Route Selection Study

ITC Redfield to Panora 69kV Transmission Route Study

Prepared by Ulteig for ITC Holding Corp.

ITC Midwest
Cedar Rapids, Iowa

Project Number 15. 01265
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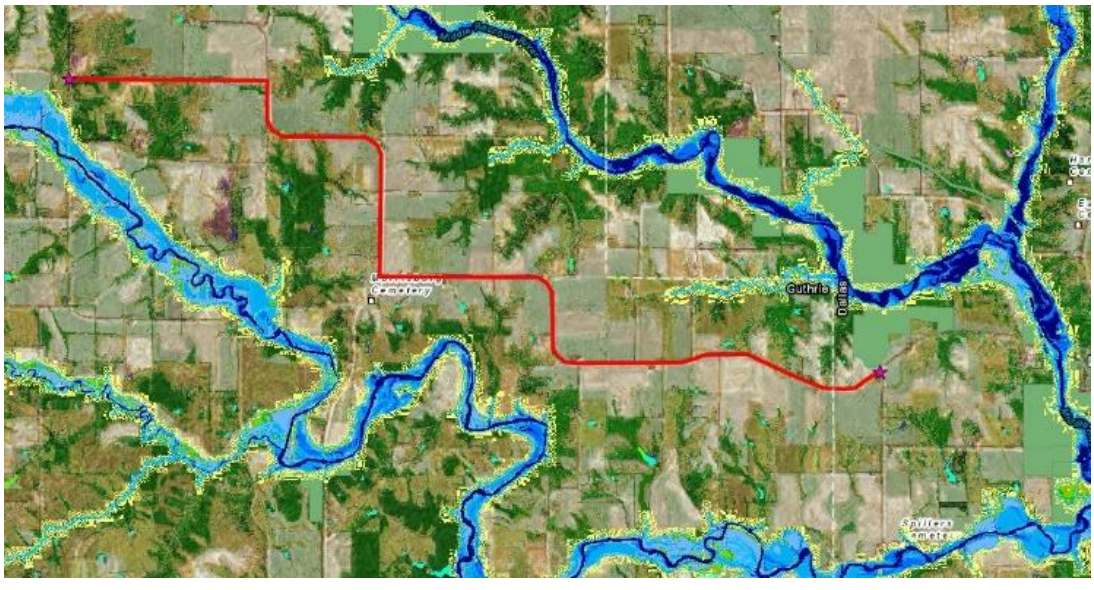

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1. INTRODUCTION

ITC Midwest, LLC (ITC Midwest) is a wholly-owned subsidiary of ITC Holdings Corp., the nation's largest independent electricity transmission company. ITC Midwest operates more than 6,600 circuit miles of transmission lines in Iowa, Minnesota, Illinois and Missouri. The company is headquartered in Cedar Rapids, Iowa, and maintains operating locations at Dubuque, Iowa City and Perry, Iowa; and Albert Lea and Lakefield, Minnesota (ITC Midwest 2016).

ITC Midwest is proposing to construct a new 69-kV transmission line from an existing substation just west of Redfield, Iowa (SE Substation) to the proposed CIPCO NW Substation near Panora, Iowa. The proposed NW substation will be located near the intersection of Monteith Rd and Tank Ave in township 79N and Range 30W, in the northwest part of Section 29. This substation will connect to CIPCO's existing Guthrie-Grand Junction 69kV line via the new Panora substation. A small portion (less than 1/2-mile) of the ITC Midwest line will be constructed within Dallas County. ITC Midwest seeks authorization from the Iowa Utilities Board (IUB) to construct the remaining portion of the line outside of Guthrie County.

Ulteig Engineers, Inc. (Ulteig) was retained by ITC Midwest to prepare this routing report for the purposes of assisting ITC Midwest in acquiring a franchise from the IUB. The following sections provide a brief overview of the project, the processes used to develop and analyze alternative routes, and the methodology to select a recommended route for the proposed project.

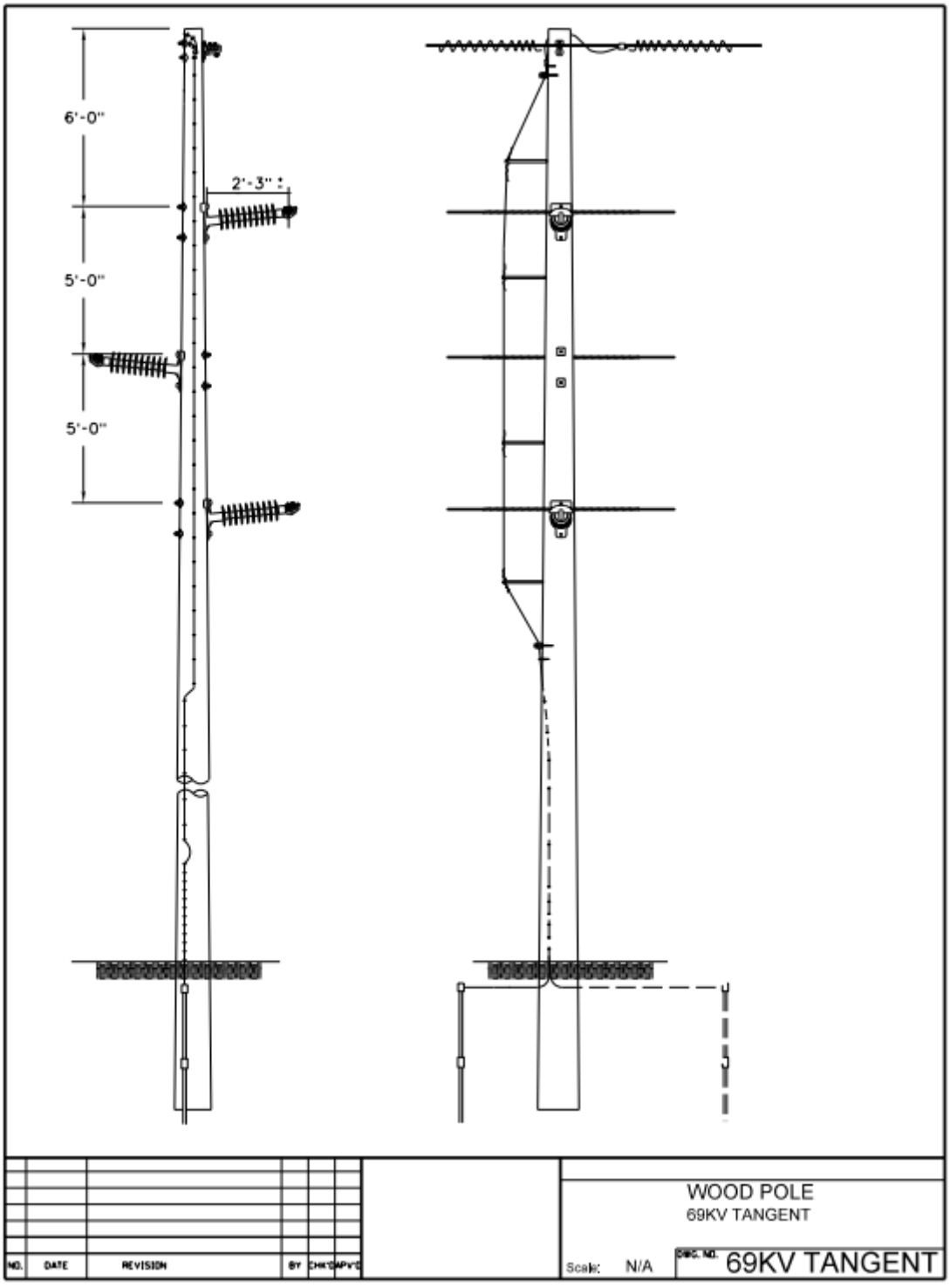
1. Project Description

The proposed 69-kV line would consist of approximately 10 miles of new transmission line located mostly in Guthrie County. At this time, the materials for the transmission line would consist of tubular steel or wood single pole structures, with a typical above- ground height of approximately 55-75 feet, depending on local topography and other site-specific conditions such as clearances for road crossings (Figure 1).

The proposed structures to be used on this project are the ITC Midwest Standard 69kV single circuit wood pole design with horizontal brace post insulators. The wire size is to be designed for T2-4/0 ACSR conductor with fiber optic static wire.

The width of right-of-way required would be 25 feet along roads and 50 feet when crossing open land. The typical span between poles would be approximately 250-275 feet. Structure spotting will be fluent to account for specific corridor avoidance areas such as sensitive habitats or environmental features. The transmission line would span all streams and rivers. Access roads may need to be constructed where existing county or field roads do not provide adequate access for construction and maintenance of the proposed transmission line. Vegetation management may also be prescribed for the safe operation of the line in areas where encroaching vegetation has the potential to impact the line due to growth or severe weather events.

Figure 1 Proposed Typical 69kV Transmission Line Structure



Maintaining the right-of-way under the transmission line is essential for the reliable operation of the line and public safety. Operation and maintenance of the line would consist of periodic inspection of the line and right-of-way, occasional replacement of hardware when necessary, and periodic treatment or trimming of woody vegetation within or near the right-of-way. Agricultural activities would be allowed to continue within the right-of-way. Landowners would be paid for any damages to crops or trees as a result of transmission line construction or maintenance activities.

2. Overview of Route Selection Process

The route selection process began with the establishment of a study area (Map 1) followed by GIS data acquisition to support the development of route segments. The study area was established to be large enough to be suitable for developing a reasonable number of alternate routes for evaluation to connect these points. The study area is approximately 8 miles long and 4 miles wide (Map 1).

The route selection process included three primary components:

- **Development of route segments**. The initial route segments were developed and evaluated based on compliance with Iowa Code § 478.18(2) and 199 IAC 11.1(7), which require that planning for a transmission line begin with routes that are near and parallel to roads, rights-of-way of active railroads, or division lines of land.
- **Development of sub-routes.** Routes were then further developed into sub-routes based on impacts to wooded land cover, wetlands.
- **Development of alternative routes**. Four alternative routes were evaluated based on a variety of engineering, social, and environmental and land cover criteria. The criteria reflect the natural and human resources present within the study area, engineering and economic considerations.

The objective of these route segments was to identify a potential routes that complies with IUB routing guidance, minimizes impacts on natural and human resources, and is cost-effective. Following the IUB's routing principles, and in compliance with Iowa Code § 478.18(2) and 199 IAC 11.1(7), alternate routes were first identified near and parallel to:

- Roads,
- active railroad rights-of-way, or
- division lines of land, including section, quarter section, and quarter-quarter section lines.

The use of quarter-sections was due to the abnormal size of the sections in this area of the county. The section sizes range from .93-1.0 miles east/west by 1.5-1.78 miles north/south.

Additional routing considerations were then applied to the route segments identified in the preceding step. These included (not in order of importance):

- Minimizing overall length and number of angles
- Minimizing conflicts with existing and planned land uses
- Minimizing conflicts with residential areas and individual properties and structures
- Minimizing impacts to natural resources (streams, forestland, wetlands)
- Minimizing impacts to agricultural resources
- Avoiding major road crossings in the vicinity of intersections and interchanges
- Minimizing impacts to public facilities
- Avoiding public lands

2. STUDY AREA

A number of activities were involved in the development of alternative routes for consideration. These included establishing a study area, reviewing information on the characteristics of the study area, consulting with public officials, and developing potential routes according to IUB requirements. These steps are discussed in detail in the following section.

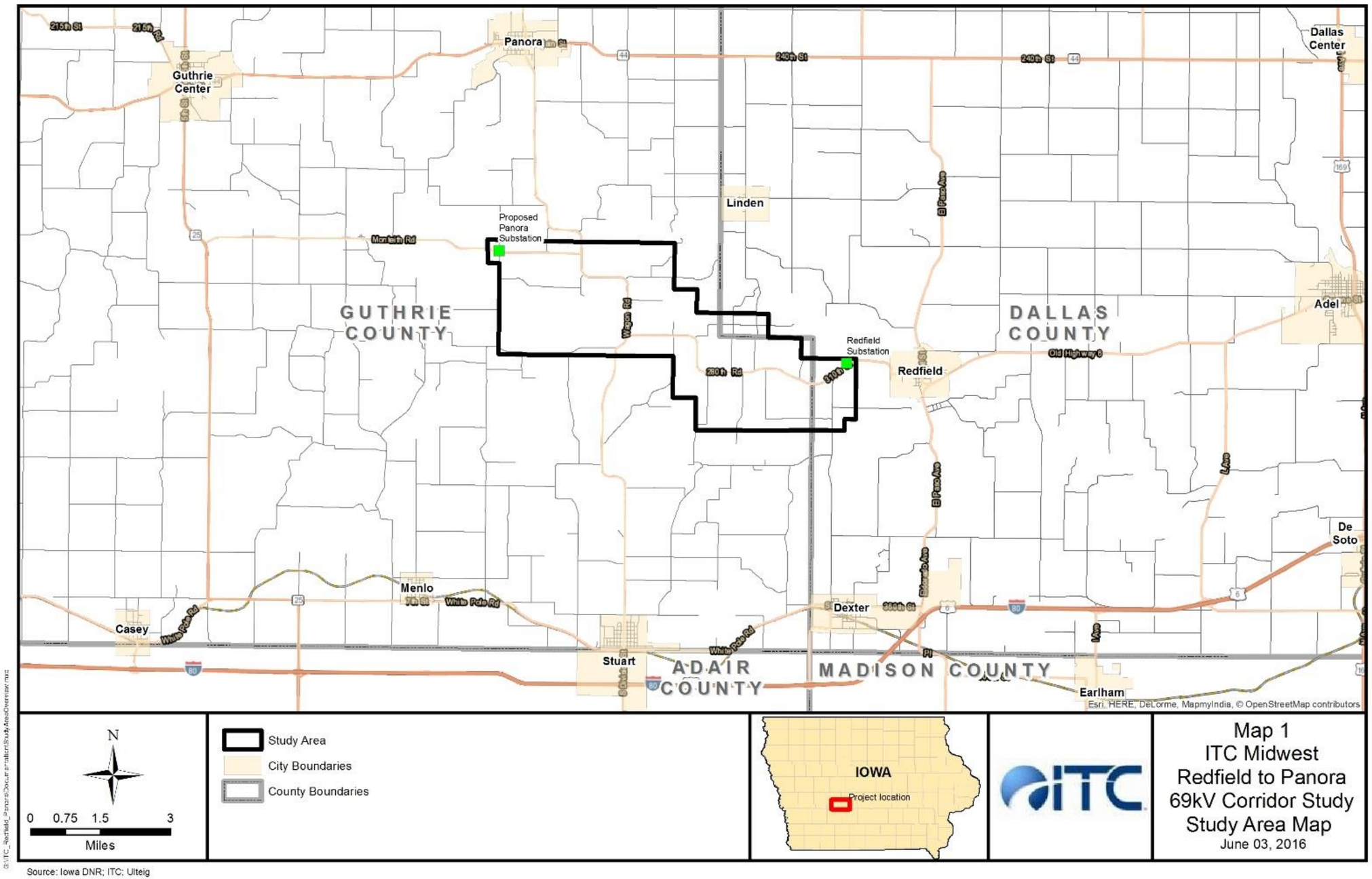
1. Establishment of the Study Area

The first step included identification of the substations which served as the end points. The project study area needed to be a reasonable boundary in which to locate the alternative routes. The following criteria were considered in detail when determining the exact study area:

- Multiple opportunities to follow lines of land division, roadways, or active railroad rights-of-way
- Avoid having to cross the Middle and South Raccoon River Basins
- Minimization of impacts to the wetlands and riparian complexes of the Raccoon River Basins along with the Milo Ray State Wildlife Area

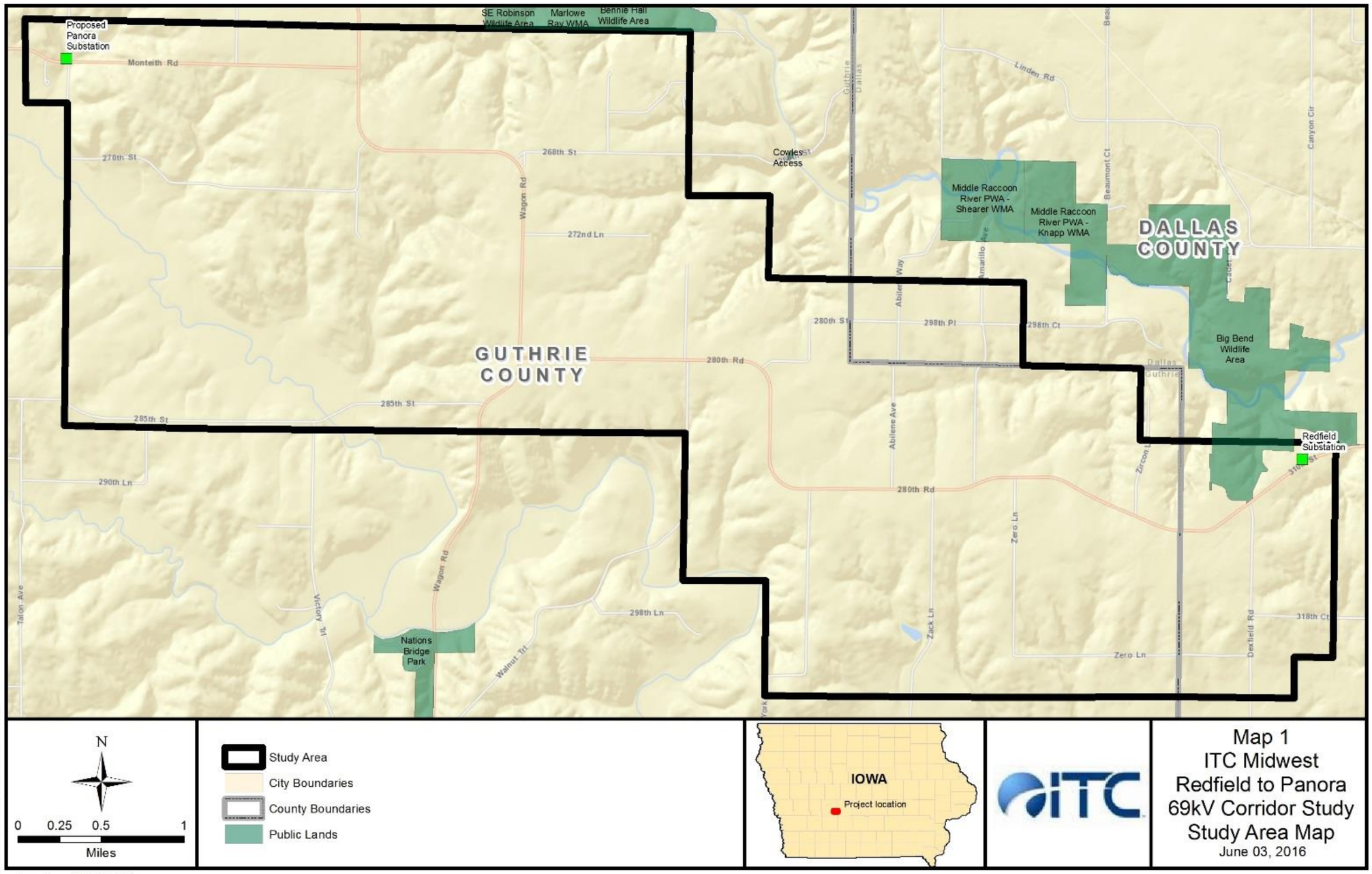
Using the above conditions and working with ITC staff, Ulteig developed a study area approximately 8 miles long and 4 miles wide (Map 1).

1. Study Area Map - Overview



Source: Iowa DNR; ITC; Ulteig

Study Area Map - Detail



Source: Iowa DNR; ITC; Ulteig

2. *Description of Study Area*

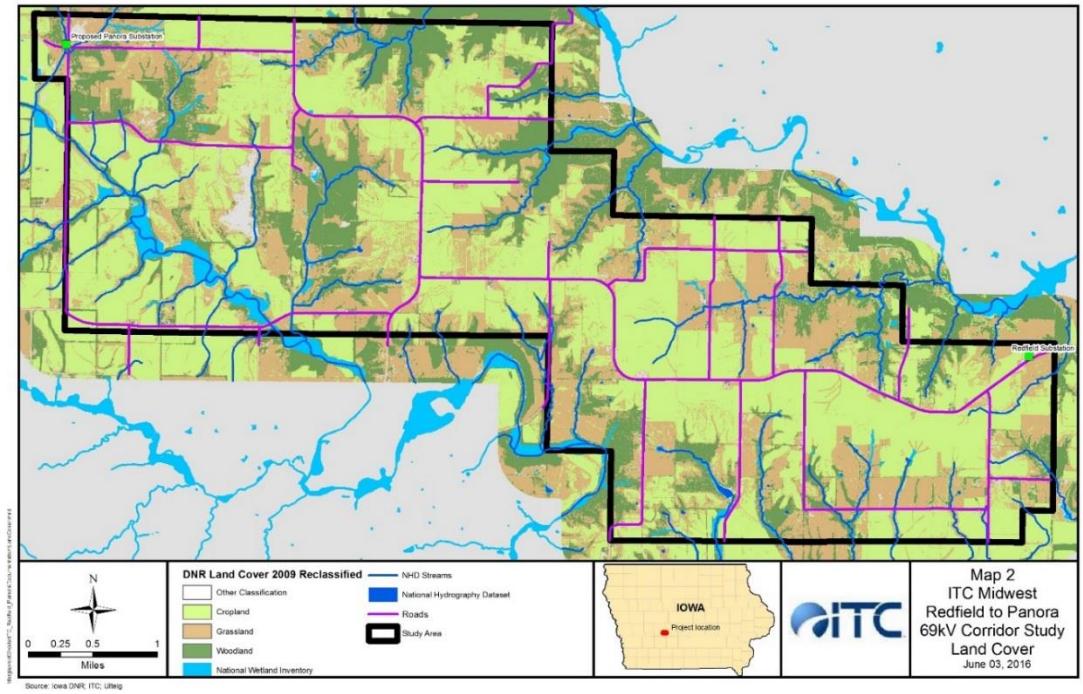
The following section provides a brief overview of the study area for the proposed Redfield to Panora project. This description is intended to provide a general overview of the nature and character of the area as related to the conditions and potential issues and concerns during development of route alternatives, identification of evaluation criteria, and the route evaluation.

3. *Land Use – Guthrie County*

The study area for this project is located mostly in eastern Guthrie County. Guthrie County is 591 square miles in size in west-central Iowa with a 2010 population of 10,954 (Guthrie County). Guthrie County is comprised mostly of rural agricultural land sprinkled with ten incorporated communities including Adair, Bagley, Bayard, Casey, Guthrie Center, Jamaica, Menlo, Panora, Stuart, and Yale. The county is also home to two private lake developments, Lake Panorama and Diamondhead Lake. The study area study area does not include any municipalities of Guthrie or Dallas County (only a few parcels of Dallas County are included within the study area boundary). Guthrie County was formed on January 15, 1851 and is one of the five counties that make up the Des Moines-West Des Moines Metropolitan Statistical Area.

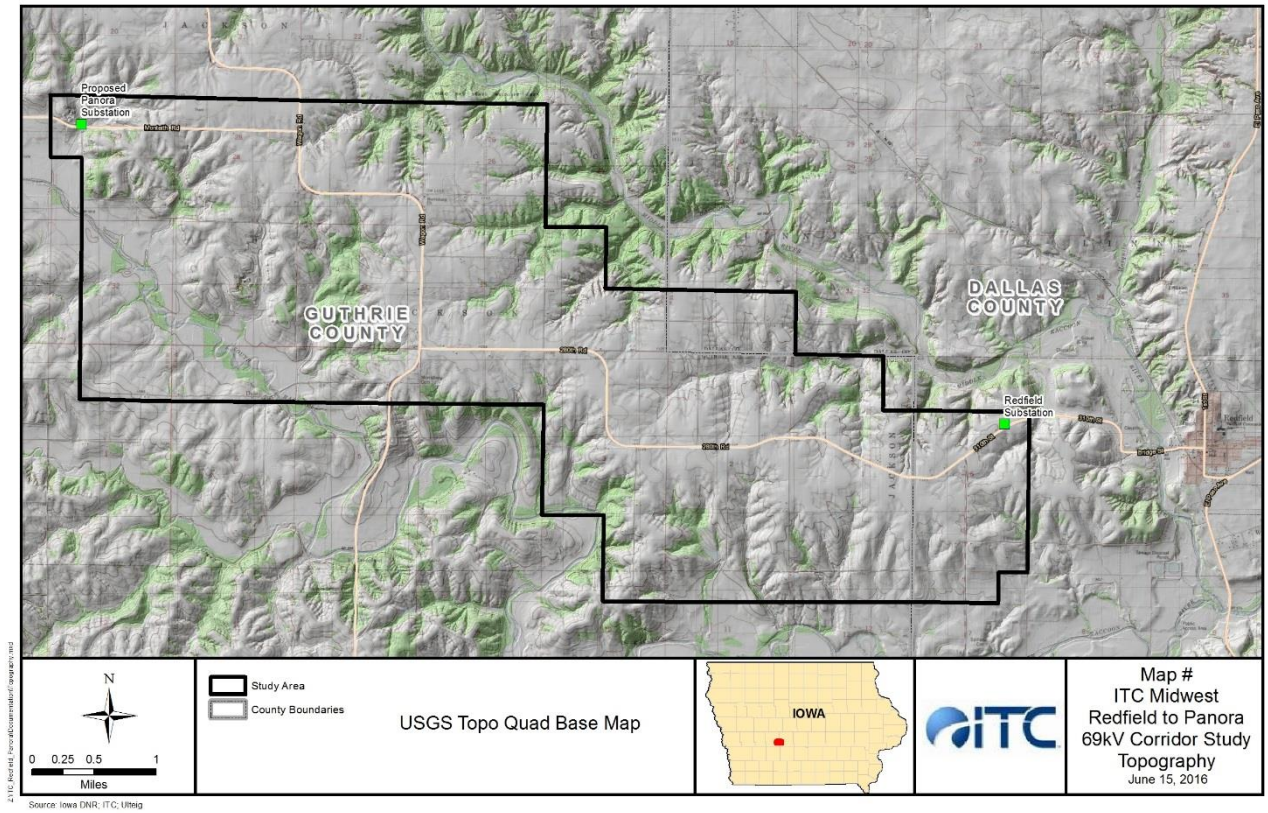
The study area includes approximately 30 acres of wetlands, 4,000 acres of woodlands including coniferous and deciduous forestland, almost 6,100 acres of grasslands and 9,200 acres of cropland.

Land Cover Map



1. Topography Map

The topography in within the study area contains no prominent elevations, no marked valleys with the majority of the study area between the Little Raccoon River and South Raccoon River channels.



4. Biological Resources

Biological resources in Guthrie County include a diverse range of habitat, including approximately 52,000 acres of land classified as either deciduous or evergreen forestlands, approximately 114,000 acres of grassland or herbaceous vegetation, and almost 2,000 acres of land classified as wetland or emergent herbaceous wetlands. In addition, Guthrie County includes more than 200,000 acres of croplands and pasture, which also provides valuable habitat for a number of terrestrial and avian species. County activities devoted to habitat protection include four county conservation areas. (National Land Cover Dataset, NLCD 2011)

Biological resources in Dallas County include a diverse range of habitat, including approximately 50,000 acres of land classified as either deciduous or evergreen forestlands, approximately 60,000 acres of grassland or herbaceous vegetation, and almost 5,000 acres of land classified as wetland or emergent herbaceous wetlands. Dallas County also includes more than 240,000 acres of croplands and pasture, which provides valuable habitat for a number of terrestrial and avian species. County activities devoted to habitat protection include an environmental education program and conservation areas. (National Land Cover Dataset, NLCD 2011)

The majority of the undeveloped natural areas within the study area are found along the Middle Raccoon and South Raccoon Rivers and their tributaries, including the riparian corridor and wetland systems that extent immediately beyond the river banks. The Middle Raccoon River habitat is grassland and wooded river edge and South Raccoon River habitat is river and stream woodland.

5. Threatened and Endangered Species

The Endangered Species Act of 1973 (ESA) affords legal protection to those species and their habitats determined to meet the specified criteria for listing by the federal government as either threatened or endangered. The ESA defines a federally endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range."

Four species are listed as state and/or federally threatened or endangered in Guthrie County (Table 2-1). They include two animal species (Northern long-eared bat and Indiana bat) and two plant species (prairie bush clover and western prairie fringed orchid). Five species are listed in Dallas County. They include the four species listed in Guthrie County as well as the Topeka shiner. Habitat areas within the study area were reviewed in consultation with the Iowa DNR. None of the habitat or species in Table 2-1 was in proximity to any of the alternate routes proposed for this study although Northern long-eared bat and Indiana bat habitat could occur in wooded areas along riparian corridors along the Middle Raccoon and South Raccoon

Rivers and their tributaries. In their response to the agency inquiry for this project, the DNR indicated the Northern long-eared bat and Indian bat have the potential to inhabit this area of the state in may occur in the area of this project (Appendix A). Once a final recommended route is determined, an Environmental Review by the Iowa DNR may be warranted, depending on the specific location of the route.

Table 1 Federally-Listed Threatened and Endangered Species in Guthrie and Dallas Counties

Common Name	Scientific Name	Status	Habitat	County
Western prairie fringed orchid	*Platanthera praeclara*	Threatened	Wet prairies and sedge meadows	Guthrie/Dallas
Prairie bush clover	*Lespedeza leptostachya*	Threatened	Dry to mesic prairies with gravelly soil	Guthrie/Dallas
Northern long-eared bat	*Myotis septentrionalis*	Endangered	Caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during late spring and summer.	Guthrie/Dallas
Indiana bat	*Myotis sodalis*	Endangered	Caves, mines (hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging)	Guthrie/Dallas
Topeka shiner	*Notropis topeka*	Endangered and Critical Habitat	Prairie streams and rivers	Dallas

6. Population and Employment

Guthrie County had a 2010 population estimate of 10,954, approximately 0.3 percent of the total 2010 Iowa population (US Census 2016). 2015 population estimates for Guthrie County were approximately 10,676. The county showed a -2.5 percent population decrease from April of 2010 to July of 2015 (2012b).

Dallas County had a 2010 population estimate of 66,135, approximately 2 percent of the total 2010 Iowa population (US Census 2016). 2015 population estimates for Dallas County were approximately 80,133. The county showed a 21.2 percent population growth from April of 2010 to July of 2015 (2012b).

The State of Iowa registered a population growth percentage of 2.5 percent over the same time period. 2010 population characteristics for Guthrie and Dallas Counties are provided below in Table 2.

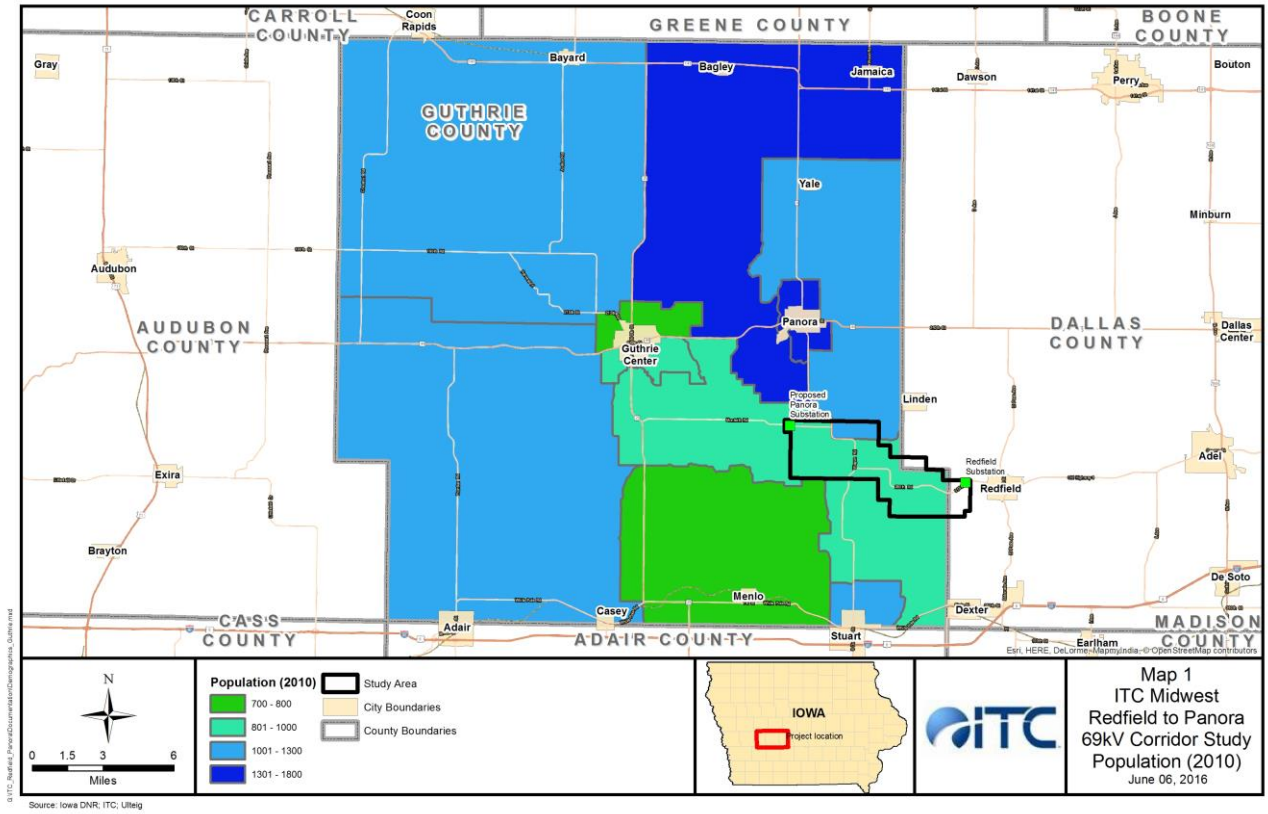
Table 2 Population and Housing Data

	Guthrie	Dallas
2010 Population	10,954	66,135
Percent Male	49.7	48.9
Percent Female	50.3	51.1
Percent White	97.6	92.2
Percent Black or African American	0.1	1.4
Percent Asian	0.3	2.2
Percent Hispanic/Latino	1.8	6.1
Average Family Size	2.32	2.67
Households, 2010-2014	4,559	26,819
Percent Owner-Occupied Housing Units	80.0	76.2
Median Value Of Owner-Occupied Housing Units, 2010-2014	$98,500	$184,400
Percent Persons in Poverty	12.4	6.2

*Family Households are defined by the U.S. Census Bureau as those consisting of a House-holder and one or more other people related by birth, marriage, or adoption.

Employment data for 2016 shows an unemployment rate of 3.6 percent for Guthrie County and 2.6 for Dallas County (Iowa Workforce Development April 2016).

1. Demographics Map



7. Agency Consultation

Following establishment of the study area, letters were sent to applicable local, state, and federal agencies with jurisdiction over resources within the study area boundary. The letter introduced the Redfield to Panora project and provided a brief overview of the purpose and need for the routing study.

The intent of the letters was to request information from the agencies that would assist in the development of alternative routes and environmental documentation necessary for the project. Specifically, the letter asked for input on the following primary issues that could potentially impact the development of the routing network for this project:

- Land use, ownership (public, state, federal), and development (current and future)
- Aesthetics
- Water resources and wetlands
- Soils and geology
- Wildlife, vegetation and fisheries, including threatened and endangered species
- Socioeconomics (population, employment, growth, current/future development)
- Hazardous materials sites
- Cultural resources (historic and archaeological)
- Native American lands, issues, and considerations
- Transportation and roads (airport and roadway expansions, construction, operations and maintenance)

Agency letters were sent to the following state, local government organizations:

- Iowa Department of Natural Resources
- Iowa Department of Transportation
- Guthrie County Conservation
- Dallas County Conservation
- Dallas County Planning and Development
- Dallas County Engineer
- Iowa Natural Heritage Foundation

The only areas of concern noted from agency representatives was the Indian bat (*Myotis sodalis*), and the northern long-eared bat (*Myotis septentrionalis*). Both are federally threatened species and have potential to inhabit this area of the state.

3. ROUTE ANALYSIS

1. Development of Route Segments

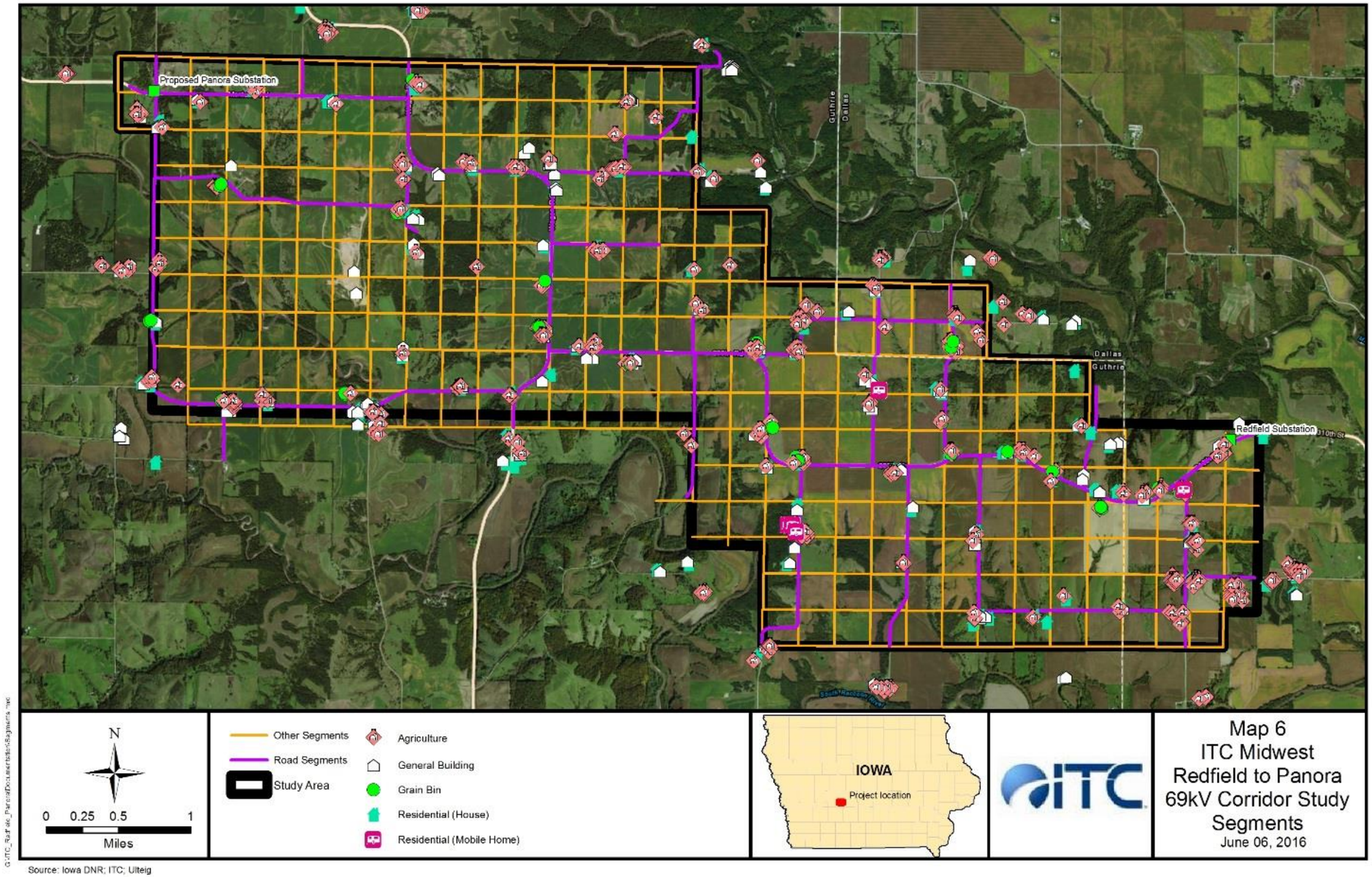
The initial step in development of the routing network was obtaining GIS data including recent aerial photography of the study area to support the upfront creation of the route segments and to identify project constraints. The following GIS datasets were obtained:

- PLSS (Public Land Survey System) – townships, sections, quarter sections, and quarter-quarter sections
- Parcels
- Roads
- NWI (National Wetlands Inventory)
- Structures – residential and agricultural
- National Hydrography Dataset – Streams and Rivers
- Points of Interest – Cemeteries, Gravel Pits, Public Facilities
- National Land Cover Dataset
- DNR Recreation Lands
- FEMA Floodplain
- Federal/State/Local Government Lands

The initial group of segments were developed based on the division of lines of land including section, quarter section, and quarter-quarter section lines. The route segments were developed to comply with Iowa Code § 478.18(2) and 199 IAC 11.1(7), which set forth the requirements for the selection of a route for an electric transmission line. These route segments were created using the GIS PLSS (Public Land Survey System) data and are shorter portions of overall routes that when joined together create sub-routes and ultimately full routes from each endpoint substation (Route Segment Map).

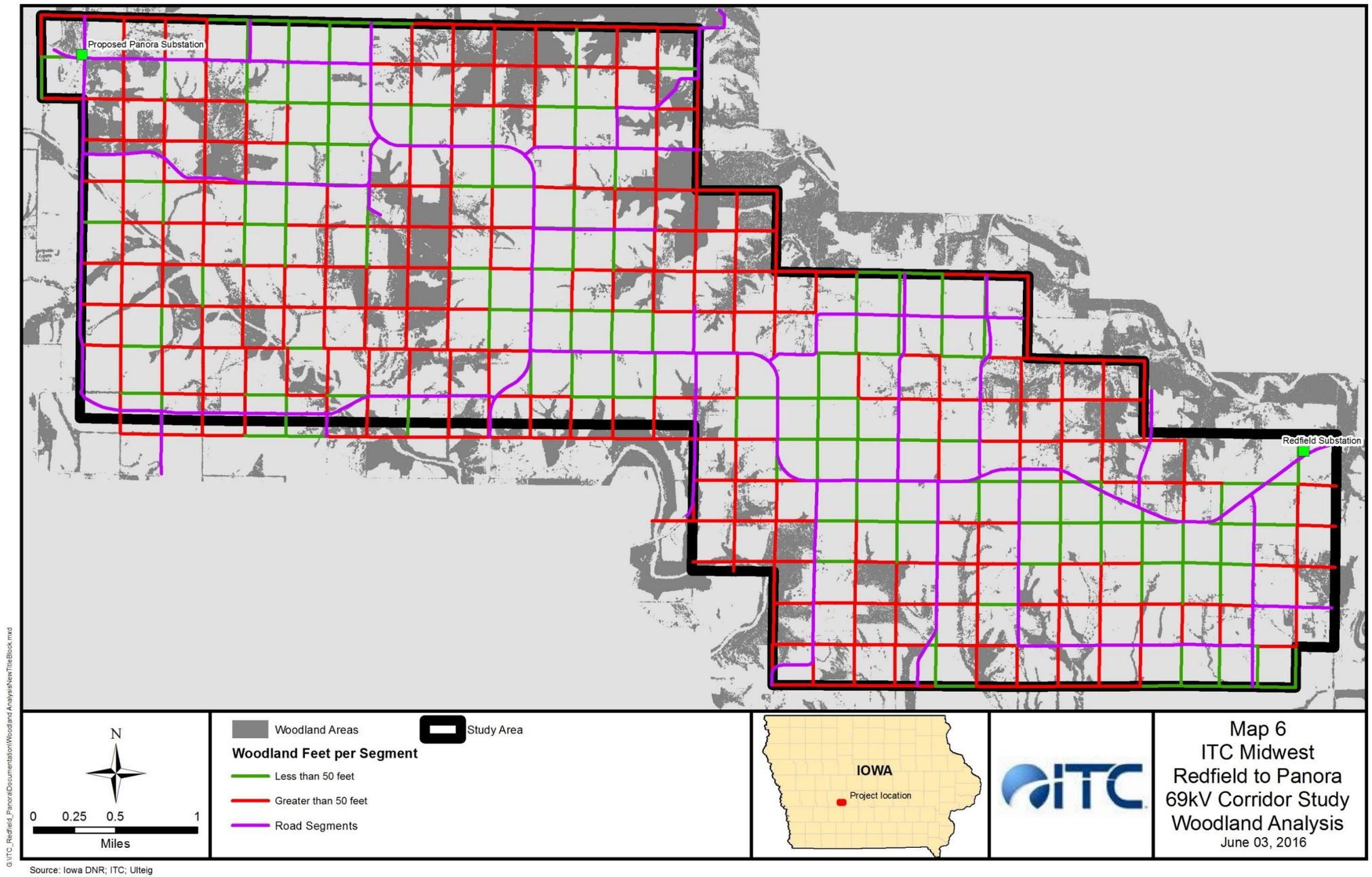
After beginning route segment development in accordance with Iowa Code § 478.18(2) and 199 IAC 11.1(7), it became clear there would be three areas of limitation. Crossing through significant areas of woodlands, wetlands, and segments that did not present a continuous connection. Crossing through wooded areas greater than 50 feet would be a primary limitation in route development due to the engineering and construction challenges it presented, as well as, potential disturbance of the Indian bat and northern long-eared bat. The Indian bat and northern long-eared bat are federally endangered species and have potential to inhabit wooded areas. Another factor of influence was the crossing of wetlands or bodies or water. GIS Analysis was conducted to identify which route segments were impacted by the limiting factors. Each segment contained a field for number of feet crossing woodlands and wetlands along with a primary limiting factor justification. Segments that required greater than 50 feet of tree clearing or wetland crossings were eliminated along with segments that were not a continuous connect.

1. Route Segments Map



Source: Iowa DNR; ITC; Ulteig

2. Route Segment Map Analysis Map



Additionally, the following criteria for development of the initial route segments were considered:

- Avoid airport approach zones
- Minimize impacts to human and natural resources
- Avoid crossing back and forth across highways
- Avoid crossing back and forth across rivers
- Avoid or span wetlands, streams, and other water bodies
- Minimize woodland clearing
- Cross pasture, grassland, or rangeland rather than cropland
- Cross cropland at narrow areas where it could be spanned or the number of structures in fields could be minimized

2. Analysis of Sub-Routes

Sub-routes were generated after the route segment analysis. Additional limiting factors were documented using spatial map notes (Comments Map) to justify further elimination of route segments. The spatial notes represented important features, such as, gravel pits, project concerns, and route placement. Much of this information was gathered during the onsite field walk-downs on April 22, 2016. All potential sub-routes were reviewed, the location of residences, agricultural/residential structures were recorded and site photos were captured. The sub-routes comments map illustrates the decision factors to further eliminate the sub-routes, which were mostly due to either too many structures or pinch points along the route, longer distances, and a discontinuous segment.

1. Sub-Route Comparison Table

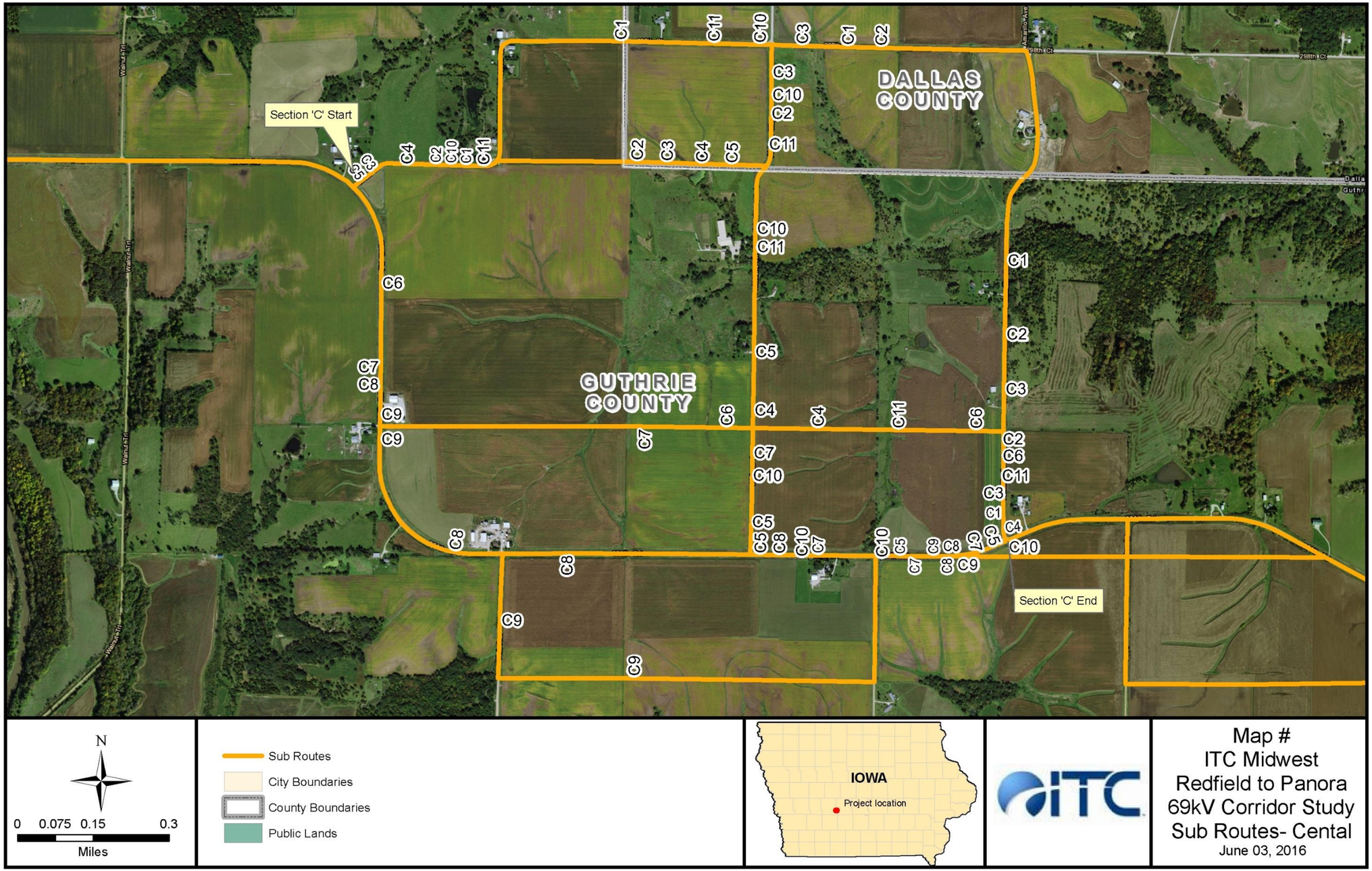
The sub-route table reflects the results of quantitative analysis that was conducted on each sub-route segment. Each sub-route number corresponds with the subsequent sub-route map. The green shaded rows are the top routes that will become full routes from the project end points.

Sub-Route	Total Length (feet)	Adjacent to Road (feet)	Woodlands (feet)	Wetlands (feet)	Other Land Cover (feet)	Homes Within 50ft	Homes Within 100ft	Homes Within 150ft	Homes Within 300ft	Grain Bins Within 100Ft	Other Structures Within 100Ft	Comments
A1	22822	22822	0	0	0	0	1	5	9	0	1	Main Hwy
A2	25502	25502	0	0	0	0	1	4	8	0	4	Potential historic site
A3	26585	26441	0	144	0	0	8	12	14	1	15	Too many homes
B1	7750	7750	0	0	0	0	0	1	4	0	0	
C1	13518	13518	0	0	0	0	3	6	11	2	15	Not preferred. Bad pinch point between buildings.
C2	13570	10751	0	0	2819	0	2	4	8	1	10	Not preferred. Bad pinch point between buildings.
C3	13571	10752	0	0	2819	0	2	4	8	1	10	Not preferred. Bad pinch point between buildings.
C4	10956	5518	0	0	5438	0	3	4	7	0	8	
C5	11209	8390	0	0	2819	0	3	4	7	0	9	
C6	10267	3731	24	0	6512	0	0	3	3	2	0	Cross country
C7	10520	6603	24	0	3893	0	0	3	3	2	1	Cross country
C8	10078	10078	0	0	0	0	1	5	5	0	3	Main Hwy
C9	12777	8800	48	0	3929	0	1	5	9	0	1	Not preferred. Longer distance. Crosses cultivated land.
C10	13701	13701	0	0	0	0	4	6	10	1	14	Not preferred. Bad pinch point between buildings.
C11	13448	10829	0	0	2619	0	4	6	10	1	13	Not preferred. Bad pinch point between buildings.
D1	7349	7349	0	0	0	0	0	3	5	0	0	Main Hwy
D2	7659	5584	0	0	2075	0	0	1	3	0	0	
D3	8763	3618	13	0	5132	0	0	0	1	0	0	
D4	7672	5849	0	0	1823	0	0	3	4	0	0	
D5	7194	3296	0	0	3898	0	0	1	2	0	0	
D6	8298	1330	13	0	6955	0	0	0	0	0	0	
E1	4818	4818	0	0	0	0	0	4	4	1	3	Main Hwy
E2	5644	4165	0	0	1479	0	0	5	5	1	5	

Sub-Route Map - West

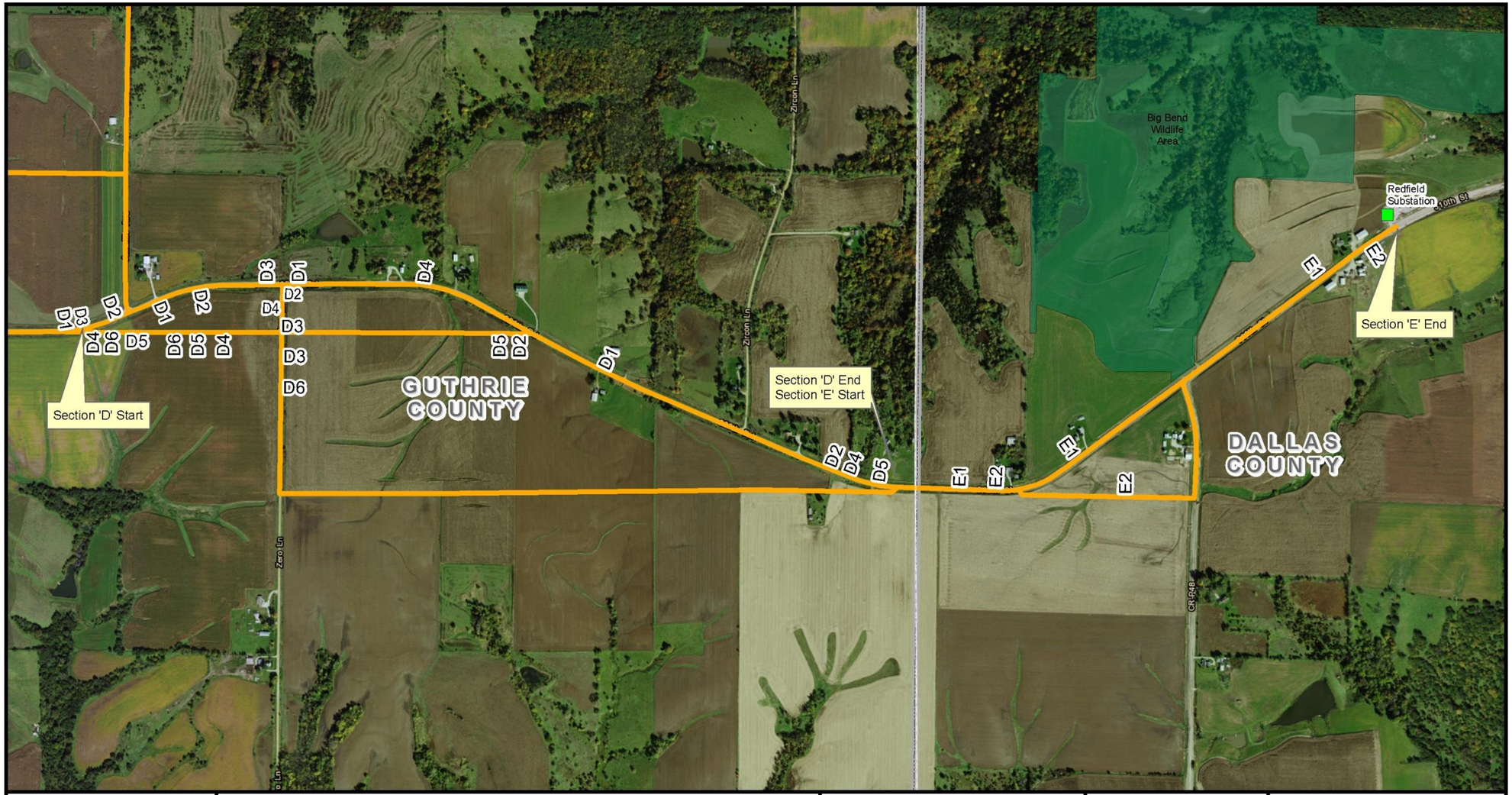
Source: Iowa DNR; ITC; Ulteig

Route Map - Central



Source: Iowa DNR; ITC; Ulteig

Route Map - East



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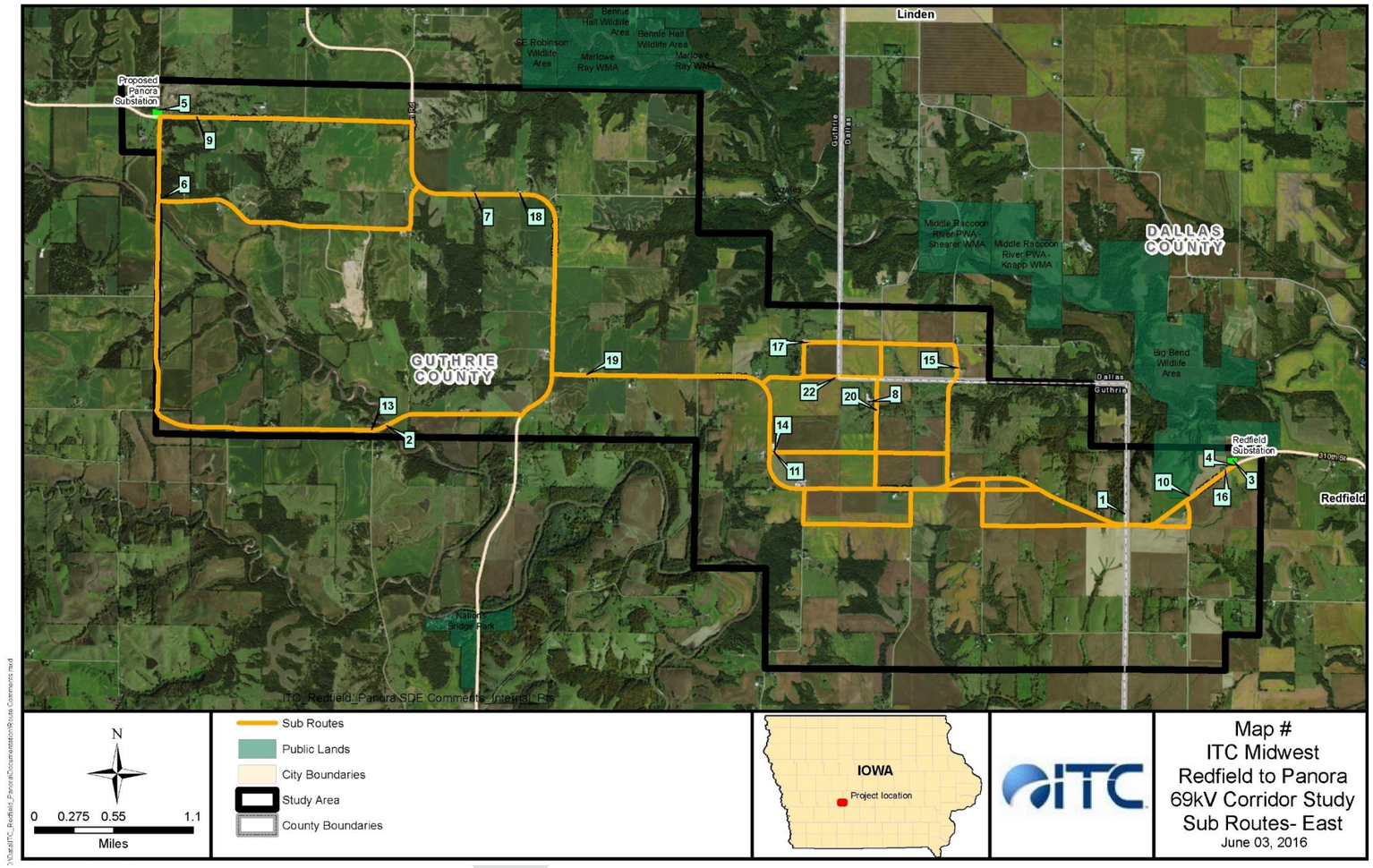
Source: Iowa DNR; ITC; Ulteig

Sub-Route Comment Map and associated comments table.



Comment	Comment		Comment	Comment
1	Structure near property line		11	Fixed auger
2	River Crossing		13	Small development with homes close to road.
3	310th St, Redfield IA		14	Grain bin aprox 30' from property line. Verify augur location/type
4	69kv on north side		15	Pinch point between home and agricultural buildings
5	sub site		16	Pinch point. Buildings, home, grain bins close to road
6	Possible historical significance- Frog Pond School		17	Pinch point between buildings
7	Large maples		18	House very close to road
8	Horse stables		19	Houses with large trees on both sides
9	Very difficult terrain next to road ROW, both sides of the road.		20	Very Tight in this area
10	Double Circuit 69kV from this point?		22	Distribution line, existing easements?

3. Analysis of Alternative Routes

After completing the route segment and sub-routes analysis and documentation, four alternative full routes were created from the study area substation endpoints. All four routes and their component segments were determined to satisfy the requirements of Iowa Code § 478.18(2) and 199 IA 11.1(7), and, with the exception of a portion of sub route C7, are located near and parallel to roads, rights-of-way of active railroads, or division lines of land. Having determined compliance with the Iowa code, the evaluation of the route alternatives focused on determining whether particular routes minimized overall impacts to natural and human environments over another route, and whether the routes were economical and design feasible. Map 8 shows an overview of the alternative routes developed for further evaluation.

4. Evaluation Criteria

The resources observed during the site reconnaissance were used in conjunction with the information provided by agencies and city and county representatives to develop evaluation criteria for analysis and comparison of alternative routes. Evaluation criteria are quantifiable characteristics that can be used to compare the potential impact of one particular route to another. Categories include engineering, environmental, and social. Descriptions of each of the criteria are provided below.

1. Engineering

1. **Total length deviating from locations near and parallel to roads, rights-of-way of active railroads, or division lines of land without engineering justification:** The purpose of this criterion is to compare the routes in the analysis based on compliance or noncompliance with the route selection requirements of Iowa Code § 478.18(2) and 199 IAC 11.1(7). Deviations from the near and parallel requirement may be proposed for engineering reasons and may be permissible for landowner preference or the minimization of interference with land use.
2. **Total length (miles)**: Total length indicates the overall extent of the proposed project and its presence in the landscape, as well as providing a general reflection of potential construction costs.
3. **Number of angle structures (number):** Represents the number of angles along the transmission line that would be required for each route.
4. **Stream crossings (number):** Identifies the number of perennial or intermittent river, stream, or creek crossings for each proposed route. Stream crossings also indicate potentially raised or uneven terrain, which could potentially increase construction complexity and cost. Data was provided by the USGS National Hydrologic Dataset.

2. Environmental and Land Use

1. **Wetlands crossed (feet):** Indicates the lineage of wetlands in the proposed transmission line route. Wetlands were measured from National Wetland Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service. Areas of open water associated with stream, river, or lake crossings were included in wetland totals.
2. **Length through cropland (miles):** Indicates the total length of each route through areas used as cropland. This criteria was based on the length of line which traveled through areas identified as cropland in the land cover data obtained from the Iowa DNR.
3. **Length of transmission line requiring active vegetation management (miles**): Indicates the length of transmission line crossing woodlands requiring clearing or active vegetative management. The criteria was based on length of proposed routes that crossed woodland land cover data.

3. Social Issues

1. **Residential proximity within 100 feet:** Identifies the number of residences within 100 feet of the centerline of the transmission line.
2. **Residential proximity within 300 feet:** Identifies the number of residences within 300 feet of the centerline of the transmission line.
3. **Non-residential proximity within 100 feet:** Calculates the number of non-residences (i.e. commercial facilities, public facilities, grain bins, agricultural buildings, etc.) within 0-100 feet of the centerline of the transmission line.

4. RECOMMENDED ROUTE

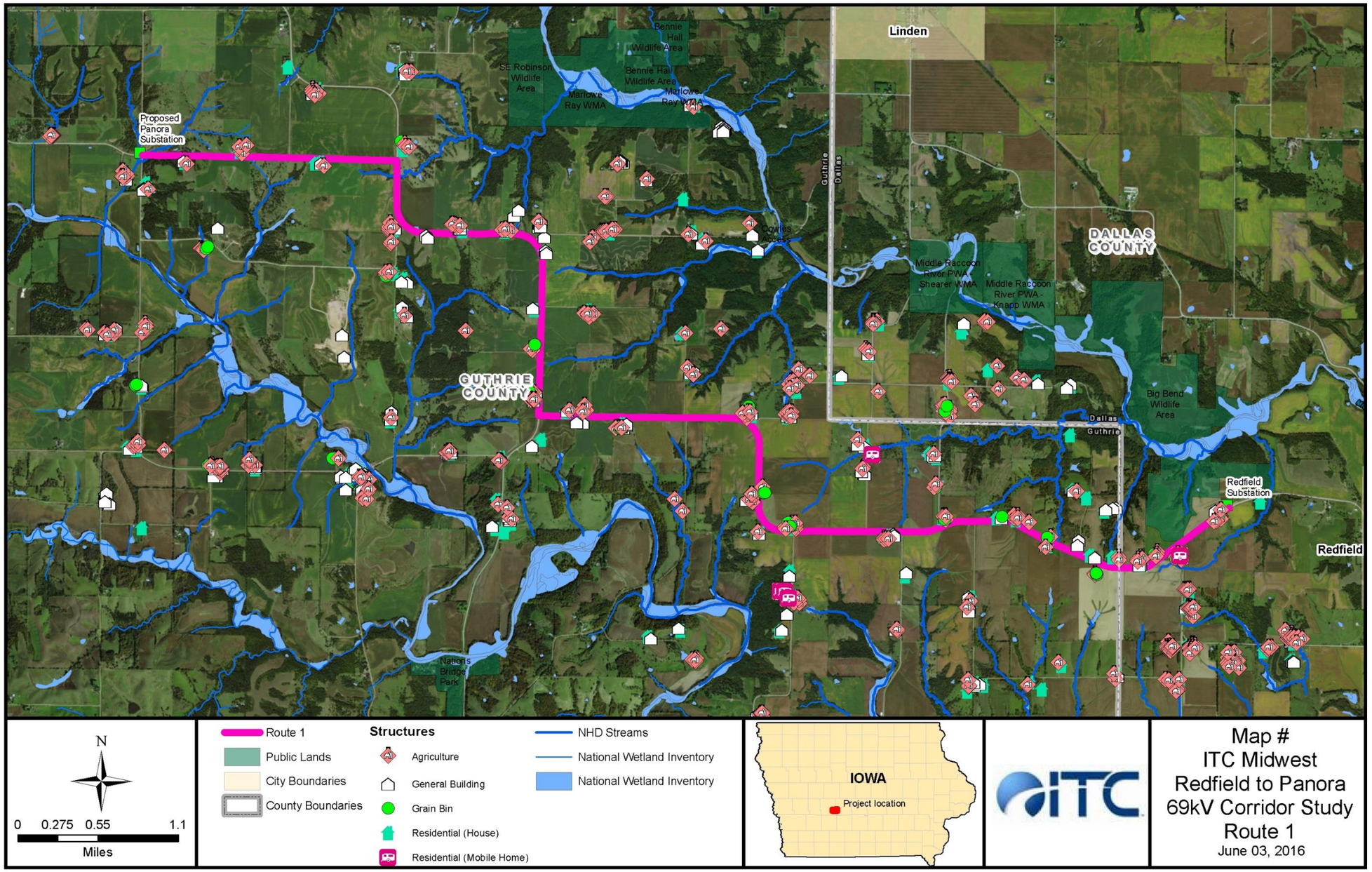
After extensive analysis and review of the route segments, sub-routes, and incorporating input from the agencies, ITC and Ulteig staff, along with the field walk-downs route 1 is selected as the recommended route. Mostly due to location near and parallel to roads coupled with providing the least impacts to tree clearing, and is the shortest distance.

Route 2 was eliminated due to potential historical significance and was longer in length then route 1. Route 3 had the most impact to adjacent structures along with a horse stable property within close proximity of the route. Route 4 had pinch points with structures, especially grain bins with close proximity and part of the route was cross country and had one additional stream crossing than route 1.

1. *Comparison Table* ***for Alternative Routes***

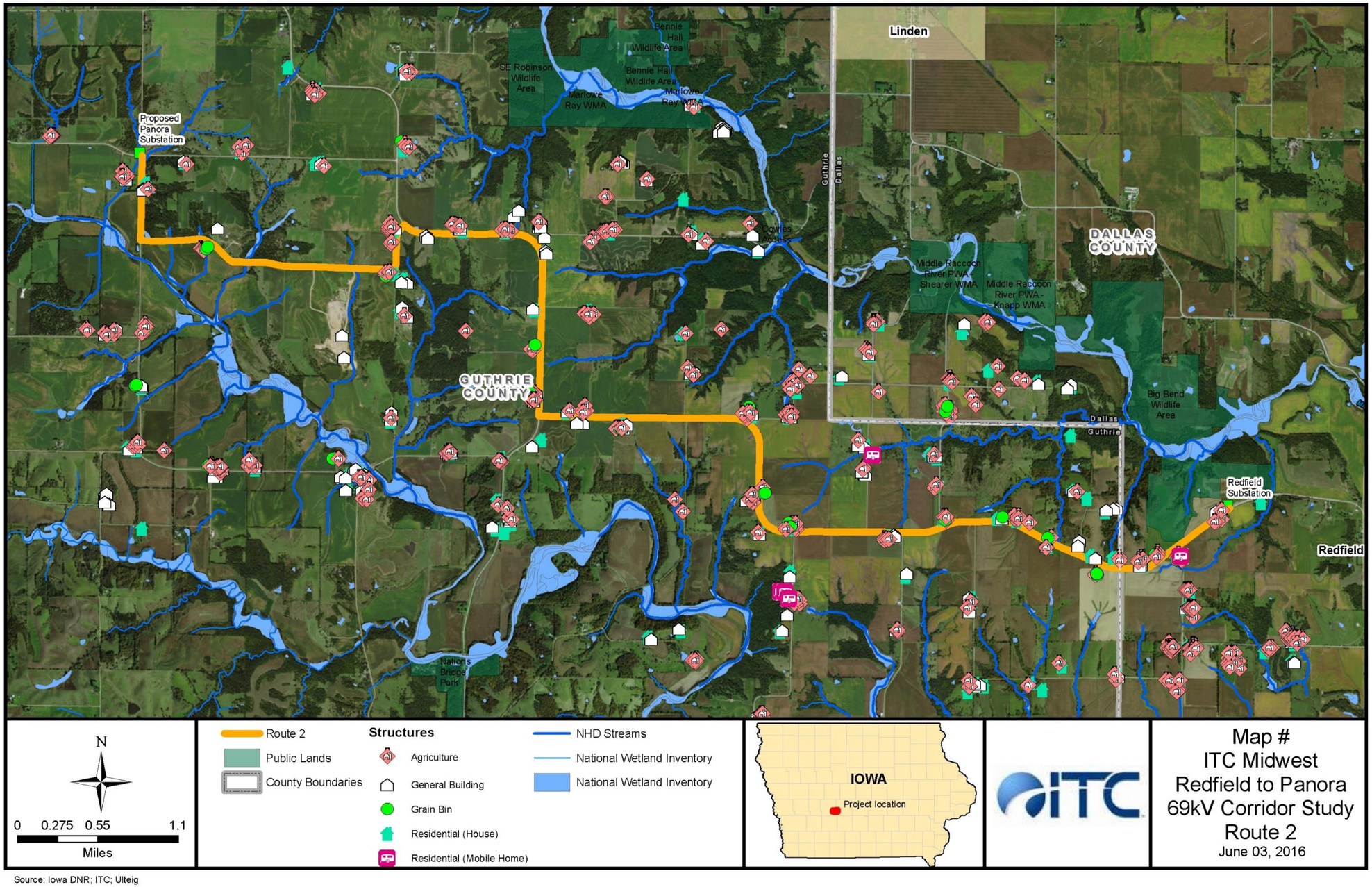
Route ID	Sub Routes Used	Total Length (miles)	Adjacent to Road (miles)	Woodlands (feet)	Wetlands (feet)	Cropland (feet)	Other Land Cover (feet)	Homes Within 50ft	Homes Within 100ft	Homes Within 150ft	Homes Within 300ft	Grain Bins Within 100Ft	Other Structures Within 100Ft	NHD Stream Crossings	Angle Poles Required	Comments
1	A1, B1, C8, D1, E1	9.9	9.9	0	0	0	0	0	2	15	24	1	7	2	39	Main Hwy route
2	A2, B1, C8, D1, E1	10.4	10.4	0	0	0	0	0	2	14	23	1	10	5	49	2nd west option (A2)
3	A1, B1, C5, D1, E1	10.2	9.7	0	0	2464	355	0	4	16	26	1	11	3	37	Horse stable conflict
4	A1, B1, C7, D1, E1	10.1	9.3	24	0	3383	510	0	1	14	23	3	5	3	37	Part is cross country

1. Route 1 Map – Recommended Route



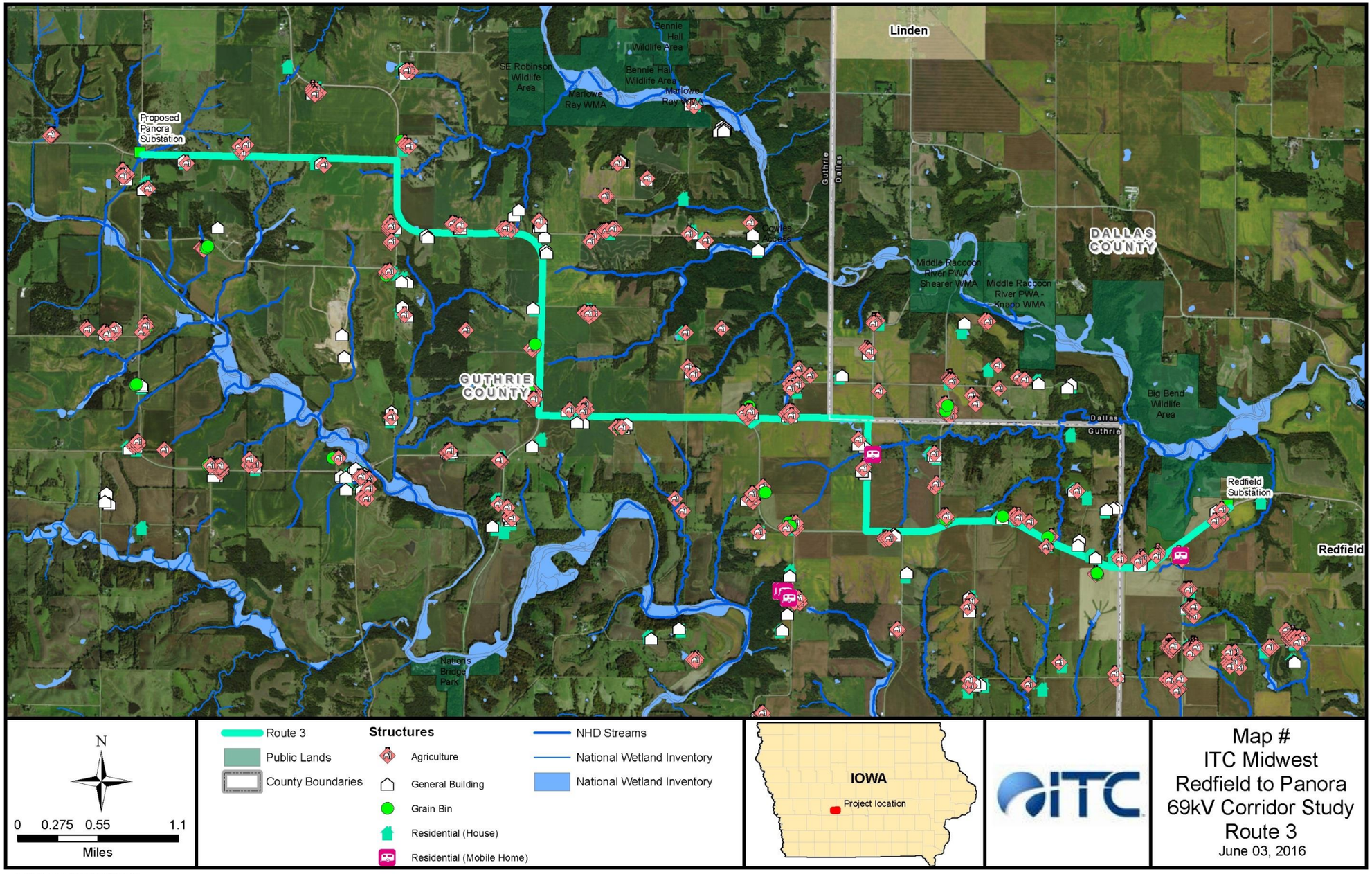
Source: Iowa DNR; ITC; Ulteig

2. Route 2 Map



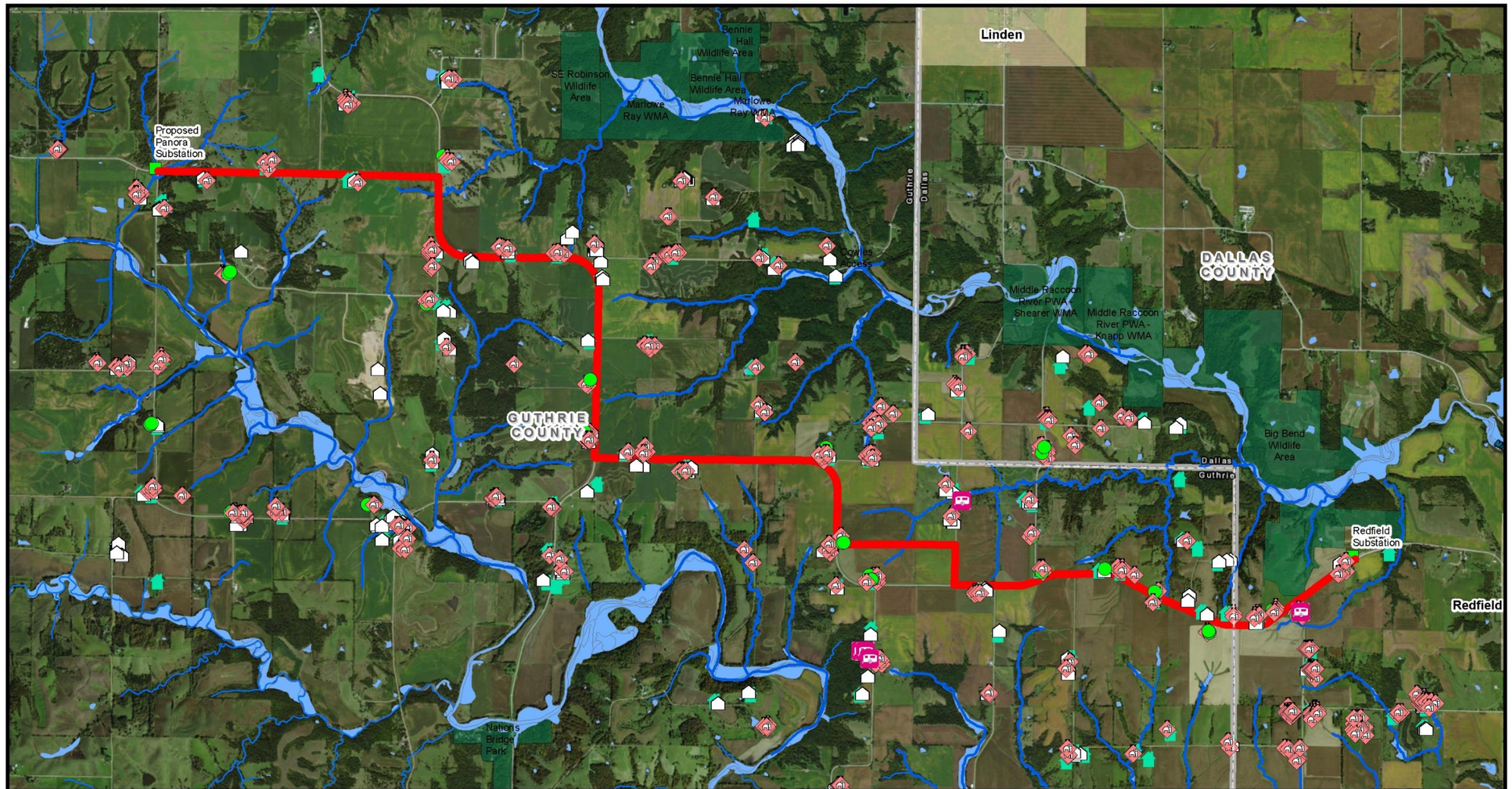
Source: Iowa DNR; ITC; Ulteig

3. Route 3 Map



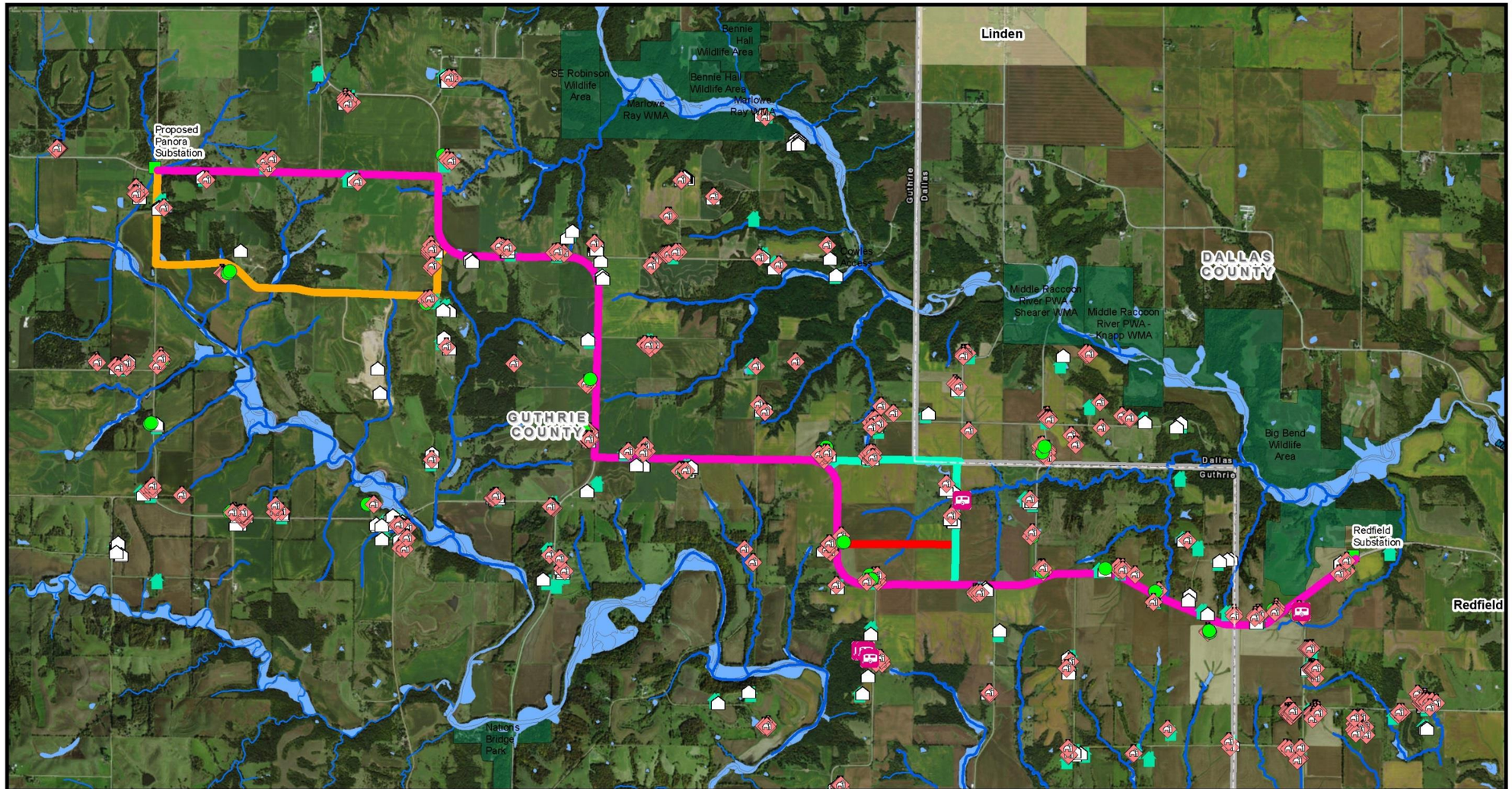
Source: Iowa DNR; ITC; Ulteig

4. Route 4 Map



Source: Iowa DNR; ITC; Ulteig

5. All Routes Map



2. Agency Responses

From: Moore, Seth [DNR] [mailto:Seth.Moore@dnr.iowa.gov]
Sent: Wednesday, February 24, 2016 11:31 AM
To: Mike Schnetzer <Mike.Schnetzer@Ulteig.com>; Dan Haglund <Dan.Haglund@Ulteig.com>
Cc: Sipe, Stacey [DNR] <Stacey.Sipe@dnr.iowa.gov>; Lundh, Kristen <kristen_lundh@fws.gov>
Subject: Environmental Review for Natural Resources 12679

Dear Mr. Schnetzer and Mr. Haglund

Redfield to Panora Transmission Line Project
Project Number M0004219
Guthrie and Dallas County

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required. If the construction plans change, the Department should be contacted for another review.

The Indiana bat (*Myotis sodalis*), a state- and federally-endangered species, and the northern long-eared bat (*Myotis septentrionalis*), a federally threatened species, have the potential to inhabit this area of the state and may occur in the area of this project. Indiana bats are found in areas of mature upland forest and along wooded corridors of small streams. The bats forage for insects beneath the canopy. Female Indiana bats form maternity colonies under loose tree bark. Northern long-eared bats spend winter hibernating in caves and nes, called hibernacula. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees) and may roost in structures such as old buildings, culverts, and bridges.

The enclosed guidelines provide information about the habitat requirements and survey methods for Indiana bat summer habitat. These guidelines may also be used for the northern long-eared bat. If it appears that you will disturb potential Indiana bat and/or northern long-eared bat summer habitat, and seasonal tree removal guidelines cannot be met, we suggest that you contact the US Fish and Wildlife Service regarding this project. The Rock Island Field Office may be reached at (309) 757-5800 or 1511 47th Ave, Moline IL 61265-7022.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

Please reference the following DNR Environmental Review/Sovereign Land Program tracking number assigned to this project in all future correspondence related to this project: 12679.

If you have questions about this letter or require further information, please contact me at (515) 725-8464.

SETH MOORE Sovereign Lands & Environmental Review Coordinator
Iowa Department of Natural Resources
515.725.8464| seth.moore@dnr.iowa.gov
502 E. 9th Street | Des Moines, IA 50319-0034

Mike Schnetzer

Subject: FW: ITC Panora to Redfield

-----Original Message-----
From: Parker, Bridget [mailto:bparker@itctransco.com]
Sent: Monday, February 15, 2016 4:42 PM
To: Mike Schnetzer <Mike.Schnetzer@Ulteig.com>
Subject: FW: ITC Panora to Redfield

Mike,
Please see the response below.
Thanks

-----Original Message-----
From: Weary, Troy
Sent: Monday, February 15, 2016 4:17 PM
To: Parker, Bridget <bparker@itctransco.com>
Subject: FW: ITC Panora to Redfield

Bridget,

Can you forward this to the consultant?

Many Thanks,

Troy

-----Original Message-----
From: Weary, Troy
Sent: Monday, February 15, 2016 4:16 PM
To: Weary, Troy
Subject: FW: ITC Panora to Redfield

-----Original Message-----
From: Dahl, Bobby [DOT] [mailto:Bobby.Dahl@dot.iowa.gov]
Sent: Monday, February 15, 2016 4:08 PM
To: Weary, Troy
Cc: Jerman, Troy [DOT]; Shackelford, Kurtis [DOT]
Subject: ITC Panora to Redfield

Hello Troy. I received in the mail ITC proposal Project number M0004219 to build a 10 mile 69 kV overhead transmission line in Guthrie and part of
Western Dallas Counties.

This would be from near Montieth Road and Tank Avenue in Guthrie County to near 310th street and Dexfield Road west of Redfield, Ia. In Dallas County.
This proposal does not include any State Highway Right of Way.

Bobby