or other infrastructure, which limits population size and use of the habitat. Distance between patches or absence of an appropriate movement corridor may prevent re-colonization of some areas after a local extinction event, resulting in the local extirpation of that species.

None of the listed species was observed in the project area during the site reconnaissance. Based on the site reconnaissance, suitable habitat may be present in the project area for 13 species; Golden Eagle (*Aquila chrysaetos*), Short-eared Owl (*Asio flammeus*), Ferruginous Hawk (*Buteo regalis*), Chihuahuan Raven (*Corvus cryptoleucus*), Bobolink (*Dolichonyx oryzivorus*), Peregrine Falcon (*Falco peregrinus*), Long-billed Curlew (*Numenius americanus*), Lesser Prairie Chicken (*Tympanuchus pallidicinctus*), Eastern Spotted Skunk (*Spilogale putorius*), Longnose Snake (*Rhinocheilus lecontei*), Checkered Garter Snake (*Thamnophis marcianus*), Texas Blind Snake (*Leptotyphlops dulcis*), and Strecker's Chorus Frog (*Pseudacris streckeri*). In addition, the entire length of the project lies within the migration corridor used by Whooping Crane (*Grus americana*). Although suitable migration habitat does not generally appear to be present, circumstances (e.g., weather, fatigue) may drive individual migrating birds to land within the project area. State-designated critical habitat for Eastern Spotted Skunk (*Spilogale putorius*) is associated with the Arkansas River mainstem at points where the river is crossed by the transmission line between the Clark Substation and the Spearville Substation. Critical habitat for Strecker's Chorus Frog (*Pseudacris streckeri*) is present southeast of Medicine Lodge and would not be affected by the project. In addition, this state-threatened species has been reported north of the Thistle Substation location.

However, because the preferred route goes west from the substation, the wetlands the species is associated with would not be impacted by project construction or transmission line operation.

In addition, the Longnose Snake (*Rhinocheilus lecontei*), Checkered Garter Snake (*Thamnophis marcianus*) and Texas Blind Snake (*Leptotyphlops dulcis*) are protected by the Kansas Nongame and Endangered Species Conservation Act and administrative regulations applicable thereto. Any time an eligible project that will impact the species' preferred habitats within its probable range is proposed, the project sponsor must contact the Environmental Services Section, Kansas Department of Wildlife and Parks (KDWP), 512 SE 25th Ave., Pratt, Kansas 67124-8174. Department personnel can then advise the project sponsor on permit requirements.

As defined by Kansas Administrative Regulations, critical habitats include those areas documented as currently supporting self-sustaining population(s) of any threatened or endangered species of wildlife as well as those areas determined by the KDWP to be essential for the conservation of any threatened or endangered species of wildlife. Current knowledge of the status of the Longnose Snake (*Rhinocheilus lecontei*), Checkered Garter Snake (*Thamnophis marcianus*) and Texas Blind Snake (*Leptotyphlops dulcis*) is too limited to designate specific areas of critical habitat for these species. Although critical habitat has not been designated in specific areas for the Longnose Snake (*Rhinocheilus lecontei*), Checkered Garter Snake (*Thamnophis marcianus*) and Texas Blind Snake (*Leptotyphlops dulcis*), based on conversations with the KDWP, the preferred route will require an Action Permit for impacting the preferred habitats of these species.

Species requiring perennial aquatic habitat (i.e., fish) were not considered, since all streams or ponds would be spanned without entering and conventional best management practices (BMPs) would be employed to prevent erosion and sedimentation; therefore, aquatic species would not be adversely affected by the project.

Habitat for the other listed species is not present, is not suitable (extent, quality, level of disturbance, fragmentation, etc.) or it is isolated habitat without a nearby colonization source or migration corridor. In most cases, avoidance of wildlife habitat, mainly wetlands, ponds and streams or rivers, would be accomplished by spanning the area and through selective support structure placement. In addition to structure placement, consideration for construction access needs to be made, which cannot be accurately evaluated at this level of investigation. Based on this preliminary review, significant adverse impacts to listed species or their habitats are not anticipated, with the exception of the Arkansas River crossing. An Action Permit obtained from the KDWP may be required for habitat impacts related to vegetation clearing in the right-of-way near

the Arkansas River. Further detailed onsite investigation will be needed once continued review results in a preferred route.

Table 3.4-3
Listed Wildlife and Plant Species in the V-Plan Project Area

English Name	Latin Name	State Status*	Federal Status*	Location**
Birds				
Golden Eagle	<i>Aquila chrysaetos</i>	SINC	SC	BA, CL, FO, KI, PR
Short-eared Owl	<i>Asio flammeus</i>	SINC	--	FO, KI
Ferruginous Hawk	<i>Buteo regalis</i>	SINC	--	BA, CL, FO, KI, PR
Whip-poor-will	<i>Camprimulgus vociferus</i>	SINC	--	PR
Snowy Plover	<i>Charadrius alexandrinus</i>	T	--	BA, CL, FO, KI, PR
Piping Plover	<i>Charadrius melodus</i>	T	LT	CL, FO, KI, PR
Black Tern	<i>Chlidonias niger</i>	SINC	SC	BA, CL, FO, KI, PR
Chihuahuan Raven	<i>Corvus cryptoleucus</i>	SINC	--	FO, KI
Bobolink	<i>Dolichonyx oryzivorus</i>	SINC	--	BA, PR
Peregrine Falcon	<i>Falco peregrinus</i>	UL	DL	BA, FO, KI
Whooping Crane	<i>Grus americana</i>	E	LE	BA, CL, FO, KI, PR
Bald Eagle	<i>Haliaeetus leucocephalus</i>	UL	DL	BA, CL, FO, KI, PR
Long-billed Curlew	<i>Numenius americanus</i>	SINC	--	CL, FO, KI
Eskimo Curlew	<i>Numenius borealis</i>	E	LE	BA, KI, PR
Least Tern	<i>Sterna antillarum</i>	E	LE	BA, CL, FO, KI, PR
Curve-billed Thrasher	<i>Toxostoma curvirostre</i>	SINC	--	FO
Lesser Prairie-Chicken	<i>Tympanuchus pallidicinctus</i>	--	C	BA, CL, FO, KI
Black-capped Vireo	<i>Vireo atricapillus</i>	E	LE	BA, CL
Mammals				
Pallid Bat	<i>Antrozous pallidus</i>	SINC	SC	BA
Townsend's Big-Eared Bat	<i>Corynorhinus townsendii</i>	SINC	--	BA, KI
Eastern Spotted Skunk	<i>Spilogale putorius</i>	T	SC	BA, CL, FO, KI, PR
Southern Bog Lemming	<i>Synaptomys cooperi</i>	SINC	--	BA
Reptiles				
Glossy Snake	<i>Arizona elegans</i>	SINC	SC	BA, CL, FO, KI, PR
Western Hognose Snake	<i>Heterodon nasicus</i>	SINC	--	BA, CL, FO, KI, PR
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	SINC	--	BA, CL, FO, KI, PR
Night Snake	<i>Hypsiglena torquata</i>	SINC	--	BA, CL
Texas Blind Snake	<i>Leptotyphlops dulcis</i>	T	--	BA, CL
Longnose Snake	<i>Rhinocheilus lecontei</i>	T	SC	BA, CL, FO, KI, PR
Checkered Garter Snake	<i>Thamnophis marcianus</i>	T	--	BA, CL
Amphibians				
Red-Spotted Toad	<i>Bufo punctatus</i>	SINC	--	BA, CL
Strecker's Chorus Frog	<i>Pseudacris streckeri</i>	T	--	BA
Fish				
Arkansas Darter	<i>Etheostoma cragini</i>	T	C	BA, CL, KI, PR
Plains Minnow	<i>Hybognathus placitus</i>	T	SC	BA, CL, FO, KI, PR
Arkansas River Speckled Chub	<i>Macrhybopsis tetranema</i>	E	--	BA, CL, PR

Table 3.4-3
Listed Wildlife and Plant Species in the V-Plan Project Area

Arkansas River Shiner	<i>Notropis girardi</i>	E	LT	BA, PR
Topeka Shiner	<i>Notropis topeka</i>	T	LE	BA
Plants				
Mead's Milkweed	<i>Asclepias meadii</i>	--	LT	Kansas (statewide)
Western Prairie Fringed Orchid	<i>Platanthera praeclara</i>	--	LE	Kansas (statewide)
Running Buffalo Clover	<i>Trifolium stoloniferum</i>	--	LE	Kansas (statewide)

***Federal:** LT = threatened; LE = endangered; P = proposed; C = Candidate; DL = delisted, recovered; SC = Species of Concern

***State:** E = endangered; T = threatened; SINC = Species in Need of Conservation; UL = Unlisted
-- = no reported status in listing.

County data obtained from Kansas Department of Wildlife and Parks online at <http://www.kdwp.state.ks.us/news/Other-Services/Threatened-and-Endangered-Species/Threatened-and-Endangered-Species/County-Lists/> for each county. Accessed March 10, 2011. Last updated February 10, 2010.

** Project counties: Barber (BA); Clark (CL); Ford (FO); Kiowa (KI) and Pratt (PR). Comanche County was eliminated from the project area after the August site reconnaissance.

Suitable habitat for the three listed plant species is generally absent from the project area. Furthermore, the known range of these species in Kansas does not include the project area. It is unlikely that these species are present or would be affected by the project.

On December 10, 2008, the Federal Register published updated information on the status of many candidate species and the Lesser Prairie Chicken (LPC) was included. A candidate species is one for which the U.S. Fish and Wildlife Service (FWS) has sufficient information to propose it for listing as a threatened or endangered species, but for which immediate listing is unwarranted or precluded by higher priority actions. The LPC has been a candidate species since 1999, but the recent Federal Register posting elevated its listing priority from 8 to 2. Species are assigned a listing priority from 1 to 12 based on the magnitude of the threats they face, the immediacy of the threats, and taxonomic uniqueness, with 1 being the highest listing priority. The listing priority dictates the relative order in which proposed listing rules are prepared, with the species at greatest risk, at priorities 1 through 3, being proposed first. In February 2011, the FWS published a fact sheet indicating they are now in the initial stages of the listing process for the LPC under the Endangered Species Act (ESA).

In September 2010, the KDWP issued a decision to not list the LPC as a protected species under Kansas statutes after a petition was submitted to the agency from non-government entities concerned about the species. The regulatory perspective regarding this species is currently unknown and difficult to speculate upon.

Because the preferred route traverses some LPC habitat, this situation will need to be monitored. Future rules issued by the FWS or KDWP may prescribe actions that will need to be taken by those constructing permanent facilities in the area.

Cultural resources in the Project area were not reviewed before or during the site reconnaissance. Historic, archaeological and traditional cultural properties should be reviewed in consultation with the Kansas State Historic Society and State Historic Preservation Officer.

Evaluation of human resources included consideration of existing and future land uses, proximity to residences, schools, churches, subdivisions and other population concentrations, industrial developments, other existing utilities and linear rights-of-way, visual impacts, and irrigated farmlands.

3.5 Local Stakeholders and Public Meetings

ITC has actively informed stakeholders about the Project and engaged them in the consultation process. The principal methods of engagement have consisted of public open house meetings or workshops, smaller meetings with community leaders and landowners, and the formation of a Community Action Group (CAG).

Three public workshops were held, the first conducted at the Dodge House Hotel and Convention Center in Dodge City on January 17, 2011, the second at the Heritage Community Center in Medicine Lodge on January 18, and the third at the Greensburg Community Recreation Center in Greensburg on January 19. These workshops were held to inform potentially affected landowners and to seek their comments. Landowners owning property within 1,000 feet of the center line of any of the proposed alternate routes were invited to attend the open house, to visit with ITC employees, and to learn more about ITC and the project. Notice of the public workshops was provided three ways: postcard invitations mailed directly to affected landowners, personal letters mailed to each landowner, and print advertisements which ran in local papers for two weeks before the event.

In addition to a registration table, the public workshops featured six information stations that landowners could visit at their convenience: introduction to ITC and the Project; need for the Project; maps and details of the route alternatives; GIS mapping of routes on landowner property; right-of-way information; and environmental considerations. There was also a final station where landowners were encouraged to provide feedback or ask additional questions. Feedback obtained at any of the information stations was entered into a landowner database and utilized by ITC to provide a qualitative context for the technical considerations involved in selecting a

preferred route. In the center of each workshop room were two to three sets of route maps, seven maps in each set.

The GIS mapping station provided landowners with the opportunity to see how the proposed routes specifically crossed their properties. By providing section, township, and range, landowners could zoom in using aerial photography to determine where a proposed route would be in relation to their homes or other structures on their properties. The environmental considerations station addressed the Project's impacts not only on wildlife and humans, but on other considerations such as land use and agriculture.

All three public workshops were well attended, drawing more than 150 visitors on each of the first two nights and approximately 60 on the third night in the midst of freezing rain and icy roads. Landowners provided contact information to facilitate future conversations, and provided written feedback on the proposed routes and any other message they wished to convey. Every question posed to ITC received an answer in the manner requested – most often e-mail.

Prior to the public workshops, ITC also organized a Community Action Group (CAG) as a collection of citizens from communities along the Project route who act as advisers and counselors to ITC. The CAG would also help ITC communicate with citizens by serving as liaisons throughout the life of the Project. CAG was designed to represent a cross-section of the community.

The CAG meetings were held at the Dodge House Hotel and Convention Center in Dodge City on December 7, 2010 and at the Heritage Community Center in Medicine Lodge on December 8. ITC maintained contact with members of the CAG throughout the routing process to learn about planned business developments in the Project area and to get information regarding local reaction to the Project.

Community relations and stakeholder engagement has been an ITC Great Plains priority since it began operations in July 2006 and will always be one. ITC will continue to nurture relationships with affected landowners and communities based on transparency and open communication throughout the planning and construction process, and throughout its stewardship of transmission assets in Kansas.

3.6 Route Modifications

As a result of the two field reconnaissance trips, subsequent desktop data collection, public outreach efforts, and comments received by ITC after the three public meetings, Black & Veatch made many modifications to the preliminary routing options. These modifications resulted in the identification of updated potential routes for the proposed transmission line. Modifications to the preliminary routes addressed the following avoidance areas not identified in the initial desktop work:

- Homes present in the study area.
- Parcels of land subdivided for future residential and commercial development.
- Center pivot irrigation structures.
- Oil, gas, and water wells.
- Technically challenging creek and stream crossing locations.
- Existing high-voltage transmission lines and lower voltage distribution lines.
- Cemeteries.
- Wetlands.
- Communication towers.
- Other existing or planned construction near any of the potential routes.

After revisions were made to the routing options based on landowner comments, Black & Veatch developed route scores.

3.7 Proposed Routing Options

As a result of desktop research, field investigations, public meetings, and other inputs, Black & Veatch refined the routing options for the V-Plan Project and arrived at a preferred route. This process for determining the preferred route is described in Section 4.0 of this report. The map provided in Appendix A to this report contains the preferred route alignment. All of the routes shown on the maps are technically feasible and environmentally viable options for the new transmission line.

The maps in Appendix A were produced from the USDA's Natural Agriculture Imagery Program (NAIP). All maps for Kansas are based on aerial photography taken in 2005.

4.0 Description of Routes and Segments

Between the Spearville Substation and the Clark County Substation site, Black & Veatch developed two primary routing options, designated on maps (see Figure 4-1) as the Blue (western) route and the Red (eastern) route. By adding crossovers between the primary routes where the primary routes are close to each other or where a crossover might shorten a route overall, many more feasible routes were developed. From Spearville to Clark County, five crossovers (Segments N, O, P, Q, and R) were added and this resulted in 15 additional feasible routes for a total of 17 routes overall. Crossovers are shown on the maps as light blue lines.

Between the Clark County Substation site and the Thistle Substation site, Black & Veatch developed three primary routes, designated as Yellow (northern), Orange (central), and Pink (southern). There are two primary routes, Yellow and Orange, from the Clark County Substation site to central Kiowa County, south of Greensburg. At this point, the Orange (central) route intersects with an existing high-voltage transmission line that runs southeast toward Medicine Lodge. The Pink (southern) route begins here and parallels the existing transmission line for approximately 32 miles, providing a third primary route into Medicine Lodge.

By adding crossovers between the primary routes where the primary routes are close to each other or where a crossover might shorten the route overall, many more feasible routes were developed. From the Clark County Substation site to the Thistle Substation site, six crossovers (Segments HH, II, MM, JJ, KK, and LL) were added, resulting in 22 additional feasible routes for a total of 25 routes overall. Therefore, from Spearville to Thistle, there were 42 route options identified for the routing analysis.

Because the number of crossovers added so many routing alternatives to the five primary routes, analysis of each possible alternative route was done by its component segments (see Figure 4-1 for route segment locations). A segment is defined as that portion of a route between adjacent intersections with other routes or crossovers. For example, Segment T starts at its intersection with Segment X and ends at its intersection with Segment II. For this project, segments lengths ranged from 0.17 mile (Segment G) to 48.88 miles (Segment FF). Each route in this project is composed of five to ten segments (see Table 4.0-1). The reason for using segments to build routes is because the routing process involves many route adjustments. These adjustments are due to landowner and agency comments, new discoveries from route reconnaissance and review of aerial photography, and additional crossovers that became viable after the reroutes were made. By creating a spreadsheet containing data for each segment, entry of new data from a revision to one segment automatically updates the scores for all routes

containing that segment. If the analysis had been done on a whole route basis, each revision would require that every route containing the area of the revision would have to be updated individually.

For example, if a route revision had to be made to Segment X, every route containing Segment X would also have to be revised. As shown in Table 4.0-1, there are 18 routes containing that segment and a new GIS land use and construction factor analysis would have to be run for each of the 18 routes. By using segments, only one GIS analysis, for Segment X, is needed to update all 18 routes.

It should be noted that in most of the Project area, additional routes may be feasible. Much of the Project area is sparsely populated, affording even more routing options than the 42 listed in Table 4.0-1. The selection of the five primary routes, the two from Spearville to Clark County, the three from there to Thistle, and the 37 alternative routes was made to provide a manageable basis for discussion of route characteristics and preferences. Identifying and analyzing many more routes would provide little or no net benefit from either an environmental or engineering standpoint.

The V-Plan Project as presented in this report is divided into two portions—the north/south portion from Spearville to Clark County and the west/east portion from Clark County to Thistle. The north/south portion comprises a group of 17 routes (nominally Blue and Red routes) and the west/east portion comprises a group of 25 routes (nominally Yellow, Orange, and Pink routes). When scoring all of these route options, these groups were kept separate; in other words, all the north/south routes were scored only against one another as were all of the west-east routes. Therefore, there is a best scoring route in each group and the combination of the best routes in each group would be the preferred route for the project. The reason for taking this approach rather than comparing all possible routes from Spearville to Thistle is that the number of those possible routes would be 425 (17 times 25). This would have been an unwieldy number of routes to evaluate and at any rate would have provided the same outcome as the method used here.

Finally, the classification of routes into color groups is approximate. Only one route in each category is a one-color route all the way. The others are combinations of the primary color, crossovers, and other colored routes. In fact, the so-called Pink route uses the Orange route for nearly half of the total Clark County to Thistle route distance. The grouping of routes by color is for convenience in analyzing and discussing routes with similar characteristics and shared segments.

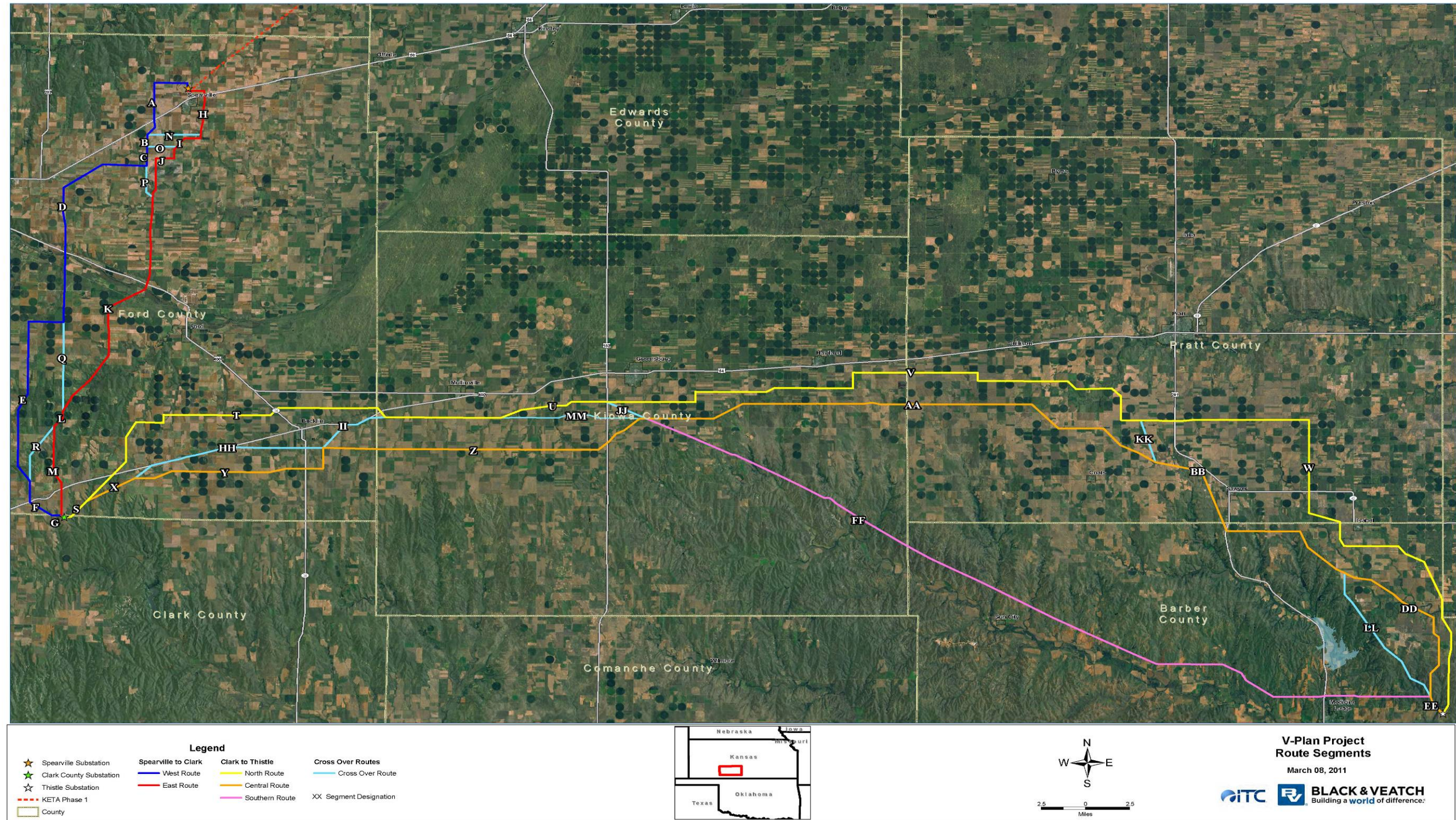


Figure 4-1: V-Plan Project Route Segments

Table 4.0-1: Route Numbers and Segments			
Route Portion	Primary Route Color	Route #	Segment Components*
Spearville to Clark County Substation	BLUE	1**	A-B-C-D-E-F-G
		2	A-B-C-P-K-L-M-G
		3	A-B-C-P-K-L-R-F-G
		4	A-B-C-D-Q-L-M-G
		5	A-B-C-D-Q-R-L-F-G
	RED	6**	H-I-J-K-L-M-G
		7	H-I-J-K-L-R-F-G
		8	H-N-B-C-D-E-F-G
		9	H-N-B-C-D-Q-L-M-G
		10	H-N-B-C-D-Q-L-R-F-G
		11	H-N-B-C-P-K-L-M-G
		12	H-N-B-C-P-K-L-R-F-G
		13	H-I-O-C-D-E-F-G
		14	H-I-O-C-D-Q-L-M-G
		15	H-I-O-C-D-Q-L-R-F-G
		16	H-I-O-C-P-K-L-M-G
		17	H-I-O-C-P-K-L-R-F-G
Clark County to Thistle Substation	YELLOW	18**	S-T-U-V-W
		19	S-T-U-JJ-AA-BB-DD-EE
		20	S-T-U-JJ-AA-BB-LL-EE
		21	S-T-U-JJ-FF-EE
		22	S-T-U-V-KK-BB-DD-EE
		23	S-T-U-V-KK-BB-LL-EE
		24	S-T-MM-FF-EE
		25**	S-X-Y-Z-AA-BB-DD-EE
	ORANGE	26	S-X-Y-Z-AA-BB-LL-EE
		27	S-X-Y-II-U-V-W
		28	S-X-Y-II-U-V-KK-BB-DD-EE
		29	S-X-Y-II-U-V-KK-BB-LL-EE
		30	S-X-Y-II-U-JJ-AA-BB-DD-EE
		31	S-X-Y-II-U-JJ-AA-BB-LL-EE
		32	S-X-Y-II-JJ-FF-EE
		33	S-X-HH-Z-AA-BB-DD-EE
		34	S-X-HH-Z-AA-BB-LL-EE
		35	S-X-HH-Z-FF-EE
		36	S-X-HH-II-U-V-W
		37	S-X-HH-II-U-V-KK-BB-DD-EE
		38	S-X-HH-II-U-V-KK-BB-LL-EE
		39	S-X-HH-II-U-JJ-AA-BB-DD-EE
		40	S-X-HH-II-U-JJ-AA-BB-LL-EE
		41	S-X-HH-II-U-JJ-FF-EE
PINK	42**	S-X-Y-Z-FF-EE	

* Segments CC and GG were eliminated late in the routing process and the letters were not reused for new segments.

** Designated as a “primary” or single-colored route. Pink route includes Orange route segments X, Y, and Z and Yellow route segment S.

4.1 Preferred Project Route

The preferred project route is a combination of routes 9 and 42 (see Table 4.1-1), comprising segments H-N-B-C-D-Q-L-M-G-S-X-Y-Z-FF-EE. Figure 4-2 depicts this

route. Route 9 is the highest ranked route from Spearville to Clark County with a score of 229.74. Route 42 is the highest ranked technically viable route from Clark County to Thistle with a score of 465.92. Route 35, with a lower overall score of 445.00, had to be eliminated for reasons provided in Section 4.2.2 below.

The preferred route exits the Spearville substation to the south traveling less than one-half mile, crossing an existing high voltage transmission line, and then heading one mile east to the north side of US Highway 50. It then runs south 2.5 miles, crossing US Highway 50 and Garnett Road. The route then runs west for three miles to 123 Road and south for two miles. After crossing Iron Road the route heads to the west where it meets an existing high voltage transmission line. Paralleling the existing transmission line on the south for 2.5 miles, the preferred route leaves the existing line and heads due south for approximately 14.5 miles crossing another existing high voltage transmission line and US Highway 400. Just before Wilburn Road the preferred route angles to the southwest to run parallel along the east side of 118 Road for approximately three miles. After a three-quarter mile leg to the southeast, the route continues due south for approximately two miles crossing US Highway 54, leaving Ford county, entering Clark County, and angling to the southeast into the Clark County Substation site.

From the Clark County Substation site the preferred route runs due east for one-half mile before exiting Clark County and traveling northeast back into Ford County. After traveling in a generally northeast direction for 6.6 miles, it turns due east following along the south side of Wrangler Road for 5.4 miles. From there, the preferred route turns east/northeast, then due east for 3.1 miles, continuing east 8.5 miles crossing State Highway 34. Upon reaching 133rd Road the route turns north for a little more than a mile before continuing to the east for another 15.5 miles during which the route leaves Ford County and enters Kiowa County. After crossing Road 25 in Kiowa County the route heads to the northeast crossing US Highway 183 and meets an existing high voltage transmission line. The preferred route then follows along the south side of the existing transmission line for eight miles after which it crosses to the north side of the existing line. The preferred route leaves Kiowa County and enters Barber County continuing to follow along the north side of existing transmission line for another 32 miles. After crossing Willow Road the route then heads due east running parallel to an existing transmission line, crossing US Highway 281, and running another 6.4 miles before turning south for one mile into Thistle substation.

V-Plan Route Scores
March 8, 2011

	Route #	Route Segments	Total Length	Total Score	Rank
Spearville to Clark County (17 Route Options)	1	A-B-C-D-E-F-G	37.28 miles	256.84	10
	2	A-B-C-P-K-L-M-G	32.64 miles	251.18	8
	3	A-B-C-P-K-L-R-F-G	34.09 miles	257.43	12
	4	A-B-C-D-Q-L-M-G	34.07 miles	230.11	2
	5	A-B-C-D-Q-L-R-F-G	35.52 miles	236.36	4
	6	H-I-J-K-L-M-G	32.77 miles	267.06	14
	7	H-I-J-K-L-R-F-G	34.21 miles	273.31	17
	8	H-N-B-C-D-E-F-G	38.49 miles	256.47	9
	9	H-N-B-C-D-Q-L-M-G	35.28 miles	229.74	1
	10	H-N-B-C-D-Q-L-R-F-G	36.73 miles	235.99	3
	11	H-N-B-C-P-K-L-M-G	33.85 miles	250.81	7
	12	H-N-B-C-P-K-L-R-F-G	35.30 miles	257.06	11
	13	H-I-O-C-D-E-F-G	38.13 miles	268.27	15
	14	H-I-O-C-D-Q-L-M-G	34.93 miles	241.54	5
	15	H-I-O-C-D-Q-L-R-F-G	36.38 miles	247.79	6
	16	H-I-O-C-P-K-L-M-G	33.50 miles	262.61	13
	17	H-I-O-C-P-K-L-R-F-G	34.94 miles	268.86	16
Clark County to Thistle (25 Route Options)	18	S-T-U-V-W	103.38 miles	599.86	23
	19	S-T-U-JJ-AA-BB-DD-EE	95.28 miles	571.97	18
	20	S-T-U-JJ-AA-BB-LL-EE	93.70 miles	560.29	15
	21	S-T-U-JJ-FF-EE (uses Pink)	88.11 miles	507.58	7
	22	S-T-U-V-KK-BB-DD-EE	99.53 miles	612.27	25
	23	S-T-U-V-KK-BB-LL-EE	97.94 miles	600.59	24
	24	S-T-MM-FF-EE	87.32 miles	514.79	8
	25	S-X-Y-Z-AA-BB-DD-EE	93.15 miles	527.30	11
	26	S-X-Y-Z-AA-BB-LL-EE	91.57 miles	515.62	9
	27	S-X-Y-II-U-V-W	101.74 miles	577.62	20
	28	S-X-Y-II-U-V-KK-BB-DD-EE	97.88 miles	590.03	22
	29	S-X-Y-II-U-V-KK-BB-LL-EE	96.30 miles	578.35	21
	30	S-X-Y-II-U-JJ-AA-BB-DD-EE	93.64 miles	549.72	14
	31	S-X-Y-II-U-JJ-AA-BB-LL-EE	92.05 miles	538.04	13
	32	S-X-Y-II-U-JJ-FF-EE (uses Pink)	86.47 miles	485.34	4
	33	S-X-HH-Z-AA-BB-DD-EE	92.17 miles	506.38	6
	34	S-X-HH-Z-AA-BB-LL-EE	90.59 miles	494.70	5
	35	S-X-HH-Z-FF-EE (uses Pink)	85.00 miles	445.00	1
	36	S-X-HH-II-U-V-W	100.76 miles	561.69	16
	37	S-X-HH-II-U-V-KK-BB-DD-EE	96.90 miles	574.11	19
	38	S-X-HH-II-U-V-KK-BB-LL-EE	95.32 miles	562.43	17
	39	S-X-HH-II-U-JJ-AA-BB-DD-EE	92.66 miles	533.80	12
	40	S-X-HH-II-U-JJ-AA-BB-LL-EE	91.07 miles	522.12	10
	41	S-X-HH-II-U-JJ-FF-EE (uses Pink)	85.49 miles	469.42	3
	42	Pink Route S-X-Y-Z-FF-EE (uses Orange)	85.99 miles	465.92	2

Table 4.1-1
V-Plan Route Scores

4.2 Alternate Routes

As described in Section 4.0 above, the routing analysis yielded 17 distinct routes from Spearville to Clark County and 25 distinct routes from Clark County to Thistle. All 42 of these routes were scored. For the Spearville to Clark County group, the scores ranged from 229.74 for the top-ranked route to 273.31 for the last-place route (Section 4.3 contains details of the scoring system). For the Clark County to Thistle group, the scores ranged from 445.00 for the top-ranked route to 612.27 for the last-place route.

While there is no rule regarding the number of alternate routes to evaluate in more detail, it is customary industry practice to evaluate at least three. In this section of the report, the second and third best scoring routes in each group are described.

4.2.1 Spearville to Clark County (Routes 4 and 10)

Route 9 is the preferred route in the north/south group with a score of 229.74. Route 4 ranked second with a score of 230.11, and Route 10 was third with a score of 235.99. Table 4.2-1 provides a comparison of scores and segments.

Route #	Route Score	Segment List	Distinctive Segments from Preferred Route
4	230.11	A-B-C-D-Q-L-M-G	A
9	229.74	H-N-B-C-D-Q-L-M-G	Preferred Route
10	235.99	H-N-B-C-D-Q-L-R-F-G	R-F

Route 4 is the only Blue group route to score in the top three, although Route 5 came very close at 236.36. Among the top three routes, Route 4 is distinguished by containing Segment A, which is in all of the Blue group routes. Segment A leaves Spearville Substation to the north and runs 0.3 miles before turning due west for 1.8 miles. At that point, it turns due south for 2.8 miles, crossing US 50 Highway in the process. Its final leg angles southwest for 0.6 mile where it intersects with Segment N and ends. Segment B begins at this point.

Route 10 is the third ranked route and part of the Red group of routes. Route 10 contains Segments R and F, distinguishing it from the preferred Route 4, which uses Segment M instead. Segments R, F, and M are located near the south end of their respective routes, near the town of Bloom.

Segment R begins at the end of Segment I, 4.5 miles north of Bloom. From that point, it runs 2.3 miles to the southwest where it turns due south for 1.6 miles where it intersects with Segment E and ends. Segment F begins at this point. Segment F runs 1.3 miles to the south, crossing US Highway 54 in the process. It then runs 1.5 miles to the southeast, then 0.6 mile due east where it intersects with Segment M and ends. Segment G begins at this point.

Because it contains Segments R and F, Route 10 bows out to the west nearly 1.8 miles further than does Segment M and so Route 10 is 1.4 miles longer than Route 9. This added length accounts for most of the difference in score (5.25 out of 6.25 points) between Routes 9 and 10 without providing any benefit. Segments R and F were identified before the final location of the Clark County Substation was determined, so routes that passed both east and west of Bloom were sought. Once the Clark County Substation site was finalized, any route passing west of Bloom had to turn back to the east after crossing US 54 Highway. This is the main reason why routes using Segment M score better than the corresponding routes that use Segments R and F.

Based on the foregoing information, Route 9 is designated as the preferred route from Spearville to Clark County Substations.

4.2.2 Clark County to Thistle (Routes 32, 35 and 41)

Route 42 is the preferred route in the west/east group with a score of 465.92. Route 35 had the best score of 445.00, and Route 41 was third with a score of 469.42. Table 4.2-2 provides a comparison of scores and segments.

All three routes in that table have in common the use of the Pink route, composed almost totally of Segment FF. In fact, of the 25 routes in the west/east group from Clark County to Thistle Substations, the four that use Segment FF (Routes 32, 35, 41, and 42) rank first through fourth. These are also the four shortest routes, ranging in length from 85.00 miles to 86.47 miles. The next shortest route is Route 34 at 90.59 miles, more than four miles longer.

Route #	Route Score	Segment List	Distinctive Segments from Preferred Route
32	485.34	S-X-Y-II-U-JJ-FF-EE	II-U-JJ
35	445.00	S-X-HH-Z-FF-EE	HH
41	469.42	S-X-HH-II-U-JJ-FF-EE	HH-II-U-JJ
42	465.92	S-X-Y-Z-FF-EE	Preferred Route

Route 35 is the route with the overall best score among the 25 west/east group routes. Its score is 20.92 points better than second-place Route 42, the preferred route. The reason that Route 35 is not the preferred route is that there is a north/south, one-half-mile long, grass airstrip on the west side of Bucklin. It is located between West Center Street and Wildfire Road. The south end of the strip is one-half mile north of Segment HH in Route 35. Discussions with knowledgeable landowners in the area indicate that the airstrip handles crop dusting aircraft. When these aircraft are carrying a full load of chemicals, it may be difficult for them, in the distance of one-half mile, to attain an altitude higher than the proposed transmission line structures and uppermost conductors. For this reason, any route containing Segment HH, and there are nine of them, had to be excluded from further consideration. Therefore, Route 35, with the best score, and Route 41, with the third best score, were eliminated from final consideration.

Because the two routes most competitive with Route 35 were eliminated for the same reason, Route 32 is included for evaluation. Route 32 is ranked fourth, 19.42 points behind Route 35. Route 32 is distinguished from the preferred Route 42 by Segments II, U, and JJ in lieu of Segment Z. Segment II begins at the intersection of Segments HH and Y on 133 Road, 0.5 mile south of Wildfire Road, approximately 1.5 miles southeast of Bucklin. It runs to the northeast for 1.9 miles, reaching the south side of US Highway 54, then parallels that highway for 1.5 miles before heading east for 0.9 mile and ending at its intersection with Segment T on the Yellow route. Segment U starts here, runs due east for 6.5 miles, then in a generally east/northeast direction for 6.1 miles before ending at its intersection with Segment JJ. Segment JJ runs southeast and parallel with an existing high voltage transmission line for 2.5 miles, ending at its intersection with Segment Z on the Orange route.

Of the 19.42 points difference in score between Route 32 and the preferred Route 42, 19 points of it are due to additional angle structures with the small remainder due to the additional length of 0.48 mile. Land use for both routes is nearly identical. Another factor contributing to the selection of Route 42 over Route 32 has to do with landowner

input. Segments II, U, and JJ in Route 32 traverse or abut 18 parcels of land concerning which landowners have voiced objections to the project. The corresponding number in Segment Z is eight parcels.

Based on the foregoing information, Route 42 is designated as the preferred route from Clark County to Thistle Substations.

4.3 Comparative Resource Inventory

Table 4-3.1 provides a comparative resource inventory for the preferred route and the alternate routes developed for the Project. It contains inventories of features and characteristics identified within and along each of the routes.

The composite score values at the bottom of the table represent, in part, the results of efforts to quantify land use along each route using land use data embedded in state of Kansas GIS maps of the area and factoring in cost considerations due to angle structures. Lower scores are better than higher scores. The length of each type of land use or other route feature is multiplied by its assigned value and the products of each multiplication are added to arrive at a composite score for the route. The values used for land use, number of angle structures, crossings, and proximity to wind turbines are shown in Table 4-3.2. This table contains more types of land use than were encountered for this project, though all are encountered in the state of Kansas.

With respect to land use, the assignment of values is based on the desirability of types of land for construction of transmission lines: the more barren the land, the fewer the obstructions, and the better its prospects for construction. With respect to residences, the nearness of the routes to residences has been addressed in three ways. The first way, not reflected directly in the scoring, was accomplished through direct observations in the field in August and October 2010, along with subsequent confirmation from aerial photographs. These efforts confirmed that no residence is nearer than 500 feet to any of the proposed lines, assuming the transmission line would be constructed in the center of its 200-foot right-of-way throughout the entire route. The second way, reflected in the scoring, is contained in the “Developed” land use categories, definitions of which can be found in Appendix C. The third way, also reflected in the scoring, is in the number of angles. On the routes contained in this project, many of the angles placed in the lines are for avoidance of residences, businesses, or institutional buildings.

The only difference in land use values between those used for this Project and those used in previous ITC projects in Kansas is in the Grassland/Herbaceous category. The elevation of this value from ‘2’ in previous projects to ‘4’ in the V-Plan project is in recognition of the importance of grassland as sensitive habitat in this part of the state.

Table 4.3-1: Comparative Resource Inventory						
	Spearville to Clark County			Clark County to Thistle		
Route Number	Route 4	Route 9	Route 10	Route 35	Route 41	Route 42
Total Length (miles)	34.07	35.28	36.73	85.00	85.49	85.99
Land Use Factors						
Cultivated Crops (miles)	22.32	24.55	25.94	26.31	27.01	29.72
Deciduous Forest (miles)	0.11	0.11	0.11	0.75	0.75	0.75
Developed, Low Intensity (miles)	0.04	0.08	0.08	0.40	0.58	0.00
Developed, Open Space (miles)	3.50	2.67	1.15	5.91	6.57	2.96
Emergent Herbaceous Wetlands	0.06	0.06	0.06	0.00	0.00	0.00
Grassland/Herbaceous (miles)	6.31	6.25	7.15	51.19	50.20	52.24
Hay / Pasture (miles)	1.38	1.38	2.05	0.02	0.02	0.02
Open Water (miles)	0.29	0.13	0.13	0.25	0.25	0.17
Woody Wetlands (miles)	0.06	0.06	0.06	0.16	0.11	0.11
Construction Factors						
Number of Angle Structures \geq 30 degrees	12	12	11	9	12	12
Number of Angle Structures $<$ 30 degrees	5	4	6	19	23	20
Number of High-Voltage Transmission Line Crossings	2	2	2	3	3	3
Number of Federal or State Highway Crossings	3	3	3	3	3	3
Number of Railroad Crossings	3	3	3	1	1	1
Number of River Crossings	1	1	1	0	0	0
Number of Sited Wind Turbines within 500 feet	0	0	0	0	0	0
Composite Score	230.11	229.74	235.99	445.00	469.42	465.92
Sources: Satellite Imagery, ESRI ArcGIS Map Service; NLCD 2001 Land Use Maps; Google Earth Aerial Photography, 2008; MapQuest Aerial Photography; Kansas GIS Catalog Maps; Field Observations, August 18-21, 2008 and January 19-21, 2010.						

Table 4-3.2 Assigned Values for Types of Land Use and Technical Issues	
Type of Land Use and Construction Factors	Assigned Value*
Barren Land	1
Cultivated Crops	3
Deciduous Forest	6
Developed, High Intensity	8
Developed, Low Intensity	4
Developed, Medium Intensity	6
Developed, Open Space	3
Emergent Herbaceous Wetlands	7
Evergreen Forest	5
Grassland/Herbaceous	4
Hay/Pasture	3
Mixed Forest	6
Open Water	9
Road Crossings and Encroachments	3
Shrub/Scrub	4
Woody Wetlands	7
Angle Structure, at least 30 degrees	5
Angle Structure, greater than 5 and less than 30 degrees	3
High-Voltage Transmission Line Crossing	5
Federal or State Highway Crossing	4
Railroad Crossing	5
River Crossing	7
Sited Wind Turbines within 500 Feet	2

* The lower the value, the more favorable for siting a transmission line.

5.0 Permitting Requirements

A preliminary search of regulatory requirements identified those federal, state, and local permits or formal approvals that will or might be required for the construction, and in some cases operation, of the V Plan Project. These permits and approvals are described in Sections 5.1, 5.2, and 5.3. Formal consultations with several of the involved agencies were also conducted and these are addressed in Section 5.5.

The need for the following permits and approvals will not be conclusively determined until route approval is granted and engineering design work begins. Once details of design are known, this permitting assessment will be updated and the process of applying for and obtaining permits will begin.

5.1 Federal

The following reviews, permits and approvals may be required from federal regulatory agencies for the construction and operation of the proposed transmission line and substations:

- U. S. Department of Agriculture, Natural Resources Conservation Service (NRCS, formerly the U. S. Soil Conservation Service)
 - Review of the final preferred route for the presence of land designated as “Prime Farmland.”
 - Review of the final preferred route for the presence of land designated as “Farmed Wetlands” (regulated by COE Section 404 permitting).
- U. S. Department of Defense, Army Corps of Engineers (COE)
 - Clean Water Act Section 404 Permit – required for work in “Waters of the United States,” including wetlands. Such work includes the need for fill material and the installation of transmission line structures and permanent access roads (considered as fill). Required permit may be a Nationwide Permit or an Individual Permit.
- U. S. Department of the Interior, Fish and Wildlife Service (USFWS)
 - Endangered Species Act Section 7 Consultation – review of designated Threatened and Endangered (T&E) species (plant and animal and habitats) for any required federal and state permits.
 - Endangered Species Act Section 10 Survey and Permit – field survey of designated T&E species and incidental take permit if construction will harm the affected species or destroy its habitat. A habitat conservation plan may also be needed.

-
- U. S. Department of Transportation, Federal Aviation Administration (FAA)
 - Notice of Proposed Construction – for objects that have heights that could be considered obstructions to navigable airspace, project notification to the FAA will be required.
- U. S. Environmental Protection Agency (EPA)
 - Spill Prevention Control and Countermeasure (SPCC) Plan – only if the project will have petroleum products in storage during construction and/or operation in excess of 1,320 gallons. This would apply to transformers at the new or expanded substations and to fuel tanks for construction vehicles and equipment.

5.2 State

The following permits and approvals may be required from various state regulatory agencies for construction and operation of the proposed transmission line and substations:

- Kansas State Historical Society
 - National Historic Preservation Act Section 106 Review – a review of cultural resources (archaeological and historic resources) required as a general condition for authorization of COE Section 10 and Section 404 permits.
 - Review under the State Historic Preservation Statute (KSA 75-2715 to 75-2726) – review of a project requiring authorization from the state or any political subdivision of the state when the project is located within 500 feet of the boundaries of a historic property within the corporate limits of a city, or within 1,000 feet of the boundaries of a historic property located within the unincorporated portion of a county.
- Kansas Department of Health and Environment
 - NPDES General Storm Water Permit for Construction – required for land disturbances greater than or equal to one acre.
 - Construction Storm Water Pollution Prevention Plan – required to design, implement, manage, and maintain Best Management Practices to reduce the amount of pollutants in storm water discharges.
 - Above Ground Storage Tank System Permitting and Registration – required for storage of flammable and combustible liquids.
 - Temporary or Minor Source Construction Permit – required for the installation of generators

- Water Quality Protection Plan – required with the submittal of a Clean Water Action Section 404 permit application, if the proposed project will traverse an exceptional state water.
- Section 401 Water Quality Certification – approval is required as a general condition for authorization of the COE Section 10 and Section 404 permits.
- Kansas Department of Wildlife and Parks
 - Threatened and Endangered Species Evaluation – review of designated Threatened and Endangered (T&E) species (plant and animal and habitats) for any required federal and state permits.
- Kansas Department of Agriculture
 - Floodplain Fill Approval – required for the installation of structures within the 100-year flood plain.
- Kansas Department of Transportation
 - Highway Use Permit – required for the crossing of highway crossings, including US-50, US-400, US-54, US-183, US-281, and K-34.

5.3 Local

The following permits and approvals may be required from Ford, Clark, Kiowa, Pratt, and Barber Counties for construction of the proposed transmission line and new substations. The need for each of these has not yet been confirmed, but each will be investigated with the appropriate permitting agency upon approval of construction of the Project and the development of more engineering design details.

5.3.1 Ford County

- Flood Zone Determination and Compliance.
- Airport Overlay Zone Non-Confirming Use Permit and Variance (likely not required).
- Conditional Use and Development Plan Permit.
- Building Permit or Land Use Permit.
- Construction Permits.
- Entrance/Culvert Permits – Survey Permits-Excavation Permits

5.3.2 Clark County

- Building Permit.
- Construction Permit.
- County Road Crossing Approval.

- Design Review and Approval.
- Flood Zone Determination and Compliance.
- Zoning Review/Conditional Use Permit and Certificate of Occupancy.

5.3.3 Kiowa County

- Building Permit.
- Construction Permit.
- County Road Crossing Approval.
- Design Review and Approval.
- Flood Zone Determination and Compliance.
- Zoning Review/Conditional Use Permit.

5.3.4 Pratt County

- Building Permit.
- Construction Permit.
- County Road Crossing Approval.
- Design Review and Approval.
- Flood Zone Determination and Compliance.

5.3.5 Barber County

- Building Permit.
- Construction Permit.
- County Road Crossing Approval.
- Design Review and Approval.
- Flood Zone Determination and Compliance.
- Zoning Review/Conditional Use Permit and Certificate of Occupancy.

5.4 Other Permits

Because the routes cross railroads, permits or approvals from each railroad company will be needed. Railroads owned by the following companies may be crossed by the proposed transmission line BNSF Railway, Union Pacific, and Kansas & Oklahoma Railway.

5.5 Agency Consultations

Black & Veatch contacted federal, state and local agencies as part of data collection and environmental consultation. The objective of making the contacts is the

identification of issues of concern for the agencies after their review of the Project and the determination of the permits and approvals that will be required. The results of the phone and electronic mail contacts are summarized in this section and copies of the letters received from the agencies are contained in Appendix D, Agency Responses to Requests for Consultation.

5.5.1 Contacts with Agencies

Black & Veatch contacted several federal and state agencies seeking consultation and input regarding their environmental concerns with the Project. This consultation process helped ITC and its representatives address those concerns with route modifications where needed and where feasible.

5.5.2 Summary of Agency Responses

Letters requesting consultation were sent to the following agencies:

- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Kansas State Historical Society
- Kansas Department of Health and Environment, Division of Environment
- Kansas Department of Wildlife and Parks
- Kansas Department of Agriculture
- Kansas Department of Transportation
- The Nature Conservancy

The following is a summary of the responses from those agencies that did respond. They appear in the order received from the agency.

5.5.2.1 Kansas Department of Health and Environment, Bureau of Environmental Remediation. In a letter dated January 10, 2011, the respondent stated that Bureau's Landfill Remediation Unit has three known City Dump sites in the vicinity of the Project. The Ford City Dump is located in the southwest quarter of Section 25, Township 27 S, Range 23 W. The Isabel City Dump is located in the southwest quarter of Section 1, Township 30 S, Range 12 W. The Spearville City Dump is located in the northwest quarter of Section 28, Township 25 S, Range 22 W.

The respondent stated that her agency recommends that any construction be located outside of the limits of the buried solid wastes whenever possible. Should the construction expose any wastes, the wastes exposed must be transported to and disposed of in a KDHE approved landfill.

5.5.2.2 Kansas State Historical Society. In a letter dated January 11, 2011, the respondent stated that the agency had reviewed its cultural resource files for the proposed project area. However, the respondent found it difficult to provide definitive comments for such a large area, but was able to provide some direction. In Ford and northern Clark Counties, recorded sites and good potential for others may be found along the Arkansas River, Bluff Creek, and their major tributaries. Likewise in the remainder of the study area recorded sites and likelihood for others will follow the region's rivers and major tributaries. These include, among others, Rattlesnake Creek, the South Fork of the Ninnescah River, and the Medicine Lodge River. In terms of standing structures, the respondent noted that numerous farmsteads and early buildings are present within the study area and that he will likely request that basic ground-level photographs of structures in and near the chosen routes be submitted in order that their historic significance (if any) may be assessed.

5.5.2.3 Kansas Department of Agriculture. In a letter dated January 20, 2011, the respondent stated that the route of the transmission line as depicted in the maps provided will traverse the Arkansas River. The route does not appear to encounter any other significant water resources. A portion of the route parallels the Medicine Lodge River and will likely encounter hilly terrain.

5.5.2.4 United States Department of the Interior, Fish and Wildlife Service. In a letter dated January 20, 2011, the respondent stated that the Project would occur within the migratory corridor for the endangered whooping crane. The respondent stated that the LPC, a candidate species, occurs within the project area. It was recommended that actions that could adversely affect the lesser prairie chicken or its primary habitat be avoided.

The respondent noted that under the Migratory Bird Treaty Act (MBTA) construction activities that could result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. The provisions of the MBTA are applicable year-round and most migratory bird nesting activities in Kansas occurs April 1 to July 15.

The respondent also stated that invasive species have been identified as a major factor in the decline of native flora and fauna and impact aquatic resources. Proactive measures to prevent the inadvertent spread of exotic and invasive species were recommended.

On December 9, 2010, Project team members from ITC and Black & Veatch met with FWS representatives in Manhattan, Kansas. Service staff indicated a preference for Project impact to occur within cropland and concerns about landing sites of migratory birds. Service staff also stated that the Project should avoid impacts to playa lakes, even

when the playa lakes occur within farmed fields. Regarding the LPC, service staff indicated that if the Project satisfies the KDWP, the FWS will also be satisfied.

5.5.2.5 The Nature Conservancy. In a letter dated January 25, 2011, the respondent stated that the Nature Conservancy's preference is a route that avoids intact grasslands and mainly traverses croplands and less contiguous grasslands. The Nature Conservancy is concerned by the effects of fragmentation on intact native grasslands and the impacts to the wildlife dependent on those large contiguous landscapes.

5.5.2.6 Kansas Department of Health and Environment, Bureau of Water. In a letter dated January 26, 2011, the respondent stated that she had no objection to the proposal but offered a comment for review and consideration. Any construction activity which disturbs one acre or more is required to file a National Pollutant Discharge Elimination System (NPDES) permit application for stormwater runoff resulting from construction activities. The project owner (party responsible for the project) must obtain authorization from KDHE to discharge stormwater runoff associated with construction activities prior to commencing construction.

5.5.2.7 United States Army Corps of Engineers. In email correspondence dated January 28, 2011, the respondent stated it was unable to comment on the Project due to a lack of information regarding potential impacts to waters of the United States. Construction impacts to streams, rivers, lakes, seasonally dry drainage channels, and wetlands could require a Corps of Engineers permit under Section 404 of the Clean Water Act (33 USC 1344). The Project intends to provide additional information to the Corps of Engineers once the exact location of the final route is determined so the Corps of Engineers may provide a substantive response.

5.5.2.8 United States Department of Agriculture, Natural Resources Conservation Service. In a letter dated January 13, 2011, the respondent stated that our request for information needed to be accompanied by additional forms completed for the proposed substations near Bucklin (sic) and Medicine Lodge. Upon review of the forms, it became apparent that the respondent assumed federal funding was being sought. A Black & Veatch representative made a phone call to the respondent's office, explained the project and the fact that it would be privately funded, and was told to disregard the January 13 letter. Furthermore, there would be no need to resend our request for consultation as there would be no further comment on the project from that office.

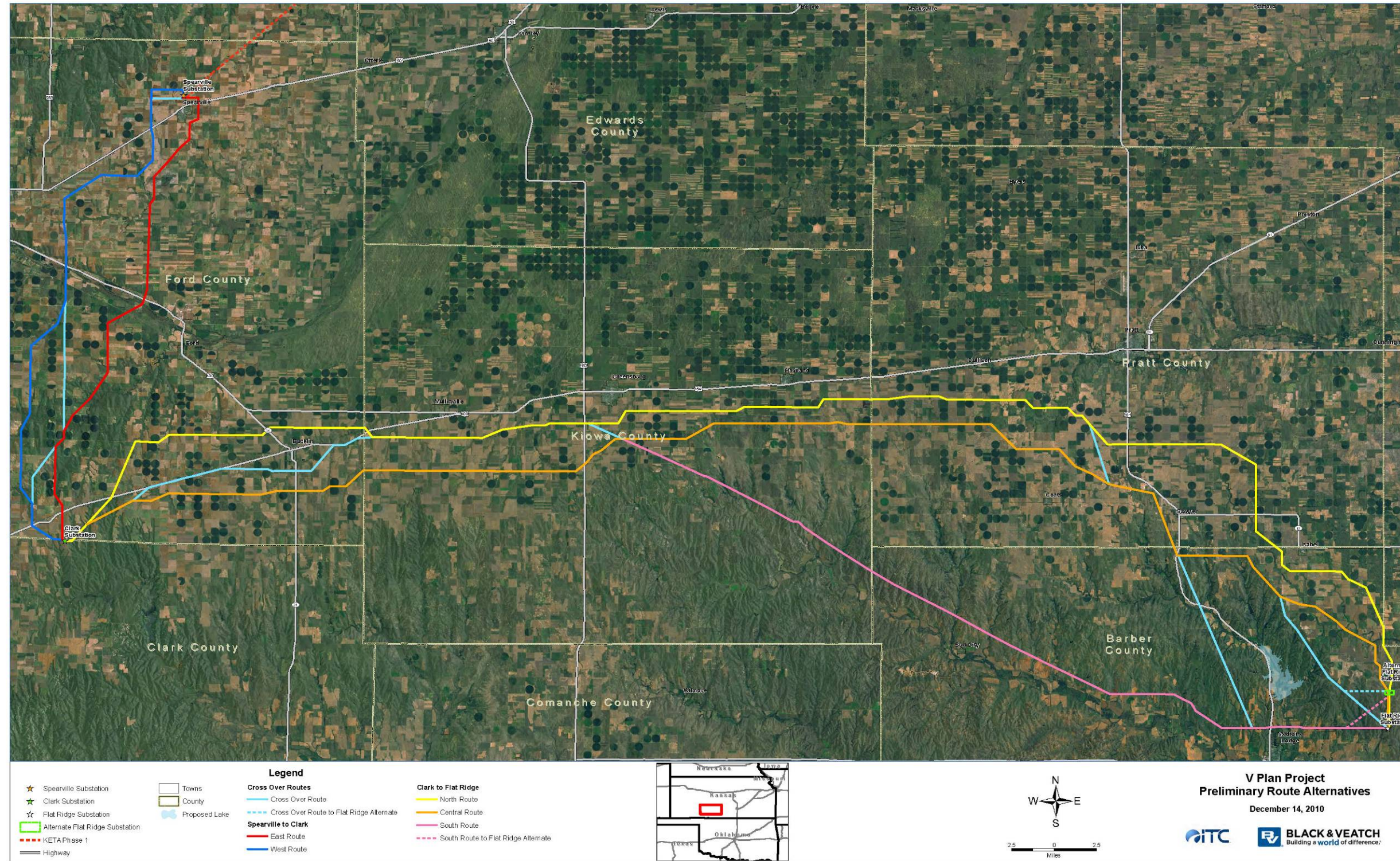
5.5.2.9 Kansas Department of Transportation. In a letter dated March 2, 2011, the respondent stated his concerns were limited to potential conflicts with state and federal highways in Ford County. Specifically, the crossings of US Highways 50, 54 and 400 should be aligned at 90 degrees, plus or minus 10 degrees, and the two of those highways are being considered for widening to four lanes in the future. This would

require a 400-foot right-of-way corridor that should be planned for in the design of the transmission line. For the other counties in the project area, the respondent referred Black & Veatch to the agency's office in Hutchinson.

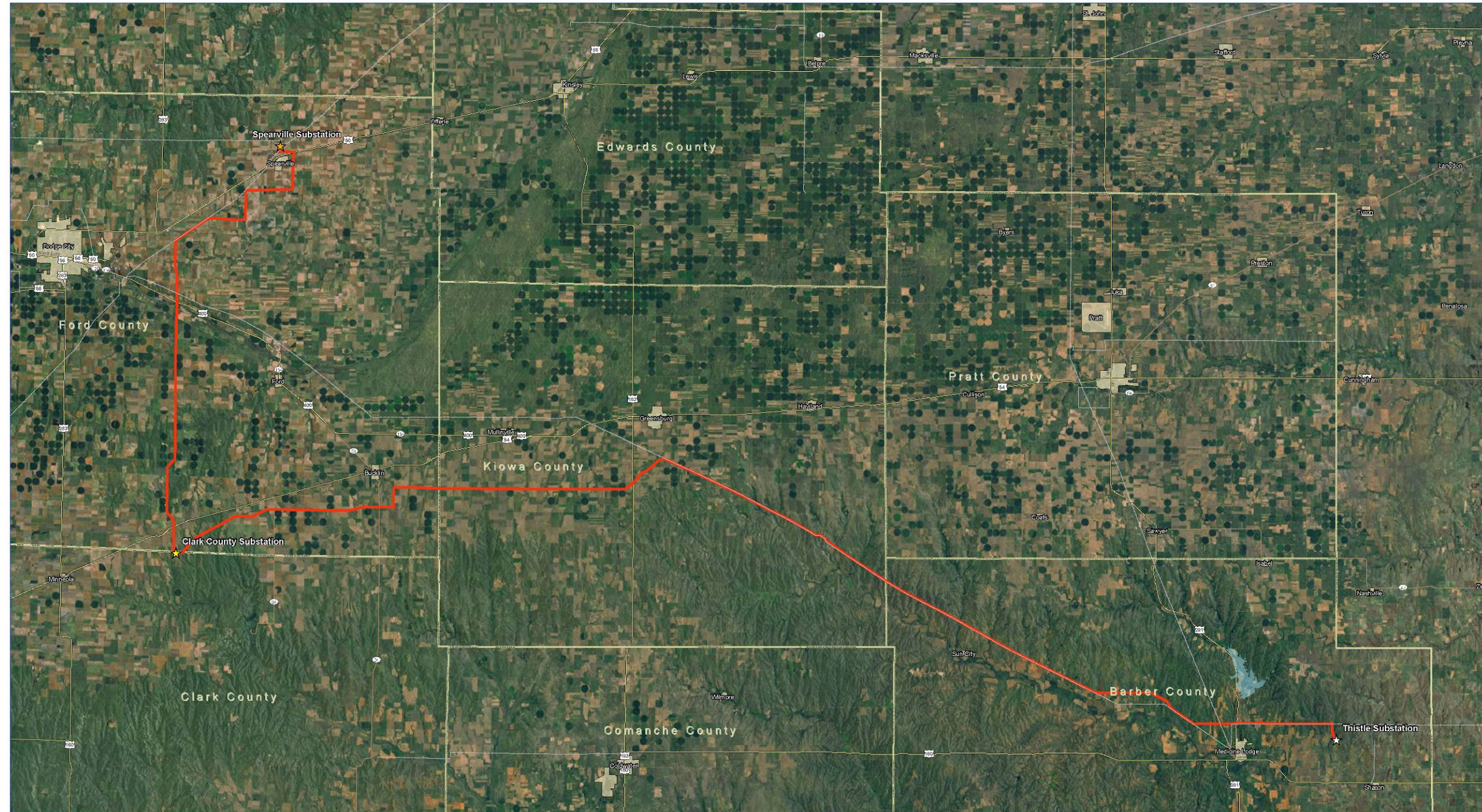
An email to that office yielded a response that, even though they had not yet seen a map of the project, the highway crossings west of Medicine Lodge should not be an issue.

5.5.2.10 Kansas Department of Wildlife and Parks. Consultations with this agency began on an informal basis in April 2010 through meetings and conference calls. On December 8, 2010, Project team members from ITC and Black & Veatch met with the KDWP. KDWP staff stated concerns regarding the whooping crane and the LPC. LPC mitigation areas may be impacted by one of the potential routes. Additionally, KDWP staff indicated that an Action Permit may be required due to temporary ground compaction in construction areas.

Appendix A
Map of Alternate Routes



Appendix B
Map of Preferred Route



Legend

- ★ Spearville Substation
- ★ Clark County Substation
- ★ Thistle Substation
- Existing Transmission Line
- V-Plan Preferred Route



0 5 10 Miles

**V-Plan Project
Preferred Route**
March 8, 2011



Appendix C
Land Use Category Definitions

Multi-Resolution Land Characteristics Consortium (MRLC) National Land Cover Data (NLCD) 2001 Land Cover Class Definitions

DEFINITIONS OF TERMS USED IN STUDY:

Barren Land (Rock/Sand/Clay) - Barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.

Cultivated Crops - Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total vegetation. This class also includes all land being actively tilled.

Deciduous Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75 percent of the tree species shed foliage simultaneously in response to seasonal change.

Developed, High Intensity - Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to 100 percent of the total cover.

Developed, Low Intensity - Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.

Developed, Medium Intensity - Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-79 percent of the total cover. These areas most commonly include single-family housing units.

Developed, Open Space - Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. This category also includes paved and unpaved roadways.

Emergent Herbaceous Wetlands - Areas where forest or shrubland vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Grassland/Herbaceous - Areas dominated by grammanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.

Open Water - All areas of open water, generally with less than 25% cover of vegetation or soil.

Road Crossing - Locations where route crosses roads of all kinds. Minimum width of crossing in database is 100 feet, the width of one pixel.

Woody Wetlands - Areas where forest or shrubland vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water (also broad category--see below).

BROAD CATEGORY DEFINITIONS:

Water - All areas of open water or permanent ice/snow cover.

Developed - Areas characterized by a high percentage (30 percent or greater) of constructed materials (e.g. asphalt, concrete, buildings, etc).

Barren - Areas characterized by bare rock, gravel, sand, silt, clay, or other earthen material, with little or no "green" vegetation present regardless of its inherent ability to support life. Vegetation, if present, is more widely spaced and scrubby than that in the "green" vegetated categories; lichen cover may be extensive.

Forested Upland - Areas characterized by tree cover (natural or semi-natural woody vegetation, generally greater than 6 meters tall); tree canopy accounts for 25-100 percent of the cover.

Herbaceous Upland - Upland areas characterized by natural or semi-natural herbaceous vegetation; herbaceous vegetation accounts for 75-100 percent of the cover.

Planted/Cultivated - Areas characterized by herbaceous vegetation that has been planted or is intensively managed for the production of food, feed, or fiber; or is maintained in developed settings for specific purposes. Herbaceous vegetation accounts for 75-100 percent of the cover.

Woody Wetlands - Areas where forest or shrubland vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Appendix D
Agency Responses to Requests for Consultation



BLACK & VEATCH
Building a world of difference.

SALVATORE J. FALCONE
Project Manager, Energy
11401 LAMAR, OVERLAND PARK, KS 66211 USA
+1 913-458-3380 | FALCONESJ@BV.COM

January 5, 2011

Donna Fisher
Kansas Department of Health and Environment
Division of Environment
1000 SW Jackson, Suite 400
Topeka, Ks. 66612-1367

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Ms. Fisher:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Ste. 400
Topeka, KS 66612-1367



Phone: 785.296.1535
Fax: 785.296.8464
www.kdheks.gov

Robert Moser, MD, Acting Secretary

Department of Health & Environment

Sam Brownback, Governor

Comments by: KDHE

Transmittal Date: January 26, 2011

This form provides notification and the opportunity for your agency to review and comments on this proposed project as required by Executive Order 12372. Review Agency, please complete Parts II and III as appropriate and return to contact person listed below. Your prompt response will be appreciated.

RETURN TO: Salavtore Falcone, Environmental Project Manager
Black & Veatch Corporation
11401 Lamar
Overland Park, KS 66211

PART I REVIEW AGENCIES/COMMISSION

- | | | |
|--|--|---|
| <input type="checkbox"/> Aging | <input type="checkbox"/> Education | <input type="checkbox"/> State Forester |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Geological Survey, KS | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Biological Survey | <input checked="" type="checkbox"/> Health & Environment | <input type="checkbox"/> Water Office, KS |
| <input type="checkbox"/> Conservation Commission | <input type="checkbox"/> Historical Society | <input type="checkbox"/> Wildlife & Parks |
| <input type="checkbox"/> Corporation Commission | <input type="checkbox"/> Social & Rehabilitation | <input type="checkbox"/> Commerce |

PART II AGENCY REVIEW COMMENTS

COMMENTS: (Attach additional sheet if necessary) Re: Proposed Transmission Line, V-Plan Project in Southern Kansas
Please see the enclosed comments submitted by Don Carlson and Kathleen Bleach.

PART III RECOMMENDED ACTION COMMENTS:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Clearance of the project should be granted. | <input type="checkbox"/> Clearance of the project should not be delayed but the Applicant should (in the final application) address and clarify the question or concerns indicated above. |
| <input type="checkbox"/> Clearance of the project should not be granted. | |
| <input type="checkbox"/> Clearance of the project should be delayed until the issues or questions above have been clarified. | |
| <input type="checkbox"/> Request a State Process Recommendation in concurrence with the above comments. | <input type="checkbox"/> Request the opportunity to review final application prior to submission to the federal funding agency. |

DIVISIONS/ AGENCY/ COMMISSION

John W. Mitchell, Director
Division of Environment

JM/df

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 400
Topeka, KS 66612-1367



Phone: 785.296.1535
Fax: 785.296.8464
www.kdheks.gov

Robert Moser, MD, Acting Secretary

Department of Health & Environment

Sam Brownback, Governor

January 26, 2011

Salvatore Falcone
Project Manager, Energy
Black & Veatch
11401 Lamar
Overland Park, KS 66211

Re: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. Falcone:

I have no objection to the proposal but offer the following comment for review and consideration:

Any construction activity which disturbs one acre or more is required to file a National Pollutant Discharge Elimination System (NPDES) permit application for stormwater runoff resulting from construction activities. The project owner (party responsible for the project) must obtain authorization from KDHE to discharge stormwater runoff associated with construction activities prior to commencing construction. The Kansas construction stormwater general permit, a Notice of Intent (application form), a frequently asked questions file and supplemental materials are on-line on the KDHE Stormwater Program webpage at www.kdhe.state.ks.us/stormwater. Answers to questions regarding or additional information concerning construction stormwater permitting requirements can be obtained by calling 785.296.5549.

Sincerely,

Donna Fisher
Director's Office

DC/df



*Mark Parkinson, Governor
John W. Mitchell, Acting Secretary*

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

MEMORANDUM

TO: Donna Fisher

CC: Scott Yankey → File: Ford City Dump (029-FOR)
Isabel City Dump (004-ISA)
Spearville City Dump (029-SPE)

FROM: Kathleen Bleach

DATE: January 10, 2010

RE: Intergovernmental Review requested by Black & Veatch for a proposed transmission line in Barber County, Pratt County, Kiowa County, and Ford County.

The Kansas Department of Health and Environment (KDHE), Bureau of Environmental Remediation (BER), Assessment and Restoration Section, Landfill / Drycleaner Remediation Unit has three known city dump sites in the vicinity of the proposed project. The Ford City Dump is located within the Southwest Quarter of Section 25, Township 27 South, Range 23 West. The Isabel City Dump is located in the Southwest Quarter of Section 01, Township 30 South, Range 12 West. The Spearville City Dump is located in the Northwest Quarter of Section 28, Township 25 South, Range 22 West.

KDHE-BER does not oppose construction near the sites of former city dumps. However, KDHE-BER recommends that any construction be located outside of the limits of the buried solid wastes whenever possible. Should construction expose any wastes, the wastes exposed must be transported to and disposed of in a KDHE approved landfill.

Staff from Black & Veatch are welcome to come view the KDHE-BER files in accordance with the Kansas Open Records Act. If you have any questions, please contact me at (785) 296-6377 or email kbleach@kdheks.gov.



BLACK & VEATCH
Building a world of difference.

SALVATORE J. FALCONE
Project Manager, Energy
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+1 913-458-3380 | FALCONESJ@BV.COM

January 5, 2011

Rick Kreider
Bureau Chief of Materials and Research
Kansas Department of Transportation
Dwight D. Eisenhower State Office Bldg.
700 SW Harrison
Topeka KS 66603-3754

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. Kreider:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental and constructability review of this project. Your agency's assistance and input will assist with the project's review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding areas of concern within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)

District 6
121 North Campus Drive
Garden City, KS 67846



Phone: 620-276-3241
Fax: 620-276-2333
Hearing Impaired - 711
publicinfo@ksdot.org
<http://www.ksdot.org>

Deb Miller, Secretary
Larry L. Thompson, P.E., District Engineer

Kansas Department of Transportation

Sam Brownback, Governor

March 2, 2011

Salvatore Falcone
Project Manager, Energy
Black & Veatch Corporation
11401 Lamar
Overland Park KS 66211

RE: Proposed Transmission Line, V-Plan project in Southern KS

Mr. Falcone:

Rick Kreider has forwarded your request for information to me. I apologize for not responding in a more timely manner.

My comments are limited to concerns with potential conflicts with the State and US highway transportation system in Ford County. The counties to the east of Ford County are in District Five, with headquarters in Hutchinson.

Crossings of the proposed transmission line and US-50, US-400 and US-54, or other State and US highways, should be aligned at 90 degrees, plus or minus 10 degrees to minimize the length of transmission line over the highway right of way. Obviously, vertical clearances are also of concern. A permit will be necessary for highway right of way crossings.

Although no official planning has occurred, there is local and statewide interest in providing a future 4 lane highway facilities on US-50 east of Dodge City and on US-54 through Ford County. Therefore, I would suggest that your study consider that a 400 foot wide highway corridor may exist at some future date along these facilities. Anything that could be done today to eliminate future conflicts will benefit both projects.

Feel free to contact me if additional information or clarification is desired.

Sincerely,

Larry L. Thompson, P.E.
Southwest District Engineer

c: Dale Luedke, P.E. – Area Engineer



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Building a world of difference.

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January 5, 2011

Chad Voigt
Water Structures Program Manager
Kansas Department of Agriculture
109 S.W. 9th Street, 2nd Floor
Topeka, KS 66612-1280

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. Voigt:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)

109 SW 9th Street
4th Floor
Topeka, Kansas 66612-1280



phone: (785) 296-3556
fax: (785) 296-8389
www.ksda.gov
ksag@kda.ks.gov

Office of the Secretary
Kansas Department of Agriculture

Sam Brownback, Governor
Dale A. Rodman, Acting Secretary

Salvatore Falcone, Project Manager
Black & Veatch Corporation
11401 Lamar
Overland Park, KS 66211

January 20, 2011

RE: Environmental Review
Transmission Line, V-Plan Project in South
Kansas

DWR A-95 2011.3

Dear Mr. Falcone:

This correspondence will acknowledge your request for this Agency to review the project area for the proposed transmission lines from the existing Spearville, Kansas substation to a new substation in Clark County, and from there to a new substation near Medicine Lodge, Kansas as depicted on the provided map.

The proposed routes from Spearville south to the new Clark substation will traverse the Arkansas River. The proposed north and central routes from Clark to Flat Ridge do not appear to encounter any significant water resources. The south route to Flat Ridge runs, in large part, parallel to the Medicine Lodge River, and would likely encounter hilly terrain.

Sincerely,

Bob Lytle
Environmental Scientist
Technical Services Section



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SALVATORE J. FALCONE

Project Manager, Energy

11401 LAMAR, OVERLAND PARK, KS 66211 USA

+1 913-458-3380 | FALCONESJ@BV.COM

January 5, 2011

Jennie Chinn
Executive Director
State Historic Preservation Officer
Kansas State Historical Society
6425 SW Sixth Avenue
Topeka KS 66615-1099

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Ms. Chinn:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project, including potential impacts on cultural resources. Your agency's assistance and input will assist with the project's review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the cultural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)



Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

January 11, 2011

Salvadore Falcone
Environmental Project Manager
Black & Veatch Corporation
11401 Lamar
Overland Park, KS 66211RE: Transmission Line Routing Study
V-Plan Project, Southern Kansas
Barber, Clark, Ford, Kiowa, and Pratt Counties

Dear Mr. Falcone:

The Kansas State Historic Preservation Office has reviewed its cultural resources files for the area of the proposed project as described in your letter of January 5, 2011 in accordance with 36 CFR 800. It is difficult to provide definitive comments for such a large area, but our office can offer some direction at this time. We do so with the expectation that a thorough Phase I records search will be conducted and submitted for review once transmission line routes have been chosen.

In Ford and northern Clark Counties, recorded sites and good potential for others may be found along the Arkansas River, Bluff Creek, and their major tributaries. Likewise in the remainder of the study area in Kiowa, Pratt, and Barber Counties, recorded sites and likelihood for others will follow the region's rivers and major tributaries. These include, among others, Rattlesnake Creek, the South Fork of the Ninnescah River, and the Medicine Lodge River. In terms of standing structures, we note that numerous farmsteads and early buildings are present within the study area. Our office will likely request that basic ground-level photographs of structures in and near the chosen routes be submitted in order that their historic significance (if any) may be assessed.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn, Executive Director and
State Historic Preservation OfficerA handwritten signature in black ink that reads "Timothy Weston". To the right of the signature is a small, stylized mark that appears to be "107".
Patrick Zollner
Deputy SHPO



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SALVATORE J. FALCONE
Project Manager, Energy
11401 LAMAR, OVERLAND PARK, KS 66211 USA
+1 913-458--3380 | FALCONESJ@BV.COM

January 5, 2011

The Nature Conservancy in Kansas
700 SW Jackson, Suite 804
Topeka, KS 66603

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Sir/Madam:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)



Protecting nature. Preserving life.™

Jim Hays
106 N. Pine
Pratt, KS 67124

tel/fax [620]508-6039
cell [620]388-4613
nature.org/Kansas

January 25, 2011

Mr. Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation
11401 Lamar
Overland Park, KS. 66211

Mr. Falcone;

Thank you for the opportunity to review the proposed new V-Plan transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. The Nature Conservancy (TNC) – Kansas Chapter strives to conserve biodiversity, in part by reducing habitat fragmentation across native ecological landscapes. Intact grasslands are of particular importance; as are grassland birds, North America's most rapidly declining suite of avian species. As you know, we have been working with other members of the Kansas conservation community to develop an on-line planning and mapping tool for the state. Through this process, the state's conservation experts have identified a number of important natural resource geospatial layers that provide important information regarding the impacts of development in Kansas landscapes. The most current available data and expertise is utilized in this planning tool. We used this planning tool and our knowledge of the area to aid in our evaluation of the proposed V-Plan transmission corridors.

The project route encompasses a fairly large geographic area covering a distance of approximately 110 miles. As a result of our review, TNC recommends the most northern and easterly route proposed from the new substation in Clark County, KS to the new substation near Medicine Lodge, KS. This corridor is depicted by the yellow line on your map and would lie mostly outside of the northern edge of the intact grasslands of the Red Hills in Kansas. It would mainly traverse croplands and less contiguous grasslands.

As proposed, this corridor causes the least concern for TNC. We understand power transmission is an important factor for wind and other alternative energy development in Kansas. However, we are equally concerned by the effects of fragmentation on intact native grasslands and the impacts to the wildlife dependant on those large contiguous landscapes. The Nature Conservancy believes there is opportunity for wind and transmission development to occur in the state, while avoiding large scale impacts. The selection of this transmission corridor would go far in supporting that principle.

When investigating future transmission or other development projects in Kansas, we recommend you review the new Kansas planning tool <http://www.kars.ku.edu/maps/naturalresourceplanner/>. Additionally, TNC welcomes the opportunity to provide input for any future project you may have in Kansas. Thank you for the opportunity to review and present comments on this proposed transmission corridor. Please feel free to contact me to discuss any questions you may have.

Sincerely,

Jim Hays
Conservation Projects Coordinator
The Nature Conservancy – Kansas Chapter



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SALVATORE J. FALCONE

Project Manager, Energy

11401 LAMAR, OVERLAND PARK, KS 66211 USA

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January 5, 2011

Steve Penaluna
Regulatory Project Manager
Kansas State Regulatory Office
U.S. Army Corps of Engineers
2710 NE Shady Creek Access Road
Eldorado, KS 67042

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. Penaluna:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)

Falcone, Salvatore J. (Sal)

From: Penaluna, Stephen H NWK [Stephen.H.Penaluna@usace.army.mil]
Sent: Thursday, January 27, 2011 12:56 PM
To: Falcone, Salvatore J. (Sal)
Subject: Response to 01/05/2011 Request

Sir:

Your request which appears to take the form of a scoping document, fails to identify whether there would be any impacts to waters of the United States, to include wetlands. We are therefore, unable to comment on the ITC Great Plains transmission line project. Any construction impacts to streams, rivers lakes, seasonally dry drainage channels, wetlands, could result in the requirement for a Corps of Engineers permit under the provisions of Section 404 of the Clean Water Act.

If you have any questions, please feel free to contact me directly.

Stephen H. Penaluna
Regulatory Project Manager/Team Leader
Kansas State Regulatory Office
(316) 322-8247 (Ofc)
(316) 322-8259 (Fax)



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SALVATORE J. FALCONE

Project Manager, Energy

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+1 913-458--3380 | FALCONESJ@BV.COM

January 5, 2011

Mike LeValley, Project Leader
US Fish and Wildlife Service
Ecological Services, Kansas Field Office
2609 Anderson Avenue
Manhattan, Kansas 66502

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. LeValley:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
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- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in black ink that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, Kansas 66502-2801

January 20, 2011

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation
11401 Lamar Avenue
Overland Park, KS 66211

RE: V-Plan Project in Southern Kansas

64411-2011-CPA-0183

Dear Mr. Falcone:

This is in reply to your January 13, 2011 letter requesting Fish and Wildlife Service review of alternate proposals for transmission line construction between Ford and Barber counties, Kansas. ITC Great Plains proposes to construct a new transmission line, referred to as the V-Plan, and has developed several alternative routes for consideration. My staff also met with ITC representatives on December 9, 2010 to discuss the various alternatives. The following comments are provided for your consideration.

All alternatives proposed, both north-south and east-west, will occur within the migratory corridor for the endangered whooping crane. As transmission lines are known to be a significant hazard for this highly endangered species, the same concerns will apply to any of the alternatives currently under consideration. I am enclosing guidance developed for our Region that outlines measures that can be employed to reduce the potential impact on this species. If you have any questions or concerns regarding implementation of any of this guidance, please contact Dan Mulhern of this office.

The candidate species lesser prairie-chicken also occurs within the project design area, primarily utilizing native prairie and some cropland for foraging. Candidate species are those for which the Fish and Wildlife Service has substantial information to indicate they warrant protection under the Endangered Species Act. Proposed rules to begin the process of implementing this legal protection may be initiated at any time for these species. It is our recommendation that actions that could adversely affect this species or its primary habitat should be avoided.

Regarding the proposed routes from Spearville to Clark, it appears the western (blue) route would likely result in fewer environmental impacts than the eastern (red) route. Regarding the proposed routes from Clark to Flat Ridge, we conclude that the northern (yellow) route should result in fewer impacts than the other routes proposed. We had previously discussed the possibility that the southernmost diagonal (pink) route may be a possibility, since it parallels an existing powerline which already exerts an environmental impact on the landscape. However, in discussing this with our Partners for Fish and Wildlife program, this alternative would intersect with several private lands projects which they have spent considerable effort and finances to develop. Since 2000, our

Partners program and other agencies and landowners have spent approximately \$2.8 million on 110,000 acres within the Red Hills region of Kansas, with lesser prairie-chicken habitat a priority resource for conservation.

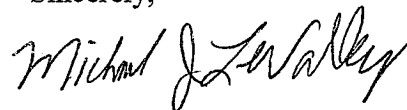
Under the Migratory Bird Treaty Act, construction activities that could result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Bird nests may be encountered in prairies, wetlands, stream and woodland habitats, as well as on bridges and other structures. While the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Kansas occurs April 1 to July 15. Keep in mind that some migratory birds are known to nest outside these dates, so a field assessment may be necessary. If the project appears likely to impact habitat which is being used by nesting birds, I recommend a survey to determine the presence of active nests. Our office should be contacted immediately for further guidance if a survey identifies the existence of one or more active bird nests that you believe cannot be avoided temporally or spatially by the planned activities.

Invasive species have been identified as a major factor in the decline of native flora and fauna and impact aquatic resources. Information on aquatic invasive species in Kansas can be found on KDWP's website http://www.kdep.state.ks.us/news/fishing/aquatic_nuisance_species. I recommend the following proactive measures to prevent the inadvertent spread of exotic and invasive species:

All equipment brought on site will be thoroughly washed to remove dirt, seeds, and plant parts. Any equipment that has been in any body of water within the past 30 days will be thoroughly cleaned with hot water greater than 140° F (typically the temperature found at commercial car washes) and dried for a minimum of five days before being used at this project site. In addition, before transporting equipment from the project site all visible mud, plants and fish and animal parts will be removed, all water will be eliminated, and the equipment will be thoroughly cleaned. Anything that came in contact with water will be cleaned and dried following this procedure.

Thank you for this opportunity to provide input to this decision-making process. If you have additional comments or questions, please direct them to Dan Mulhern of this office.

Sincerely,



Michael J. LeValley
Field Supervisor

enclosure

cc: KDWP, Pratt, KS (Environmental Services)
OP Group, Topeka, KS (Curt Rasmusson)
Atwell, Andover, KS (Kim Austin)



United States Department of the Interior

FISH AND WILDLIFE SERVICE Mountain-Prairie Region



IN REPLY REFER TO:
FWS/R6
ES


MAILING ADDRESS:
P.O. Box 25486, DFC
Denver, Colorado 80225-0486

STREET LOCATION:
134 Union Boulevard
Lakewood, Colorado 80228-1807

FEB 04 2010

Memorandum

To: Field Office Project Leaders, Ecological Services, Region 6
Montana, North Dakota, South Dakota, Nebraska, Kansas

From: Assistant Regional Director, Ecological Services, Region 6 

Subject: Region 6 Guidance for Minimizing Effects from Power Line Projects Within the Whooping Crane Migration Corridor

This document is intended to assist Region 6 Ecological Services (ES) biologists in power line (including generation lines, transmission lines, distribution lines, etc.) project evaluation within the whooping crane migration corridor. The guidance contained herein also may be useful in planning by Federal action agencies, consultants, companies, and organizations concerned with impacts to avian resources, such as the Avian Power Line Interaction Committee (APLIC). We encourage action agencies and project proponents to coordinate with their local ES field office early in project development to implement this guidance.

The guidance includes general considerations that may apply to most, but not every, situation within the whooping crane migratory corridor. Additional conservation measures may be considered and/or discretion may be applied by the appropriate ES field office, as applicable. We believe that in most cases the following measures, if implemented and maintained, could reduce the potential effects to the whooping crane to an insignificant and/or discountable level. Where a Federal nexus is lacking, we believe that following these recommendations would reduce the likelihood of a whooping crane being taken and resulting in a violation of Endangered Species Act (ESA) section 9. If non-Federal actions cannot avoid the potential for incidental take, the local ES field office should encourage project proponents to develop a Habitat Conservation Plan and apply for a permit pursuant to ESA section 10(a)(1)(B).

Finally, although this guidance is specific to impacts of power line projects to the whooping crane within the migration corridor, we acknowledge that these guidelines also may benefit other listed and migratory birds.

If you have any questions, please contact Sarena Selbo, Section 7 Coordinator, at (303) 236-4046.

Region 6 Guidance for Minimizing Effects from Power Line Projects Within the Whooping Crane Migration Corridor

- 1) Project proponents should avoid construction of overhead power lines within 5.0 miles of designated critical habitat and documented high use areas (these locations can be obtained from the local ES field office).
- 2) To the greatest extent possible, project proponents should bury all new power lines, especially those within 1.0 mile of potentially suitable habitat¹.
- 3) If it is not economically or technically feasible to bury lines, then we recommend the following conservation measures be implemented:

a) Within the 95-percent sighting corridor (see attached map)

- i) Project proponents should mark² new lines within 1.0 mile of potentially suitable habitat and an equal amount of existing line within 1.0 mile of potentially suitable habitat (preferably within the 75-percent corridor, but at a minimum within the 95-percent corridor) according to the U.S. Fish and Wildlife Service (USFWS) recommendations described in APLIC 1994 (or newer version as updated).
- ii) Project proponents should mark replacement or upgraded lines within 1.0 mile of potentially suitable habitat according to the USFWS recommendations described in APLIC 1994 (or newer version as updated).

b) Outside the 95-percent sighting corridor within a State's borders

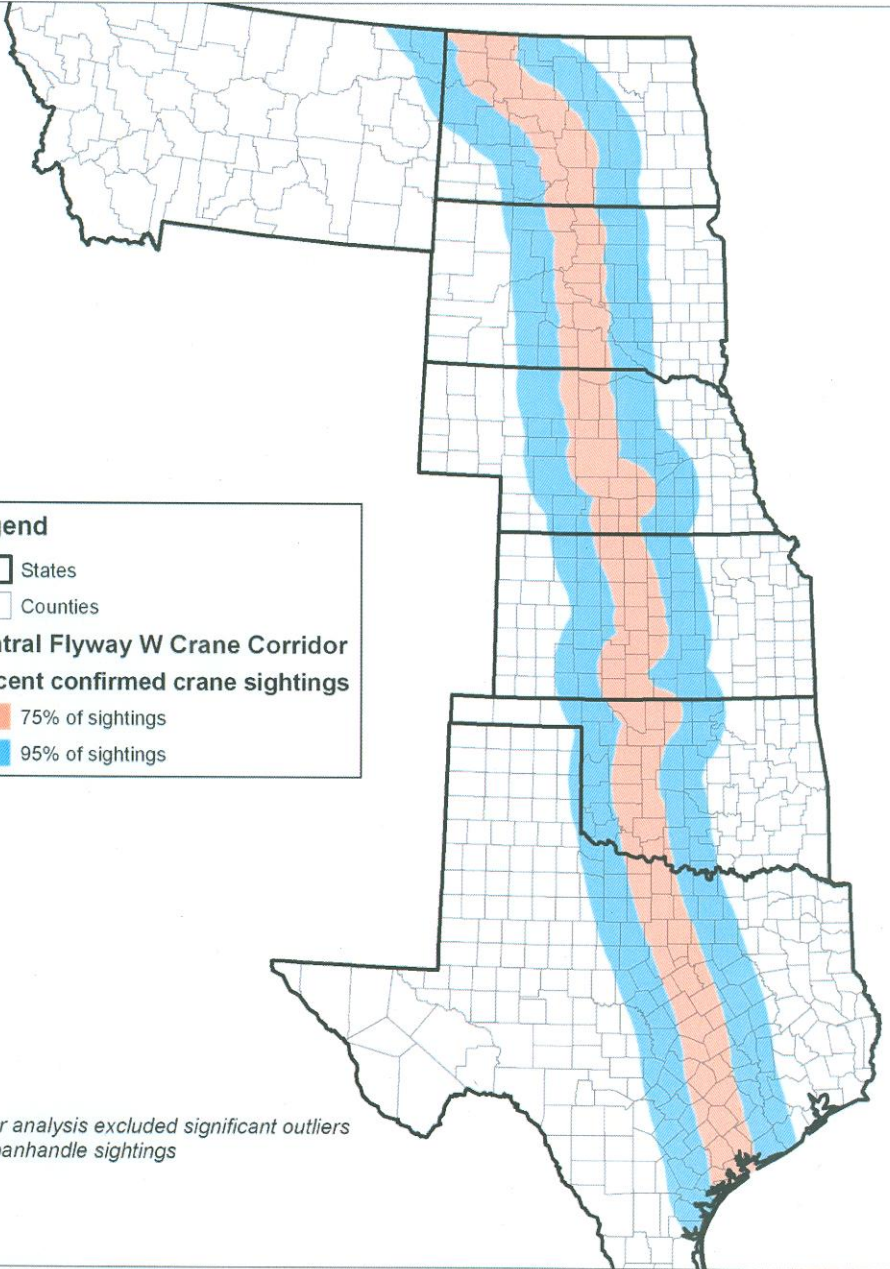
Project proponents should mark new lines within 1.0 mile of potentially suitable habitat at the discretion of the local ES field office, based on the biological needs of the whooping crane.

c) Develop compliance monitoring plans

Field offices should request written confirmation from the project proponent that power lines have been or will be marked and maintained (i.e., did the lines recommended for marking actually get marked? Are the markers being maintained in working condition?)

¹ Potentially suitable migratory stop over habitat for whooping cranes includes wetlands with areas of shallow water without visual obstructions (i.e., high or dense vegetation) (Austin & Richert 2001; Johns et al. 1997; Lingle et al. 1991; Howe 1987) and submerged sandbars in wide, unobstructed river channels that are isolated from human disturbance (Armbruster 1990). Roosting wetlands are often located within 1 mile of grain fields. As this is a broad definition, ES field office biologists should assist action agencies/applicants/companies in determining what constitutes potentially suitable habitat at the local level.

² Power lines are cited as the single greatest threat of mortality to fledged whooping cranes. Studies have shown that marking power lines reduces the risk of a line strike by 50 to 80 percent (Yee 2008; Brown & Drewien 1995; Morkill & Anderson 1991). Marking new lines and an equal length of existing line in the migration corridor maintains the baseline condition from this threat.



Legend

- States
- Counties

Central Flyway W Crane Corridor

Percent confirmed crane sightings

- 75% of sightings
- 95% of sightings

* Corridor analysis excluded significant outliers and TX panhandle sightings



Literature Cited

- Armbruster, M.J. 1990. Characterization of habitat used by whooping cranes during migration. U.S. Fish and Wildlife Service. Biological Report 90(4). 16 pp.
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- Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines: the state of the art in 1994. Edison Electric Institute. Washington, D.C. 99 pp.
- Brown, W.M., and R.C. Drewien. 1995. Evaluation of two powerline markers to reduce crane and waterfowl collision mortality. *Wildlife Society Bulletin* 23(2):217-227.
- Howe, M.A. 1987. Habitat use by migrating whooping cranes in the Aransas-Wood Buffalo corridor. Pp 303-311, in J.C. Lewis and J.W. Ziewitz, eds. Proc. 1985 Crane Workshop. Platte River Whooping Crane Habitat Maintenance Trust and U.S. Fish and Wildlife Service, Grand Island, Nebraska.
- Johns, B.W., E.J. Woodsworth, and E.A. Driver. 1997. Habitat use by migrant whooping cranes in Saskatchewan. *Proc. N. Am. Crane Workshop* 7:123-131.
- Lingle, G.R., G.A. Wingfield, and J.W. Ziewitz. 1991. The migration ecology of whooping cranes in Nebraska, U.S.A. Pp 395-401 in J. Harris, ed. Proc. 1987 International Crane Workshop, International Crane Foundation, Baraboo, Wisconsin.
- Morkill, A.E., and S.H. Anderson. 1991. Effectiveness of marking powerlines to reduce sandhill crane collisions. *Wildlife Society Bulletin* 19:442-449.
- Yee, M.L. 2008. Testing the effectiveness of an avian flight diverter for reducing avian collisions with distribution power lines in the Sacramento Valley, California. California Energy Commission; Publication CEC-500-2007-122.



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SALVATORE J. FALCONE
Project Manager, Energy
11401 LAMAR, OVERLAND PARK, KS 66211 USA
+1 913-458-3380 | FALCONESJ@BV.COM

January 5, 2011

Eric Banks, State Conservationist
USDA, NRCS
760 South Broadway
Salina, KS 67401
US Department of Agriculture, NRCS

RE: Proposed Transmission Line, V-Plan Project in Southern Kansas

Dear Mr. Banks:

ITC Great Plains (ITC) proposes to construct a new transmission line from the existing Spearville, Kansas substation to a new substation in Clark County, Kansas and from there to a new substation near Medicine Lodge, Kansas. ITC requested that Black & Veatch conduct an environmental review of this project. Your agency's assistance and input will assist with the project's environmental review.

The proposed project will begin in Ford County, Kansas near Spearville and end in Barber County, Kansas. The project consists of:

- A new substation near Bucklin, Kansas
- A new substation near Medicine Lodge, Kansas
- Approximately 110 miles of double-circuit 345 kV transmission line joining the existing Spearville substation to the new ones near Bucklin and near Medicine Lodge

The specific location of the new substation near Medicine Lodge has not been determined, but it will be within two miles of an existing substation there. The new transmission line will require a right-of-way width of approximately 200 feet.

Please refer to the enclosed map for reference. This map illustrates alternative route alignments under consideration. A preferred route has not yet been determined, but ITC is in the process of seeking input from a variety of stakeholders, including state and federal agencies and the public.

Information from your agency regarding the natural resources within the project area is requested to assist in the identification of a preferred route.



Black & Veatch requests a written response of your findings for the project record, within 30 days of your receipt of this letter if possible. If you have any questions during your review or require additional information, please contact me at (913) 458-3380 or at FalconeSJ@bv.com. Thank you in advance for your effort in completing this request.

Sincerely,

A handwritten signature in cursive script that reads "Salvatore Falcone".

Salvatore Falcone
Environmental Project Manager
Black & Veatch Corporation

Cc: B&V File (with enclosures)

United States Department of Agriculture



Natural Resources Conservation Service
760 South Broadway
Salina, Kansas 67401-4604

Phone: 785-823-4500
FAX: 785-823-4540
www.ks.nrcs.usda.gov

January 13, 2011

BLACK & VEATCH Corporation
ATTN: Salvatore J. Falcone
Project Manager
11401 Lamar
Overland Park, Kansas 66211

Dear Mr. Falcone:

Based on the information provided in your cover letter dated January 5, 2011, the Natural Resources Conservation Service submits the following request indicated below, please include a legal descriptions of the new substation near Bucklin and Medicine Lodge, Kansas of the project area.

- The project is not subject to the Farmland Protection Policy Act as no farmland is being converted to nonagricultural use.
- Your request needs to be accompanied with Form AD-1006, Farmland Conversion Impact Rating (or Form NRCS-CPA-106, Farmland Conversion Impact Rating for Corridor Projects) with parts I and III filled out. (Form AD-1006 is available at www.nrcs.usda.gov/programs/fppa/pdf_files/AD1006.PDF and Form NRCS-CPA-106 at www.nrcs.usda.gov/Programs/fppa/pdf_files/CPA106.pdf.) Please submit the completed form(s) to me at the above address or by e-mail to susie.mcbride@ks.usda.gov. Additionally, please provide the section, township and range of the project.

Sincerely,

A handwritten signature in cursive script that reads "Susie".

SUSIE M. MCBRIDE
Soil Conservationist

STATE CORPORATION COMMISSION

MAR 14 2011

Steven Kelly

Exhibit 2

Direct Testimony of
Salvatore Falcone
ITC Great Plains, LLC

Open House Invitation Letter
to Landowners



December 21, 2010

RE: G-KS-FD-008.001, G-KS-FD-009.000, G-KS-FD-009.001, G-KS-FD-010.000, G-KS-FD-017.000

Dear Landowner:

As part of the regional effort to improve electric transmission reliability and enable energy developers to tap into a robust transmission grid, ITC Great Plains has developed the Kansas V-Plan, a high-voltage electric transmission line designed to connect eastern and western Kansas. As part of the Kansas Corporation Commission's approved settlement, ITC Great Plains will construct an approximately 110-mile, double-circuit 345,000 volt (345kV) transmission line that will run from Spearville to a new substation in Clark County and to a new substation near Medicine Lodge. The Kansas V-Plan will contribute to a robust transmission grid that will benefit the entire region. Kansans will see significant benefits upon project completion.

ITC Great Plains has developed potential routes for the line through Ford, Clark, Kiowa, Pratt and Barber counties. The routes attempt to minimize impacts to residents, their land and the natural environment while providing a technically viable and cost-effective transmission line. You are receiving this notification because one of the proposed routes for the line intersects or passes within 1,000 feet of your property.

ITC Great Plains is seeking community input on important topics such as the final proposed route. We are holding public open house events on January 17, 18 and 19. During these events, you will have the opportunity to review the proposed routes in detail and provide input.

The events will take place between 5 and 8 p.m. at the following locations:


- **Monday, January 17:** Dodge House, 2408 West Wyatt Earp Blvd., Dodge City
- **Tuesday, January 18:** Barber County Heritage Center, 1056 SE Isabel Road, (Corner of Hwy. 160), Medicine Lodge
- **Wednesday, January 19:** Greensburg Recreation Center, 600 South Main (Behind Kiowa County HS), Greensburg

Under the open house format, there is no formal presentation. Interested parties can visit at any time between 5 and 8 p.m. to talk informally with ITC Great Plains representatives about the purpose of the project, proposed routes, right-of-way requirements, real estate easements and other topics. We have included a map of the proposed routes and a detail map showing where the route intersects your land.

Our relationships with landowners and community members are important to us. ITC Great Plains is committed to working respectfully with you throughout the siting, design and construction process to minimize impacts to your properties. We look forward to meeting you at one of these upcoming open house events.

If you have any questions about the open house or the V-Plan Project, please don't hesitate to contact us at 877.ITC.ITC9 or VPLAN@itctransco.com.

Sincerely,


Alan K. Myers
Vice President of Technical Services, ITC Great Plains
Manager of Grid Development, ITC Great Plains

Enclosures

STATE CORPORATION COMMISSION

MAR 14 2011

Steven DeBry

Exhibit 3

Direct Testimony of
Salvatore Falcone
ITC Great Plains, LLC

Map of Proposed Route

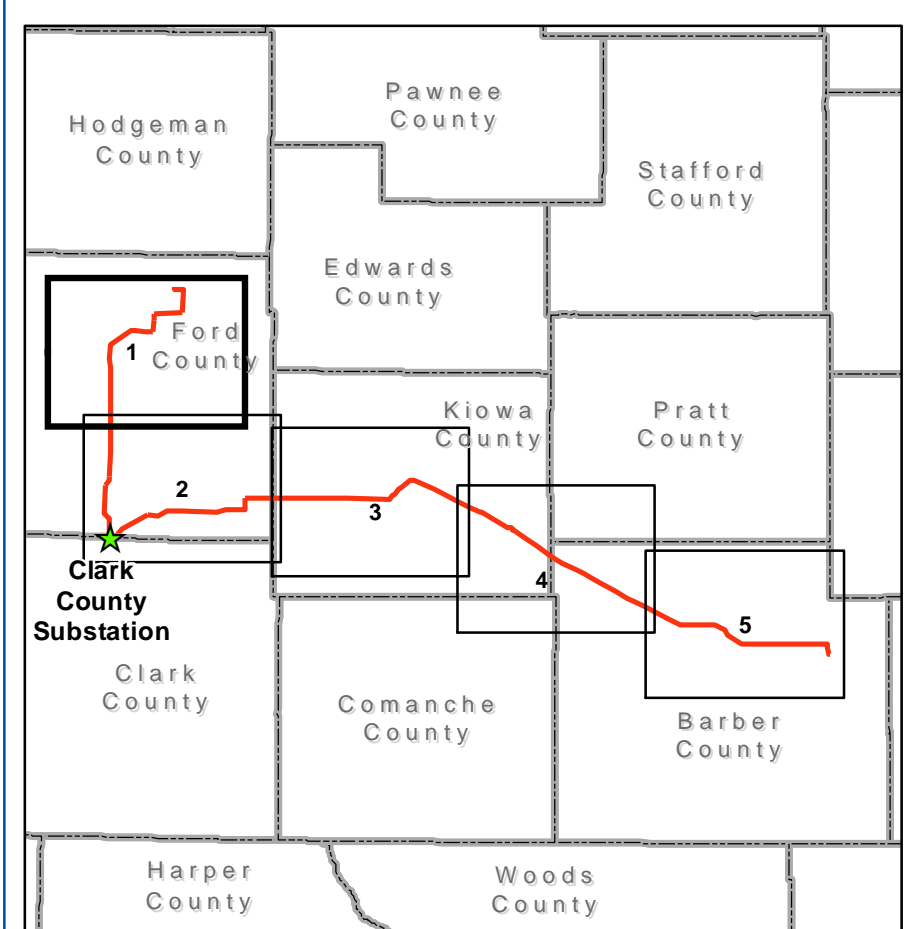
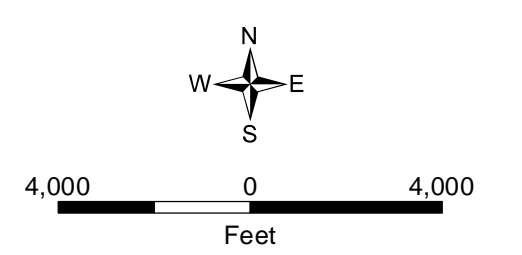
V Plan Project Preferred Route

March 8, 2011

Sheet 1



- Legend**
- Turbine Locations
 - ★ Speanville Substation
 - ★ Clark County Substation
 - ★ Thistle Substation
 - Proposed Ironwood Substation
 - V-Plan Preferred Route
 - KETA Phase 1
 - Transmission Lines (69 kV +)
 - Highway
 - Roads
 - Rivers and Streams
 - ⊕ Lakes and Reservoirs
 - Proposed Lake
 - Parks
 - Federal Lands
 - Sections
 - Towns
 - County



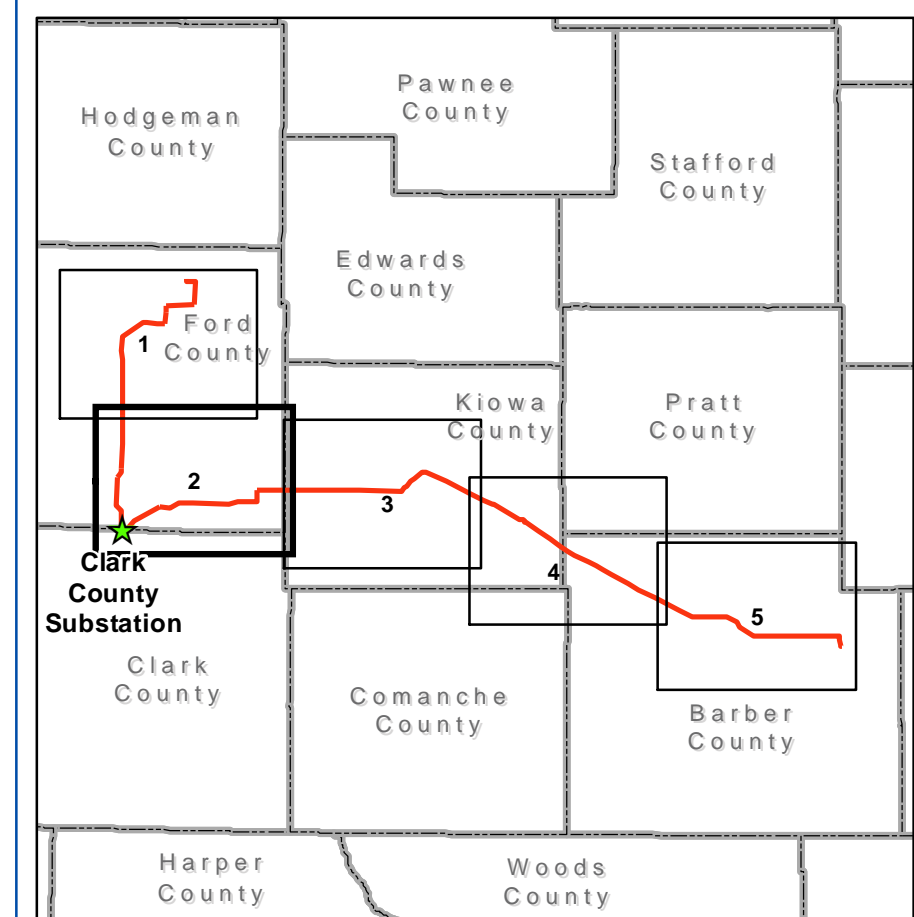
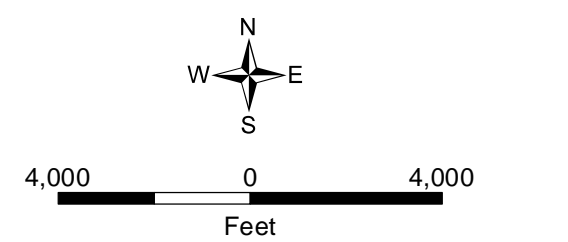
V Plan Project Preferred Route

March 8, 2011

Sheet 2

Legend

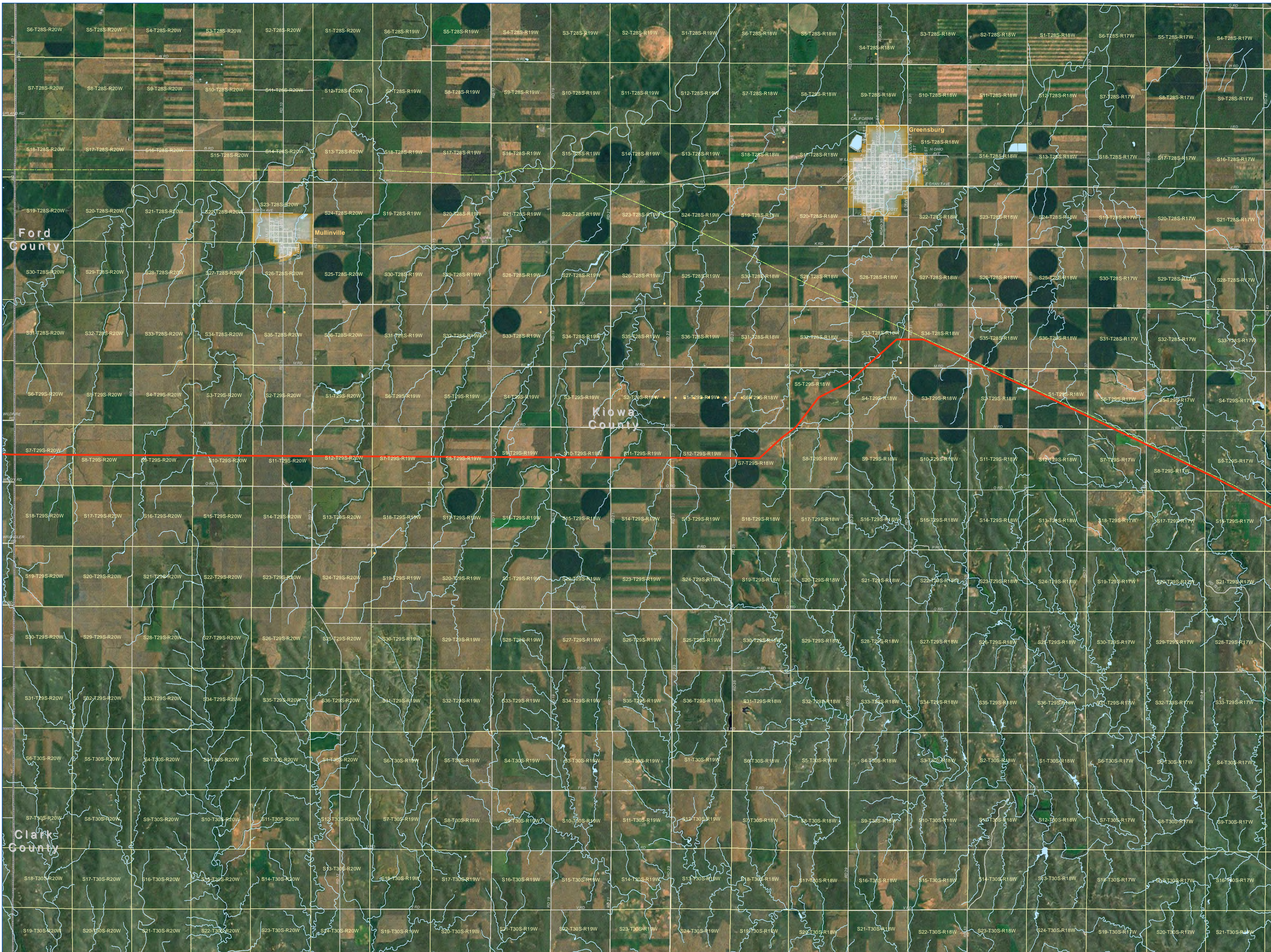
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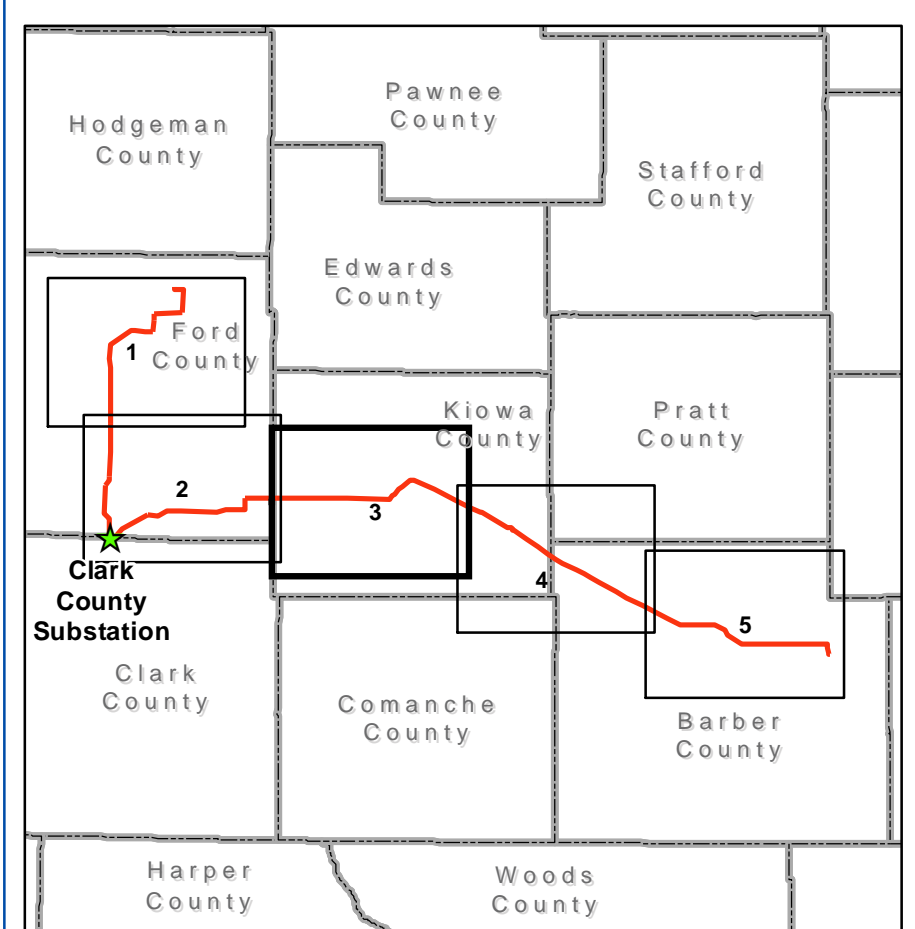
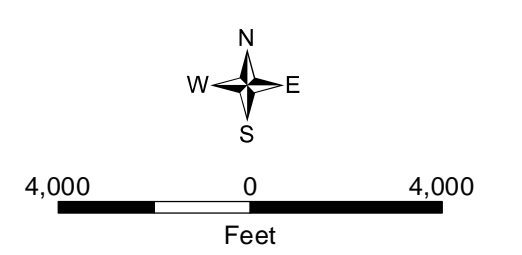
V Plan Project Preferred Route

March 8, 2011

Sheet 3



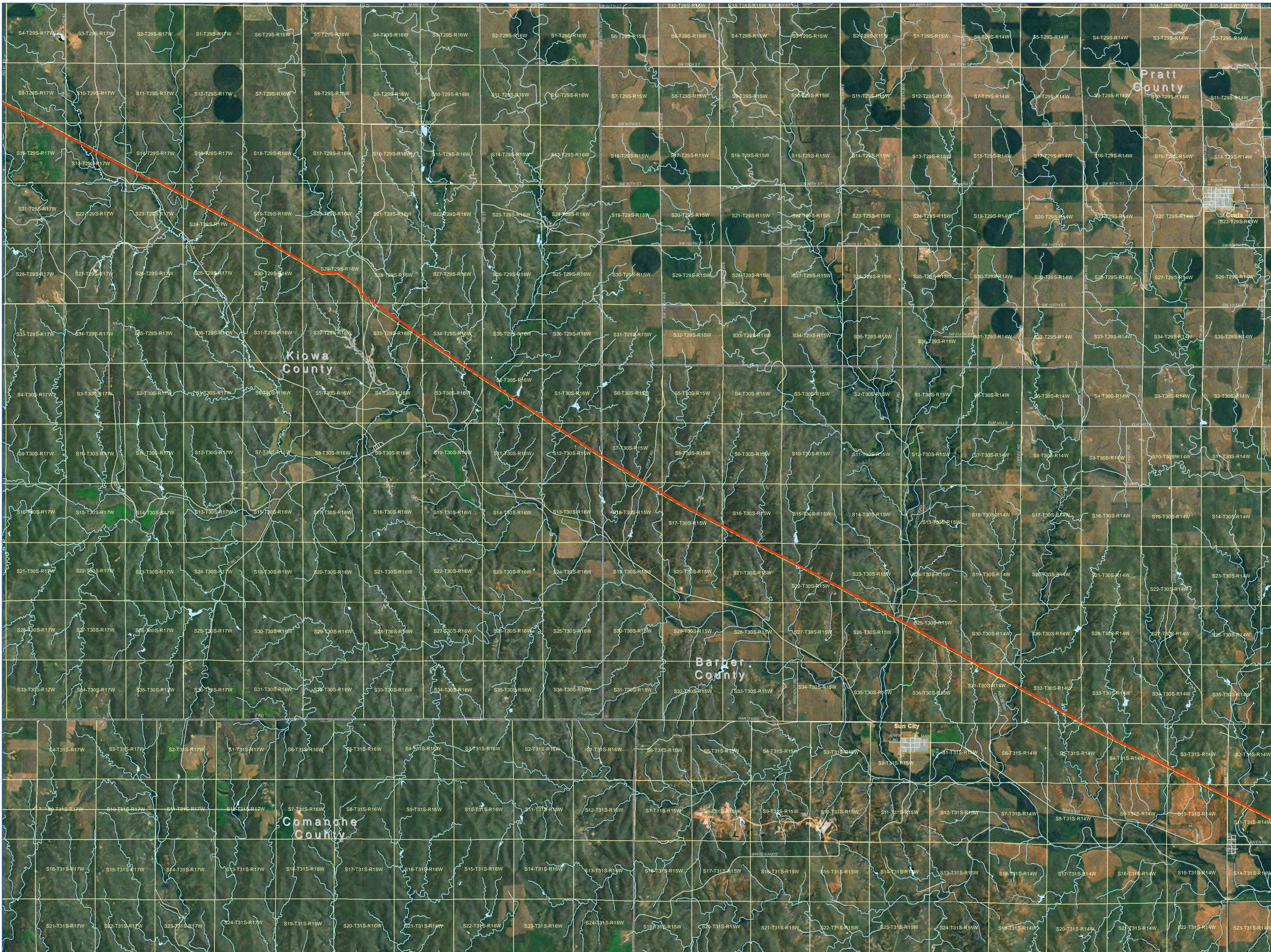
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V Plan Project Preferred Route

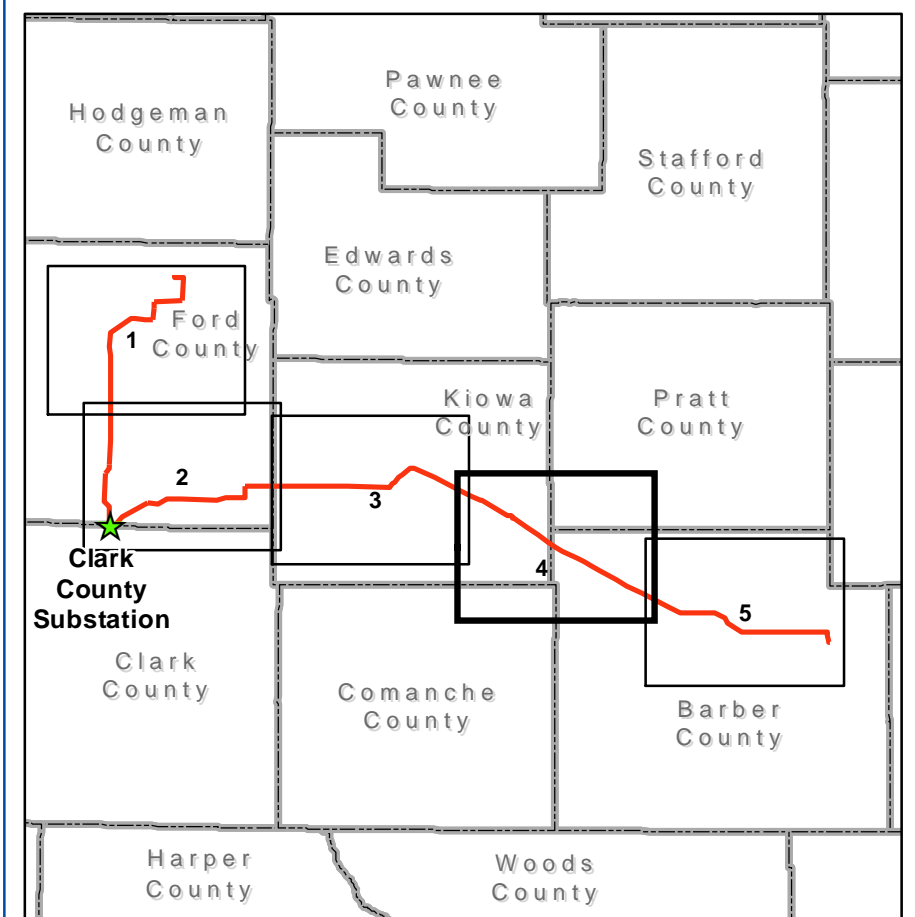
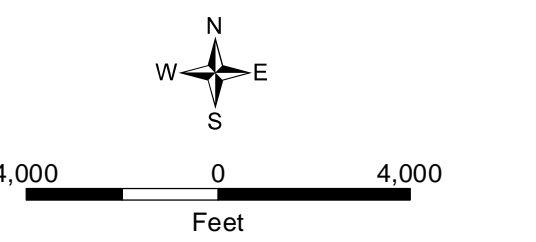
March 8, 2011

Sheet 4



Legend

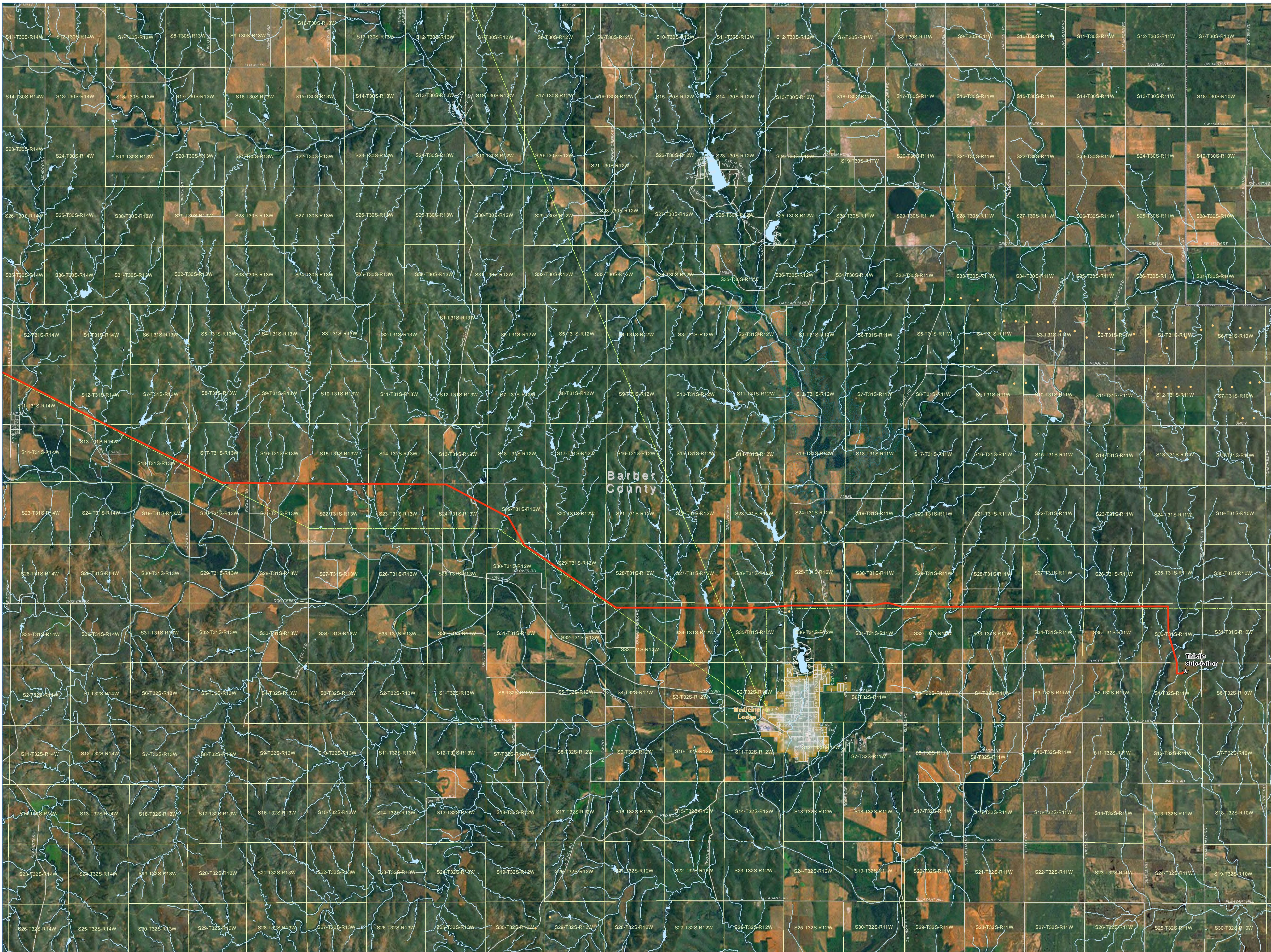
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V Plan Project Preferred Route

March 8, 2011

Sheet 5



- Legend**
- Turbine Locations
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