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APPENDIX A: ROUTING TEAM

ROUTING TEAM			
Member	**Affiliation**	**Title**	**Specific Role**
Mike Skelly	CLE	President	Project oversight
Jason Thomas	CLE	Environmental Director	Environmental oversight
Wayne Galli	CLE	Executive Vice President – Transmission and technical services	Engineering support and oversight
Mark Lawlor	CLE	Director of Development	Siting support, public outreach, agency consultation
Diana Rivera	CLE	Project Development Manager	Siting support and public outreach
Adhar Johnson	CLE	Manager	Siting support Public outreach and relations
Ally Smith	CLE	Associate	Siting support Public outreach
John Kuba	CLE	Associate – Environmental Specialist	Siting support, agency consultation, environmental and sensitive species
Cari vanAmburg	CLE	Associate	Public outreach support
Daniel Hodges Copple	CLE	Associate	Public outreach support
Alex Landon	CLE	Associate	Public outreach support
Claire Richard	CLE	Associate	Public outreach support
Louisa Kinoshi	CLE	Associate, Communications	Public outreach support and graphics
Ty White	CLE	Associate	GIS support
Timothy Gaul	LBG	Associate Vice	Project Director, siting support,

ROUTING TEAM			
Member	**Affiliation**	**Title**	**Specific Role**
		President, Energy Services	agency consultation, public outreach
Laurie Spears	LBG	Environmental Planner	Project Manager, siting support, agency consultation, public outreach
James Puckett	LBG	GIS Specialist	Siting support, GIS Analysis and Mapping
Todd McCabe	LBG	Environmental Scientist	Siting support, public outreach, agency consultation, GIS support, sensitive species, land use
Emily Larson	LBG	Environmental Scientist	Siting support & public outreach
Brad Fine	LBG	Environmental Planner	Siting support, public outreach support and logistics, Engineering
Linda Green	LBG	GIS Specialist	GIS Analysis and Mapping, public outreach
Chris Flannagan	LBG	Environmental Scientist	Soils and Geology
Josh Schanbel	LBG	Environmental Planner	Visual and Recreational Resources
Camilla Deiber	LBG	Cultural Resource Specialist	Architectural resources
Tina Fortugno	LBG	Cultural Resource Specialist	Archaeological resources
Laura Totten	LBG	Environmental Scientist	Wildlife and habitat and sensitive species

ROUTING TEAM			
Member	**Affiliation**	**Title**	**Specific Role**
Mike Snyder	LBG	Environmental Scientist	Water resources
Neeli Landon	LBG	Communications Specialist	Public outreach
Phil Robertson	POWER Engineers	Engineer	Siting support and engineering
Kelsey Rockey	Parris Communications	Communications Specialist	Public outreach
Kelly Cooper	Parris Communications	Communications Specialist	Public outreach

APPENDIX B: DATA SOURCES

Category	Definition	Units	Data Source
Aerial Photography			
National Agricultural Imagery	Missouri NAIP 2008, 2010, 2012		The National Agricultural Imagery Program (NAIP) obtains aerial imagery during agricultural growing seasons. The most current imagery for the state of Missouri when the project began was taken in 2008. Imagery flown in 2010 and 2012 was used once it became available. Imagery is collected at the spatial resolution of one square meter and with the spectral resolution as natural color.
Natural Resources			
Hydrology			
Streams	National Hydrography Dataset flowlines	Number of streams crossed	A statewide subset of the National Hydrography Dataset (NHD) model version 2 was downloaded from the United States Geological Survey (USGS). Feature classes used for calculations included canal/ditch, stream/river (intermittent and perennial), artificial path, and any named features. A member of the routing team verified each stream/river crossing point using 2012 NAIP imagery.
Water bodies	National Hydrography Dataset waterbodies	Length of water body crossed by potential route	A statewide subset of the National Hydrography Dataset (NHD) model version 2 was downloaded from the United States Geological Survey (USGS).
Wetlands	National Wetlands Inventory	Length of wetlands crossed by potential route, Acres of wetland within 200' ROW	National Wetland Inventory (NWI) data was downloaded from the U.S. Fish and Wildlife Service's (USFWS) website.
Floodplains	100 and 500-year floodplains		The Federal Emergency Management Agency (FEMA) provides a digital version of their National Flood Hazard Layer on DVDs. Floodplain data for Missouri was requested on November 14, 2011. Where possible, unmapped flood areas near the Missouri River crossing were digitized from georeferenced FIRMettes. Floodplain data provided by the Illinois Geospatial Data Clearinghouse was used to approximate the length of floodplains crossed by potential routes on the Illinois side of the Mississippi River.
Protected and Public Lands			

Category	Definition	Units	Data Source
Public and Conservation Lands	Local, private, state, and federally owned lands	Length of public/conservation land crossed	This data layer represents features from a wide variety of sources, including the U.S. Geological Survey's Protected Areas Database (PADUS v1.2); U.S. Army Corps of Engineers; National Resource Conservation Service; U.S. Fish and Wildlife Service; U.S. Forest Service; The Nature Conservancy; National Conservation Easement Database; Illinois Department of Natural Resources; Illinois Parks and Recreation; Illinois Nature Preserve Commission; Illinois State Geological Survey; Missouri Department of Natural Resources; Missouri Department of Conservation; Missouri Spatial Data Information service, Indiana Department of Natural Resources; Kansas Department of Wildlife, Parks, and Tourism; Kansas Data Access and Support Center; Kansas Parks and Recreation Association; and many counties and municipalities. Where possible, the boundaries of these protected areas have been edited to match parcel boundaries provided by the counties in the study area.
Sensitive Species and Habitat			
Indiana Bat and Long-Eared Bat Habitat	Potential habitat crossed by route	Miles	The United States Fish and Wildlife Service (USFWS) publish a list of Federally-Listed Threatened, Endangered, Proposed, and Candidate species by county for Missouri. Because all study area counties are listed as potential habitat for the Indiana Bat and the Long-Eared Bat, habitat for these species was calculated using Forest and Forested Riparian areas as determined by the Photo-Interpreted Land Cover dataset.
Heritage Hotspot	Hotspot length crossed	Miles	Heritage Hotspot data was provided by the Missouri Department of Conservation and is part of the Comprehensive Wildlife Strategy (CWS) project data. The CWS data description says that hotspots "represent areas with a concentration of species of conservation concern."
Illinois Natural Areas Inventory, Threatened and Endangered Species, Illinois Nature Preserves Commission sites			The Illinois Department of Natural Resources (IDNR) provided shapefiles of threatened/endangered species, Illinois Natural Areas Inventory sites, and Illinois Nature Preserves Commission sites. This data was used to analyze potential impacts to protected species and protected areas at the Mississippi River crossing locations.
Important Bird Areas (IBA)			The MDC Comprehensive Wildlife Strategy project provided data showing areas identified as Important Bird Areas by the Missouri Audubon society. Important Bird areas provide crucial habitat for species of conservation concern and avian species vulnerable due to their limited range or high congregation density.
Soils and Land Use			
Karst		Miles crossed	Data depicting regions of karst topography were acquired from the USGS (via the National Atlas Map).

Category	Definition	Units	Data Source
NLCD Land Cover			The National Land Cover Database 2006 (NLCD 2006) compiled by the Multi-Resolution Land Characteristics (MRLC) Consortium (including the U.S. Geological Survey, Environmental Protection Agency, U.S. Forest Service, National Oceanographic and Atmospheric Association, National Aeronautics and Space Administration, Bureau of Land Management, National Park Service, Natural Resource Conservation Service, and the U.S. Fish and Wildlife Service). NLCD 2006 products include 16 classes of land cover from Landsat satellite imagery.
Steep Slopes	Slopes > 20%	Feet crossed	Slopes (in percent) were derived from a digital elevation model (DEM) consisting of terrain elevations for ground positions at regularly spaced horizontal intervals (10 meters). The data used for this analysis was derived from the National Elevation Dataset (NED) prepared by the USGS.
Human Environment			
Residences	Residences within 250, 500, and 1000'	Counts	Residences were digitized using high resolution aerial image interpretation as well as field reconnaissance. Aerial imagery provided by the National Agricultural Imagery Program (2008/2012).
Schools, Churches, Cemeteries	Features within 1000 feet of route	Counts	The locations of churches, schools, and cemeteries were derived from the United States Geological Survey's Geographic Names Information System (GNIS) and augmented through high resolution aerial photo interpretation, field reconnaissance and public outreach efforts. The GNIS database serves as the Federal Government's repository of information regarding feature name spellings and applications for features in United States and its Territories. The names listed in the inventory are often published on Federal maps, charts, and in other documents and have been used in emergency preparedness planning, site-selection and analysis, genealogical and historical research, and transportation routing. Through field reconnaissance, the Routing Team recorded local schools, churches, and cemeteries to augment and verify this data layer.
Parcels	Tax parcel boundaries	Number of parcels crossed	The routing team contacted counties in the study area (Buchanan, Clinton, Caldwell, Livingston, Carroll, Chariton, Macon, Randolph, Audrain, Shelby, Monroe, Marion, Ralls, Pike) and purchased parcel data during April, May, and June 2013. All counties except for Ralls County provided digital GIS parcel boundary data and associated ownership information. Ralls County provided scans of parcel maps and a spreadsheet with property owner name and address information.
Household Density		Miles crossed	Household density was derived at the census block level from census population data obtained from the US Census Bureau (2010).

Category	Definition	Units	Data Source
Pivot Irrigation Systems	Pivots impacted	Counts	Pivot irrigation systems were digitized using high resolution aerial image interpretation. Members of the public were also encouraged to provide information about existing or planned pivot irrigation systems on their land, and this data aided in digitizing and verifying pivot locations. A pivot is considered potentially impacted when a potential route crosses more than 1,500 feet of irrigated area in a single span.
Energy Infrastructure			
Transmission Lines		Length parallel to existing transmission lines. Count of existing transmission lines crossed.	Information on existing transmission lines was collected from Platts Transmission Lines geospatial data layer. . The information was augmented through aerial photo interpretation and field review.
Oil and Gas Pipelines		Length parallel to existing gas line corridors.	Major natural gas and oil pipeline in formation was obtained through the EV Energy Map of North America. Spatial accuracy of the data was augmented through field review of pipeline line corridors, and pipeline ownership information was improved by comparison with the National Pipeline Mapping System online viewer.
Oil and Gas Wells		Counts	The Missouri Department of Natural Resources, Division of Geology and Land Survey, and Geological Survey Program maintain a list of permitted oils and gas well information within the State of Missouri.
Transportation			
Major Roads	Interstates, U.S. Highways, State Highways	Number of each road type crossed	Major roads data was prepared by the Environmental Systems Research Institute (ESRI), (2012) Redlands, California, USA.
Airport and Heliport Notification Zones	Airport points and FAA Notification Zone	Length of route within FAA Notification Zone	The location of airports and heliports was gathered from FAA databases, aerial photograph interpretation, field reconnaissance, public input, and navigational charts. An approximation of the air navigation obstruction zone was developed based on the Code of Federal Regulations (CFR) Title 14 Part 77, (Aeronautics and Space, Objects affecting navigable airspace). This approximation was calculated based on aerial interpretation of runway length, the average height of the proposed transmission towers, and approach zone formulas for airports and heliports in the CFR. Note: this is a rough approximation performed based on aerial photo interpretation without the inclusion of topographic effects or precise knowledge of runway length.
Recreation			
Recreation Trails			The Missouri Department of Conservation publishes data showing recreational trails in the state.

Category	Definition	Units	Data Source
Scenic Byways		Crossings	Information and driving directions from the National Scenic Byways Program enabled mapping of scenic and historic byways in Missouri, Illinois, and Indiana.
Historic Resources			
Historic and Archaeological Sites		Sites within ¼ mile, ½ mile, and 1 mile	The Missouri State Historic Preservation Office provided shapefiles showing locations of sites and districts listed on the National Register of Historic Places and a geodatabase with spatial and tabular data for archaeological sites across the state.

APPENDIX C: FEDERAL AND STATE AGENCY COORDINATION

CLEAN LINE
ENERGY PARTNERS

February 10, 2011

Joe Cothern
U.S. EPA Region VII
901 N. 5th Street
Kansas City, MO 66101

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Mr. Cothern:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. We would like to request the following, and, if available, any Geographic Information Systems data identifying their location:

NPL	USEPA Superfund Sites, National Priorities List
CERCLIS	USEPA Potential Superfund Sites
RCRA-LgGen	USEPA RCRA Large Quantity Generators
RCRA-SmGen	USEPA RCRA Small Quantity Generators
RCRA-TSD	USEPA RCRA Treatment, Storage and Disposal Sites
RCRA-Transp	USEPA RCRA Transporters
ERNS	USEPA Emergency Response Notification System
HWMP-UST/ LUST	KDHE UST and LUST Sites
HWMP-CERCLIS	KDHE Superfund Sites
HWMP-RCRIS	KDHE RCRA Sites
HWMP-Registry	KDHE Registry of Confirmed or Abandoned or Uncontrolled Hazardous Waste Sites
HWMP-VCP	KDHE Voluntary Cleanup Program Sites

The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832-319-6310 FAX 832-319-6311

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures. Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Maps shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
[illegible]

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
tel 816-398-8658
[illegible]

Attachments:

I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
Clay	Cooper	Johnson	Polk
Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

Kansas Counties within Study Area			
Allen	Doniphan	Kiowa	Pawnee
Anderson	Douglas	Labette	Pottawatomie
Atchison	Edwards	Leavenworth	Pratt
Barber	Elk	Lincoln	Reno
Barton	Ellis	Linn	Rice
Bourbon	Ellsworth	Lyon	Riley
Brown	Finney	Marion	Rush
Butler	Ford	Marshall	Russell
Chase	Franklin	McPherson	Saline
Chautauqua	Geary	Meade	Sedgwick
Cherokee	Gray	Miami	Shawnee
Clark	Greenwood	Mitchell	Stafford
Clay	Harper	Montgomery	Sumner
Cloud	Harvey	Morris	Wabaunsee
Coffey	Hodgeman	Nemaha	Washington
Comanche	Jackson	Neosho	Wilson
Cowley	Jefferson	Ness	Woodson
Crawford	Johnson	Osage	Wyandotte
Dickinson	Kingman	Ottawa	

CLEAN LINE
ENERGY PARTNERS

February 10, 2011

Charlie Scott, Field Supervisor
Columbia Ecological Services Field Office
U.S. Fish and Wildlife Service
101 Park DeVille Dr., Suite A
Columbia, MO 65203-0057

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Mr. Scott:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. In accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544 as amended) we would like to request your comments on the project's potential to have adverse effects on federally threatened or endangered species. The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures. Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832-319-6310 FAX 832-319-6311

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
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sparker@louisberger.com

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Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
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Attachments:
I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

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Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

January 12, 2014

John Kuba
1001 McKinney, Suite 700
Houston, Texas 77002

Dear Mr. Kuba:

This letter is in regards to the preliminary routing network for the proposed 600 kV Grain Belt Express transmission line from western Kansas to southern Indiana. The preliminary network was presented to my staff on December 5, 2013 during a webinar with representatives from Clean Line and the Louis Berger Group. Also participating in the webinar were staff from the Service's Rock Island Illinois Field Office and from the Missouri Department of Conservation. The comments herein are offered on behalf of the Columbia Missouri Ecological Services Field Office of the U.S. Fish and Wildlife Service (Service) under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

Western Portion of the Line

For the western half of the routing network in Missouri (Buchanan County to Chariton County), we recommend selecting the southern route with a terminal slightly east of Keytesville (Figure 1). The northern route intersects the Lower Grand River Conservation Opportunity Area and the Lower Grand River Wetlands Important Bird Area which contain a network of conservation lands including Swan Lake National Wildlife Refuge, Pershing State Park, and Fountain Grove Conservation Area. These lands support large numbers of migratory birds, especially shorebirds, waterbirds, and waterfowl; and birds are known to move between wetlands on these lands and those in surrounding areas. Placing a large transmission line within areas containing large numbers of migrating birds, especially those with long wingspans, heavy bodies, and poor maneuverability (e.g., ducks, geese, pelicans, herons, etc.), greatly increases the likelihood and frequency of collisions with power lines. While various measures can be implemented to reduce these impacts, the most effective measure is to site transmission lines away from these important bird areas.

According to information you provided during the December 5, 2013 webinar, sections of the southern route would parallel an existing right-of-way for the Rockies Express -West pipeline. Because paralleling an existing right-of-way would reduce the amount of fragmentation to

forested habitat, we further support selection of the southern route.

Eastern Portion of the Line

During the webinar on December 5, 2013, you explained that one of the routes on the eastern half of the line in Missouri (roughly from Moberly to New London) would also parallel an existing right-of-way for approximately 70 percent of the route (Figure 1). While all possible routes for this portion of the line will intersect Indiana bat (*Myotis sodalis*, federally endangered) and northern long-eared bat (*Myotis septentrionalis*, proposed for listing as federally endangered) roosting habitat, this routing option would result in less habitat fragmentation than the other two possible routes. Migratory birds would also benefit from reducing fragmentation of forested habitat. Therefore, we recommend selection of this route for the eastern half of the line in Missouri.

Mississippi River Crossing

During the webinar on December 5, 2013, you also described options for where the proposed Grain Belt line will cross the Mississippi River. These options include: (1) across McDonald Island near mile 313; (2) north of Saverton Island near mile 303; (3) between Browns Island and Jim Young Island near mile 300; (4) across Blackburn Island near mile 284, also referred to as the Louisiana crossing; and (5) across Pharrs Island near mile 276, also referred to as the Clarksville crossing. You stated that the McDonald Island and the Louisiana crossings have been eliminated from the options, however; thus so our comments pertain only to the remaining three crossings.

With each of proposed options, bald eagles (*Haliaeetus leucocephalus*) have the potential to be negatively impacted by the presence of the transmission lines. Eagles, as well as other migratory birds, can collide with the transmission lines, resulting in injury or death. The height of the structures at the river crossings (estimated as 200-300 feet) will increase this risk given that the probability of bird strikes increases as the height of the structures increase. While not common, electrocution of eagles and other birds with large wingspans can also occur. Based on these risks, we recommend that Clean Line select a route other than the route crossing the Mississippi River downstream of the lock and near Saverton, Missouri (between Browns Island and Jim Young Island near mile 300). At this location, bald eagles are known to occur in high concentrations and may collide with transmission lines even if line markers are employed. Please refer to the Service's Rock Island Illinois Ecological Services Field Office for comments regarding impacts to aquatic species in the Mississippi River, such as the pallid sturgeon (*Scaphirhynchus albus*, federally endangered) and Higgins eye pearlymussel (*Lampsilis higginsii*; federally endangered).

In summary, we recommend selecting the southern route on the west half of the line, the center route on the east side of the line, and a route which does not cross the Mississippi River downstream of the lock and dam near river mile 300 at Saverton, Missouri (Figure 1). While we recognize that all routes will result in some level of impacts to natural resources, we recommend selection of these routes in order to reduce impacts to fish and wildlife resources.

We appreciate the opportunity to provide comments on the proposed transmission line and the efforts of Clean Line to reduce impacts to fish and wildlife. If you have questions concerning this response, please contact Trisha Crabill at (573) 234-2132, extension 121.

Sincerely,

Amy Salveter
Field Supervisor

Enclosures

cc: MDC, Jefferson City, MO (Attn: Policy Coordination)
USFWS, Manhattan Kansas Field Office, Manhattan, KS
USFWS, Rock Island Field Office, Rock Island, IL

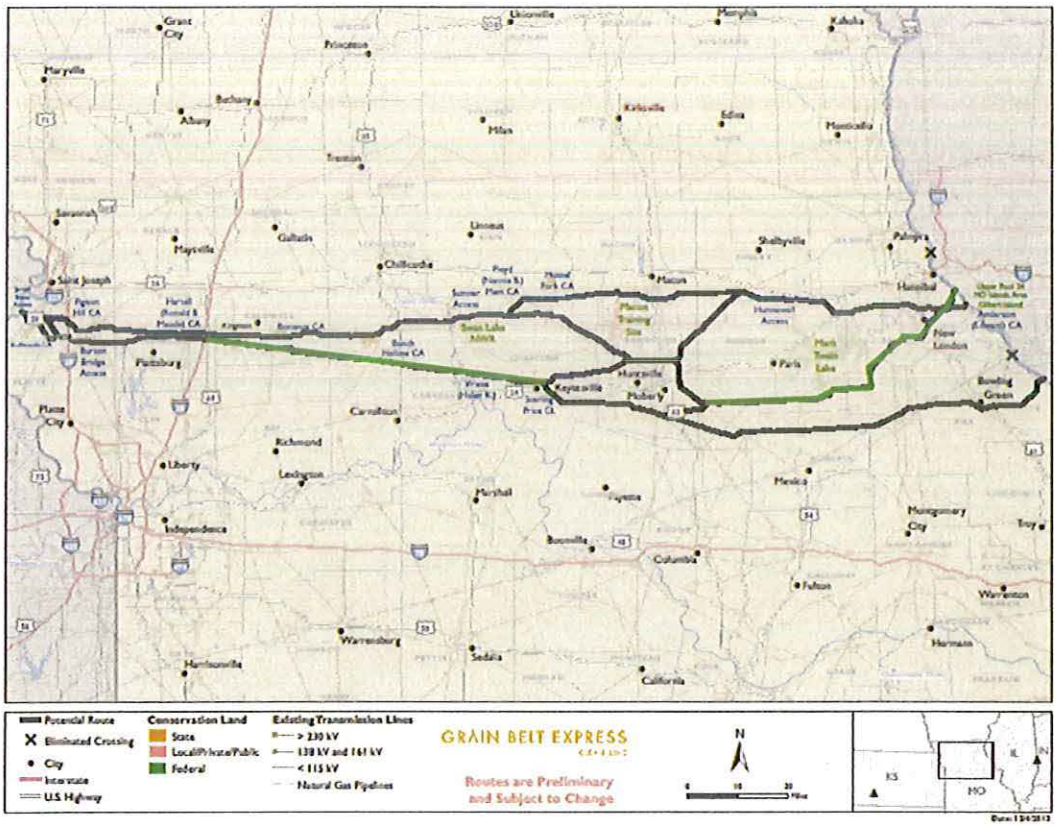

Figure 1. Preliminary routing network for the proposed Grain Belt Express Line, provided during the December 5, 2013 webinar. Highlighted in green are routes resulting in less impacts to migratory birds and federally threatened and endangered species and thus recommended by the Columbia Missouri Ecological Services Field Office of the U.S. Fish and Wildlife Service (Service). Segments with no highlighted routes represent routing options for which the Service has no preference.

CLEAN LINE
ENERGY PARTNERS

February 9, 2011

Mark Frazier
U.S. Army Corps of Engineers
Regulatory Division
Attn: OD-R, Rm 706
601 E. 12th Street
Kansas City, MO 64106

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Mr. Frazier:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. We would like to request your comments in the form of an agency coordination letter. The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures.

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Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Maps shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
tel 816-398-8658
sparker@louisberger.com

Attachments:
I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
Clay	Cooper	Johnson	Polk
Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

Kansas Counties within Study Area			
Allen	Doniphan	Kiowa	Pawnee
Anderson	Douglas	Labette	Pottawatomie
Atchison	Edwards	Leavenworth	Pratt
Barber	Elk	Lincoln	Reno
Barton	Ellis	Linn	Rice
Bourbon	Ellsworth	Lyon	Riley
Brown	Finney	Marion	Rush
Butler	Ford	Marshall	Russell
Chase	Franklin	McPherson	Saline
Chautauqua	Geary	Meade	Sedgwick
Cherokee	Gray	Miami	Shawnee
Clark	Greenwood	Mitchell	Stafford
Clay	Harper	Montgomery	Sumner
Cloud	Harvey	Morris	Wabaunsee
Coffey	Hodgeman	Nemaha	Washington
Comanche	Jackson	Neosho	Wilson
Cowley	Jefferson	Ness	Woodson
Crawford	Johnson	Osage	Wyandotte
Dickinson	Kingman	Ottawa	

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
636 FEDERAL BUILDING
601 E 12TH STREET
KANSAS CITY MO 64106-2824

REPLY TO
ATTENTION OF

March 17, 2011

Regulatory Branch
(NWK-2011-0199)
(Multiple Counties, KS & MO)

Mr. Stephen Parker
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, Missouri 64111

Dear Mr. Parker,

This is in response to your inquiry, for the proposed Grain Belt Clean Line Transmission Project, received on February 14, 2011. The project will be located in Kansas and Missouri. The Kansas City District, Little Rock District, and St. Louis District will coordinate to facilitate consistency and communication in the permitting process.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (Title 33 United States Code Section1344). The implementing regulation for this Act is found at Title 33 Code of Federal Regulations Parts 320-332. Any work or structures in, over, or under a navigable water of the United States, require prior authorization from the Corps of Engineers under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403). Please see enclosed exhibit of approximate Section 10 waters within the study area.

To comply with the National Environmental Policy Act, we require notice of any federal funding, regulatory oversight or permit requirements you know of for our determination to establish a lead federal agency.

Federal regulations require that a Department of the Army (DA) permit be issued by the Corps of Engineers prior to the initiation of any construction on the portion of a proposed activity which is within the Corps' regulatory jurisdiction.

We are interested in your thoughts and opinions concerning your experience with the Kansas City District, Corps of Engineers Regulatory Program. We have placed an automated version of our Customer Service Survey form at: **http://per2.nwp.usace.army.mil/survey.html**. At your request, we will mail you a paper copy that you may complete and return to us by mail or fax.

The Kansas City District will be the lead district associated with this project; Ms. Kailey Rippen is the project manager. The Kansas City District will coordinate with Ms. Cynthia Blansett and Ms. Sarah Chitwood of the Little Rock District; and Ms. Jennifer Brown of the St. Louis District.

If you have any questions concerning this matter, please feel free to contact Ms. Kailey Rippen at 816-389-2123 (FAX 816-389-2032). Please reference Permit No. 2011-0199 in all comments and/or inquiries relating to this project.

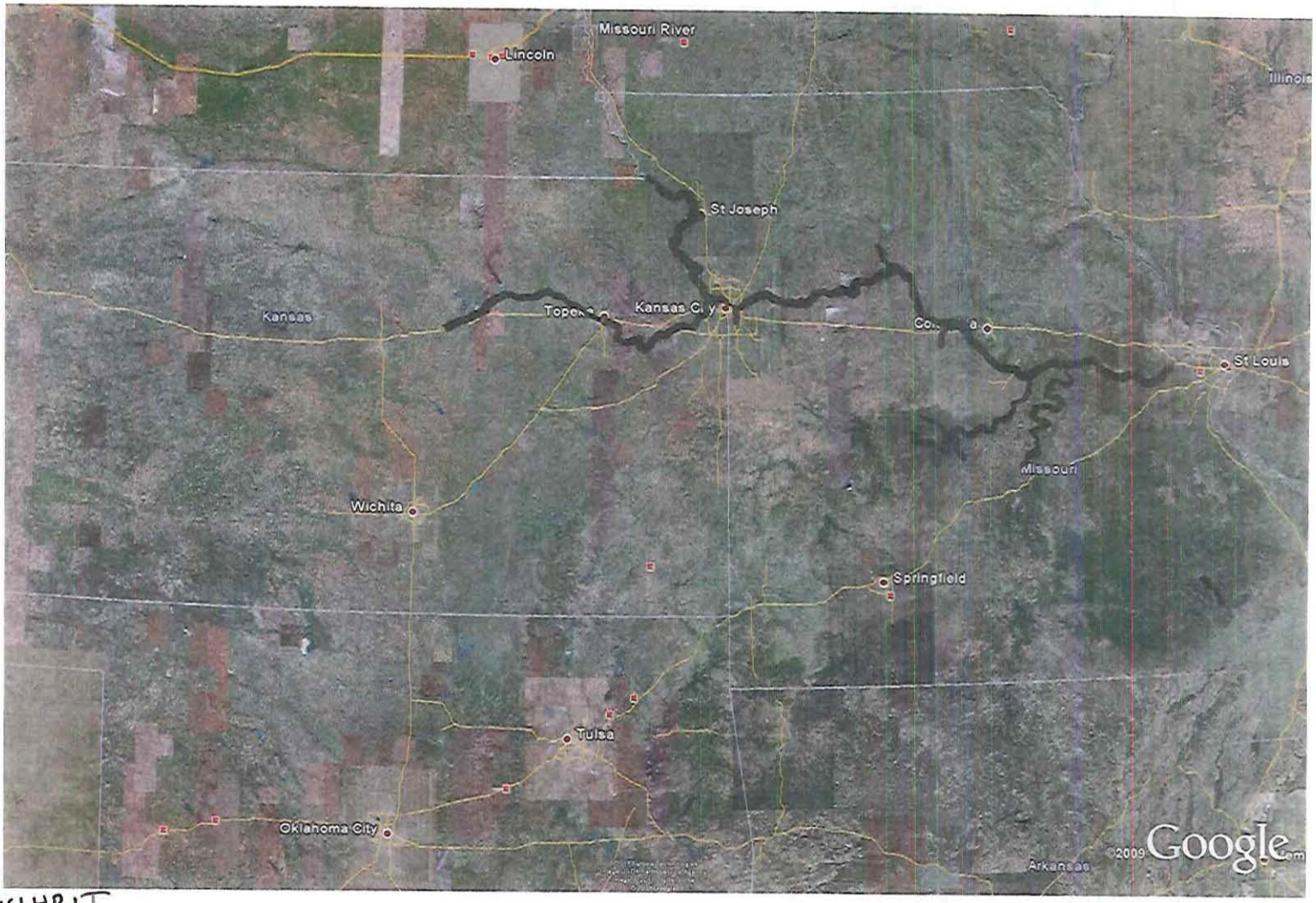
Sincerely

Kailey Rippen
Project Manager
Regulatory Branch

Enclosure

Copy Furnished (electronically w/o enclosure)

Ms. Cynthia Blansett
Little Rock District Corps of Engineers, Regulatory Branch
Ms. Jennifer Brown
St. Louis District Corps of Engineers, Regulatory Branch
Environmental Protection Agency,
Watershed Planning and Implementation Branch
U.S. Fish and Wildlife Service, Manhattan, Kansas
Kansas Department of Wildlife and Parks
Kansas Department of Health and Environment
Kansas Department of Agriculture
U.S. Fish and Wildlife Service, Columbia, Missouri
Missouri Department of Natural Resources,
Water Protection Program
Missouri Department of Conservation
Missouri Department of Natural Resources,
State Historic Preservation Office



EXHIBIT

Approximate Section 10 waters

CLEAN LINE
ENERGY PARTNERS

February 9, 2011

Brian Johnson
U.S. Army Corps of Engineers
CE-MVS-PA
1222 Spruce St.
St. Louis, MO 63103

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Mr. Johnson:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. We would like to request your comments in the form of an agency coordination letter. The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures. Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced

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approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Maps shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
tel 816-398-8658
sparker@louisberger.com

Attachments:
I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
Clay	Cooper	Johnson	Polk
Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

THE Louis Berger Group, INC.

July 8, 2013

U.S. Army Corps of Engineers – St. Louis District
Attn: Ms. Jennifer Brown
1222 Spruce St.
St. Louis, MO 63103

Re: Clean Line Energy's Grain Belt Express Transmission Project - Mississippi River Potential Crossings

Dear Ms. Brown,

Clean Line Energy Partners LLC (Clean Line) is proposing to develop, construct, and operate the Grain Belt Express Clean Line Transmission Project (Project). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed Project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

The Louis Berger Group, Inc. (Berger) developed a potential route network for the proposed Project from the Spearville Substation in Ford County, Kansas to the Sullivan Substation in Sullivan County, Indiana. Potential routes have been developed through a process that has taken into account data analysis and field reconnaissance. In mid-July, Clean Line and Berger will be presenting these Potential Routes to the public at 12 Open Houses that will be held throughout the state of Missouri. At this time, there are 5 potential routes to cross the Mississippi River.

On June 26, 2013, Berger and Clean Line held an online meeting with the U.S. Army Corps of Engineers St. Louis District to discuss the project and give an update on the current activities. In response to that meeting, Berger is submitting this letter along with maps of each crossing and shape files. We are requesting a preliminary review of each of the crossings by the Corps to help identify any information that will be helpful in further refining the crossings. Below is a brief summary of each of the potential routes.

Marion County (MO)/Adams County (IL) – River Mile Marker 313-314 (Figures 1 and 1a)
The potential route in Marion and Adams counties is the northern most crossing of the Mississippi River. The width of the river is approximately 7,000 feet (ft.) but, could be spanned with a structure on an island. The route would cross over the South River Drainage District in Marion County and the Sny Island Levee and Drainage District in Adams County. Land adjacent to the river is flat with marginal relief.

Ralls County (MO)/Pike County (IL) – River Mile Marker 303-304 (Figures 2 and 2a)
The potential route would cross at one of the more narrow points along the river. The width of the river is approximately 4,500 ft. The topography is hilly to steep on the Missouri side becoming flat, cultivated land on the Illinois side of the river. The potential route would cross the Sny Island Levee and Drainage District in Pike County.

1600 Baltimore Avenue, Suite 100 | Kansas City, MO 64108 USA
Tel 816.398.8578 | Fax 816.561.1666 | www.louisberger.com

Ralls County (MO)/Pike County (IL) – River Mile Marker 299-300 (Figures 3 and 3a)
The potential route crosses the Mississippi River near mile marker 300, just north of the Edward Anderson Conservation Area. The width of the river is approximately 4,000 ft. Land adjacent to the river is flat with marginal relief on the Illinois side. In Missouri, land is hilly too steep with forest cover.

Pike County (MO)/Pike County (IL) – River Mile Marker 284-285 (Figures 4 and 4a)
The potential route parallels an existing natural gas line right-of-way crossing the Mississippi River. Topography on the Missouri side is hilly to step with residential development to the north and south. On the Illinois side, land adjacent to the river is flat, cultivated land. The width of the river is about 3,800 ft. South of the crossing is the town of Louisiana and the Upper Mississippi Conservation Area – Angle Island is located to the north. In addition, there are several gas lines passing through the area.

Pike County (MO)/Pike County (IL) – River Mile Marker 276-277 (Figures 5 and 5a)
The potential route parallels an existing transmission line before diverting around a substation to cross over the Mississippi River on the Missouri side. The width of the river is approximately 9,800 ft. Crossing the river at this location would likely involve a structure on the island that is part of the Upper Mississippi Conservation Area. The potential route would cross over the Sny Island Levee and Drainage District and the Mark Twain National Wildlife Refuge, a private – inholding.

At this time, the proposed route has not been identified. Clean Line and Berger are requesting input from the Army Corps of Engineer on the five potential crossings described above. We would like to set up a meeting with you in the next few weeks to review the crossings and get your feedback. Please let me know if you have additional questions or would like additional information on these potential river crossings.

Sincerely,

Tim Gaul

Tim Gaul
Louis Berger Group
Associate Vice President, Energy Services
Office: 202.303.2647
Mobile: 240.381.8054

Comments for the Louis Berger Group, Inc. for Grain Belt Express Transmission Project –

Mississippi River Potential Crossings (USACE St. Louis District)

General comments:

- USACE policy requires mitigation for loss of public lands for non recreational outgrants. This is in addition to Regulatory requirements that may involve mitigation for wetlands. Non-recreational outgrant mitigation is typically "acre for acre" land acquisition based on the proposed footprint.
- Are there benefits to locating the lines within existing transmission line corridors spaning the river?
- Strongly recommend that project not be located on public lands.
- High public recreational use in Pool 24, including boating, kayaking, fishing, wildlife viewing, etc. Proposed locations fall within primitive camping locations, Mississippi River Water Trail designated sites.
- Review /approvals from navigation industry, including US Coast Guard, US Army Corps of Engineers, RIAC, etc.
- Coordination with Sny Levee and Drainage District.

Figure 3a: Ralls County / Pike County (IL) - RM 299-300:

- Preferred Site.
- Not located on public land.
- Recommend to coordinate with Missouri Department of Conservation

Figure 4a: Pike County (MO) / Pike County (IL) - RM 284-285:

- USACE land ownership on IL side not shown on Figure 4.
- Discourage location due to impacts to public lands, which has negative effects to forestry, wildlife, migratory waterfowl, fisheries, recreation, general aesthetic, etc.
- Blackburn Island is part of Ted Shanks Conservation Area (TSCA). TSCA is currently undergoing a large scale environmental restoration project to restore forests and wetlands. Over 3000 acres of forest have been lost due to flooding of 1993. Following the prolonged Mississippi River flood in 1993, much of the bottomland hardwood and floodplain forest at TSCA died and reed canary grass invaded these areas. Further impacts to forested areas in this stretch of Mississippi River are discouraged.
- Encompasses a known nesting area for eagles, herons, and egrets.
- Blackburn Island area contains 4 permanent research plots as part of Long Term Monitoring Program in order to maintain forest diversity, health, and sustainability on Federal lands. Goals set forth in Upper Mississippi River Systemic Forest Stewardship Plan.
- Anticipate larger impact as compared to natural gas pipelines as they do not necessarily require permanent vegetation clearing footprint.
- Natural Resource Management Goals and Objectives for Blackburn Island area:
    - Restore natural riparian forests and wetland communities through natural succession, restoration plantings, silviculture techniques, succession control and native plant introductions.
    - Sustain healthy forests and wetlands communities through vegetative management to provide high quality habitat for forest wildlife.
    - Accommodate resource compatible public access for recreational opportunities (i.e. hunting, fishing, and wildlife viewing).
    - Communicate regularly and collaborate with MDC on resource compatible natural resource management goals and objectives of the Upper Mississippi Conservation Area.

- Prescribe forest management techniques which support federal management goals and objectives for wildlife and fish management.
- Accommodate resource compatible public access for recreational opportunities (i.e. hunting and water trail access).

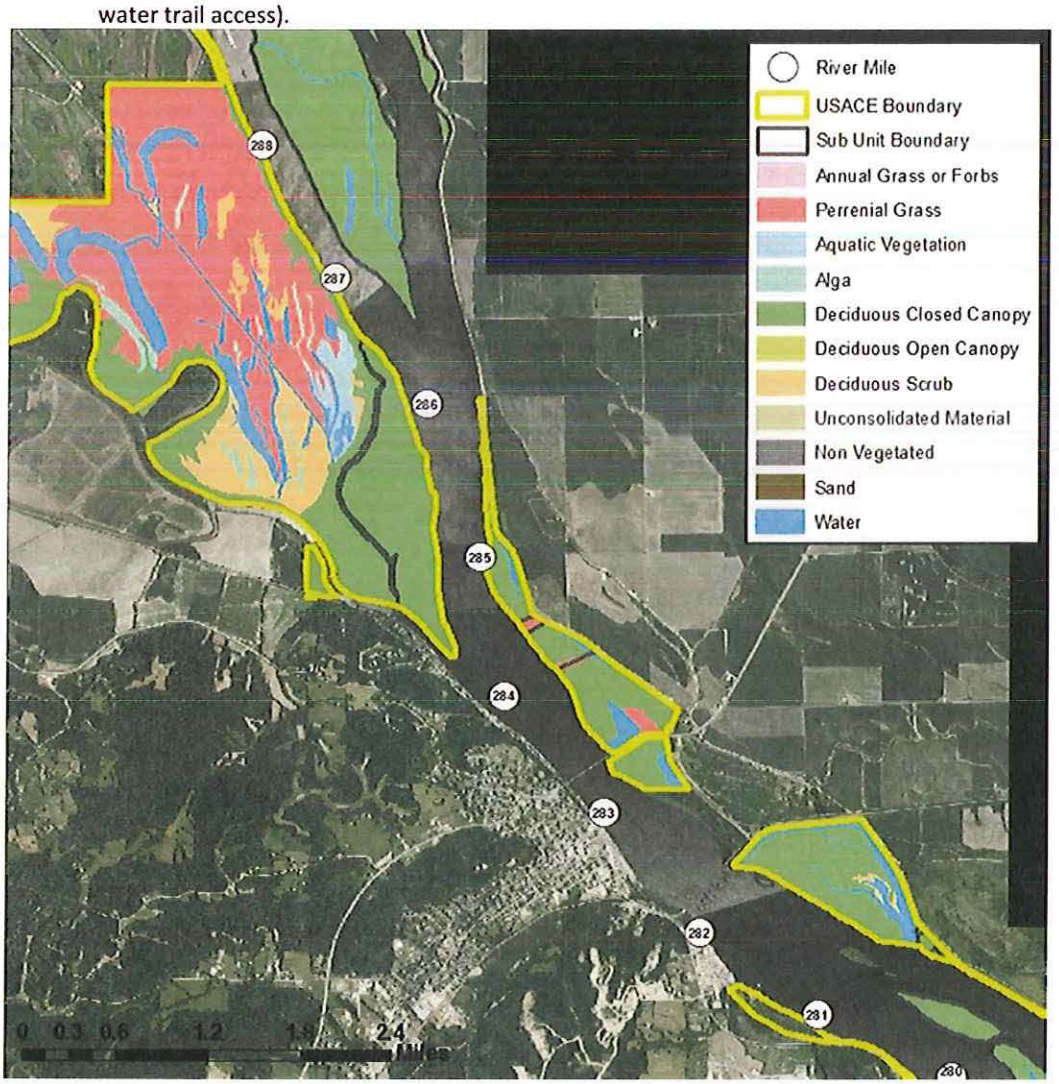

Figure 5a: Pike County (MO) / Pike County (IL) - RM 276-277:

- USACE public land ownership on both Illinois and Missouri sides of the river are not shown on Figure 4a.
- Discourage location due to impacts to public lands, which has negative effects to forestry, wildlife, migratory waterfowl, fisheries, recreation, general aesthetic, etc.
- Encompasses a known nesting area for eagles, herons, and egrets.
- Pharrs Island Conservation Area consists of a mixture of a natural riparian bottomland forest, which is composed of silver maple, green ash, and cottonwood, and herbaceous wetland communities. Suitable habitat exists in this sub unit for bald eagle and Indiana bat resting, roosting and/or nesting.

- Hunting regulations in this area are managed in accordance with MDC statewide regulations and MDC Upper Mississippi Conservation Area regulations. The island also has 15-20 hunting blind sites.
- The Pharrs Island Conservation Area includes a large scale environmental restoration project that was completed in 1992. Existing infrastructure includes a bullnose rock dike 6,750-foot long with a crown elevation (453 NGVD) which is 4 feet above normal pool that was constructed with Grade A stone. Six fish attractors were placed inside the Island complex and held in place with 1500 lb. concrete anchors.
- Pharrs Island contains 2 permanent research plots as part of Long Term Monitoring Program in order to maintain forest diversity, health, and sustainability on Federal lands. Goals set forth in Upper Mississippi River Systemic Forest Stewardship Plan.
- Natural Resource Management Goals and Objectives.

    - Restore natural riparian forests and wetland communities through natural succession, restoration plantings, silviculture techniques, succession control and native plant introductions.
    - Sustain healthy forests and wetlands communities through vegetative management to provide high quality habitat for forest wildlife.
    - Accommodate resource compatible public access for recreational opportunities (i.e. hunting, fishing, and wildlife viewing).
    - Prescribe forest management techniques which support federal management goals and objectives for wildlife and fish management.

CLEAN LINE
ENERGY PARTNERS

February 9, 2011

Elaine Edwards
U.S. Army Corps of Engineers
Regulatory Division
700 W. Capital
Little Rock, AR 72203

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Ms. Edwards:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

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The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures. Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced

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approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Maps shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
tel 816-398-8658
sparker@louisberger.com

Attachments:
I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
Clay	Cooper	Johnson	Polk
Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867
www.swl.usace.army.mil/

REPLY TO
ATTENTION OF

February 25, 2011

Regulatory Division

Mr. Stephen Parker
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, Missouri 64111

SUBJECT: Permit Application No. **2011-00151**

Dear Mr. Parker:

Please refer to your letter dated February 9, 2011, on behalf of Clean Line Energy Partners, concerning the proposed Grain Belt Express Clean Line Transmission Project, in Kansas and Missouri. Your request has been assigned File No. **2011-00151**.

Mrs. Cynthia Blansett and Mrs. Sarah Chitwood have been assigned as the regulatory project managers for your request in the Little Rock District and will be evaluating it as expeditiously as possible. However, because of our permit workload, it will take a while for us to respond. You may be contacted for additional information about your request.

If you have any questions about the evaluation of your request, please contact the project manager listed below and refer to your assigned file number. Please note that it is unlawful to start work without a Department of the Army permit if one is required.

Cynthia W. Blansett
Sarah L. Chitwood
US Army Corps of Engineers
Little Rock District
ATTN: Regulatory Division
PO Box 867
Little Rock, Arkansas 72203-0867

PHONE: (501) 324-5295 FAX: (501) 324-6013

EMAIL: Cynthia.W.Blansett@usace.army.mil or Sarah.L.Usdrowski@usace.army.mil

CLEAN LINE
ENERGY PARTNERS

March 23, 2012

Wayne Hannel, Regulatory Project Manager
U.S. Army Corps of Engineers
Rock Island District
Clock Tower Building
P.O. Box 2004
Springfield, Illinois 61204

Re: Proposed Grain Belt Express Clean Line Transmission Project

Dear Mr. Hannel:

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current (HVDC) transmission line project known as the Grain Belt Express Clean Line (Project). The proposed Project is designed to move up to 3,500 megawatts (MW) of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and markets farther east. The currently proposed Project will begin near the Spearville substation in Ford County, Kansas, and end in western Indiana near the Sullivan substation in Sullivan County, Indiana. The estimated length of the transmission line is roughly 700 miles.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. The Project is in a relatively early planning phase, and potential routes are still in development. Project development and environmental permitting will be a multi-year process, and Clean Line anticipates the need to obtain federal, state, and local permits from the appropriate agencies. Attached are a list of counties within the study area and an overview map.

We respectfully would like to request a meeting with you to introduce the Project and give you an opportunity to comment and provide input. A member of the Berger staff will contact you soon to schedule a meeting and provide an overview of the proposed Project scope and schedule.

If you require further information or have questions regarding this matter, please feel free to contact Todd McCabe at mmccabe@louisberger.com or 816-398-8657. We look forward to working with you throughout the route development and permitting process.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

CLEAN LINE
ENERGY PARTNERS

For general project information, please visit the project website at www.grainbeltexpresscleanline.com or www.cleanlineenergy.com.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Attachments:
1. Project Overview Map

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners
Greg McKay, USACE Louisville District
Todd McCabe, The Louis Berger Group

CLEAN LINE
ENERGY PARTNERS

Illinois Counties within the Study Area				
Adams	Christian	Clark	Clay	Clinton
Crawford	Cumberland	Jasper	Jefferson	Lawrence
Marion	Monroe	Montgomery	Morgan	Pike
Randolph	Richland	Sangamon	Scott	Shelby
	St. Clair	Washington	Wayne	

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

THE Louis Berger Group, INC.

July 8, 2013

U.S. Army Corps of Engineers – Rock Island District
Attn: Ms. Donna M. Jones, Regulatory Branch
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

Re: Clean Line Energy's Grain Belt Express Transmission Project - Mississippi River Potential Crossings

Dear Ms. Jones,

Clean Line Energy Partners LLC (Clean Line) is proposing to develop, construct, and operate the Grain Belt Express Clean Line Transmission Project (Project). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed Project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

The Louis Berger Group, Inc. (Berger) developed a potential route network for the proposed Project from the Spearville Substation in Ford County, Kansas to the Sullivan Substation in Sullivan County, Indiana. Potential routes have been developed through a process that has taken into account data analysis and field reconnaissance. In mid-July, Clean Line and Berger will be presenting these Potential Routes to the public at 12 Open Houses that will be held throughout the state of Missouri. At this time, there are 5 potential routes to cross the Mississippi River.

On June 25, 2013, Berger and Clean Line held an online meeting with the U.S. Army Corps of Engineers Rock Island District to discuss the project and give an update on the current activities. In response to that meeting, Berger is submitting this letter along with maps of each crossing and shape files. We are requesting a preliminary review of each of the crossings by the Corps to help identify any information that will be helpful in further refining the crossings. Below is a brief summary of each of the potential routes.

Marion County (MO)/Adams County (IL) – River Mile Marker 313-314 (Figures 1 and 1a)
The potential route in Marion and Adams counties is the northern most crossing of the Mississippi River. The width of the river is approximately 7,000 feet (ft.) but, could be spanned with a structure on an island. The route would cross over the South River Drainage District in Marion County and the Sny Island Levee and Drainage District in Adams County. Land adjacent to the river is flat with marginal relief.

Ralls County (MO)/Pike County (IL) – River Mile Marker 303-304 (Figures 2 and 2a)
The potential route would cross at one of the more narrow points along the river. The width of the river is approximately 4,500 ft. The topography is hilly to steep on the Missouri side

1600 Baltimore Avenue, Suite 100 | Kansas City, MO 64108 USA
Tel 816.398.8578 | Fax 816.561.1666 | www.louisberger.com

becoming flat, cultivated land on the Illinois side of the river. The potential route would cross the Sny Island Levee and Drainage District in Pike County.

Ralls County (MO)/Pike County (IL) – River Mile Marker 299-300 (Figures 3 and 3a)
The potential route crosses the Mississippi River near mile marker 300, just north of the Edward Anderson Conservation Area. The width of the river is approximately 4,000 ft. Land adjacent to the river is flat with marginal relief on the Illinois side. In Missouri, land is hilly too steep with forest cover.

Pike County (MO)/Pike County (IL) – River Mile Marker 284-285 (Figures 4 and 4a)
The potential route parallels an existing natural gas line right-of-way crossing the Mississippi River. Topography on the Missouri side is hilly to step with residential development to the north and south. On the Illinois side, land adjacent to the river is flat, cultivated land. The width of the river is about 3,800 ft. South of the crossing is the town of Louisiana and the Upper Mississippi Conservation Area – Angle Island is located to the north. In addition, there are several gas lines passing through the area.

Pike County (MO)/Pike County (IL) – River Mile Marker 276-277 (Figures 5 and 5a)
The potential route parallels an existing transmission line before diverting around a substation to cross over the Mississippi River on the Missouri side. The width of the river is approximately 9,800 ft. Crossing the river at this location would likely involve a structure on the island that is part of the Upper Mississippi Conservation Area. The potential route would cross over the Sny Island Levee and Drainage District and the Mark Twain National Wildlife Refuge, a private – inholding.

At this time, the proposed route has not been identified. Clean Line and Berger are requesting input from the Army Corps of Engineer on the five potential crossings described above. We would like to set up a meeting with you in the next few weeks to review the crossings and get your feedback. Please let me know if you have additional questions or would like additional information on these potential river crossings.

Sincerely,

Tim Gaul
Louis Berger Group
Associate Vice President, Energy Services
Office: 202.303.2647
Mobile: 240.381.8054

McCabe, Michael

From: Jones, Donna M MVR <Donna.M.Jones@usace.army.mil>
Sent: Friday, August 02, 2013 3:50 PM
To: McCabe, Michael
Cc: Hannel, Wayne MVR; Taylor, Freddie L MVR; Lundh, Joseph S MVR; Swenson, Gary V MVR; St. Louis, Paul F MVR; Jones, Sarah B MVR; Manar, Katy MVS; Brown, Jennifer MVS
Subject: Grain Belt Clean Line (UNCLASSIFIED)
Attachments: RE: Grain Belt Express - Mississippi River Crossings 2 of 3 (UNCLASSIFIED); RE: Transmission line crossing - Grain Belt Clean Line Project 1 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mike
Here are the comments for your proposed crossing alignments within our District.
It appears there may be some land use designation conflicts for the crossings at river miles 303 and 313.
Please take these comments into consideration as you continue to evaluate your river crossing alternatives.
Also, please remember we will also have to get a clearance from the Emergency Management folks.
They are going to have to approve the clearances of the line and structures above/around the levee.

The other river crossings are within the St. Louis District's river jurisdiction.
They should be providing you comments for the other crossing alternatives under consideration.

Let me know if there are additional questions regarding our comments.

Donna M. Jones, P.E.
Chief, Enforcement Section
Regulatory Branch
Rock Island District Corps of Engineers
309/794-5371

In order to assist us in improving our service to you, please complete the survey found at
http://per2.nwp.usace.army.mil/survey.html

Classification: UNCLASSIFIED
Caveats: NONE

McCabe, Michael

From: Lundh, Joseph S MVR <Joseph.S.Lundh@usace.army.mil>
Sent: Friday, August 02, 2013 2:01 PM
To: Jones, Donna M MVR
Cc: Swenson, Gary V MVR; Nelson, Jeffrey E MVR; Knoble, John F MVR
Subject: RE: Grain Belt Express - Mississippi River Crossings 2 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Donna-

The proposed crossing at river mile 313 crosses federal fee title acquired for the Corps of Engineers 9 foot channel project. This includes the majority of the lands and islands on the Illinois side of the channel west of the levee. These federal lands are leased to the Fish and Wildlife Service (FWS) for management whom have in turn leased the lands to the State of Illinois. Both agencies should be contacted for any continued consideration of this crossing. It also appears to cross tract Ils-16 in Pool 22 which is designated as a Natural Area according to our Land Use Allocation Plan. Constructing a power line crossing on this tract may be incongruent with its designated use and should be further reviewed by District staff. Timber rights are maintained by the Corps on these lands and clearing would require compensation/mitigation. Further consideration should include coordination with District staff on cultural resource and environmental compliance.

The proposed crossing at river mile 303 also crosses federal (Corps) fee title. Some of these lands are again leased to the FWS and third party leased to Illinois. The land use designation is Wildlife Management/Reserve Forest. Both agencies should also be contacted for any continued consideration of this crossing. Timber rights are maintained by the Corps on these lands and clearing would require compensation/mitigation. Further consideration should include coordination with District staff on cultural resource and environmental compliance.

The proposed crossing at river mile 300 does not appear to cross federal fee title. I will defer to the St Louis District for further comments on this and the other two crossings.

Thanks for the opportunity to comment.

Joseph Lundh
Supervisory Natural Resource Specialist
US Army Corps of Engineers
Mississippi River Project
PO Box 534
Pleasant Valley, IA 52767
309-794-4528
Joseph.s.lundh@usace.army.mil

-----Original Message-----
From: Jones, Donna M MVR
Sent: Friday, July 12, 2013 10:50 AM
To: Swenson, Gary V MVR; Lundh, Joseph S MVR; Fiscus, Timothy A MVR; Jones, Sarah B MVR; St. Louis, Paul F MVR
Cc: Hannel, Wayne MVR
Subject: FW: Grain Belt Express - Mississippi River Crossings 2 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Donna M. Jones, P.E.
Chief, Enforcement Section
Regulatory Branch
Rock Island District Corps of Engineers
309/794-5371

In order to assist us in improving our service to you, please complete the survey found at
http://per2.nwp.usace.army.mil/survey.html

-----Original Message-----
From: McCabe, Michael [mailto:mmccabe@louisberger.com]
Sent: Monday, July 08, 2013 2:17 PM
To: Jones, Donna M MVR
Subject: RE: Grain Belt Express - Mississippi River Crossings

See attached aerial maps.

From: McCabe, Michael
Sent: Monday, July 08, 2013 2:15 PM
To: donna.m.jones@usace.army.mil
Subject: Grain Belt Express - Mississippi River Crossings

Ms. Jones,

A copy of the attached letter and aerial and topographic maps were mailed to you today. I've also attached a shape file of the proposed river crossing locations in coordinate system North American Equidistant Conic.

Copies of the aerial and topographic maps will be sent in separate emails.

If you have any questions, please let me know.

Todd McCabe

Environmental Scientist

(816) 398-8657

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

McCabe, Michael

From: Taylor, Freddie L MVR <Freddie.L.Taylor@usace.army.mil>
Sent: Monday, July 22, 2013 2:15 PM
To: Lundh, Joseph S MVR; Jones, Donna M MVR
Cc: Deutsch, Charlie MVS; VanOpdorp, Debra J MVR
Subject: RE: Transmission line crossing - Grain Belt Clean Line Project 1 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Donna,

CEMVR-RE-M has reviewed the river crossings for the subject project, and we concur with Joe Lundh's statement below that three of the crossings (Figures 3, 4, and 5) are located within the St. Louis District.

However, both Figures 1 (RM 313-314) and 2 (RM 303-304) are located within the Rock Island District; and both crossings include Federal land on both the Missouri and Illinois shorelines. Both crossings also traverse an island, which are federally-owned as well. Utilization of either of these sites would require future real estate coordination and eventual issuance of Federal authorization.

Please let me know if you have any additional questions regarding this matter.

V/R,
Freddie L. Taylor
Realty Specialist, Management and Disposal Section MVD Regional Real Estate Division North U.S. Army Corps of Engineers Clock Tower Building P.O. Box 2004 Rock Island, Illinois 61204-2004

-----Original Message-----
From: Lundh, Joseph S MVR
Sent: Wednesday, July 17, 2013 1:55 PM
To: Jones, Donna M MVR; Taylor, Freddie L MVR
Cc: Deutsch, Charlie MVS; VanOpdorp, Debra J MVR
Subject: FW: Transmission line crossing - Grain Belt Clean Line Project 1 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Donna-

I will send you some comments on these alternate crossings for this utility. Though three of the potential crossings are in the St Louis District. As such, I've included Charlie Deutsch with the River's Project Office.

Freddie-

Likely Tim forwarded you a copy of the email...so sorry for the duplicate. The potential crossing at RM 303 goes over an island that they don't list as federal land. It appears to me that it may be federal land as we own the Illinois shoreline and it accreted to Pool 22 IIS-2 which we acquired. We may be interested in some further digging if that is the one that gets selected.

Thanks,

Joseph Lundh
Supervisory Natural Resource Specialist
US Army Corps of Engineers
Mississippi River Project
PO Box 534
Pleasant Valley, IA 52767
309-794-4528
Joseph.s.lundh@usace.army.mil

-----Original Message-----
From: Jones, Donna M MVR
Sent: Friday, July 12, 2013 10:48 AM
To: Swenson, Gary V MVR; Lundh, Joseph S MVR; Fiscus, Timothy A MVR; Jones, Sarah B MVR; St. Louis, Paul F MVR
Cc: Hannel, Wayne MVR
Subject: Transmission line crossing - Grain Belt Clean Line Project 1 of 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I will be forwarding a set of 3 emails from Grain Belt Clean Line.
There is an additional transmission line crossing proposed in the Southern portion of the District over the Mississippi River.
Grain Belt Clean Line has reduced their alternatives to the 5 locations outlined in the emails.
Please provide comments concerning these crossings by COB 22 July

Donna M. Jones, P.E.
Chief, Enforcement Section
Regulatory Branch
Rock Island District Corps of Engineers
309/794-5371

In order to assist us in improving our service to you, please complete the survey found at
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Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

FAX

Attention: Allison Smith (832/319-6311)

Missouri NRCS has learned that a HVDC transmission line is planned to traverse Missouri to states east of us and will impact several landowners with USDA-NRCS Wetlands Reserve Program, Emergency Wetland Reserve Program and Emergency Watershed Protection Program permanent and 30 year easements. We have been in contact with two such landowners in Chariton County Missouri. Be aware that USDA-NRCS will not modify the easement and you are advised to "avoid our easements" as per guidance from National Headquarters. I can send you a copy of our Warranty Easement Deed as well as procedures you must take in order for USDA-NRCS to entertain an easement modification.

Kevin Dacey
NRCS Biologist/WRP Coordinator
NRCS State Office
Parkade Center; Ste 250
601 Business Loop 70 West
Columbia, MO 65203

(V) 573/876-9356
(F) 573-876-0913

kevin.dacey@mo.usda.gov

CLEAN LINE
ENERGY PARTNERS

February 10, 2011

David Thorne, Policy Coordinator
Missouri Department of Conservation
Policy Coordination
P.O. Box 180
Jefferson City, MO. 65012

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Mr. Thorne:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. In accordance with the Missouri Revised Statues, Chapter 252, Section 252.240 we would like to request your comments on the project's potential to have adverse effects on state threatened or endangered species. The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures. Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832-319-6310 FAX 832-319-6311

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Map shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
tel 816-398-8658
sparker@louisberger.com

Attachments:
I. Project Overview Maps
II. List of Counties within the Study Area

Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
Clay	Cooper	Johnson	Polk
Audrain	Crawford	Laclede	Pulaski
Barton	Dade	Lafayette	Randolph
Bates	Dallas	Lawrence	Ray
Benton	Dent	Livingston	Reynolds
Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

CLEAN LINE
ENERGY PARTNERS

February 9, 2011

Judith Deel, Archaeologist
Missouri Historic Preservation Office
P.O. Box 176
Jefferson City, MO 65012

Re: Clean Line Energy Partners' Proposed Grain Belt Clean Line Transmission Project

Dear Ms. Deel:

Clean Line Energy Partners LLC (Clean Line) is seeking your input on our proposed project to develop, construct and operate the Grain Belt Express Clean Line transmission project ("project"). Clean Line is a privately-owned company focused on developing high voltage direct current (HVDC) transmission lines that would connect the best renewable energy resource regions to communities and cities that have limited access to renewable energy. The proposed project will be capable of moving up to 3,500 megawatts (MW) of renewable energy from the wind-rich region of southwestern Kansas to southeastern Missouri and markets farther east.

Clean Line has retained The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed project. In accordance with Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended), we would like to request your comments on the project's potential to have adverse effects on property of historical interest. The development and environmental permitting process for this project will be a multi-year process, and we are still in a relatively early phase. This coordination will be the first of many opportunities for agencies to participate in the review of this project because Clean Line will need to obtain federal, state, and local permits from the appropriate agencies. A member of our project team will be contacting you in the next few weeks to schedule a follow-up meeting for a more interactive discussion of the project, to present the status of our studies, and to solicit your input on the siting process and corridor alternatives. Construction is anticipated to take approximately two years. Under the current schedule, Clean Line is proposing the project to be in service by the end of 2016.

The Grain Belt Express Clean Line, as currently proposed, will begin near the Spearville substation in Ford County, Kansas and end in southeastern Missouri near the St. Francois substation in St. Francois County, Missouri.

Proposed project facilities include a converter station and possibly ground beds at each terminus, two sets of bundled wire conductors per HVDC circuit, shield wire, and conductor support structures.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832-319-6310 FAX 832-319-6311

Clean Line is proposing steel structures ranging in height from 120 to 150 feet that are spaced approximately 800 to 1,200 feet apart. The design and dimensions may vary based on terrain and other engineering considerations.

Please reply with your comments in writing and/or by email at your earliest convenience to:

Stephen Parker, Project Manager
The Louis Berger Group, Inc.
4050 Pennsylvania Avenue, Suite 121
Kansas City, MO 64111
sparker@louisberger.com

Although the route for the project has not been identified, the attached Overview Map shows the entire project siting study area. We have also included a list of counties within the study area boundary. Upon request, the Louis Berger team can provide you with the electronic GIS boundary for the study area. Any additional comments or concerns you have that would assist us in siting the project would be greatly appreciated.

Thank you in advance for your assistance and please do not hesitate to contact Mr. Parker or me if you need additional information.

Sincerely,

Jason Thomas
Director, Environment
Clean Line Energy Partners
cell 713-805-6840
tel 832-319-6357
jthomas@cleanlineenergy.com

Stephen Parker
Senior Scientist
The Louis Berger Group, Inc.
cell 816-674-1110
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Cc: Mark Lawlor, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners

Missouri Counties within Study Area			
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Boone	Douglas	Madison	Saline
Buchanan	Franklin	Maries	Shannon
Caldwell	Gasconade	Miller	St. Charles
Callaway	Greene	Moniteau	St. Clair
Camden	Henry	Montgomery	St. Francois
Carroll	Hickory	Morgan	Ste. Genevieve
Cass	Howard	Newton	Texas
Cedar	Howell	Osage	Vernon
Chariton	Iron	Perry	Warren
Christian	Jackson	Pettis	Washington
Clinton	Jasper	Phelps	Webster
Cole	Jefferson	Platte	Wright

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

March 8, 2011

Jason Thomas
Director, Environment
Clean Line Energy Partners
1001 McKinney, Suite 700
Houston, Texas 77002

Re: Grain Belt Clean Line Transmission Project, Sixty-Eight Counties, Missouri

Dear Mr. Thomas:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR part 800, which require identification and evaluation of cultural resources.

We have reviewed the information provided concerning the above referenced project. We recommend that survey plan and predictive model be developed. This plan will identify areas of concern for the transmission corridor and for access roads, temporary staging areas, and other such temporary or permanent project activities related to the proposed project, where an archaeological survey, with deep testing as deemed appropriate, should be conducted. All survey should be completed prior to the initiation of project-related construction activities.

A list of independent archaeological contractors who can perform such services is available through the Department of Natural Resources, Division of Administrative Support. The list can be obtained by calling (573) 751-0958 and requesting the "archaeological contractors list." Note that any 36 CFR Part 61 qualified professional may perform these surveys. If you choose a contractor not on the list, please be certain to include his or her curriculum vitae in the report. We will need to review the survey plan and predictive model. In addition, we would appreciate one (1) hard copy and one (1) pdf copy of the survey report when it is finished so we may complete the review and comment process.

If you have any questions about archaeology, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call Ms. Deel at 573/751-7862. Please be sure to include the SHPO Log Number **(029-MLT-11)** on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles
Director and Deputy
State Historic Preservation Officer

c Stephen Parker, Louis Berger Group

Recycled Paper

McCabe, Michael

From: McCabe, Michael
Sent: Friday, June 07, 2013 10:05 AM
To: Robert.stout@dnr.mo.gov
Subject: MDNR - Grain Belt Express

Mr. Stout,

Clean Line Energy and The Louis Berger Group Inc. (Berger) have developed a potential route network for the proposed Grain Belt Express Clean Line transmission project in Missouri. Clean Line and Berger are preparing to present the routes to the public at open house meetings.

Prior to the open house meetings, Clean Line and Berger would like to present the proposed routes to your office.

Would you, and others who may be interested be able to participate in a webinar meeting on Tuesday, June 18th or Wednesday, June 19th?

If so, please let me know.

Thank you.

Todd McCabe
Environmental Scientist
(816) 398-8657

McCabe, Michael

Subject: FW: Grain Belt Express Xmission Corridor
Location: Nightingale Creek Conf. Room 1E-13

Start: Fri 5/4/2012 10:00 AM
End: Fri 5/4/2012 11:30 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Stout, Robert

When: Friday, May 04, 2012 10:00 AM-11:30 AM (UTC-06:00) Central Time (US & Canada).
Where: Nightingale Creek Conf. Room 1E-13

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

-----Original Appointment-----
From: Stout, Robert
Sent: Wednesday, April 04, 2012 11:02 AM
To: Stout, Robert; Madras, John; Lale, Jane; Wilbers, Brenda; Beetem, Jane; Gillman, Joe; Schmidt, Aaron; Feeler, Steve; McCabe, Michael
Subject: Grain Belt Express Xmission Corridor
When: Friday, May 04, 2012 10:00 AM-11:30 AM (UTC-06:00) Central Time (US & Canada).
Where: Nightingale Creek Conf. Room 1E-13

We have scheduled a scoping meeting with the project developers to discuss potential impacts and permitting related to the project described below. Please advise appropriate staff.

Project Information: Clean Line Energy is evaluating the potential of locating a transmission line between western Kansas and MO, IL and IN to link wind energy from Kansas with states to the east. The project is called the Grain Belt Express and more information is available at http://www.cleanlineenergy.com/. The project is still in an early planning stage.

High-voltage direct current lines will transfer more energy with greater efficiency than comparable alternating current lines and will help those states that, by law, must use a certain portion of renewable energies. There would be two lines within a 150 to 200 ft right-of-way (ROW) and 120 to 150 ft tall towers. The primary areas being considered are adjacent to existing utility ROWs where possible.

Once a route is chosen, the company will have to seek approval from the Public Service Commission to construct and operate the line in MO. Regulatory approval in KS and Illinois still have to be obtained, as well.

Map to the Lewis and Clark State Office Building: http://dnr.mo.gov/shared/map-lewisandclark.htm

McCabe, Michael

From: McCabe, Michael
Sent: Wednesday, June 26, 2013 1:37 PM
To: 'adam.watson@modot.mo.gov'
Cc: 'don.wichern@modot.mo.gov'
Subject: MoDOT-Grain Belt Express

Mr. Watson,

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current transmission line known as the Grain Belt Express Clean Line transmission project (Project). The proposed Project is designed to move up to 3,500 megawatts of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and states farther east.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. Berger and Clean Line have developed a potential route network for the proposed Project and are preparing to present the routes to the public at open house meetings.

Prior to the open house meetings, Clean Line and Berger would like to present the proposed routes to your office.

Would you, and others who may be interested be able to meet on July 11th to discuss the proposed project? If so, please let me know what time would work best for you.

Thank you.

Todd McCabe
Environmental Scientist
(816) 398-8657

McCabe, Michael

From: Adam.Watson@modot.mo.gov
Sent: Friday, June 28, 2013 9:04 AM
To: McCabe, Michael
Subject: Re: MoDOT-Grain Belt Express

07/11/2013 2:00 pm wold be good.
Do you have a location to meet?

Adam K. Watson, P.E.
NW District Utility Engineer
MoDOT NW District
816.387.2419

From: "McCabe, Michael" <mmccabe@louisberger.com>
To: "adam.watson@modot.mo.gov" <adam.watson@modot.mo.gov>,
Cc: "don.wichern@modot.mo.gov" <don.wichern@modot.mo.gov>
Date: 06/26/2013 01:36 PM
Subject: MoDOT-Grain Belt Express

Mr. Watson,

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current transmission line known as the Grain Belt Express Clean Line transmission project (Project). The proposed Project is designed to move up to 3,500 megawatts of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and states farther east.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. Berger and Clean Line have developed a potential route network for the proposed Project and are preparing to present the routes to the public at open house meetings.

Prior to the open house meetings, Clean Line and Berger would like to present the proposed routes to your office.

Would you, and others who may be interested be able to meet on July 11th to discuss the proposed project? If so, please let me know what time would work best for you.

Thank you.

Todd McCabe
Environmental Scientist
(816) 398-8657

McCabe, Michael

From: McCabe, Michael
Sent: Wednesday, June 26, 2013 1:38 PM
To: 'brandi.baldwin@modot.mo.gov'
Cc: 'paula.gough@modot.mo.gov'
Subject: MoDOT-Grain Belt Express

Mr. Baldwin,

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current transmission line known as the Grain Belt Express Clean Line transmission project (Project). The proposed Project is designed to move up to 3,500 megawatts of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and states farther east.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. Berger and Clean Line have developed a potential route network for the proposed Project and are preparing to present the routes to the public at open house meetings.

Prior to the open house meetings, Clean Line and Berger would like to present the proposed routes to your office.

Would you, and others who may be interested be able to meet on July 11th to discuss the proposed project? If so, please let me know what time would work best for you.

Thank you.

Todd McCabe
Environmental Scientist
(816) 398-8657

McCabe, Michael

From: Brandi.Baldwin@modot.mo.gov
Sent: Thursday, June 27, 2013 6:42 AM
To: McCabe, Michael
Subject: Re: MoDOT-Grain Belt Express

Good morning Todd.

I would like to propose to you that we meet 9:00am on the 11th at our District office in Hannibal. If that location and time work for you, please let me know and I will proceed with scheduling a conference room. I can provide you with directions to our office if you need.

Thank you.

Brandi Baldwin, P.E.
District Utility Engineer
Missouri Department of Transportation
1711 South Route 61
Hannibal, MO 63401
Office p/n: (660) 385-8275 (Macon)
Office p/n: (573) 248-2602 (Hannibal)
Cell: (660) 676-8934
E-mail: brandi.baldwin@modot.mo.gov

From: "McCabe, Michael" <mmccabe@louisberger.com>
To: "brandi.baldwin@modot.mo.gov" <brandi.baldwin@modot.mo.gov>,
Cc: "paula.gough@modot.mo.gov" <paula.gough@modot.mo.gov>
Date: 06/26/2013 01:38 PM
Subject: MoDOT-Grain Belt Express

Mr. Baldwin,

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current transmission line known as the Grain Belt Express Clean Line transmission project (Project). The proposed Project is designed to move up to 3,500 megawatts of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and states farther east.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. Berger and Clean Line have developed a potential route network for the proposed Project and are preparing to present the routes to the public at open house meetings.

Prior to the open house meetings, Clean Line and Berger would like to present the proposed routes to your office.

Would you, and others who may be interested be able to meet on July 11th to discuss the proposed project? If so, please let me know what time would work best for you.

Thank you.

Todd McCabe
Environmental Scientist

CLEAN LINE
ENERGY PARTNERS

June 25, 2013

Dr. Jon Hagler
Department of Agriculture
P.O. Box 630
1616 Missouri Boulevard
Jefferson City, MO 65102

Re: Proposed Grain Belt Express Clean Line Transmission Project

Dear Dr. Hagler:

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600 kV high-voltage direct current (HVDC) transmission line project known as the Grain Belt Express Clean Line (Project). The proposed Project is designed to move up to 3,500 megawatts (MW) of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana and markets farther east.

Clean Line has retained the services of The Louis Berger Group, Inc. (Berger) to conduct a siting study for the proposed Project. The Project study area has been refined and potential routes have been developed. The currently proposed Project will enter Missouri in Buchanan County, heading east towards several locations that cross the Mississippi River between Palmyra and Clarksville, Missouri. The proposed Project would continue across Illinois, ending at a location near the Sullivan Substation in Sullivan County, Indiana. The estimated length of the transmission line is roughly 700 miles.

Project development and environmental permitting will be a multi-year process, and Clean Line anticipates the need to obtain federal, state, and local permits from the appropriate agencies. The attached map highlights counties within the study area in Missouri.

We would like to request any information that you may have available that would be useful in developing a route that has the least amount of impact on cultivated lands. We also would like to give you an opportunity to comment and provide input on developing potential routes. This coordination will be the first of several opportunities for agencies to participate in the review of this Project.

If you require further information or have questions regarding this matter, please contact Todd McCabe at mmccabe@louisberger.com or 816-398-8657. We look forward to working with you throughout the route development and permitting process.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

CLEAN LINE
ENERGY PARTNERS

For general project information, please visit the project website at www.grainbeltexpresscleanline.com or www.cleanlineenergy.com.

Sincerely,

Mark Lawlor
Director, Development
Clean Line Energy Partners
cell 913-302-3990
tel 832-319-6310
mlawlor@cleanlineenergy.com

Attachments:
1. Project Overview Map

Cc: John Kuba, Clean Line Energy Partners
Diana Coggin, Clean Line Energy Partners
Todd McCabe, The Louis Berger Group

JEREMIAH W. (JAY) NIXON
GOVERNOR

DEPARTMENT *of* AGRICULTURE
STATE OF MISSOURI
JEFFERSON CITY
Serving, promoting and protecting the agricultural producers, processors and consumers of Missouri's food, fuel and fiber products.

DR. JON HAGLER
DIRECTOR

July 16, 2013

Mr. Mark Lawlor
Director, Development
Clean Line Energy Partners
1001 McKinney, Suite 700
Houston, TX 77002

Dear Mr. Lawlor:

In reference to your letter dated June 25, 2013, the Missouri Department of Agriculture defers comment to the Missouri Department of Natural Resources, the Missouri Department of Conservation, the Missouri Department of Transportation and the Missouri Department of Economic Development regarding input minimizing environmental, economic and transportation impacts of construction of a new transmission line and substation in western and northwestern Missouri.

The Department respectfully requests all affected landowners be engaged and informed of any relevant impact on typical farming practices, such as restricted or limited access to farmland.

Best regards,

Dennis Baird
Deputy Director of Agriculture

DB/sh

GEORGE WASHINGTON CARVER STATE OFFICE BUILDING
Ph. (573) 751-4211 • 1616 Missouri Boulevard • P.O. Box 630 • Jefferson City, MO 65102-0630 • FAX (573) 751-1784 • mda.mo.gov

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APPENDIX D: PUBLIC INVOLVEMENT MATERIALS

MISSOURI ROUNDTABLE INVITEE LETTERS AND COMMENT CARD

CLEAN LINE
ENERGY PARTNERS

June 15, 2011

Salutation First_Name Last_Name
Title
Organization
Address_Line_1 Address_Line_2
City, State Postal Code

RE: Grain Belt Express Clean Line Community Leader Roundtables

Dear Salutation Last_Name:

Grain Belt Express Clean Line LLC (Grain Belt Express) is developing a high-voltage direct current (HVDC) electric transmission line known as the Grain Belt Express Clean Line. This transmission line will connect some of the nation's best wind resources located in western Kansas to energy demand centers in southeastern Missouri and points farther east. The 1.7 billion dollar Grain Belt Express Clean Line will be capable of transmitting 3,500 megawatts of new wind generation, creating immediate economic and environmental benefits to the residents and businesses in Missouri.

We are hosting roundtable workshops with community leaders from your area, and we would like for you to attend. At our workshops, the Grain Belt Express development team will gather feedback and information from you and other leaders. We will use this information in developing potential routes for the transmission line. Project materials will be available for review, and refreshments will be served.

In the letter, you will find a list of our workshops in Missouri. Please RSVP by June 22, 2011: RSVP@GrainBeltExpressCleanLine.com – or – (Toll Free Phone) 855-358-4340. We have limited space for these leadership roundtables so please let me know which meeting you would like to attend.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

CLEAN LINE
ENERGY PARTNERS

The Grain Belt Express Clean Line will stimulate the development of thousands of megawatts of new wind generation that would otherwise not get built. Manufacturing companies in Missouri supplying the wind energy industry are likely to benefit from increased demand for wind turbine components. The construction and operation of the transmission line will create jobs, generate millions of dollars of new tax revenues for state and local governments, and will result in easement payments to land owners.

We hope to see you at the workshop. If you have any questions in the meantime, please do not hesitate to contact us. You can also find more information on our website at www.grainbeltexpresscleanline.com.

Sincerely,

Diana Coggin
Project Development Manager
832-319-6342
dcoggin@cleanlineenergy.com

Attachment: Community Leader Roundtables

P.S. Don't forget to RSVP by June 20, 2011 by
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend. Thanks!

GRAIN BELT EXPRESS

CLEAN LINE

Community Leader Roundtables

Waynesville
Tuesday, June 28, 2011
8:00 am
Community Center
194 E. Lawn Ave. #A

Rolla
Tuesday, June 28, 2011
12:00 pm
The Centre
1200 Holloway St.

Houston
Wednesday, June 29, 2011
10:00 am
County Commission Administrative Building
210 N. Grand

Centerville
Wednesday, June 29, 2011
5:00 pm
Cindy's QuickStop
134 Hwy V

Farmington
Thursday, June 30, 2011
8:00 am
Farmington Civic Center
2 Black Night Drive

Potosi
Thursday, June 30, 2011
12:00 pm
Washington County Library
235 E. High Street

Due to the large study area of the project we are not able to host a meeting in every county. We very much appreciate your attendance and apologize for any inconvenience this may cause.

P.S. Don't forget to RSVP by June 20, 2011 via
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend.

CLEAN LINE
ENERGY PARTNERS

May 26, 2011

Salutation First_Name Last_Name
Title
Organization
Address_Line_1 Address_Line_2
City, State Postal Code

RE: Grain Belt Express Clean Line Community Leader Roundtables

Dear Salutation Last_Name:

Grain Belt Express Clean Line LLC (Grain Belt Express) is developing a high-voltage direct current (HVDC) electric transmission line known as the Grain Belt Express Clean Line. This transmission line will connect some of the nation's best wind resources located in western Kansas to energy demand centers in southeastern Missouri and points farther east. The 1.7 billion dollar Grain Belt Express Clean Line will be capable of transmitting 3,500 megawatts of new wind generation, creating immediate economic and environmental benefits to the residents and businesses in Missouri.

We are hosting roundtable workshops with community leaders from your area, and we would like for you to attend. At our workshops, the Grain Belt Express development team will gather feedback and information from you and other leaders. We will use this information in developing potential routes for the transmission line. Project materials will be available for review, and refreshments will be served.

In this letter, you will find a list of our workshops in Missouri. Since this is not a public meeting, we ask that you designate only one commission member to attend a roundtable, to avoid public notice requirements. Public meetings will be held at a later date. We have limited space for these leadership roundtables so please let us know which commissioner and which meeting you would like to attend by June 6, 2011: RSVP@GrainBeltExpressCleanLine.com – or – (Toll Free Phone) 855-358-4340.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

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The Grain Belt Express Clean Line will stimulate the development of thousands of megawatts of new wind generation that would otherwise not get built. The construction and operation of the transmission line will create jobs, generate millions of dollars of new tax revenues for state and local governments, and will result in land payments to property owners. Manufacturing companies in Missouri supplying the wind energy industry are also likely to see a significant increase in business.

We hope to see you at the workshop. If you have any questions in the meantime, please do not hesitate to contact us. You can also find more information on our website at www.grainbeltexpresscleanline.com.

Sincerely,

Diana Coggin

Diana Coggin
Project Development Manager
832-319-6342
dcoggin@cleanlineenergy.com

CC:

Attachment: Community Leader Roundtables

P.S. Don't forget to RSVP by June 6, 2011 by
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend. Thanks!

CLEAN LINE
ENERGY PARTNERS

May 26, 2011

Salutation First_Name Last_Name
Title
Organization
Address_Line_1 Address_Line_2
City, State Postal Code

RE: Grain Belt Express Clean Line Community Leader Roundtables

Dear Salutation Last_Name:

Grain Belt Express Clean Line LLC (Grain Belt Express) is developing a high-voltage direct current (HVDC) electric transmission line known as the Grain Belt Express Clean Line. This transmission line will connect some of the nation's best wind resources located in western Kansas to energy demand centers in southeastern Missouri and points farther east. The 1.7 billion dollar Grain Belt Express Clean Line will be capable of transmitting 3,500 megawatts of new wind generation, creating immediate economic and environmental benefits to the residents and businesses in Missouri.

We are hosting roundtable workshops with community leaders from your area, and we would like for you to attend. At our workshops, the Grain Belt Express development team will gather feedback and information from you and other leaders. We will use this information in developing potential routes for the transmission line. Project materials will be available for review, and refreshments will be served.

In the letter, you will find a list of our workshops in Missouri. Please RSVP by June 6, 2011: RSVP@GrainBeltExpressCleanLine.com – or – (Toll Free Phone) 855-358-4340. We have limited space for these leadership roundtables so please let me know which meeting you would like to attend.

The Grain Belt Express Clean Line will stimulate the development of thousands of megawatts of new wind generation that would otherwise not get built. The construction and operation of the

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

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ENERGY PARTNERS

transmission line will create jobs, generate millions of dollars of new tax revenues for state and local governments, and will result in land payments to property owners. Manufacturing companies in Missouri supplying the wind energy industry are also likely to see a significant increase in business.

We hope to see you at the workshop. If you have any questions in the meantime, please do not hesitate to contact us. You can also find more information on our website at www.grainbeltexpresscleanline.com.

Sincerely,

Diana Coggin
Project Development Manager
832-319-6342
dcoggin@cleanlineenergy.com

Attachment: Community Leader Roundtables

P.S. Don't forget to RSVP by June 6, 2011 by
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend. Thanks!

GRAIN BELT EXPRESS
CLEAN LINE

Community Leader Roundtables

Nevada
Wednesday, June 15, 2011
9:00 am
Community Center
200 N. Ash

Carthage
Wednesday, June 15, 2011
4:30 pm
Powers Museum
1617 West Oak

Greenfield
Thursday, June 16, 2011
11:30 am
Community Auditorium
150 S. Main

Hermitage
Thursday, June 16, 2011
4:30 pm
Hickory County Senior Center
HWY 54

Buffalo
Friday, June 17, 2011
8:30 am
Community Center
315 E. Ramsey

Due to the large study area we are evaluating for the project,
we are not able to host a meeting in every county.
We very much appreciate your attendance and apologize for any inconvenience this may cause.

P.S. Don't forget to RSVP by June 6, 2011 via
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend.

CLEAN LINE
ENERGY PARTNERS

February 14, 2012

Salutation First_Name Last_Name
Title
Organization
Address_Line_1 Address_Line_2
City, State Postal Code

RE: Grain Belt Express Clean Line Community Leader Roundtables

Dear Salutation Last_Name:

Clean Line Energy Partners is developing a high-voltage direct current transmission line called the Grain Belt Express Clean Line. The transmission line will deliver 3,500 megawatts of low-cost, renewable power from western Kansas to communities in Missouri, Illinois and points farther east that have a strong demand for clean, reliable energy. The $2 billion Grain Belt Express Clean Line will create significant economic and environmental benefits throughout the region.

The Grain Belt Express Clean Line will enable construction of thousands of megawatts of new wind generation projects that otherwise would not be built. The construction and operation of the transmission line and wind farms will create jobs, generate millions of dollars in new tax revenue, and result in land payments to property owners. The transmission and wind power projects will also create significant business opportunities for manufacturing and service companies that supply the wind energy and transmission industries.

An important part of our development effort is engaging with leaders in our project study area. **We are hosting roundtable workshops with community leaders from your area, and we would like for a representative from the County Commission to attend.** At the roundtables, the Grain Belt Express development team will discuss the need for transmission and gather feedback and information from you and other leaders. We will use this information

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CLEAN LINE
ENERGY PARTNERS

in developing potential routes for the transmission line. Project materials will be available for review, and refreshments will be served.

Attached you will find a list of our workshops in Missouri. Because this is not a public meeting, we ask that you designate only one commission member to attend a roundtable, to avoid public notice requirements. Public meetings will be held at a later date.

Please let us know which meeting and which commissioner will attend by Monday, February 27, 2012, via email: RSVP@GrainBeltExpressCleanLine.com – or – by toll free phone: 855-358-4340.

We hope to see you at one of the Grain Belt Express Clean Line roundtable meetings. If you have any questions in the meantime, please do not hesitate to contact us. You can also find more information on our website: www.grainbeltexpresscleanline.com.

Sincerely,

Mark Lawlor

Adhar Johnson

Diana Coggin

Allison Smith

The Grain Belt Express Clean Line Development Team

Attachment: Community Leader Roundtables in Missouri

P.S. Don't forget to RSVP by February 27, 2012 via
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend.

1001 MCKINNEY, SUITE 700 HOUSTON, TX 77002 TEL 832.319.6310 FAX 832.319.6311

CLEANLINEENERGY.COM

GRAIN BELT EXPRESS
CLEAN LINE

Community Leader Roundtable Meetings in Missouri

St. Joseph
Monday, March 5, 2012
4:00 p.m. – 5:30 p.m.
Pony Express Museum
914 Penn Street

Hamilton
Tuesday, March 6, 2012
11:30 a.m. – 1:00 p.m.
J.C. Penney Museum
312 North Davis Street

Carrollton
Tuesday, March 6, 2012
4:00 p.m. – 5:30 p.m.
Carrolton Public Library
1 North Folger Street

Moberly
Wednesday, March 7, 2012
8:00 a.m. – 9:30 a.m.
Best Western Moberly Inn
1200 U.S. Highway 24

Mexico
Wednesday, March 7, 2012
3:30 p.m. – 5:00 p.m.
Mexico Area Chamber of Commerce
100 West Jackson Street

Bowling Green
Thursday, March 8, 2012
11:30 p.m. – 1:00 p.m.
Bowling Green Public Library
201 West Locust Street

Hannibal
Thursday, March 8, 2012
4:00 p.m. – 5:30 p.m.
Quality Inn and Suites
Calypso Meeting Room
120 Lindsey Drive, Hwy 36

Due to the Grain Belt Express Clean Line's large study area, we are not able to host a meeting in every county. We very much appreciate your attendance and apologize for any inconvenience this may cause. We hope that you will join us at the meeting location nearest you.

P.S. Don't forget to RSVP by Monday, February 27 via
Email: RSVP@GrainBeltExpressCleanLine.com
Toll Free Phone: (855) 358-4340
Please specify which roundtable you will attend.

GRAIN BELT EXPRESS CLEAN LINE

Round Table Meeting Comment Card

CLEAN LINE ENERGY PARTNERS

First Name _____ ast Name _____

Organization _____ Title _____

Address ine 1 _____

Address ine 2 _____

City _____

State _____ ipcode _____

E-Mail _____

hone Number _____

Round Table ocation *(City, State)* _____

Date of Meeting Attended *(MM/DD/YYYY)* _____

Comments

_____

_____

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Did you nd this meeting format to be useful and informative ☐ es ☐ No

.C EAN INEENERG .COM

C EAN INE DE E O S IG O TAGE, ONG- AU TRANSMISSION INES TO CONNECT T E EST RENE A E RESOURCES IN NORT AMERICA TO COMMUNITIES AND CITIES T AT A E A STRONG DEMAND FOR NE , O -COST C EAN O ER.

10 01 MC INNE , SUITE 700 OUS TON,T 77002 TE 832.319 .6 310 FA 832.319.6311

INFO C EAN INEENERG .COM

MISSOURI OPEN HOUSE INVITEE LETTERS AND COMMENT CARD

PLEASE JOIN US!

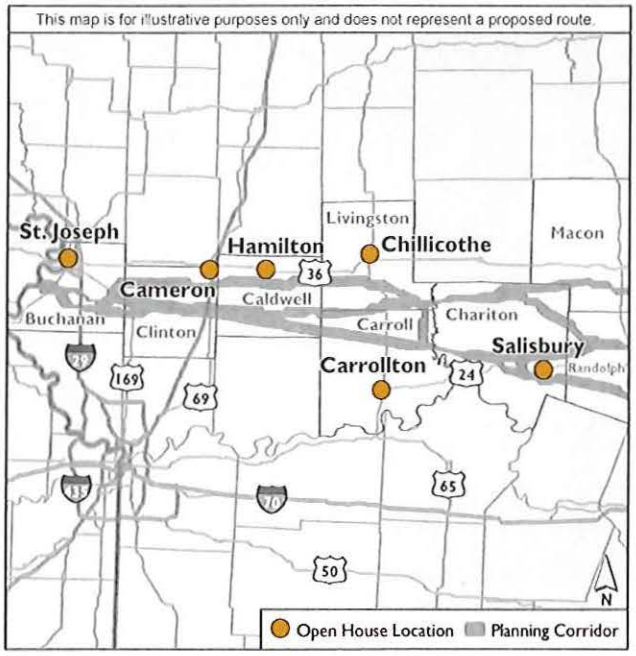
You are invited to a Public Open House to learn about a transmission line project and share your feedback on potential routes

GRAIN BELT EXPRESS CLEAN LINE

The Grain Belt Express Clean Line is an approximately 700-mile overhead, direct current transmission line that will deliver low-cost, renewable energy from western Kansas to Missouri, Illinois, Indiana, and states farther east. Similar to the trains that carry grain harvested in the Midwest to market, the Grain Belt Express Clean Line will move wind energy from its source in the grain belt of the country to markets with strong demand for low-cost, clean power.

The Grain Belt Express Clean Line will create thousands of temporary jobs and hundreds of permanent jobs, reduce pollution and water usage, and provide local benefits through property taxes.

Planning Corridors in Your Area



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For more information about the routing process, please visit our website.

Aerial maps of the potential routes will be available at the Public Open Houses and posted on the project website **after** the meetings.

RSVP Today!

Call toll-free (855)354-9088 or register online at www.grainbeltexpresscleanline.com

CLEAN LINE
ENERGY PARTNERS

c/o The Louis Berger Group
1600 Baltimore Ave. Suite 100
Kansas City, MO 64108

You have received this invitation because you own property along or near a potential route for a transmission line.

GRAIN BELT EXPRESS
CLEAN LINE

www.grainbeltexpresscleanline.com

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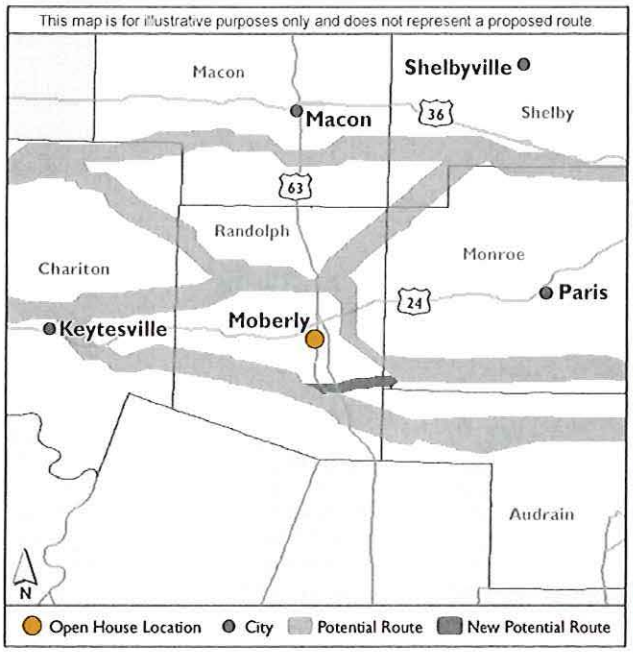

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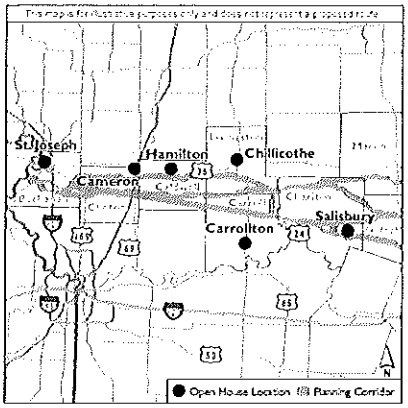

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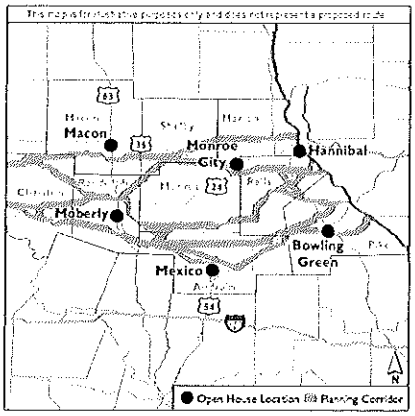

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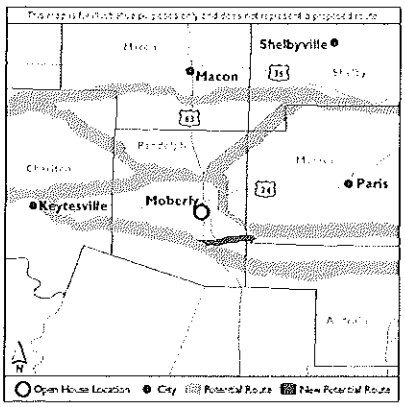

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Moberly Municipal Auditorium
109 North Clark Street
Moberly, MO 65270

WWW.GRAINBELTEXPRESSCLEANLINE.COM

2301

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ **Email:** _____

2301

This questionnaire is designed to collect comments regarding the routing of the Grain Belt Express Clean Line. Your feedback will assist the routing team in understanding your interests and concerns, and in identifying information that may help the siting process. Comments received will be considered in the route selection process.

The routing team considers parallel alignments to existing linear features when developing potential routes. As a landowner, what type of an alignment would you prefer?

Alignments that are:

- ☐ Parallel to existing transmission lines*
- ☐ Parallel to existing pipelines*
- ☐ Along parcel boundaries
- ☐ Parallel to roads or highways*
- ☐ No preference
- ☐ Other: _____

* Note: routes considered along these features are aligned next to the existing rights-of-way, not within or overlapping the existing rights-of-way.

Please use the space below to provide any comments you have about the project and/or any additional information you think we should consider as we refine potential routes and ultimately select the proposed route. If you have a comment on a specific potential route segment presented at the meeting, please reference the route segment number. If your parcel address is different than your mailing address, please note the parcel address or ID number below.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

For further information or to provide additional input, please visit www.grainbeltexpresscleanline.com

Additional comments:

Did you find this Open House to be informative? If not, what can we do better?

☐ **Check here if you would like to receive the project newsletter.**

☐ **Check here if you would like us to follow up with you on your comments.**

Please provide your **email address** for an expedited response: _____

PLEASE DEPOSIT COMPLETED FORMS IN THE COMMENT COLLECTION BOX UPON LEAVING THE MEETING

CLEAN LINE ENERGY PARTNERS

If you wish to provide input via mail, please send to:

Grain Belt Express Clean Line
C/O Brad Fine
1600 Baltimore Ave, Suite 100
Kansas City, MO 64108

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APPENDIX E: MISSOURI SPECIES OF CONSERVATION CONCERN

Species of Conservation Concern			
Common Name	**Scientific Name**	**Known Current Range within Study Area**	
		Segment 1	Segment 2
American badger	*Taxidea taxus*	X	X
Amethyst shooting star	*Dodecatheon amethystinum*		X
An umbrella grass	*Fuirena simplex var. aristulata*		X
An umbrella sedge	*Cyperus flavicomus*		X
Auriculate false foxglove	*Agalinis auriculata*		X
Austin springfly	*Hydroperla fugitans*		X
Bald eagle	*Haliaeetus leucocephalus*	X	X
Barn owl	*Tyto alba*		X
Bellow beaked sedge	*Carex albicans* var. *australis*		X
Bergia	*Bergia texana*		X
Black sandshell	*Ligumia recta*		X
Blacknose shiner	*Notropis heterolepis*		X
Brassy minnow	*Hybognathus hankinsoni*	X	X
Brown bog sedge	*Carex buxbaumii*		X
Cerulean warbler	*Setophaga cerulea*		X
Chapman's tridens	*Tridens flavus* var. *chapmanii*		X
Chestnut-sided warbler	*Setophaga pensylvanica*		X
Coast cockspur grass	*Echinochloa walteri*		X
Columbia water-meal	*Wolffia columbiana*		
Common mudpuppy	*Necturus maculosus*		X
Coontail	*Ceratophyllum echinatum*		
Ditchgrass	*Ruppia maritima*		X
Dwarf Chinquapin oak	*Quercus prinoides*		X
Earlyleaf brome	*Bromus latiglumis*		
Eastern tiger salamander	*Ambystoma tigrinum*	X	X
Elusive clubtail	*Stylurus notatus*		X
Flat floater	*Anodonata suborbiculata*		X
Franklin's ground squirrel	*Poliocitellus franklinii*		X
Ghost shiner	*Notropis buchanani*		X
Giant stone	*Attaneuria ruralis*		X
Great egret	*Ardea alba*		X
Great Plains skink	*Plestiodon obsoletus*	X	
Great Plains toad	*Anaxyrus cognatus*	X	X

Common Name	Scientific Name	Known Current Range within Study Area	
		Segment 1	Segment 2
Grove sandwort	*Moehringia lateriflora*		X
Hairy-fruited sedge	*Carex trichocarpa*		X
Hickorynut	*Obovaria olivaria*		X
Highfin carpsucker	*Carpiodes velifer*	X	X
Horned pondweed	*Zannichellia palustris*		
Kirtland's snake	*Clonophis kirtlandii*		X
Large-seeded mercury	*Acalypha deamii*		
Least bittern	*Ixobrychus exilis*	X	X
Least flycatcher	*Empidonax minimus*		X
Least weasel	*Mustela nivalis*		X
Leskea moss	*Leskea polycarpa*		X
Little blue heron	*Egretta caerulea*		
Loggerhead shrike	*Lanius ludovicianus*	X	X
Long-eared owl	*Asio otus*		X
Long-tailed weasel	*Mustela frenata*	X	X
Marsh wren	*Cistothorus palustris*	X	
Meadow sweet	*Spiraea alba* var. *alba*		X
Mississippi kite	*Ictinia mississippiensis*		
Mississippi silvery minnow	*Hybognathus nuchalis*		X
Northern crawfish frog	*Lithobates areolatus circulosus*		X
Northern Plains killifish	*Fundulus kansae*	X	
Northern rein orchid	*Platanthera flava* var. *herbiola*		X
Osprey	*Pandion haliaetus*		X
Pale bulrush	*Scirpus pallidus*	X	X
Prairie camas	*Camassia angusta*		X
Prairie dandelion	*Nothocalais cuspidate*		X
Plains minnow	*Hybognathus placitus*	X	X
Prairie mole cricket	*Gryllotalpa major*		
Red-berried elderberry	*Sambucus pubens*		X
Regal fritillary	*Speyeria idalia*	X	X
River darter	*Percina shumardi*		X
Rock elm	*Ulmus thomasii*	X	
Rock pocketbook	*Arcidens confragosus*		X
Rocky Mountain bulrush	*Schoenoplectiella saximontana*		X
Rose turtlehead	*Chelone obliqua*		X

Common Name	Scientific Name	Known Current Range within Study Area	
		Segment 1	Segment 2
Round-tipped conehead katydid	*Neoconocephalus retusus*		X
Schweinitz's flatsedge	*Cyperus schweinitzii*	X	
Short-eared owl	*Asio flammeus*		X
Slightly-musical conehead katydid	*Neoconocephalus exiliscanorus*		X
Skeleton plant	*Lygodesmia juncea*	X	X
Snow trillium	*Trillium nivale*		
Sora	*Porzana carolina*	X	X
Southern arrow-wood	*Viburnum dentatum*		X
Spanish gold	*Grindelia papposa*		X
Spinulose shield fern	*Dryopteris carthusiana*		X
Sturgeon chub	*Macrhybopsis gelida*	X	X
Swamp metalmark	*Calephelis muticum*		X
Tall agrimony	*Agrimonia gryposepala*		X
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*	X	X
Thread-like naiad	*Najas gracillima*		X
Toad rush	*Juncus bufonius* var. *bufonius*		X
Trout perch	*Percopsis omiscomaycus*		X
Trumpeter swan	*Cygnus buccinator*		X
Two-voiced conehead katydid	*Neoconocephalus bivocatus*		X
Umbrella flatsedge	*Cyperus diandrus*		X
Virginia rail	*Rallus limicola*		
Wartyback	*Quadrula nodulata*		X
Western foxsnake	*Pantherophis vulpinus*		X
Western sand darter	*Ammocrypta clara*		X
Western silvery minnow	*Hybognathus argyritis*		X
Western wallflower	*Erysimum capitatum* var. *capitatum*		X
Wild sarsaparilla	*Aralia nudicaulis*		X
Wood frog	*Lithobates sylvaticus*		X
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	X	
Yellow rail	*Coturnicops noveboracensis*		X

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GRAIN BELT EXPRESS CLEAN LINE

MISSOURI

ROUTE SELECTION STUDY

ADDENDUM

Prepared For Clean Line Energy Partners LLC

CLEAN LINE
ENERGY PARTNERS

Prepared By Louis Berger

Louis Berger

June 2016

TABLE OF CONTENTS

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Acronyms and Abbreviations

GIS	Geographic Information System
Grain Belt Express	Grain Belt Express Clean Line LLC
Grain Belt Project	Grain Belt Express Clean Line Project
kV	kilovolt
Project	Grain Belt Express Clean Line Project
PSC	Missouri Public Service Commission
ROW	right-of-way

Glossary

Alternative Routes—routes assembled from links that were refined after the Open Houses. One Alternative Route is ultimately selected as the Proposed Route.

constraint—areas that should be avoided to the extent feasible and reasonable during the route selection study process. The constraints were divided into two groups based on the size of the geographic area encompassed by the constraint. The first group includes constraints covering large areas of land in the Study Area. The second group of constraints encompasses other features covering smaller geographic areas or point-specific locations.

general routing guidelines—a set of principles that guide the development of alignments with respect to area land uses, sensitive features, and considerations of economic reasonableness.

Modified Proposed Route—route studied in the 2016 Missouri Route Selection Study Addendum that consists of the 2014 Original Proposed Route with the incorporation of several route modifications or reroutes.

Original Proposed Route—route identified by the Missouri Route Selection Study that was ultimately filed with the Missouri Public Service Commission in 2014.

Potential Routes—Conceptual Routes are refined into Potential Routes as additional information from agency coordination, public outreach, and ongoing route revisions are considered. Potential Routes ultimately become Alternative Routes after further refinement following Open Houses.

Potential Route Network—all Potential Routes and their interconnection points (nodes).

Proposed Route—route proposed by Grain Belt Express to be constructed in Missouri.

Public Landowner Meetings—June 2016 public meetings held in the eight Missouri counties where the Proposed Route is located.

Routing Team—the multi-disciplinary team that developed the conceptual route network, refined the Potential Routes, analyzed and compared Alternative Routes, and selected the Proposed Route. The Routing Team's experience includes transmission line route planning and selection, impact assessment for natural resources, land use assessment and planning, cultural resource identification and assessment, impact mitigation, transmission engineering and design, and construction. A list of the Routing Team members, along with a description of their individual roles, is provided in **Appendix A** of the Missouri Route Selection Study Addendum.

Study Area—portions of Kansas, Missouri, Illinois, and Indiana. The Study Area includes the converter station locations in Ford County, Kansas; a converter station in eastern Missouri; and a converter station near Sullivan County, Indiana.

1. Introduction

1.1 Overview of the Routing Process

The purpose of this Missouri Route Selection Study Addendum is to provide an overview of siting-related activities that have occurred since completion of the Missouri Route Selection Study in March 2014. This addendum describes the process of reviewing updated datasets within the Study Area, micro-siting discussions with landowners along the Proposed Route, and public and agency outreach efforts that have collectively resulted in an update to the Proposed Route.

The Missouri Route Selection Study was conducted to identify the route for the Grain Belt Express Clean Line in Missouri. The overall goal of the Missouri Route Selection Study was to gain an understanding of the opportunities and constraints in the Study Area, develop feasible Alternative Routes, evaluate potential impacts, and identify a Proposed Route for the Project. The study describes the route selection methodology, public and agency outreach processes, and the Proposed Route identification process for the Missouri portion of the Grain Belt Express Project that extends from the Missouri River to the Mississippi River.

The process of revising the Proposed Route relied on the general and technical Routing Guidelines set forth in the Missouri Route Selection Study. The resulting modified Proposed Route is depicted in **Figure 1**.

1.2 Routing Process and Timeline

Grain Belt Express Clean Line LLC (Grain Belt Express) submitted an application for a Certificate of Convenience and Necessity for the Grain Belt Express Clean Line Project (Grain Belt Project or Project) to the Missouri Public Service Commission (PSC) in March 2014. The application included the Missouri Route Selection Study that presented the process, activities, analysis, and decision rationale for selection of the Proposed Route. Following identification of the Proposed Route in Missouri, the Routing Team conducted an extensive routing effort in Illinois and selected a Proposed Route. The Illinois Commerce Commission ultimately granted a Certificate of Public Convenience and Necessity in November 2015.

1.2.1 Missouri Routing

Beginning in March 2016, the Routing Team began the process of collecting and reviewing updated datasets in the vicinity of the Proposed Route in Missouri. The process included collecting feedback from state and federal regulatory agencies (Section 2.1) and non-governmental groups (Section 2.2) and having discussions with landowners along the route (Section 2.3). Grain Belt Express hosted eight Public Landowner Meetings in counties crossed by the Proposed Route in June 2016. More than 150 members of the public attended the Public Landowner Meetings in Missouri to review the Proposed Route and receive information regarding the Project.

Revisions to the Proposed Route are described in this addendum to the Route Selection Study, along with the data collection and results of data analysis, landowner discussions, and public and agency outreach efforts that have occurred since the 2014 application to the PSC.

1.3 Data Collection and Update

This section describes the sources of information used in evaluating proposed modifications to the Proposed Route and preparation of this addendum. **Appendix B** includes an overview of the datasets reviewed and updated during the preparation of this addendum.

1.3.1 Digital Aerial Photography

Aerial photography from the sources listed below were viewed using Geographic Information System (GIS) software (ArcMap v10.4). Updated information, such as the location of residences and other constraints, was digitized by using either paper maps (at the public meetings) and transferred into the GIS or by digitizing the data directly into the GIS during field inspections and desktop reviews. The primary sources of aerial imagery used in the identification, analysis, and review effort for the Project include:

- National Agricultural Inventory Program 2014 color aerial photography;
- Environmental Systems Research Institute imagery, which ranges in date depending on location; and
- Microsoft's Bing Aerial imagery, which ranges in date depending on location.

1.3.2 GIS Data Sources

The Missouri Route Selection Study made extensive use of information from existing GIS data sets from many sources, including federal, state, and local governments. Much of that information was obtained from official agency GIS data access websites and government agencies. The Routing Team digitized information from paper maps, completed aerial photo interpretation, conducted interviews with stakeholders, and completed field reconnaissance.

Beginning in March 2016, the Routing Team refreshed these datasets and reviewed new datasets that were created since completion of the Missouri Route Selection Study.

1.3.3 Route Reconnaissance

Routing Team members conducted a helicopter review of the Proposed Route in May 2016. Prior to the helicopter reconnaissance, key features identified for the Missouri Route Selection Study, such as residences, outbuildings, recognized places of worship, cemeteries, and commercial and industrial areas, were reviewed using the updated aerial photography sources referenced in Section 1.3.1. These features were then verified in the field and added to the GIS database using laptops running GIS software supported by real-time Global Positioning System during the helicopter review.

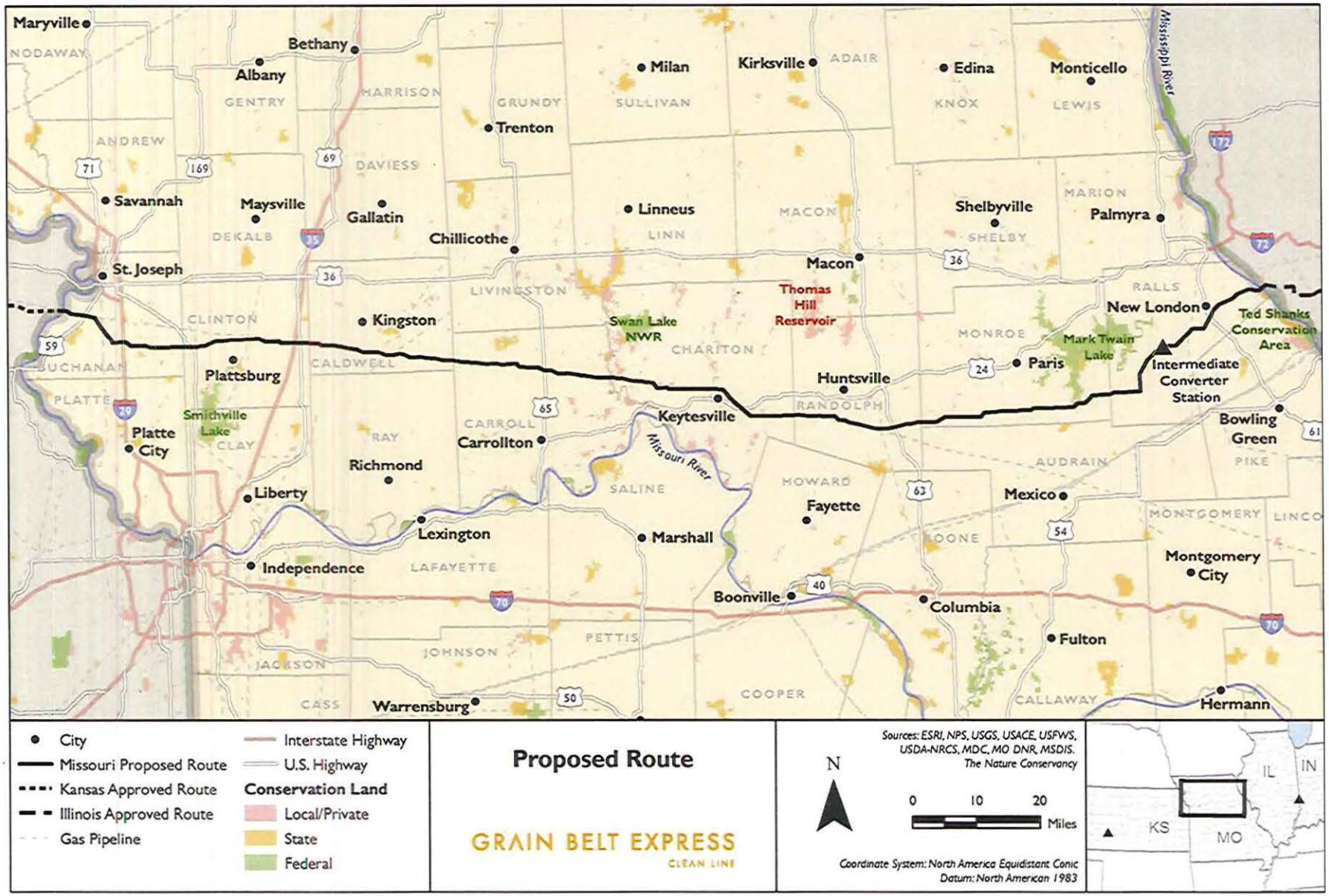


Figure 1. Proposed Route

2. Agency and Public Outreach

2.1 Regulatory Agency Coordination

The Routing Team contacted numerous federal, state, and local agencies to continue dialogue that began during the route planning process. Discussions focused on providing project status updates and identifying new resources managed by those agencies within the Study Area. A list of agencies contacted and dates of the meetings is provided in **Table 1**, and copies of correspondence with federal and state agencies are provided in **Appendix C.**

Table 1. Regulatory Agency Meetings

Agency	Attendees	Meeting Type	Meeting Date
U.S. Army Corps of Engineers, Kansas City District	Lucius Duerksen	Webinar	5/18/16
U.S. Army Corps of Engineers, St. Louis District	Jennifer Skiles	Webinar	5/17/16
U.S. Fish and Wildlife Service, Columbia Field Office	Trisha Crabill, Shauna Marquardt, Jane Ledwin	Webinar	5/16/16
Missouri Department of Conservation	Janet Sternberg	Webinar	5/16/16
Missouri Department of Natural Resources	Robert Stout, Stacia Bax	Webinar	5/12/16, 5/15/16
Missouri Department of Natural Resources, State Historic Preservation Office	Judith Deel	Webinar	5/12/16

2.2 Non-Government Organizations

In addition to state and federal agencies, the Routing Team continued discussions with members of several natural and historic conservation groups. These contacts provided valuable information sources for identifying sensitive natural resource habitats and historic resources during development of the Proposed Route, and the Routing Team sought to continue this coordination and further discuss new information in 2016. These groups included:

- The Nature Conservancy, Missouri Chapter
- Sierra Club, Missouri Chapter
- Missouri Prairie Foundation
- Ducks Unlimited
- Renew Missouri

2.3 Community Outreach Activities

The Routing Team led a community outreach program designed to educate the public about the purpose and benefits of the Project, inform community leaders and the public about the regulatory process and Project timeline, and gather general comments on the Project and specific information that would inform the siting effort.

Two rounds of public outreach meetings were conducted to gather information and provide landowners an opportunity to see and comment on the Proposed Route: One-on-One Meetings and Public Landowner Meetings. The Routing Team planned the Public Landowner Meeting locations to occur in each county within the Study Area and so that potential attendees would be within a 30-mile radius of at least one meeting location.

2.3.1 Landowner One-on-One Meetings

Grain Belt Express held One-on-One Meetings with landowners affected by route revisions that have occurred since the 2014 application filing. At each meeting, members of the Routing Team reviewed route modifications with landowners and answered questions about the Project, while collecting feedback on the revised routes. Outcomes from these meetings are described in Section 3 below.

2.3.2 Public Landowner Meetings

In June 2016, Grain Belt Express hosted eight Public Landowner Meetings in Missouri along the Proposed Route. At the Public Landowner Meetings, Grain Belt Express representatives provided information about the Project and collected feedback on the Proposed Route.

Meeting notifications for the Public Landowner Meetings included mailings sent to landowners and posted on the Project website. Invitations to these meetings were mailed to property owners (as identified in the local county tax and parcel information received from each county) who have property crossed by the Proposed Route or any potential reroute. Copies of the invitations can be found in **Schedule MOL-4 attached to Mark Lawlor's testimony**. Three-hour meetings were held in all eight counties where the Proposed Route is located. A list of the towns where Public Landowner Meetings were held is provided in **Table 2**.

At each Public Landowner Meeting, members of the Routing Team greeted meeting attendees at a welcome table and provided attendees with an optional comment card. The top of each comment card contained space for the attendees to fill in their address and contact information with the lower portion of the comment card containing several questions for attendees to answer and a space to write general comments about the Project. In addition to receiving a comment card, meeting attendees were provided with county-specific fact sheets providing detailed information about the Project.

Table 2. Public Landowner Meeting Locations	
Location	**Date**
St. Joseph	June 13, 2016 (PM)
Plattsburg	June 14, 2016 (AM)
Polo	June 14, 2016 (PM)
Carrollton	June 15, 2016 (AM)
Brunswick	June 15, 2016 (PM)
Moberly	June 16, 2016 (AM)
Paris	June 16, 2016 (PM)
Center	June 17, 2017 (AM)

After attendees were greeted at the welcome table, they were offered a guided tour of the Project on poster boards set up on easels. During the tour, Routing Team members provided attendees with information regarding the purpose of the Project, Project benefits, physical characteristics of the transmission line, and easement and compensation information. These guided tours typically lasted 10 to 15 minutes and allowed attendees the opportunity to ask questions and receive immediate answers from members of the Routing Team.

At the end of the tour, Routing Team members assisted attendees in locating their properties or other features of concern on aerial photography maps displaying the Proposed Route. Each map presented a specific portion of the line with information on identified constraints, land areas, and existing infrastructure presented at a scale of 1 inch = 1,000 feet. Participants were provided the opportunity and encouraged to document the locations of their houses, places of business, properties of concern, or other sensitive resources on the printed maps. Routing Team members worked with landowners and ensured that each comment or group of comments provided by an attendee was documented appropriately.

A digital mapping station was also provided at each Public Landowner Meeting to allow attendees the opportunity to find their land and document their comments directly in the GIS database. The digital mapping station was run by a GIS technician and contained all of the data presented on the printed maps and a full parcel database to help search for parcels that owners could not locate on the printed maps. The GIS station was most often used and most efficient for those attendees who were not familiar with their properties from an aerial map perspective, owned multiple properties in the area, or had brought a list of properties by either parcel identification number or section/township/range.

After the Public Landowner Meetings, all of the maps used to collect comments were scanned, geo-referenced, and integrated into the GIS database. The locations of specific comments provided by attendees were digitized so they could be reviewed using the GIS database. All

comments received via the comment cards were recorded and categorized in a database for review and correlation with mapped comment locations.

3. Route Revisions

This section details 16 new route revisions to the Original Proposed Route identified in the 2014 Missouri Route Selection Study. The incorporation of these revisions results in the Modified Proposed Route described in Section 4.

3.1 Route Revision Process

Two sources of information were utilized in identifying potential revisions to the Original Proposed Route. The first source came from the updated datasets used for the Project. Some of the datasets that were used in the routing process are updated regularly (such as aerial imagery) and others are updated as the features they represent change (such as new state-owned conservation lands). The latest available copies of these datasets were acquired for the route review process. Additional updates resulted from analysis of these datasets such as identifying new buildings on the updated aerial imagery.

The second source for route revisions came from ongoing discussions with individual landowners along the Original Proposed Route. Routing discussions with landowners during the application process in 2014 and during the community outreach efforts described in Section 2.3 provided valuable feedback that resulted in revisions to the Original Proposed Route. The majority of these revisions were minor and involved a small number of landowners, but they reduced potential impacts from routing the transmission line on individual properties. The Routing Team evaluated each suggested revision to ensure that it complied with routing guidelines and did not introduce new, significant impacts.

Figure 2 highlights the reroutes described above and discussed in detail below.

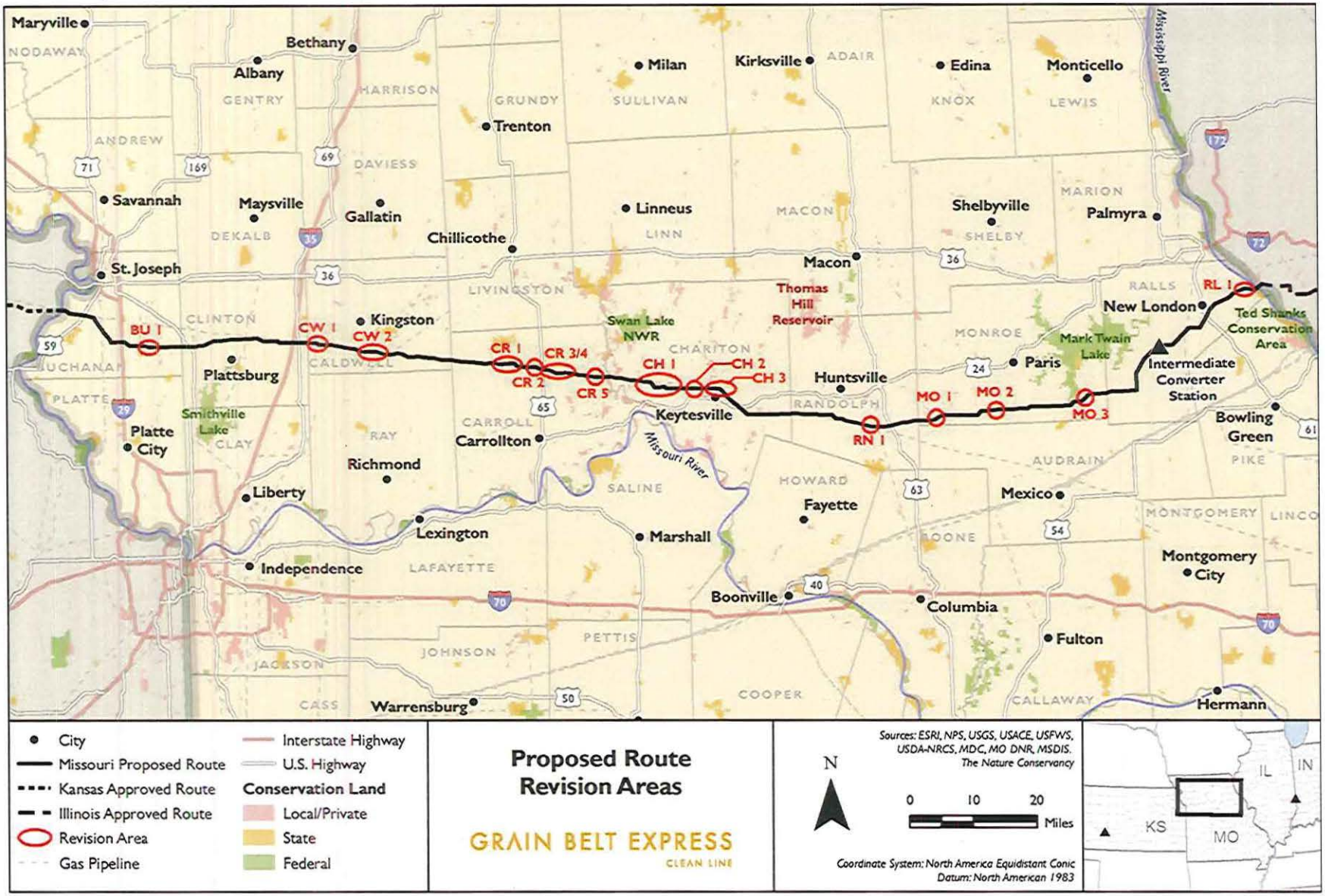


Figure 2. Proposed Reroute Areas

3.2 Data Driven Reroutes

The table in **Appendix B** lists the datasets updated and reviewed during the route revision process. The updated datasets resulted in the route revision described below.

Reroute Monroe-2

In Monroe County, the Original Proposed Route parallels the Thomas Hill 115 kilovolt (kV) transmission line, heading in a due east-west direction (**Figure 3**). In section 18, township 53 north, range 10 west, the existing transmission line angles to the northeast for 2,800 feet before resuming its east-west trajectory. The line was rebuilt in 2014, and the angle of the turn to the northeast was reduced. As a result, the northeast segment is in a different location than the previous line. The Original Proposed Route crossed from the north side of the existing line to the south side at this location. The Proposed Route was revised to remain parallel to the new alignment of the 115 kV transmission line.

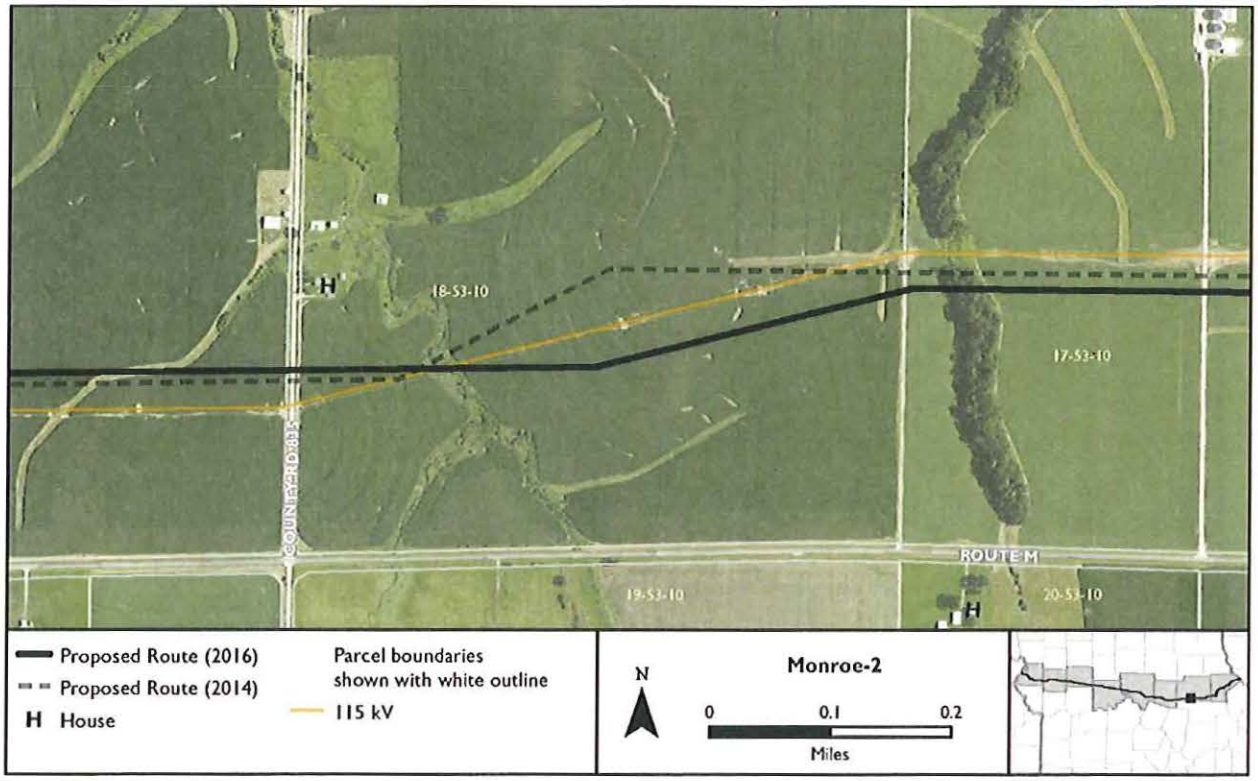


Figure 3. Reroute Monroe-2

3.3 Landowner Reroutes

The reroutes discussed below resulted from discussions with individual landowners regarding specific alignments or structure placements on their properties. Each suggestion was reviewed by members of the Routing Team and evaluated under the routing criteria described in Section 2.4 of the Missouri Route Selection Study. In many cases the suggested revisions minimized impacts to features on the landscape that were at a finer scale than other available datasets could provide, such as the location of a prime agricultural field in comparison to a landowner's other fields. The Routing Team approved revisions that complied with the routing criteria, did not introduce significant differences in the potential impacts on the natural or human environment, and did not result in unreasonable or circuitous routes. Approved reroutes were selected over corresponding portions of the Original Proposed Route and incorporated into the Modified Proposed Route. In some cases, a suggested reroute was further modified as additional information was gathered in the vicinity of the new alignment, as long as the additional modifications still met the requests set forth by the landowner.

Route modifications analyzed in this section represent changes that, based on the available data, best reduce impacts to the resources identified by the landowners. Field surveys, engineering design, and additional landowner input or landowner-identified features may result in future changes to the revision areas or other segments of the Proposed Route.

A description of each reroute, including a map of the location and discussion of analysis results, is provided below.

Reroute Buchanan-1

The Original Proposed Route crosses the Platte River on a due east to west trajectory (**Figure 4**). It angles to the southeast approximately 2,000 feet east of the river, heading in that direction for 5,100 feet before turning back to resume an east to west alignment. The landowner crossed by the diagonal portion of the line requested that the location of the route on their property be shifted to the south, allowing structures to be placed along the edges of their most productive agricultural areas.

The Modified Proposed Route was shifted to the south on these parcels by moving both of the angle structure locations to the west. The northern angle structure was moved 750 feet to the west, from an area in the middle of the agricultural field to the edge of the field, while the southern turning structure was moved 2,100 feet to the west. The northern angle was not located even further west due to the likely presence of forested wetlands in the areas nearer to the Platte River. The resulting alignment reduces the number of landowner parcels crossed and has a greater length of line crossing the landowners who suggested the reroute. They indicated that the Modified Proposed Route would have a lower overall impact to their farming operations due to the specific alignment on their property.

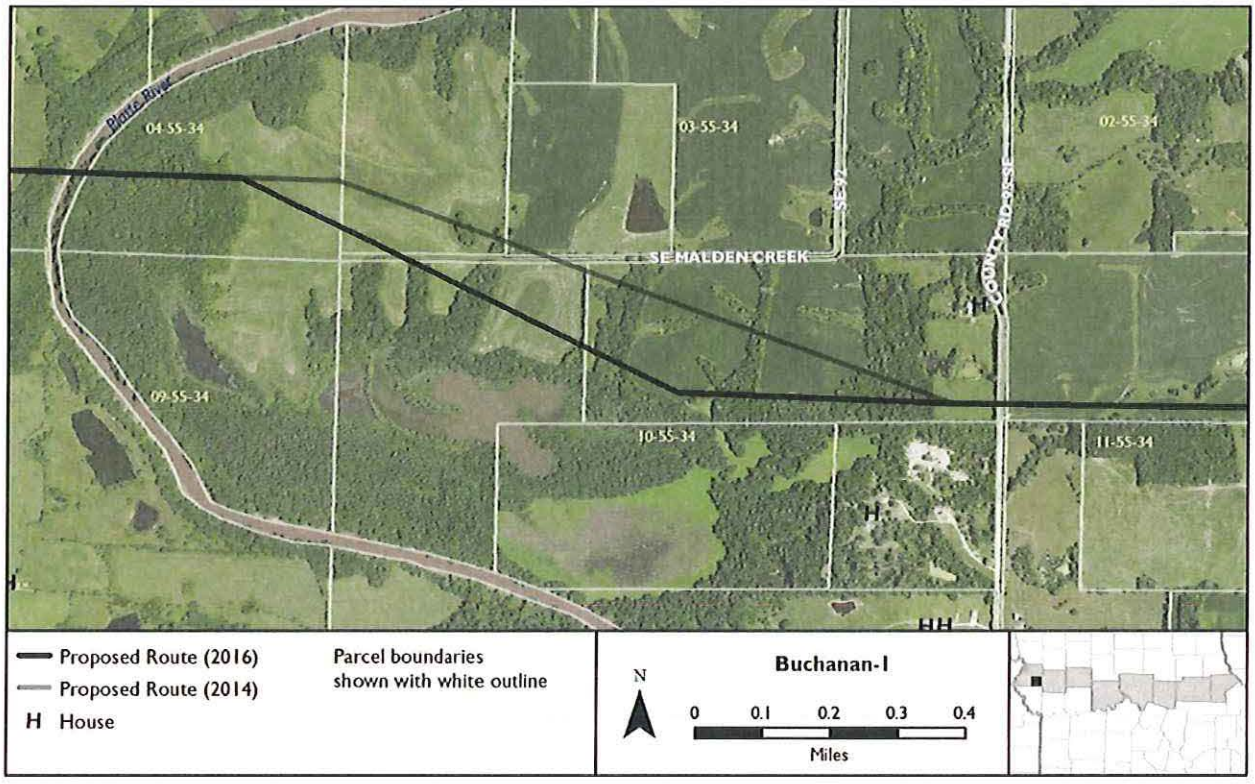


Figure 4. Reroute Buchanan-1

Reroute Caldwell-1

A landowner at the intersection of Missouri Route Z and Texas Road requested a slight modification of the Original Proposed Route across their property (**Figure 5**). The realignment would involve moving an angle structure 660 feet to the east, off a cultivated agricultural area and onto pasture land owned by the requesting landowner. The Modified Proposed Route would have an additional 660 feet of alignment parallel to the gas pipeline corridor. The Routing Team identified no negative impacts associated with this proposed change.

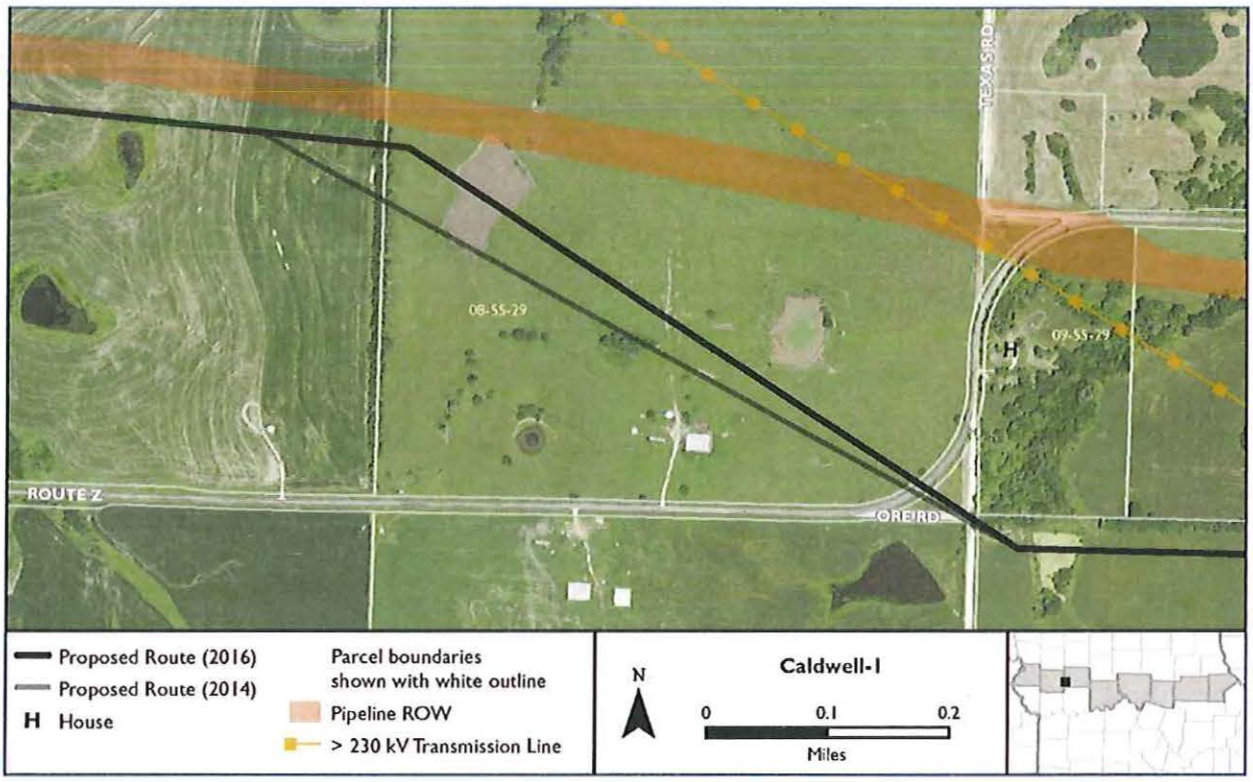


Figure 5. Reroute Caldwell-1

Reroute Caldwell-2

Through this section of Caldwell County, the Original Proposed Route diverts to the south of the gas pipeline corridor to increase distance from six residences directly adjacent to the pipeline ROW (**Figure 6**). A portion of that diversion is located parallel to parcel boundaries a quarter of a mile north of State Highway 116. During the routing process, the Routing Team identified a structure near the Original Proposed Route as a large farm building approximately 240 feet from the route. During the 2016 Public Landowner Meetings, a neighbor identified the building as a residence.

In order to increase the distance from the newly identified residence, the Modified Proposed Route was shifted to the north, paralleling the north side of the parcel boundaries rather than following an alignment coincident with the parcel boundaries. The modified alignment crosses four fewer parcels, is farther from the newly identified residence, and would likely be far enough from the parcel boundary to avoid the need to clear the small tree line along the northern edge of the property.

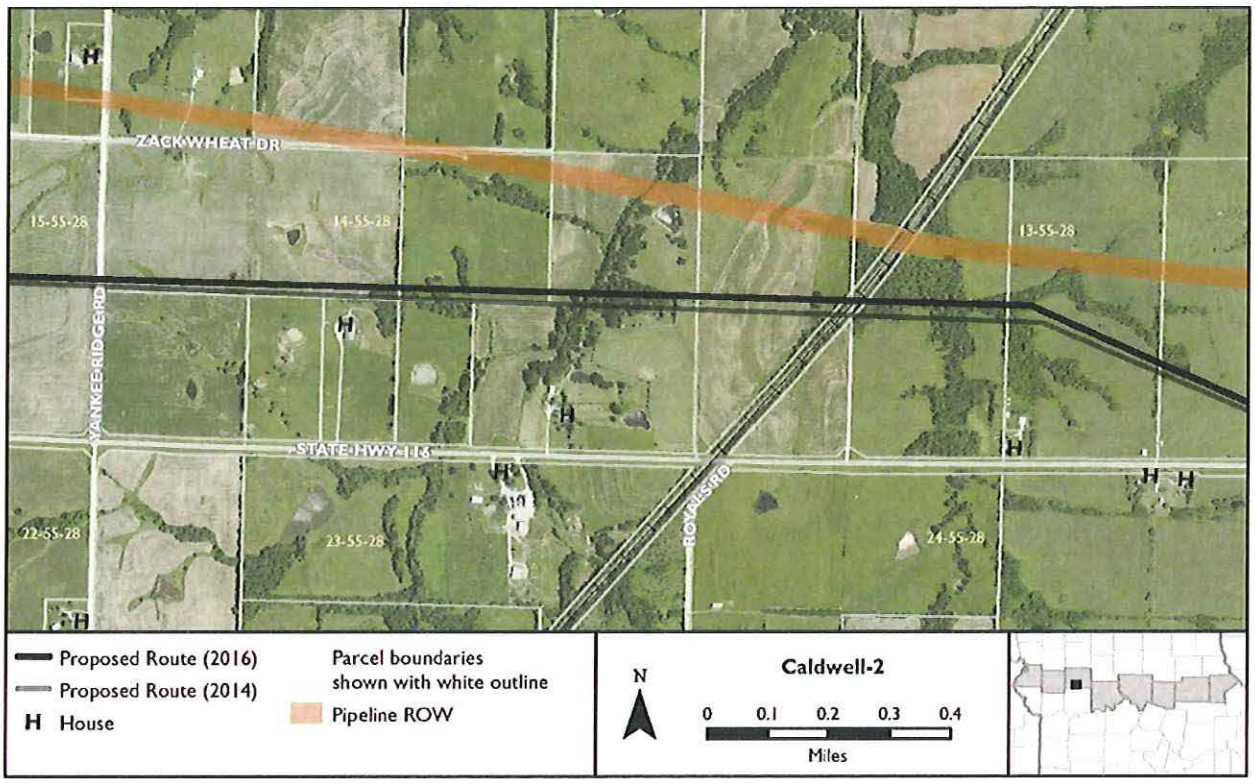


Figure 6. Reroute Caldwell-2

Reroute Carroll-1

Through this section of Carroll County, the Original Proposed Route parallels the gas pipeline corridor (**Figure 7**). The gas pipeline crosses several parcels along this stretch of the Original Proposed Route. Landowners requested moving the route to the north side of their parcels rather than remaining parallel to the gas pipeline to avoid potential impacts on their agricultural operations.

A preliminary modification to the route was presented at the Public Landowner Meetings in June 2016. Although this modification would be 500 feet longer, it would have less potential impact on the existing agricultural land use because the route would be located along the north edge of the five parcels. Additionally, the north side of these parcels has some ground that is not currently cultivated and could allow for the opportunity to strategically place structures out of or on the edge of cultivated fields. An adjacent landowner to the east of the preliminary modification expressed concern with the proximity of the route to a residence on their property and requested extending the revision an additional 4,800 feet to the east, following the same trajectory along the northern edge of the parcels. Extending the preliminary modification would move the route farther from that residence and a neighboring residence and place it in a location on that property that would ensure significant tree coverage between the residence and the line.

The Modified Proposed Route would cross less agricultural land and avoid bisecting several parcels in the area. It is located further from residences on those parcels and would have a greater length of alignment parallel to parcel boundaries.

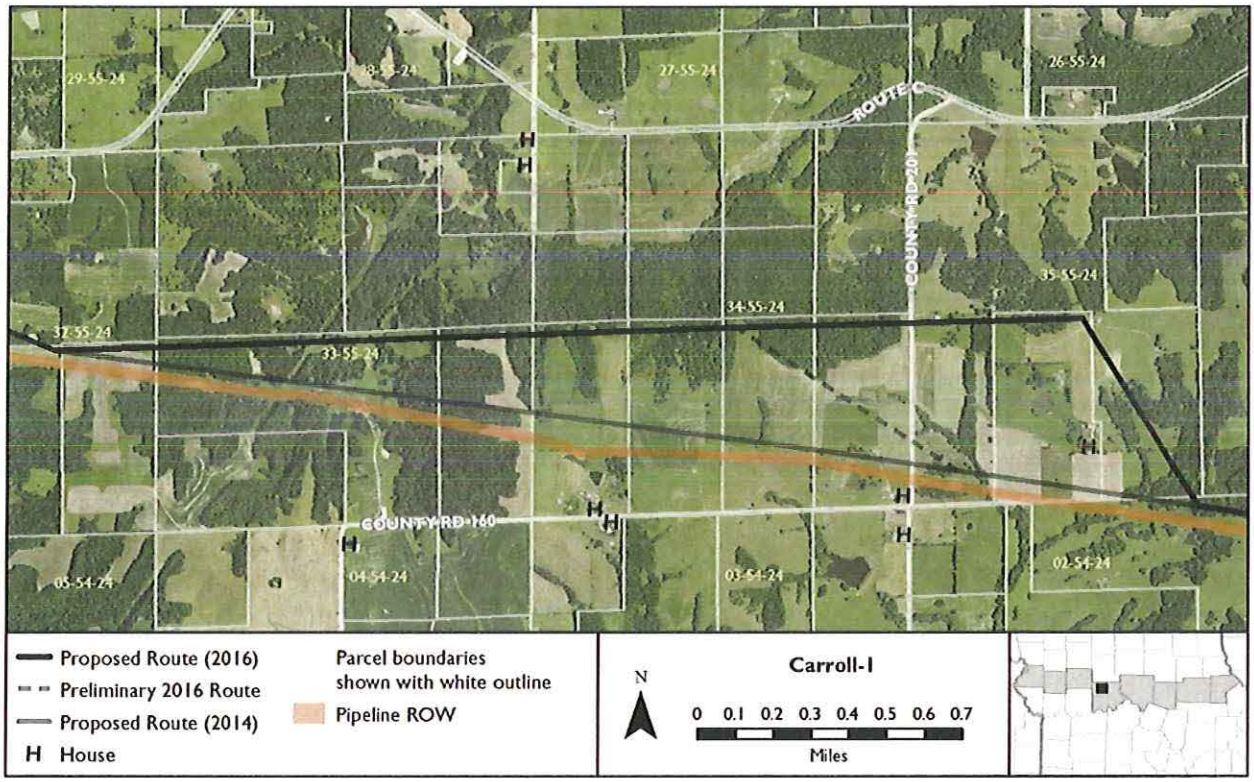


Figure 7. Reroute Carroll-I

Reroute Carroll-2

The Original Proposed Route parallels the gas pipeline corridor through this stretch of Carroll County, between Missouri Route T and U.S. Highway 65 (**Figure 8**). During the Public Landowner Meetings in June 2016, a landowner indicated that a new residence is currently being built on a parcel crossed by the route. The Routing Team verified the location of the new residence in the field and identified that it will be approximately 420 feet from the Original Proposed Route.

The landowner suggested a revision which would locate the route north of the new residence. The revision would place more of the route through agricultural lands on their property, however the route would be approximately 800 feet from the new residence. The alignment also shifts the route further from another residence located at the end of County Road 231. The Modified Proposed Route angles away from the gas pipeline corridor to the east of Missouri Route T, heads due east for 7,900 feet, and then angles to the southeast for 4,300 feet before rejoining the Original Proposed Route alignment.

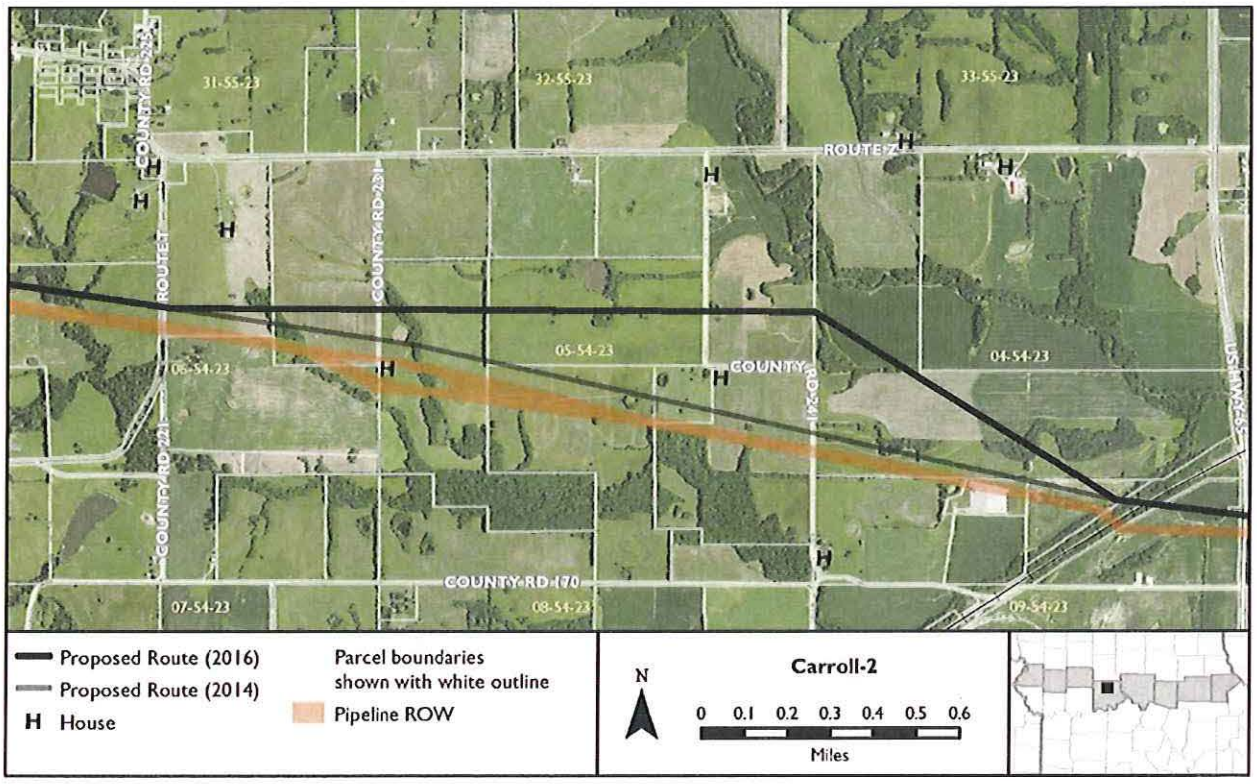


Figure 8. Reroute Carroll-2

Reroute Carroll-3

Two adjacent landowners requested modifications to the Original Proposed Route (**Figure 9**). The Original Proposed Route in this area parallels the north side of the gas pipeline before crossing to the south side and diverting from the parallel alignment to avoid a large cattle operation that the gas pipeline crosses. The route avoids crossing an area where the gas pipeline ROW widens at the western end of County Road 174. On the western end of this reroute, the landowner requested moving the Original Proposed Route to the south to accommodate new buildings associated with the cattle operation expansion that has occurred since development of the Original Proposed Route. During the Public Landowner Meetings in June 2016, the landowner reviewed the suggested reroute and requested that the new angle structure be moved further east, from a more agriculturally-productive area in the western field to a location on the edge of an adjacent field. The shift locates the angle structure 370 feet to the east and results in a minor change in alignment of the route to the east and west of that structure.

On the eastern end, between County Roads 281 and 291, a different landowner requested that the alignment move closer to the gas pipeline to consolidate easements on their property. Together, these reroutes would be approximately 250 feet longer, would have one fewer angle structure, and would have a greater length of alignment directly parallel to the gas pipeline corridor. They would avoid impacts on new buildings, which were located within the ROW of the Original Proposed Route at the southern end of the cattle operation.

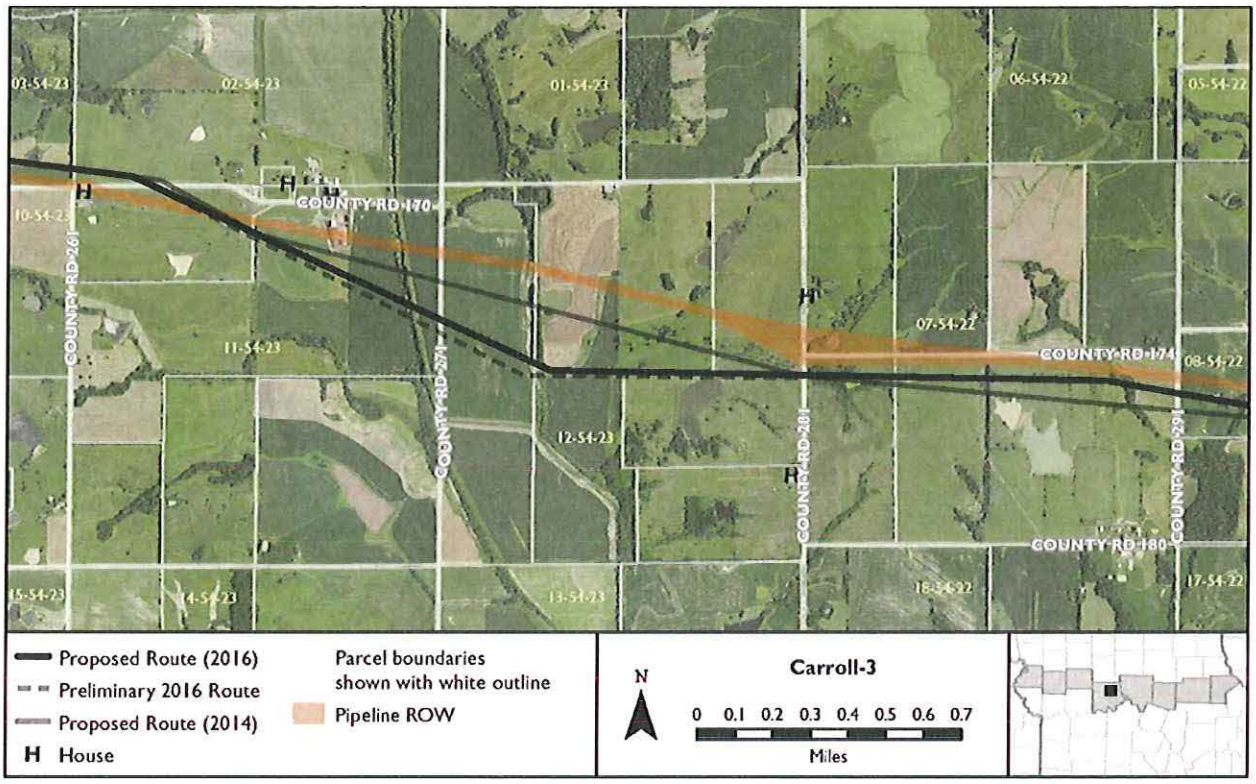


Figure 9. Reroute Carroll-3

Reroute Carroll-4

The Original Proposed Route in this section of Carroll County is roughly parallel to the southern side of the pipeline corridor (**Figure 10**). As described in the Missouri Route Selection Study, this pipeline corridor contains multiple individual pipelines. One of the pipelines in this area veers to the south of County Road 174, away from the main corridor, causing the Original Proposed Route to also redirect south to avoid a lengthy crossing of the pipeline right-of-way (ROW). Reroute Carroll-4 is directly east of Reroute Carroll-3, and in coordination with their neighbor, this landowner also suggested a potential reroute that would better align the route with the gas pipeline corridor as it crosses their property.

The landowner indicated several areas on the property that could be more greatly affected by the presence of new structures. The Original Potential Route was modified to avoid these areas and to consolidate ROW clearing along an unnamed wooded stream that runs through the property. The potential reroute was further modified to straighten its trajectory to the east and eliminate small angles in the route, which would have limited the flexibility of the engineering and construction teams to place structures outside the structure avoidance areas defined by the landowner.

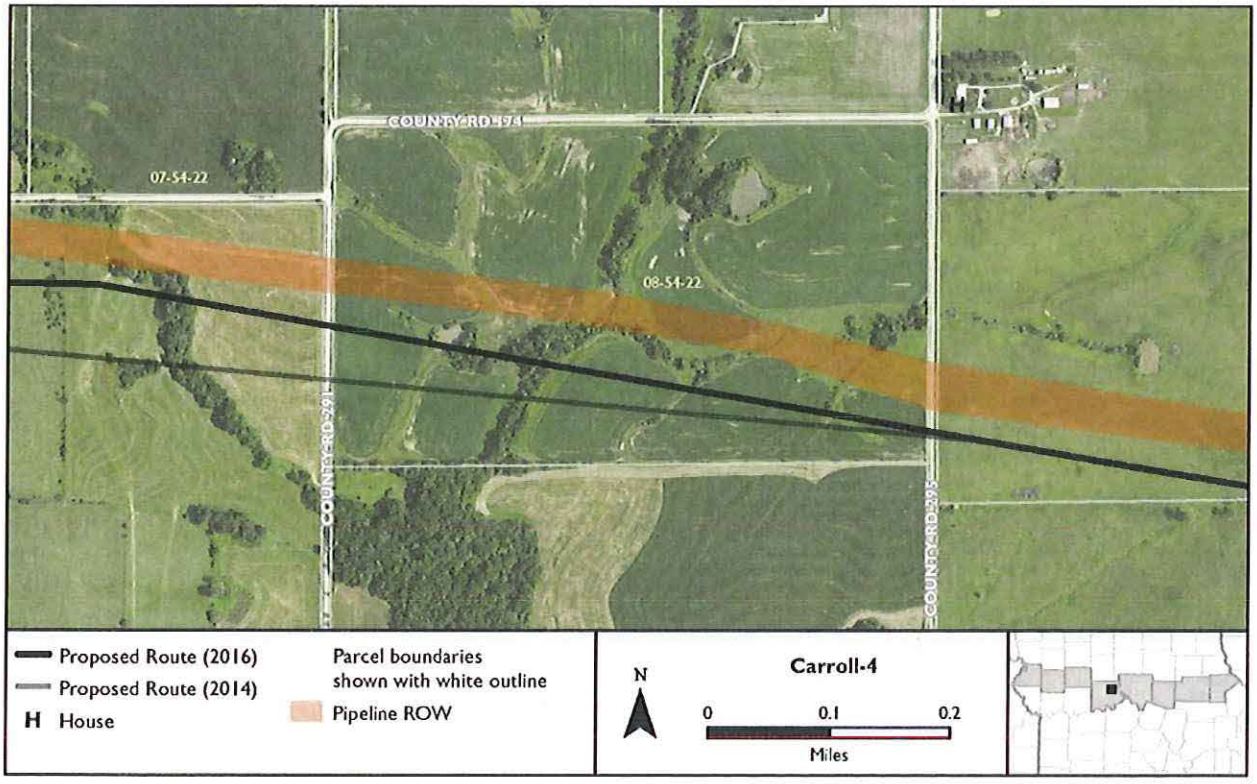


Figure 10. Reroute Carroll-4

Reroute Carroll-5

Two landowners on opposite sides of County Road 221 suggested a potential reroute that would relocate an angle structure from the east side of County Road 221 to the west side, a shift of approximately 260 feet (**Figure 11**). The revision would relocate the angle structure from an area of cultivated crops to pasture land. The Routing Team confirmed that this route change would reduce permanent impacts to agricultural lands, and it would not result in any additional impacts in comparison to the Original Proposed Route.

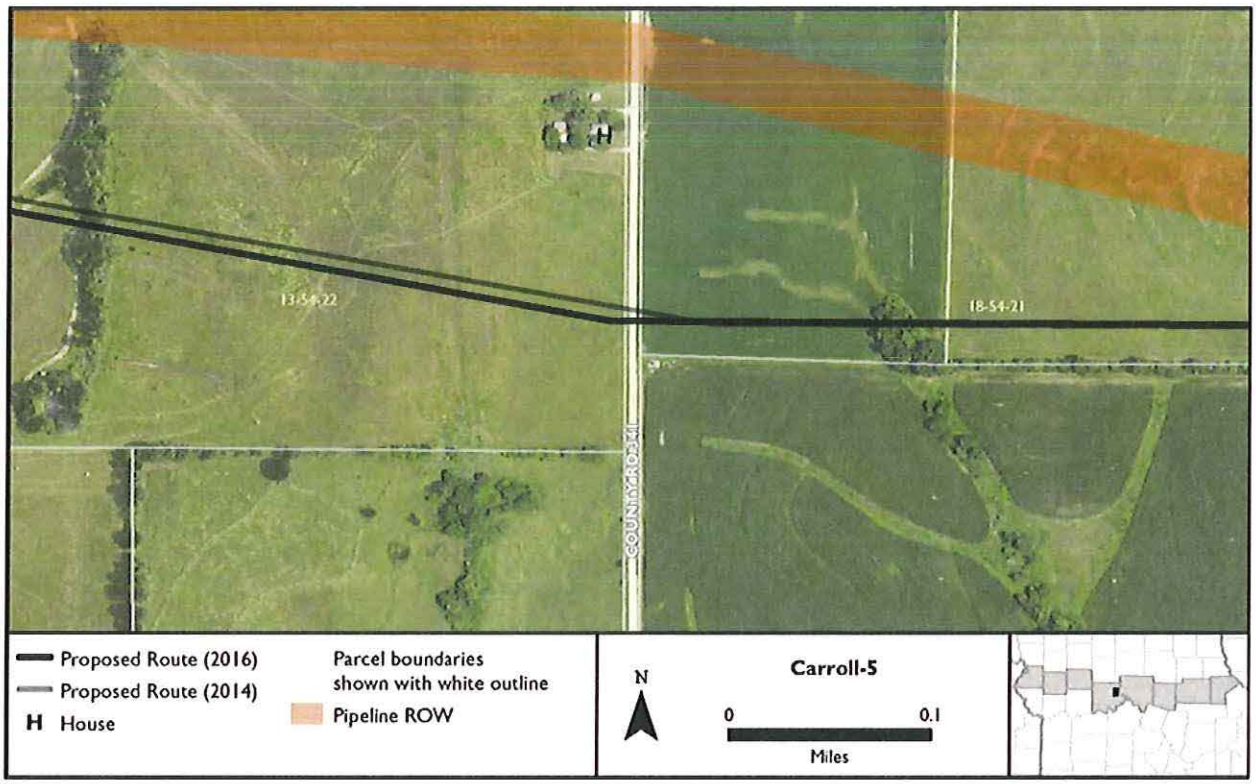


Figure 11. Reroute Carroll-5

Reroute Chariton-1

During the Missouri Public Service Commission's proceedings on the Grain Belt Express Project in 2014 (Docket NO. EA-2014-0207), two landscape features were identified in Chariton County, north of Brunswick (**Figure 12**). The first was Sycamore Valley Farms Bed and Breakfast located along County Road 205, approximately 450 feet north of the Original Proposed Route. The second was the potential for a home site near the Original Proposed Route, in the southeastern corner of a parcel at the intersection of Missouri Highway Y and Iowas Road. The Routing Team studied modifications to the alignment that addressed these concerns. Ultimately, the route on the western portion was selected that increased distance from the Bed and Breakfast, as well as avoided additional sensitivities. The alignment was maintained on the eastern portion due to impacts identified during the public outreach process.

Through this area, the Original Proposed Route diverted from an alignment parallel to the gas pipeline corridor to avoid several residences and a private airstrip (Shiloh Airpark) directly adjacent to the existing gas pipeline ROW. A revised preliminary route was presented at One-On-One Landowner meetings to landowners in the area and at the Public Landowner Meetings in June 2016. This revised preliminary route would have diverted to the south approximately 2 miles farther west from where the Original Proposed Route diverts from the gas pipeline corridor. The reroute would head due south for 0.4 mile along parcel boundaries and then angle to the southeast across a mix of primarily pastures, forests, and shrub land. The route would then continue in a mostly due east direction for 3.6 miles, before rejoining the Original Proposed Route alignment near the intersection of Marquette Avenue (County Highway 211) and Iowas Road.

During the 2016 Public Landowner Meetings, additional landscape features were identified which led to a further revision of the potential reroute. Two small potentially historic cemeteries were identified close to the preliminary revised route. Additional information was provided indicating that part of the area crossed by the revised route is a large wooded wetland complex. Following these discussions with landowners and the field review by members of the Routing Team, the route was further revised to remain on the original alignment along the pipeline corridor for an additional 2,700 feet before angling to the southeast for a little over a mile. It crosses Fort Orleans Avenue, then angles due east for 3,500 feet, at which point it angles to the northeast and begins paralleling parcel boundaries to the east. It rejoins the Original Proposed Route alignment 1,500 feet west of Missouri Route Y. During the initial routing in 2014 and early 2016, two residences were identified along Fort Orleans Avenue (County Road 205). At the Public Landowner Meetings and in the subsequent field review, it was determined that both residences are vacant. The Modified Proposed Route is approximately 200 feet from each of these vacant structures.

From the point where the Modified Proposed Route rejoins the Original Proposed Route in the northeast quarter of section 25, a further route revision was presented at the Public Landowner Meetings. The west-to-east alignment of the Modified Proposed Route would have continued for an additional 4,100 feet before angling back to the southeast crossing Iowas Road and rejoining the Original Proposed Route alignment. This potential revision was in response to the potential new home site identified during the 2014 proceedings. Grain Belt attempted to review and discuss this reroute with the landowners associated with the future home site; however, the Landowners did not provide feedback on the proposed revision other than to say they remain opposed to the project regardless of the alignment.

During the 2016 Public Landowner Meetings, the routing team spoke with several landowners to the east who would be crossed by the new alignment. These landowners identified potential negative impacts to their farming operations, specifically across terraced fields and topography that would make siting less desirable. They also suggested paralleling Iowas Road (as originally proposed) as having less impact to the existing resources and land use in the area, as structures could be placed along the edge of the property line near the road. Additionally, the proposed reroute in this area would move the west-to-east alignment further north, and in closer proximity to the Shiloh Airpark. Therefore, the Routing Team decided to maintain the original alignment on the eastern portion of this reroute.

Although Reroute Chariton-1 is 0.3 mile longer, it provides several benefits over the Original Proposed Route. **Table 3** includes a comparison of key factors between the two routes as measured between their common beginning and ending points in this area. The new alignment is approximately 1,600 feet from Sycamore Valley Farms Bed and Breakfast, whereas the Original Proposed Route is approximately 450 feet away. No residences are located within 500 feet of the Modified Proposed Route, as opposed to three within 500 feet of the Original Proposed Route.

The Modified Proposed Route has one crossing of a gas pipeline ROW, which contains a single pipeline, whereas the Original Proposed Route has two crossings of pipeline ROWs, both of which contain multiple pipelines. Additionally, the single pipeline ROW crossing by the Modified Proposed Route is closer to a perpendicular angle, which is preferable from a construction perspective and for the operation and maintenance of the gas pipeline.

The Original Proposed Route crosses a relatively large forested area to either side of Newcomers Avenue (County Highway 207). The gas pipeline corridor, which the Original Proposed Route parallels, does not remain straight through the forested area but, instead, dips closer to two residences along the highway. The two residences were already within 500 feet of the route and would end up even closer if the route maintained a strict parallel to the gas pipeline corridor to ensure the ROW directly abutted the gas pipeline ROW to reduce forest fragmentation. Total forest clearing is 4.6 acres lower for the Modified Proposed Route.

Table 3. Reroute Chariton-1 Summary		
	Original Proposed Route	**Modified Proposed Route**
Length	2.3 miles	2.6 miles
Forest Clearing within ROW	16.8 acres	11.2 acres
Residences within 250 feet	0	0
Residences within 500 feet	3	0
Total Parcels Crossed	10	12
Total Landowners Crossed	7	10
Parallel to Parcel Boundaries	0 miles	0.4 miles
Gas Pipeline ROW Crossings	2	1

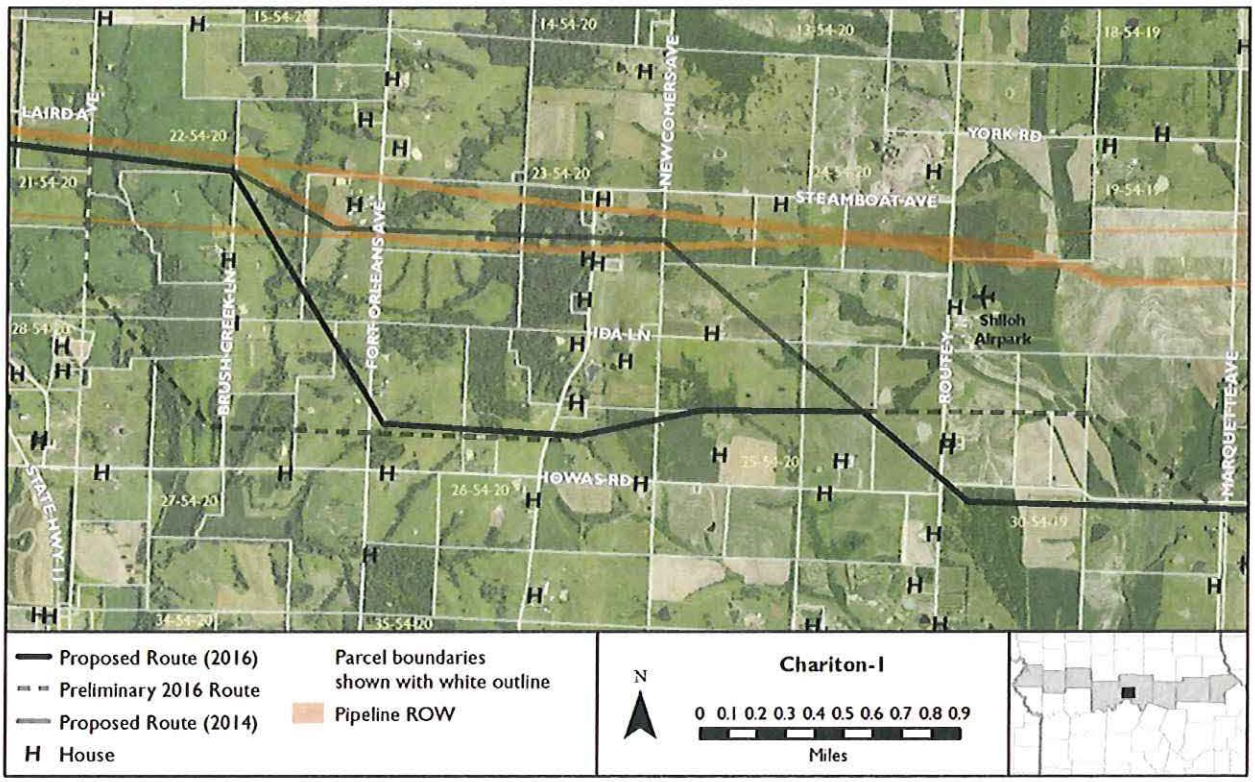


Figure 12. Reroute Chariton-1

Reroute Chariton-2

In this section of the Original Proposed Route in Chariton County, the alignment is on a generally east-west trajectory with a short diagonal segment that crossed to the south of Allen Road (**Figure 13**). A landowner at the north end of Grange Avenue proposed a potential reroute that would shift the Allen Road crossing approximately one mile to the west, thus avoiding a potential impact on their cattle operations.

While avoiding impacts to the cattle operation, the resulting alignment would angle to the north before angling back to the south across Allen Road, and then continuing east parallel to the south side of the road. The Routing Team further revised the landowner reroute, extending it to the west in order to create a less circuitous alignment. The Modified Proposed Route continues on a straight alignment from east of Missouri Route Y to Settlers Avenue; a distance of over eight miles.

In addition to avoiding the cattle operations, the Modified Proposed Route would have a greater length of transmission line that runs parallel to parcel boundaries and roadways than the Original Proposed Route. The reroute also would have a greater length across pasture land instead of cultivated crops, which would have a lesser potential impact on current land use.

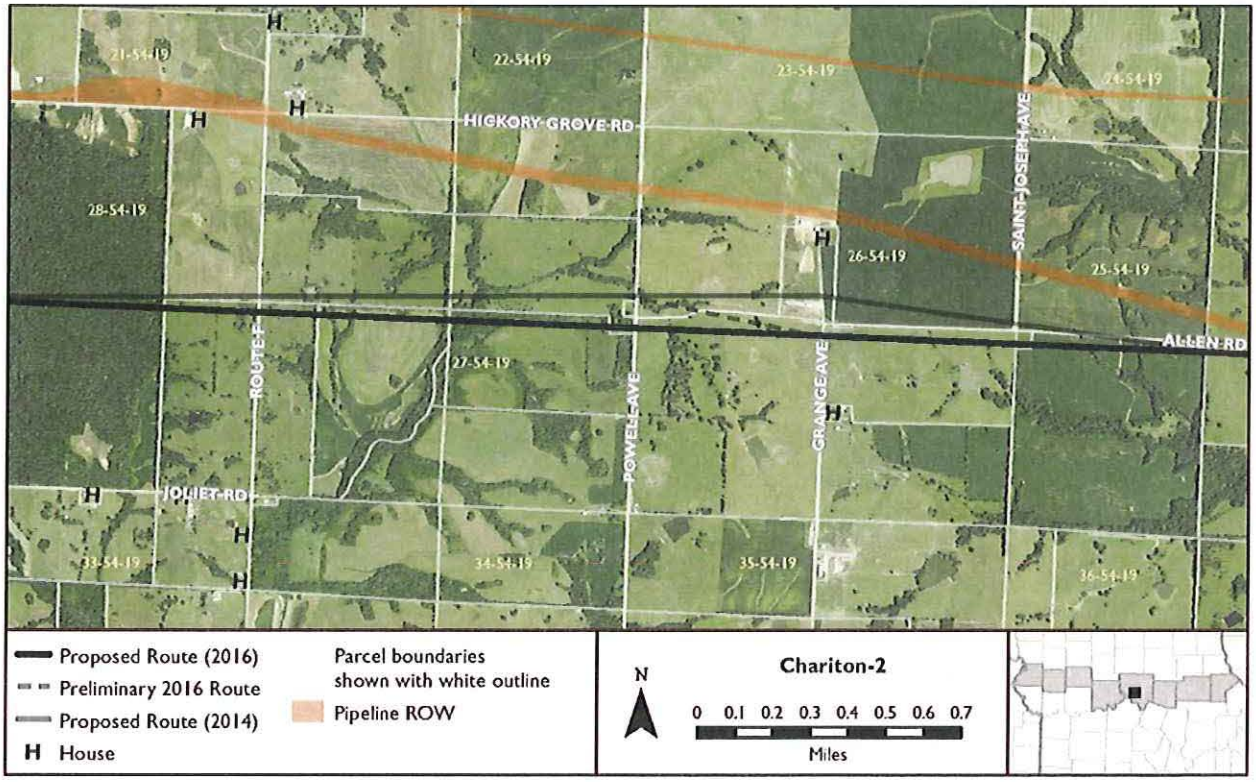


Figure 13. Reroute Chariton-2

Reroute Chariton-3

Landowners in the vicinity of the angle structure shown in **Figure 14** presented to members of the Routing Team a potential reroute that would shift the angle structure approximately 200 feet to the south, moving it from one property to another. Both landowners were in agreement with this new alignment. The alignment proposed by the landowners was further modified to lessen the angle of the route as it approached from the west and to allow for greater flexibility for detailed structure placement during the engineering phase of the project. The modification replaces two light angle structures with tangent structures, which tend to be shorter and have a smaller footprint on the landscape.

In addition to satisfying the interests of both landowners and not introducing any new quantifiable impacts, the Modified Proposed Route would be slightly shorter and would cross a greater proportion of pasture land (as opposed to cultivated crops) than the Original Proposed Route.

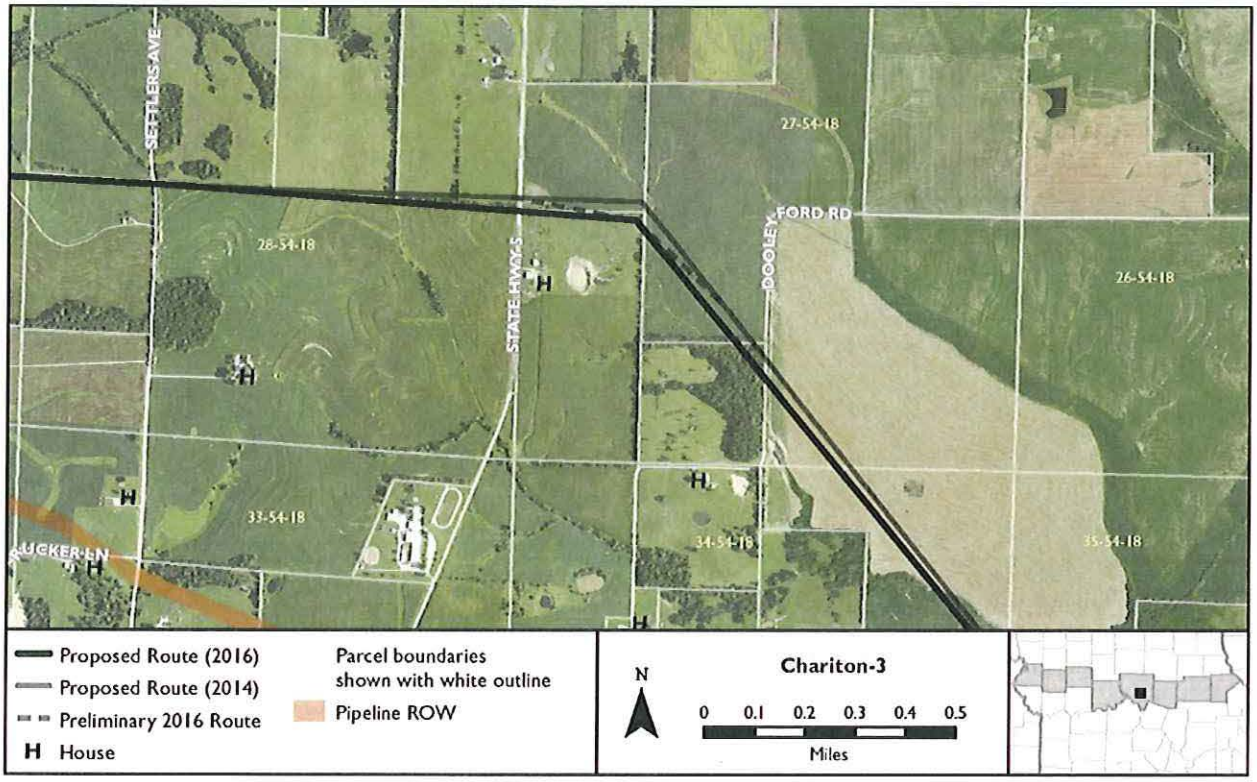


Figure 14. Reroute Chariton-3

Reroute Randolph-1

The Original Proposed Route crosses an existing 345 kV transmission line approximately 3,300 feet west of Missouri Route AA (**Figure 15**). A landowner in the vicinity of the crossing suggested moving the angle structure located just to the west of the existing transmission line further north, to increase distance from a structure on the existing line. This shifts the angle structure out of a cultivated field, towards the edge of the parcel. Additionally, crossing the existing line at a location that is further from the existing structures provides flexibility during the engineering phase of the project and possibly allows for shorter structures than would otherwise be necessary for maintaining appropriate vertical clearance between the two lines.

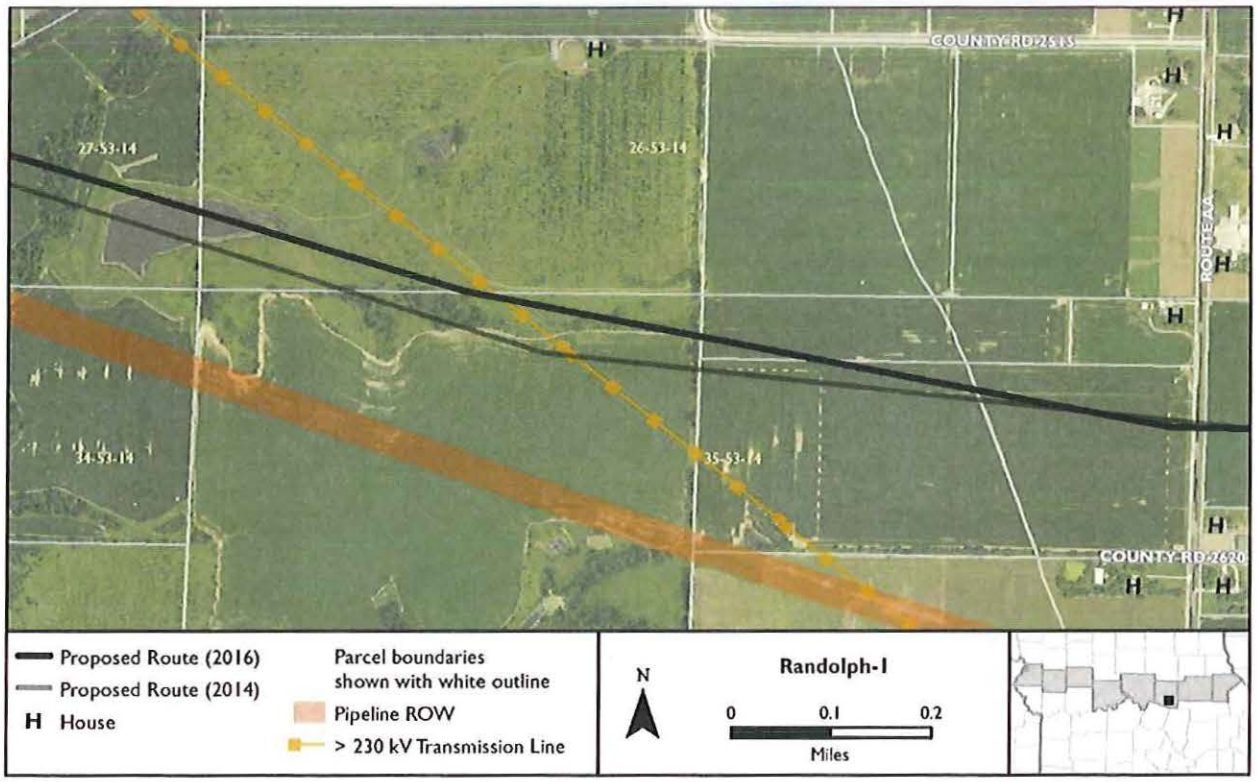


Figure 15. Reroute Randolph-1

Reroute Monroe-1

The Original Proposed Route has a segment that angles to the northeast as it crosses County Road 1061 (County Road 111) in Monroe County (**Figure 16**). The 8,000 foot-long segment crosses near a sensitive area containing two large trees identified during the Public Landowner Meetings in June 2016. A minor shift in the placement of the angle structures at the beginning and end of the diagonal segment results in moving the line far enough to avoid impacting the identified area.

Shifting the southwestern angle 220 feet to the east and the northeastern angle 180 feet to the west allows the Modified Proposed Route to minimize impacting those sensitive features identified by the landowner, while not introducing any additional impacts to the human or natural environment.

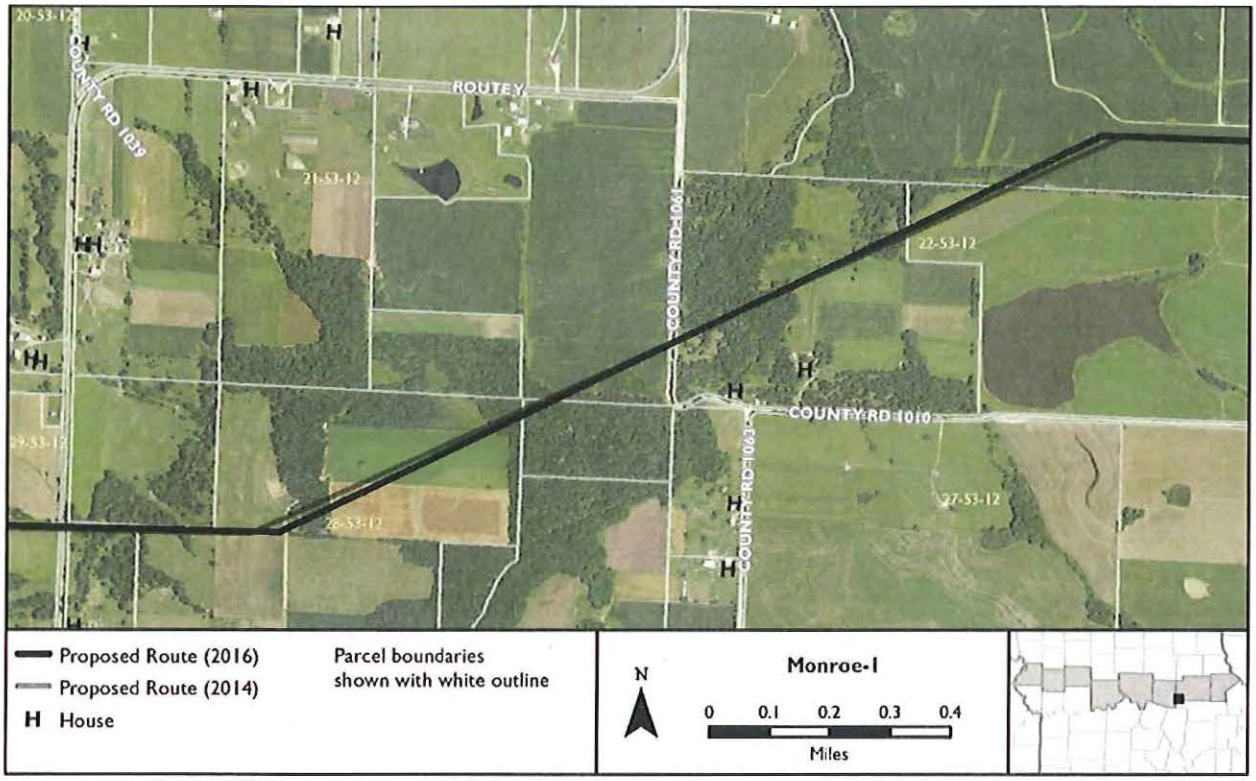


Figure 16. Reroute Monroe-1

Reroute Monroe-3

A landowner in Monroe County proposed Reroute Monroe-3, which would be located just to the east of land administered by the U.S. Army Corps of Engineers along Mark Twain Lake (**Figure 17**). Along this stretch, the Original Proposed Route traveled on a diagonal trajectory between two east-west segments that parallel parcel boundaries. The landowner requested the addition of an angle structure to the diagonal segment, modifying the alignment to avoid crossing a forested stream and the landowner's access point onto the property.

Although the Modified Proposed Route would be slightly longer (less than 100 feet), it would move farther from the South Fork Church and Cemetery along Missouri Highway E and would result in less total forest clearing than the Original Proposed Route.

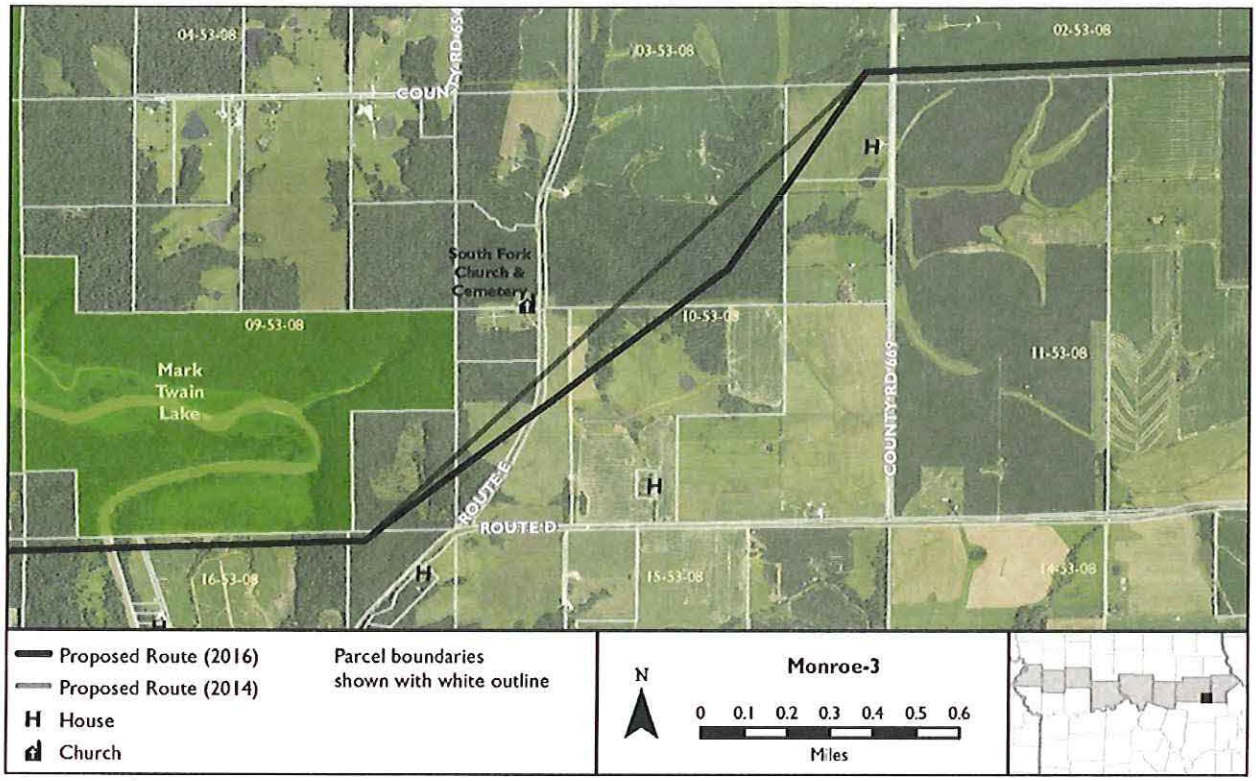


Figure 17. Reroute Monroe-3

Reroute Ralls-1

The Original Proposed Route crosses Malaruni Road on an east to west trajectory and roughly parallels the southern edge of several parcels until it crosses Missouri Highway 79 (**Figure 18**). Along this alignment, the route angles south of the parcel boundaries to avoid impacts to a residence and several outbuildings, then angles back to the north of the parcel boundaries to increase distance from another residence. Despite these diversions, this section of the Original Proposed Route passes within 500 feet of four residences.

During the Public Landowner Meetings in June 2016, a landowner in the vicinity suggested realigning the route to parallel parcel boundaries approximately 1,250 feet to the north. Although the Modified Proposed Route is slightly longer (420 feet), necessitates heavier angle structures than the Original Proposed Route, and diagonally crosses two parcels where the route was previously aligned to parcel boundaries, it significantly increases the distance between the route and the residences, maintains a greater buffer of trees to reduce visual concerns, and avoids crossing a driveway used to access two of the residences.

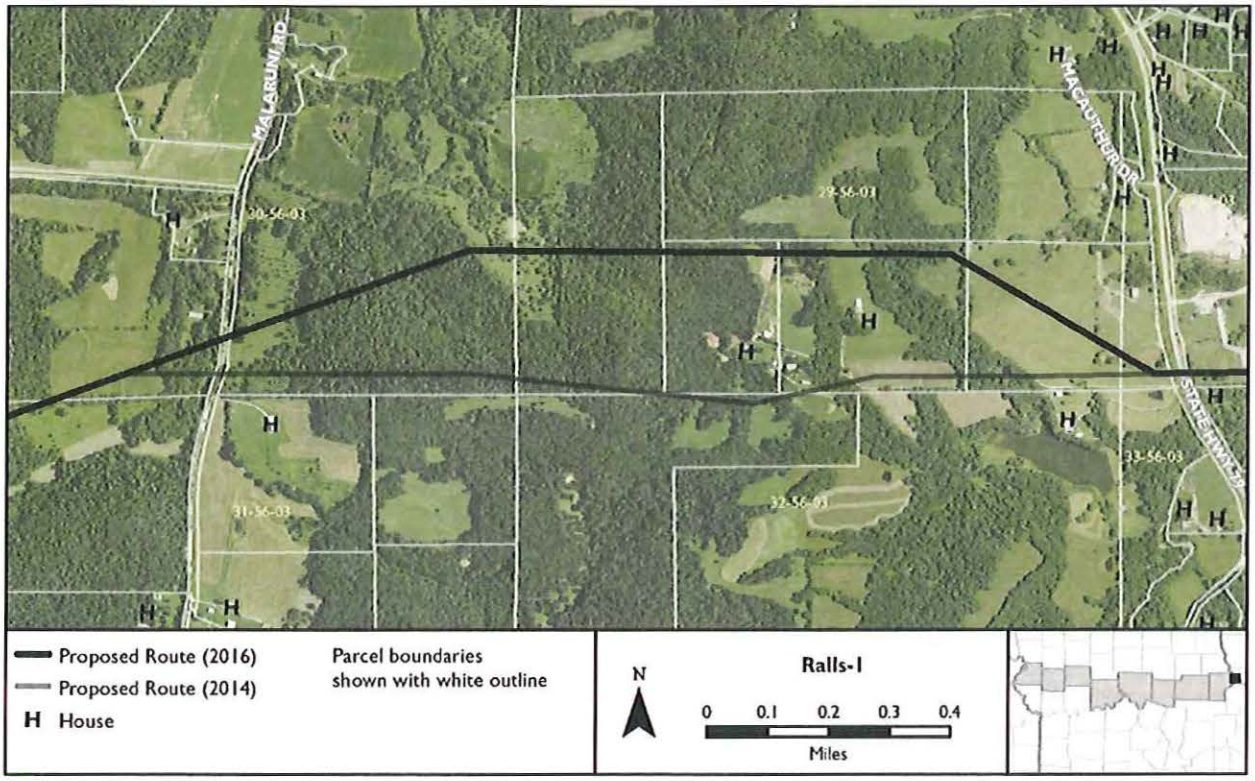


Figure 18. Reroute Ralls-1

4. Proposed Route

4.1 Proposed Route Description

The Routing Team recommends the adjustments to the Proposed Route described in Section 3. The incorporation of these reroutes into the Proposed Route addresses various landowner concerns and presents improvements to the route. The majority of route revisions were prompted by specific landowner requests and represent small modifications to improve siting of the project on their properties.

Table 4 presents a comparison of the Original Proposed Route and the Modified Proposed Route and includes the route revisions described in Section 3. Given the minor scale of revisions to the route, most measures of the impact of the route are similar or identical. A few sizeable differences between the Modified Proposed Route and the Original Proposed Route include: 10 fewer residences within 500 feet, fewer churches and cemeteries within 1000 feet, fewer total parcels crossed, and 8 fewer known archaeological sites within 1000 feet.

Table 4. Proposed Route Comparison

	Original Proposed Route	Modified Proposed Route
Length	205.1	205.7
Hydrology		
Total Stream Crossings (count)	286	288
Waterbody Crossings (count)	30	32
NWI Wetlands		
Wetlands within ROW (acres)	140	142
Forested Wetlands within ROW (acres)	73	75
Wildlife Habitat		
Forest (acres)	883	903
Wetland (acres)	140	142
Pasture/Grassland (acres)	1,317	1,314
Parallel with Existing Linear Features		
Parallel Transmission ROW (miles)	14.7	14.7
Parallel Pipeline ROW (miles)	45.3	37.6
Topography		
Karst (miles crossed)	48.0	48.0
Parallel Alignments		
Transmission Line (miles)	14.7	14.7
Pipeline (miles)	45.3	37.6

Table 4. Proposed Route Comparison		
	Original Proposed Route	**Modified Proposed Route**
Parcel Boundary (miles)	49.9	52.5
Total ROW Parallel (miles)	109.9	104.8
Parallel Alignments		
Transmission Line (percent)	7%	7%
Pipeline (percent)	22%	18%
Parcel Boundary (percent)	24%	26%
Total Percent ROW Parallel	54%	51%
Agricultural Land Use		
Agriculture/Cropland (miles crossed)	111.5	111.1
Pasture/Grassland (miles crossed)	54.1	54.0
Proximity to Buildings		
Residences within 250 feet	5	5
Residences within 500 feet	61	51
Churches within 1000 feet	1	0
Cemeteries within 1,000 Feet	6	4
Schools within 1,000 Feet	0	0
Parcels less than 10 Acres	18	17
Parcels between 10 Acres and 30 Acres	72	71
Parcels between 30 Acres and 80 Acres	227	228
Parcels Larger than 80 Acres	354	349
Total Parcels Crossed	671	665
Historic Resources		
Archaeological Sites (Sites within ROW)	13	12
Archaeological Sites (Sites within 1,000 Feet)	49	41
National Register of Historic Places Points within 0.25 Mile	0	0
National Register of Historic Places Points within 0.5 Mile	0	0
National Register of Historic Places points within 1 Mile	0	0
Federal Aviation Administration Obstruction Zone Crossings		
Public Airfields (miles)	0	0
Private Airfields (miles)	16.3	16.0
Transportation		

Table 4. Proposed Route Comparison		
	Original Proposed Route	**Modified Proposed Route**
Railroads Crossed	9	9
Interstates Crossed	2	2
U.S. Highways Crossed	8	8
State Highways Crossed	14	14
Infrastructure Crossings		
Cell Towers within 500 Feet	4	5
<115kV Transmission lines	14	14
161kV Transmission lines	8	8
345kV Transmission lines	5	5
Pipeline ROW Crossings (approximate)	27	26
Pipelines Crossed (approximate)	54	51

4.2 Rationale for Selection of the Modified Proposed Route

Based on a comparison of the Modified Proposed Route with the Original Proposed Route, the Routing Study Addendum did not identify any significant differences in the potential impacts to sensitivities analyzed in the 2014 Missouri Route Selection Study. Therefore, the rationale presented in the Missouri Route Selection Study for choosing the Proposed Route remains applicable and the general level of impacts described in that report still apply. Based on this review, the Modified Proposed Route best minimizes the overall effect of the Grain Belt Express transmission line on the natural and human environment while avoiding unreasonable and circuitous routes, unreasonable costs, and special design requirements. The Modified Proposed Route is therefore adopted as the Proposed Route for the Grain Belt Express Transmission Line to be constructed in Missouri.

APPENDIX A: ROUTING TEAM

ROUTING TEAM			
Member	**Affiliation**	**Title**	**Specific Role**
Mike Skelly	CLE	President	Project oversight
Jason Thomas	CLE	Vice President – Environmental Affairs	Environmental oversight
Wayne Galli	CLE	Executive Vice President – Transmission and Technical Services	Engineering support and oversight
Mark Lawlor	CLE	Director of Development	Siting support, public outreach, agency consultation
Ally Copple	CLE	Manager	Siting support, Public outreach
John Kuba	CLE	Director – Environmental Affairs	Siting support, agency consultation, environmental and sensitive species
Daniel Hodges Copple	CLE	Associate	Public outreach support
Amy Kurt	CLE	Manager	Siting support, Public outreach
Paula Priest	CLE	Manger – Land	Landowner relations
Ty White	CLE	Manager – Geospatial	GIS support
James Puckett	LBG	Practice Lead – Geospatial Analysis & Cartography	Siting support, GIS Analysis and Mapping
Brad Fine	LBG	Environmental Planner	Siting support, public outreach support and logistics, Engineering
Linda Green	LBG	GIS Specialist	GIS Analysis and Mapping, public outreach
Chris Flannagan	LBG	Environmental Scientist	Soils and Geology
Josh Schanbel	LBG	Environmental Planner	Visual and Recreational Resources
Camilla Deiber	LBG	Cultural Resource Specialist	Architectural resources
Tina Fortugno	LBG	Cultural Resource Specialist	Archaeological resources
Laura Totten	LBG	Environmental Scientist	Wildlife and habitat and sensitive species
Mike Snyder	LBG	Environmental Scientist	Water resources
Neeli Landon	LBG	Communications Specialist	Public outreach

ROUTING TEAM			
Member	**Affiliation**	**Title**	**Specific Role**
Phil Robertson	POWER Engineers	Engineer	Siting support and engineering

APPENDIX B:

GIS DATA SOURCES

Category	Definition	Data Source	Last Updated
Aerial Photography			
National Agricultural Imagery	Missouri NAIP 2014	The National Agricultural Imagery Program (NAIP) obtains aerial imagery during agricultural growing seasons. The most current imagery for the state of Missouri when the project began was taken in 2008. Imagery flown in 2010, 2012, and 2014 was used once it became available. Imagery is collected at the spatial resolution of one square meter and with the spectral resolution as natural color.	Summer 2014
Hydrology			
Streams	National Hydrography Dataset flowlines	A statewide subset of the 2015 National Hydrography Dataset (NHD) was downloaded from the U.S. Department of Agriculture's Natural Resources Conservation Service geospatial data gateway. Feature classes used for calculations included canal/ditch, stream/river (intermittent and perennial), artificial path, and any named features. A member of the routing team verified each stream/river crossing point using 2014 NAIP imagery.	May 2015
Water bodies	National Hydrography Dataset waterbodies	A statewide subset of the 2015 National Hydrography Dataset (NHD) was downloaded from the U.S. Department of Agriculture's Natural Resources Conservation Service geospatial data gateway.	May 2015
Wetlands	National Wetlands Inventory	National Wetland Inventory (NWI) data was downloaded from the U.S. Fish and Wildlife Service's (USFWS) website.	October 13, 2015
Floodplains	100 and 500-year floodplains	The Federal Emergency Management Agency (FEMA) provides digital geospatial data in their Flood Map Service Center. Floodplain data for Missouri was downloaded March 15, 2016. Where possible, unmapped flood areas near the Missouri River crossing were digitized from georeferenced FIRMettes. Floodplain data provided by the Illinois Geospatial Data Clearinghouse was used to approximate the length of floodplains crossed by potential routes on the Illinois side of the Mississippi River.	March 15, 2016

Protected and Public Lands			
Public and Conservation Lands	Local, private, state, and federally owned lands	This data layer represents features from a wide variety of sources, including the U.S. Geological Survey's Protected Areas Database (PADUS v1.3); U.S. Army Corps of Engineers; National Resource Conservation Service; U.S. Fish and Wildlife Service; U.S. Forest Service; The Nature Conservancy; National Conservation Easement Database; Illinois Department of Natural Resources; Illinois Parks and Recreation; Illinois Nature Preserve Commission; Illinois State Geological Survey; Missouri Department of Natural Resources; Missouri Department of Conservation; Missouri Spatial Data Information Service, Indiana Department of Natural Resources; Kansas Department of Wildlife, Parks, and Tourism; Kansas Data Access and Support Center; Kansas Parks and Recreation Association; and many counties and municipalities. Where possible, the boundaries of these protected areas have been edited to match parcel boundaries provided by the counties in the study area.	March - May 2016
Sensitive Species and Habitat			
Indiana Bat and Long-Eared Bat Habitat	Potential habitat crossed by route	The United States Fish and Wildlife Service (USFWS) publishes a list of Federally-Listed Threatened, Endangered, Proposed, and Candidate species by county for Missouri. Because all study area counties are listed as potential habitat for the Indiana Bat and the Long-Eared Bat, and all study area counties except Buchanan are listed as potential habitat for the Gray Bat, habitat for these species was calculated using Forest and Forested Riparian areas as determined by the Photo-Interpreted Land Cover dataset.	May 2016
Heritage Hotspot	Hotspot length crossed	Heritage Hotspot data was provided by the Missouri Department of Conservation and is part of the Comprehensive Wildlife Strategy (CWS) project data. The CWS data description says that hotspots "represent areas with a concentration of species of conservation concern."	April 2006
Illinois Natural Areas Inventory, Threatened and Endangered Species, Illinois Nature Preserves Commission sites		The Illinois Department of Natural Resources (IDNR) provided shapefiles of threatened/endangered species, Illinois Natural Areas Inventory sites, and Illinois Nature Preserves Commission sites. This data was used to analyze potential impacts to protected species and protected areas at the Mississippi River crossing locations.	September 25, 2014
Important Bird Areas (IBA)		The MDC Comprehensive Wildlife Strategy project provided data showing areas identified as Important Bird Areas by the Missouri Audubon society. Important Bird areas provide crucial habitat for species of conservation concern and avian species vulnerable due to their limited range or high congregation density.	May 5, 2016

Soils and Land Use			
Karst		Data depicting regions of karst topography were acquired from the USGS (via the National Atlas Map).	2004
NLCD Land Cover		The National Land Cover Database 2011 (NLCD 2011) compiled by the Multi-Resolution Land Characteristics (MRLC) Consortium (including the U.S. Geological Survey, Environmental Protection Agency, U.S. Forest Service, National Oceanographic and Atmospheric Association, National Aeronautics and Space Administration, Bureau of Land Management, National Park Service, Natural Resource Conservation Service, and the U.S. Fish and Wildlife Service). NLCD 2011 products include 16 classes of land cover from Landsat satellite imagery.	2011
Steep Slopes	Slopes > 20%	Slopes (in percent) were derived from a digital elevation model (DEM) consisting of terrain elevations for ground positions at regularly spaced horizontal intervals (10 meters). The data used for this analysis was derived from the National Elevation Dataset (NED) prepared by the USGS.	2009
Human Environment			
Residences	Residences within 250, 500, and 1000'	Residences were digitized using high resolution aerial image interpretation and verified through field reconnaissance. Aerial imagery provided by the National Agricultural Imagery Program (2014).	May 4, 2016
Schools, Churches, Cemeteries	Features within 1000 feet of route	The locations of churches, schools, and cemeteries were derived from the United States Geological Survey's Geographic Names Information System (GNIS) and augmented through high resolution aerial photo interpretation, field reconnaissance and public outreach efforts. The GNIS database serves as the Federal Government's repository of information regarding feature name spellings and applications for features in United States and its Territories. The names listed in the inventory are often published on Federal maps, charts, and in other documents and have been used in emergency preparedness planning, site-selection and analysis, genealogical and historical research, and transportation routing. Through field reconnaissance, the Routing Team recorded local schools, churches, and cemeteries to augment and verify this data layer.	February 1, 2016
Parcels	Tax parcel boundaries	The routing team contacted counties in the study area (Buchanan, Clinton, Caldwell, Livingston, Carroll, Chariton, Macon, Randolph, Audrain, Shelby, Monroe, Marion, Ralls, Pike) and purchased parcel data during April, May, and June 2013. All counties except for Ralls County provided digital GIS parcel boundary data and associated ownership information. Ralls County provided scans of parcel maps and a spreadsheet with property owner name and address information.	April - June 2013

Household Density		Household density was derived at the census block level from census population data obtained from the US Census Bureau (2010).	2010
Pivot Irrigation Systems	Pivots impacted	Pivot irrigation systems were digitized using high resolution aerial image interpretation. Members of the public were also encouraged to provide information about existing or planned pivot irrigation systems on their land, and this data aided in digitizing and verifying pivot locations. A pivot is considered potentially impacted when a potential route crosses more than 1,500 feet of irrigated area in a single span.	May 4, 2016
Energy Infrastructure			
Transmission Lines		Information on existing transmission lines was collected from Platts Transmission Lines geospatial data layer. The information was augmented through aerial photo interpretation and field review.	May 4, 2016
Oil and Gas Pipelines		Major natural gas and oil pipeline in formation was obtained through the EV Energy Map of North America. Spatial accuracy of the data was augmented through field review of pipeline line corridors, and pipeline ownership information was improved by comparison with the National Pipeline Mapping System online viewer.	May 4, 2016
Oil and Gas Wells		The Missouri Department of Natural Resources, Division of Geology and Land Survey, and Geological Survey Program maintain a list of permitted oils and gas well information within the State of Missouri.	December 17, 2014
Transportation			
Major Roads	Interstates, U.S. Highways, State Highways	Major roads data was prepared by the Environmental Systems Research Institute (ESRI), (2013) Redlands, California, USA.	2013
Airport and Heliport Notification Zones	Airport points and FAA Notification Zone	The location of airports and heliports was gathered from FAA databases, aerial imagery interpretation, field reconnaissance, public input, and navigational charts. An approximation of the air navigation obstruction zone was developed based on the Code of Federal Regulations (CFR) Title 14 Part 77, (Aeronautics and Space, Objects affecting navigable airspace). This approximation was calculated based on aerial interpretation of runway length, the average height of the proposed transmission towers, and approach zone formulas for airports and heliports in the CFR. Note: this is a rough approximation performed based on aerial imagery interpretation without the inclusion of topographic effects or precise knowledge of runway length.	March 21, 2016
Recreation			
Recreation Trails		The Missouri Department of Conservation publishes data showing recreational trails in the state.	October 2010

Scenic Byways		Information and driving directions from the National Scenic Byways Program enabled mapping of scenic and historic byways in Missouri, Illinois, and Indiana.	March 2016
Historic Resources			
Historic and Archaeological Sites		The Missouri State Historic Preservation Office provided shapefiles showing locations of sites and districts listed on the National Register of Historic Places and a geodatabase with spatial and tabular data for archaeological sites across the state.	August 2013

APPENDIX C:

FEDERAL AND STATE AGENCY COORDINATION

April 14, 2016

Robert Stout
Department of Natural Resources
Chief of Policy
P.O. Box 176
Jefferson City, MO 65012

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Robert Stout:

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600kV high-voltage direct current (HVDC) transmission line project known as the Grain Belt Express Clean Line (Project). The proposed Project is designed to deliver up to 4,000 megawatts (MW) of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana, and markets farther east.

Since we last discussed the project, Illinois has joined Kansas and Indiana in approving the Grain Belt Express Clean Line. We respectfully would like to request a web meeting with you to provide an update on the status of the Project and the next steps involved in seeking approval from the Missouri Public Service Commission. Tentatively, we would like to host this webinar during the last week of April, but we are flexible based on your availability. A member of the routing team will contact you soon to schedule the meeting and provide additional information.

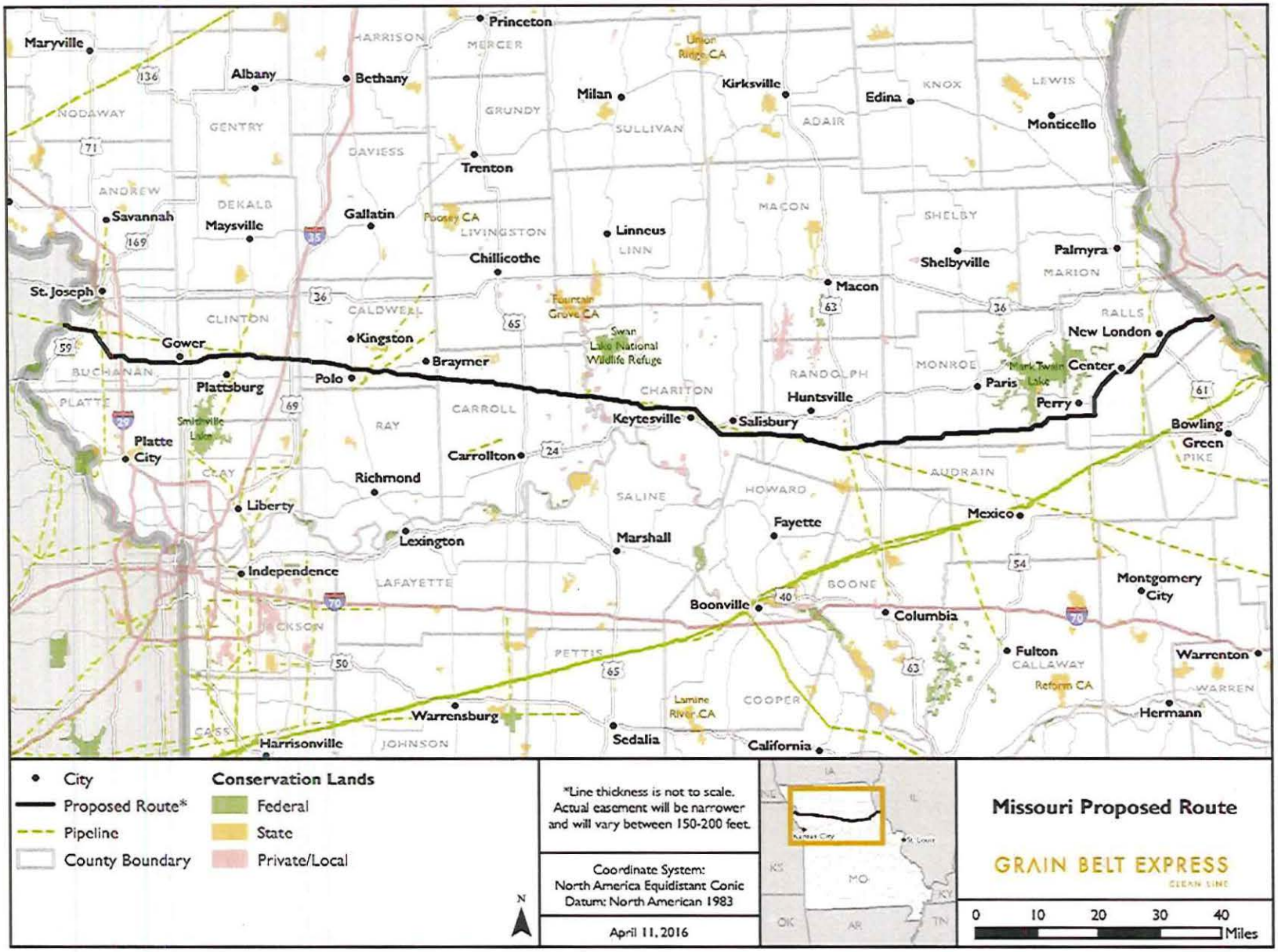
The currently proposed Project will begin with a converter station in Ford County, Kansas, and end in western Indiana near the Sullivan substation in Sullivan County, Indiana. A mid-point converter station will be located in Ralls County, Missouri. The estimated length of the transmission line is roughly 780 miles, and would include approximately 200 miles of route in MO. An overview of the project route in Missouri is provided as an attachment.

We look forward to discussing the project updates with you. If you require further information or have questions regarding this matter, please feel free to contact Jay Puckett at jpuckett@louisberger.com or 202-303-2789. For general project information, please visit the project website at www.grainbeltexpresscleanline.com or www.cleanlineenergy.com.

Sincerely,

John Kuba
Director, Environment Affairs
Clean Line Energy Partners
Work: 832-319-6361
Cell: 713-805-4829
jkuba@cleanlineenergy.com

Cc: Mark Lawlor, Clean Line Energy Partners
Jason Thomas, Clean Line Energy Partners
Jay Puckett, Louis Berger


Princeton
Maryville
Albany
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Milan
Kirksville
Edina
Monticello
Trenton
Savannah
Maysville
Gallatin
Linneus
Chillicothe
Shelbyville
Palmyra
St. Joseph
Macon
Gower
Kingston
Braymer
Polo
Plattsburg
Keytesville
Salisbury
Huntsville
Paris
Perry
New London
Center
Bowling Green
Platte City
Carrollton
Richmond
Liberty
Lexington
Marshall
Fayette
Mexico
Independence
Boonville
Columbia
Montgomery City
Fulton
Warrenton
Warrensburg
Sedalia
California
Hermann
Harrisonville
HARRISON
MERCER
GRUNDY
SULLIVAN
ADAIR
KNOX
LEWIS
NODAWAY
GENTRY
DAVIESS
ANDREW
DEKALB
LIVINGSTON
LINN
MACON
SHELBY
MARION
CLINTON
CALDWELL
BUCHANAN
PLATTE
CLAY
RAY
CARROLL
CHARITON
RANDOLPH
MONROE
RALLS
PIKE
AUDRAIN
SALINE
HOWARD
LAFAYETTE
BOONE
CALLAWAY
COOPER
PETTIS
JOHNSON
CASS
WARREN
Union Ridge CA
Fountain Grove CA
Swan Lake National Wildlife Refuge
Mark Twain Lake
Smithville Lake
Lamine River CA
Reform CA
City
Proposed Route*
Pipeline
County Boundary
Conservation Lands
Federal
State
Private/Local
N
*Line thickness is not to scale. Actual easement will be narrower and will vary between 150-200 feet.
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April 11, 2016
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Missouri Proposed Route
GRAIN BELT EXPRESS
CLEAN LINE
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Miles

April 14, 2016

Brandi Baldwin, P.E.
Missouri Department of Transportation
Northeast District
1711 Highway 61 South
Hannibal, MO, 63401

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Brandi Baldwin, P.E.:

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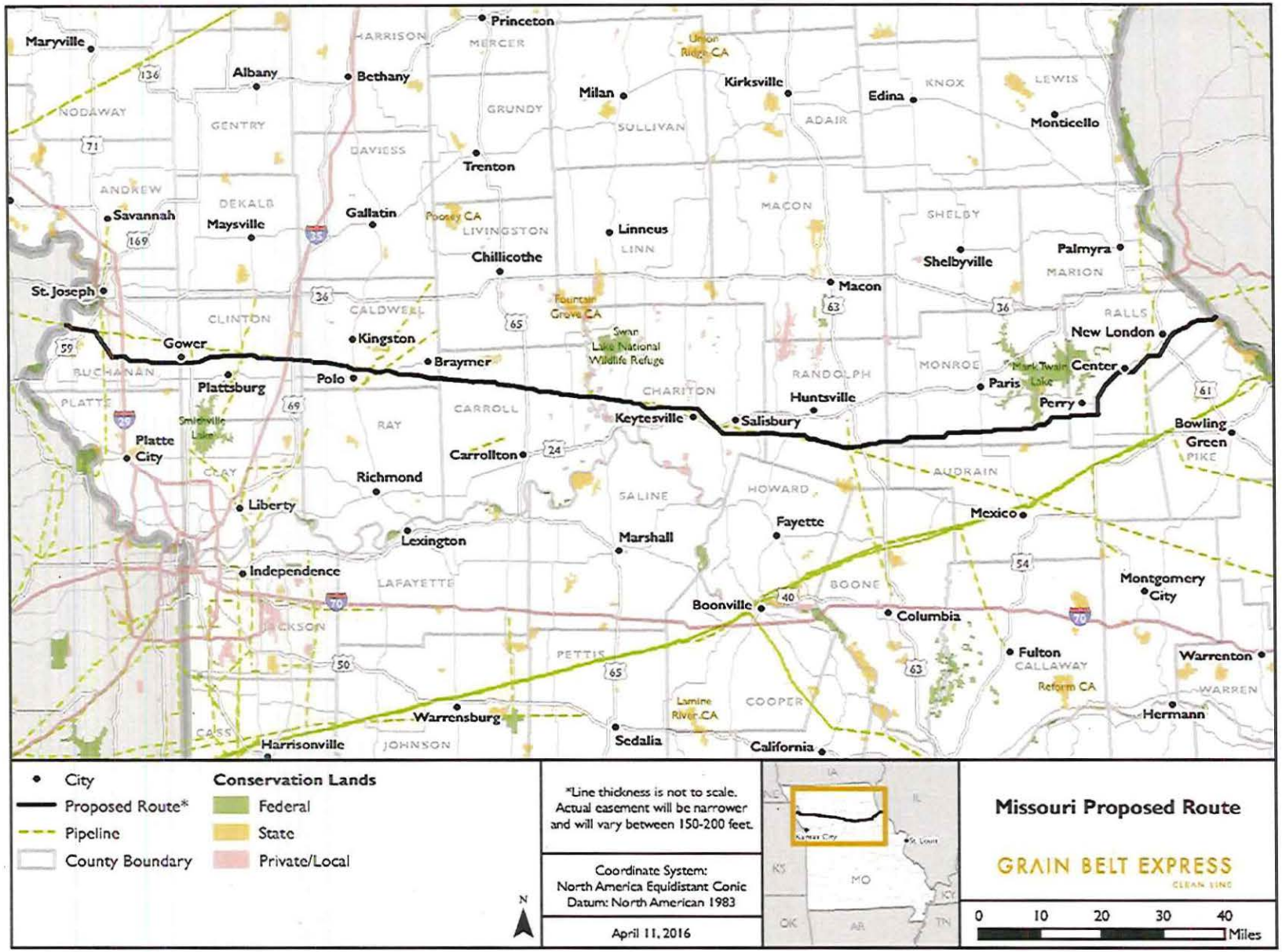
Sincerely,

John Kuba
Director, Environment Affairs
Clean Line Energy Partners
Work: 832-319-6361
Cell: 713-805-4829
jkuba@cleanlineenergy.com

Cc: Mark Lawlor, Clean Line Energy Partners
Jason Thomas, Clean Line Energy Partners
Jay Puckett, Louis Berger


Princeton
Maryville
Albany
Bethany
Milan
Kirksville
Edina
Monticello
Trenton
Savannah
Maysville
Gallatin
Linneus
Chillicothe
Shelbyville
Palmyra
St. Joseph
Macon
Gower
Kingston
Braymer
New London
Polo
Plattsburg
Huntsville
Paris
Center
Perry
Keytesville
Salisbury
Bowling Green
Platte City
Carrollton
Richmond
Liberty
Fayette
Mexico
Lexington
Marshall
Independence
Montgomery City
Boonville
Columbia
Fulton
Warrenton
Warrensburg
Sedalia
California
Hermann
Harrisonville
HARRISON
MERCER
GRUNDY
SULLIVAN
ADAIR
KNOX
LEWIS
NODAWAY
GENTRY
DAVIESS
ANDREW
DEKALB
LIVINGSTON
LINN
MACON
SHELBY
MARION
CLINTON
CALDWELL
RALLS
BUCHANAN
PLATTE
CARROLL
CHARITON
RANDOLPH
MONROE
RAY
CLAY
SALINE
HOWARD
AUDRAIN
PIKE
LAFAYETTE
BOONE
CALLAWAY
PETTIS
COOPER
WARREN
JACKSON
CASS
JOHNSON
Union Ridge CA
Pooney CA
Fountain Grove CA
Swan Lake National Wildlife Refuge
Mark Twain Lake
Smithville Lake
Lamine River CA
Reform CA
City
Proposed Route*
Pipeline
County Boundary
Conservation Lands
Federal
State
Private/Local
N
*Line thickness is not to scale. Actual easement will be narrower and will vary between 150-200 feet.
Coordinate System: North America Equidistant Conic Datum: North American 1983
April 11, 2016
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Kansas City
St. Louis
Missouri Proposed Route
GRAIN BELT EXPRESS
CLEAN LINE
0 10 20 30 40
Miles

April 14, 2016

Adam Watson, P.E.
Missouri Department of Transportation
NW District
3602 North Belt Highway
St. Joseph, MO 65012

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Adam Watson, P.E.:

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600kV high-voltage direct current (HVDC) transmission line project known as the Grain Belt Express Clean Line (Project). The proposed Project is designed to deliver up to 4,000 megawatts (MW) of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana, and markets farther east.

Since we last discussed the project, Illinois has joined Kansas and Indiana in approving the Grain Belt Express Clean Line. We respectfully would like to request a web meeting with you to provide an update on the status of the Project and the next steps involved in seeking approval from the Missouri Public Service Commission. Tentatively, we would like to host this webinar during the last week of April, but we are flexible based on your availability. A member of the routing team will contact you soon to schedule the meeting and provide additional information.

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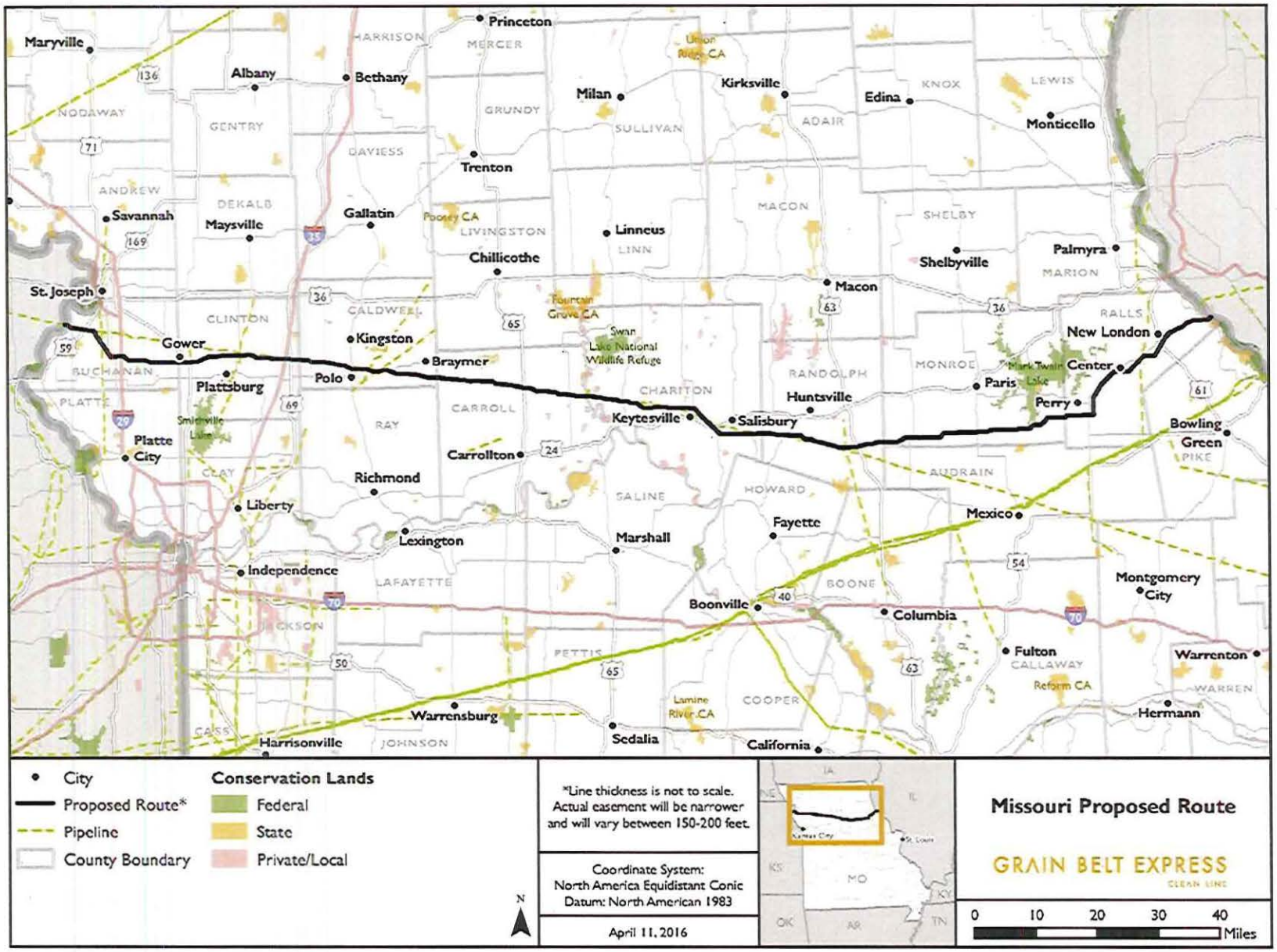
We look forward to discussing the project updates with you. If you require further information or have questions regarding this matter, please feel free to contact Jay Puckett at jpuckett@louisberger.com or 202-303-2789. For general project information, please visit the project website at www.grainbeltexpresscleanline.com or www.cleanlineenergy.com.

Sincerely,

John Kuba
Director, Environment Affairs
Clean Line Energy Partners
Work: 832-319-6361
Cell: 713-805-4829
jkuba@cleanlineenergy.com

Cc: Mark Lawlor, Clean Line Energy Partners
Jason Thomas, Clean Line Energy Partners
Jay Puckett, Louis Berger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Miles

April 14, 2016

Janet Sternburg
Missouri Department of Conservation
Policy Coordinator
P.O. Box 176
Jefferson City, MO 65012

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Janet Sternburg:

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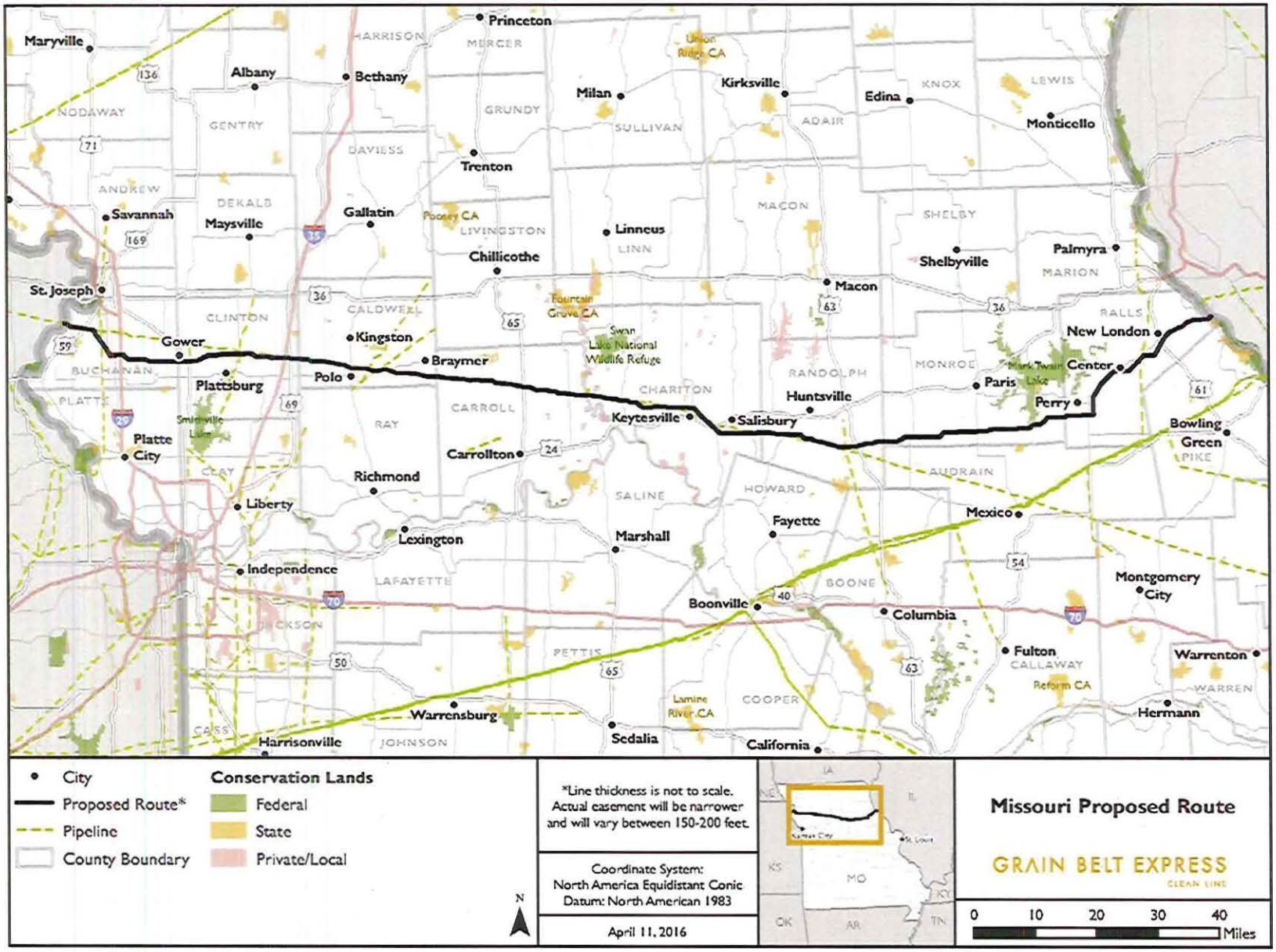
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April 14, 2016

Judith Deel
Missouri Historic Preservation Office
P.O. Box 176
Jefferson City, MO 65012

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Judith Deel:

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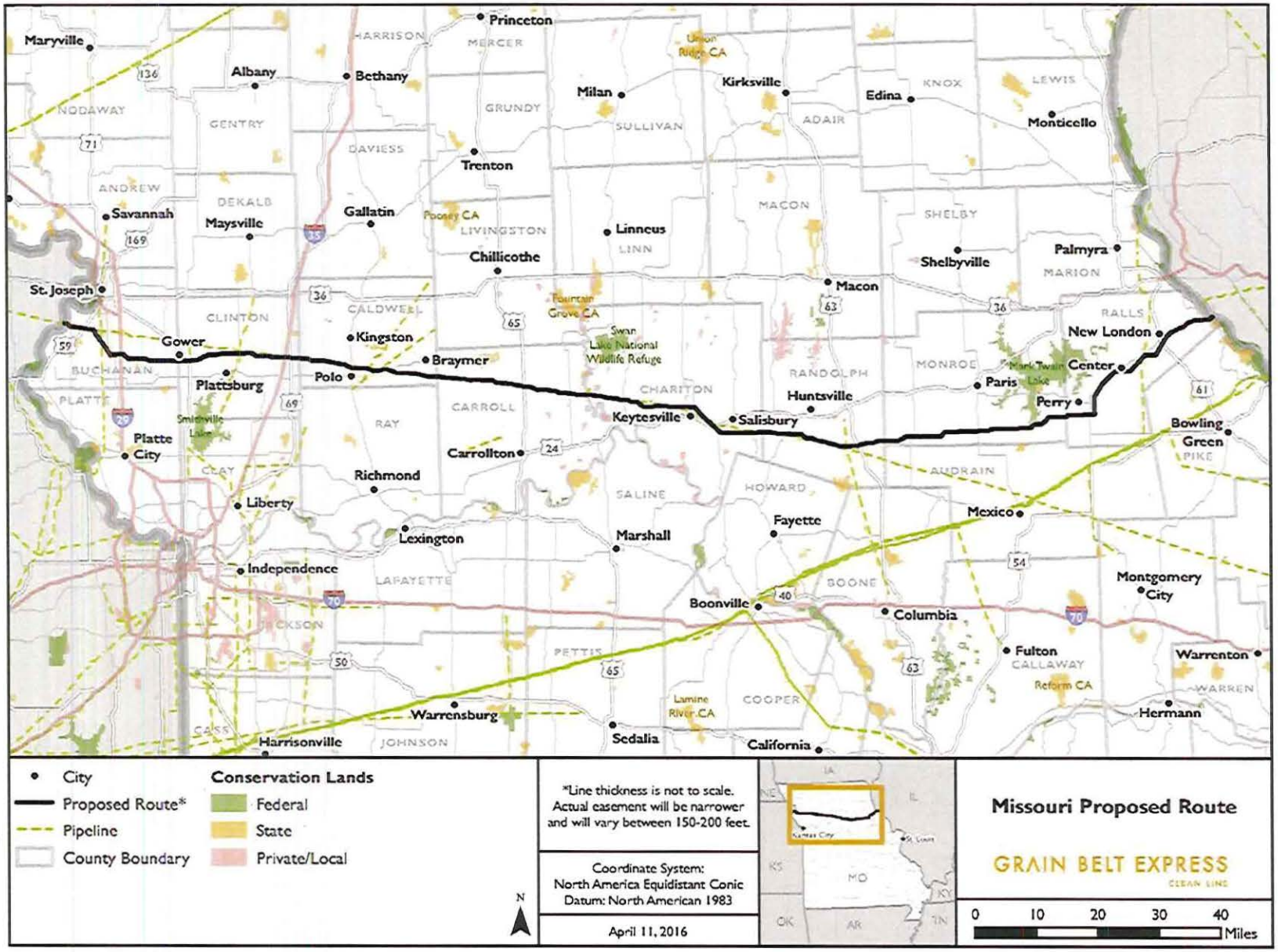
Jay Puckett, Louis Berger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April 14, 2016

Kailey Rippen,
U.S. Army Corps of Engineers, Kansas City District
Regulatory Division
Attn: OD-R, Rm 706
601 E. 12th Street
Kansas City, MO 64106

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Kailey Rippen:

Clean Line Energy Partners LLC (Clean Line) is actively developing and planning construction of a +/- 600kV high-voltage direct current (HVDC) transmission line project known as the Grain Belt Express Clean Line (Project). The proposed Project is designed to deliver up to 4,000 megawatts (MW) of wind-generated electricity from the wind-rich region of southwestern Kansas to Missouri, Illinois, Indiana, and markets farther east.

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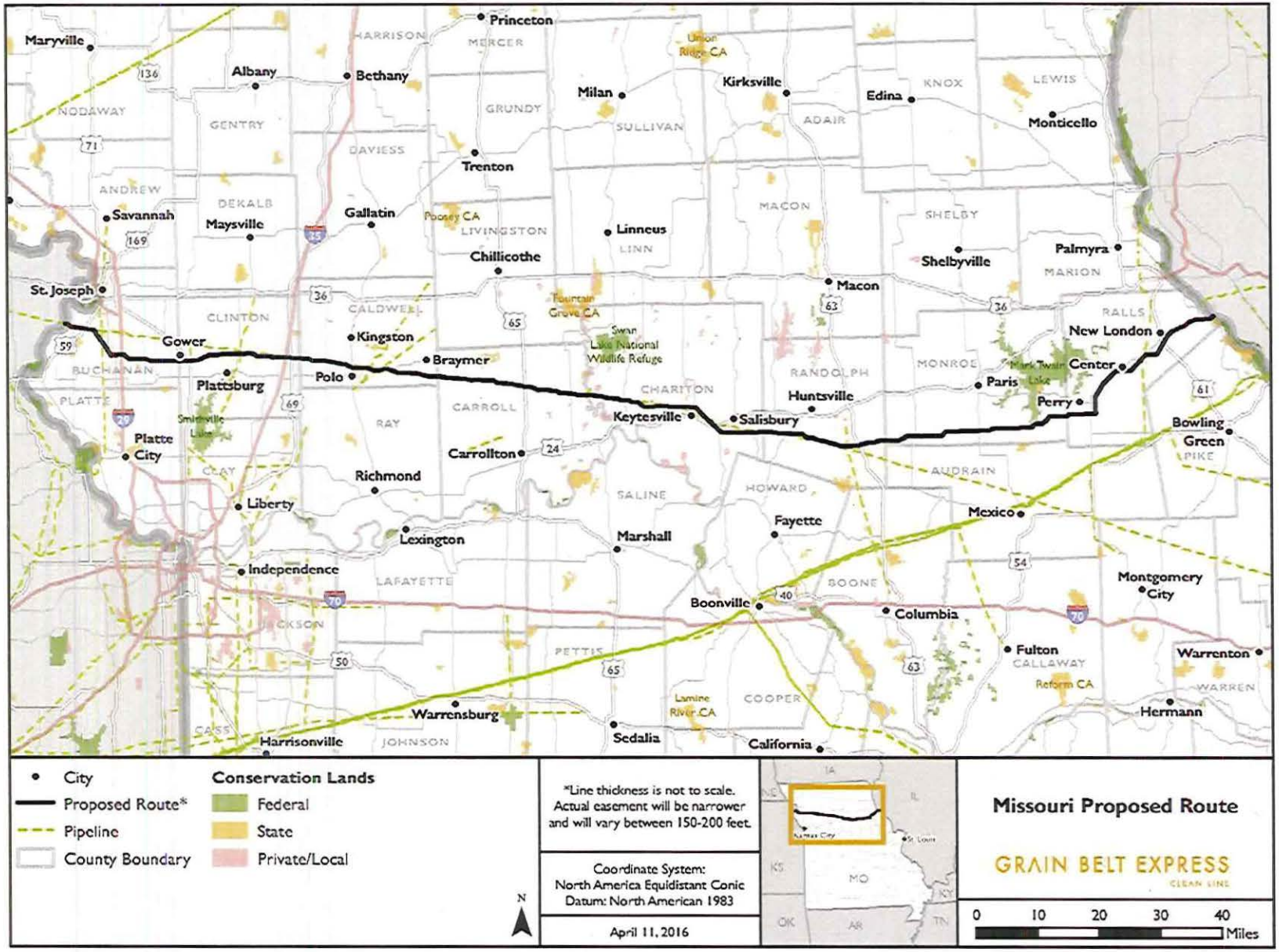
Jason Thomas, Clean Line Energy Partners
Jay Puckett, Louis Berger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April 14, 2016

Jennifer Brown
U.S. Army Corps of Engineers, St. Louis District
1222 Spruce Street
St. Louis, MO 63103

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Jennifer Brown:

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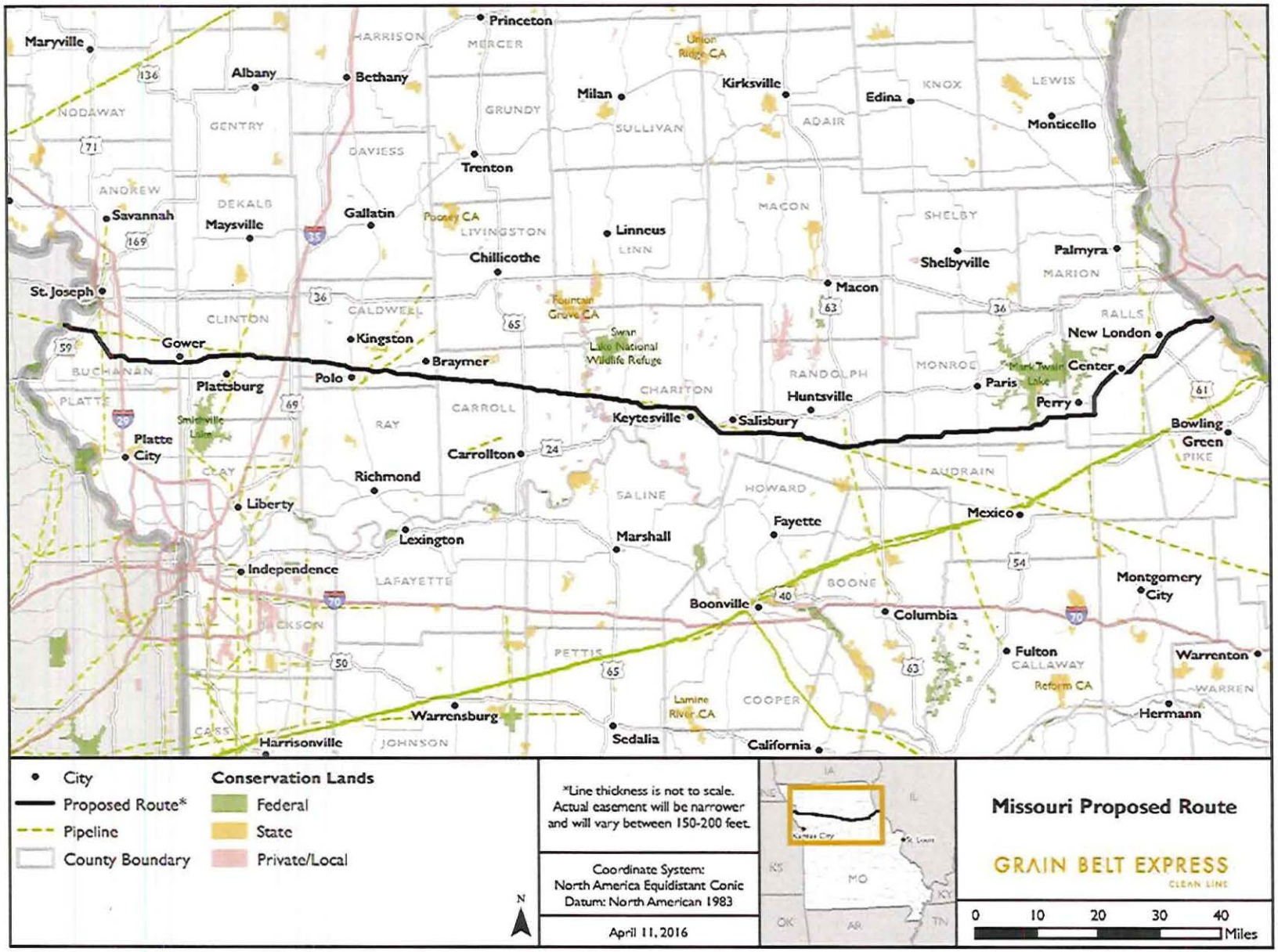
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Amy Salveter
Columbia Ecological Services Field Office
U.S. Fish and Wildlife Service
101 Park DeVille Dr., Suite A
Columbia, MO 65203-0057

RE: Proposed Grain Belt Express Clean Line Transmission Project

Dear Amy Salveter:

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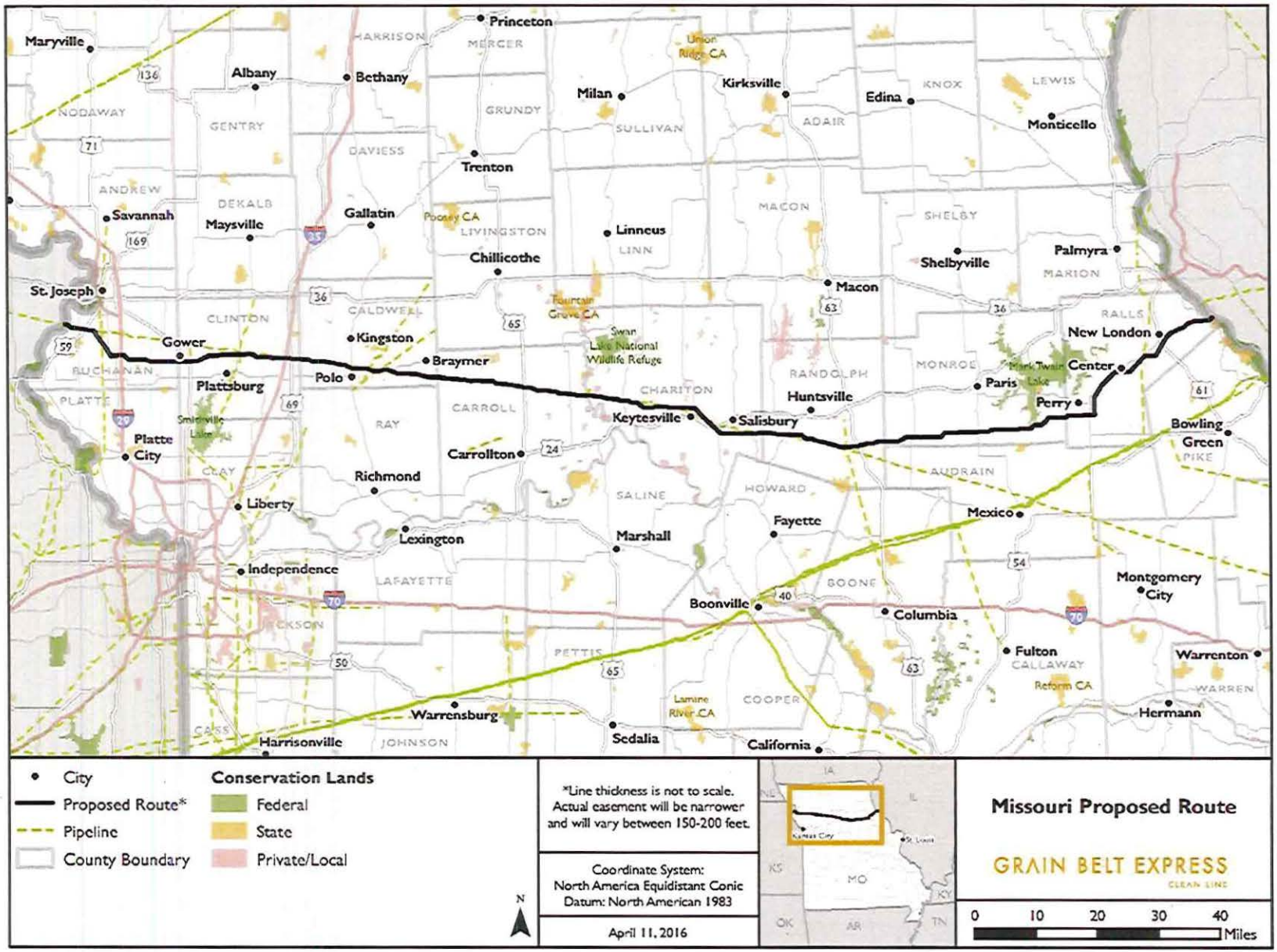
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JAMES PUCKETT, Manager, Geospatial Analysis and Cartography, Power and Energy

Mr. Puckett is an environmental planner and the Manager of Louis Berger's Geospatial Analysis and Cartography practice. He specializes in electric transmission siting studies, infrastructure planning efforts, GIS applications development, and information management efforts for major infrastructure development projects. Mr. Puckett has experience with Geographic Information Systems (GIS), public involvement, web mapping development, field data collection, IT instruction and training, and SharePoint development. He has experience in all aspects of transmission line route selection and has recent project experience working on several major transmission infrastructure development projects for Dominion Virginia Power, Clean Line Energy, Allegheny Energy, American Electric Power (AEP), FirstEnergy, and PPL Electric Utilities.

FIRM Louis Berger

EDUCATION

- MA, Geography 2008
- MPA 2008
- BA, Geography 2004

CERTIFICATIONS

- Certified GIS Professional

RELEVANT PROJECT EXPERIENCE
ELECTRIC UTILITIES

SMART PATH Transmission project, New York Power Authority (NYPA), New York.
Siting specialist and GIS lead for the permitting and approval of an 85 mile 230 kV transmission line from the St. Lawrence Moses Power Station to Adirondack Substation in New York. Oversaw GIS data management and analysis, participated in a siting review, assisted in preparation of New York Article VII application on behalf of NYPA.

Competitive Bid Transmission Project, Confidential Client.
Siting specialist and GIS lead for the siting of a 42 mile 345 kV transmission line in Indiana and Kentucky. Oversaw GIS data collection, siting efforts, and preparation of a siting report for a competitive bid transmission proposal to Midcontinent Independent System Operator (MISO).

Competitive Bid Transmission Project, Confidential Client.
Siting specialist and GIS lead for the siting of 62 miles of 115 kV, 230 kV, and 345 kV transmission lines in New York. Oversaw GIS data collection, siting efforts, and preparation of a siting report for a competitive bid transmission proposal to New York Independent System Operator (NYISO).

R-Project Habitat Conservation Plan EIS, U.S. Fish and Wildlife Service, Nebraska.
Siting specialist and GIS lead for the siting of a 135 mile 345 kV transmission line in Nebraska as an alternative evaluated by U.S. Fish and Wildlife Service in the R-Project Habitat Conservation Plan EIS. Oversaw GIS data collection, siting efforts, and preparation of a siting report.

Competitive Bid Transmission Project, Confidential Client.
Siting specialist and GIS lead for the siting of 24 miles of 115 kV transmission lines in Kansas. Oversaw GIS data collection and participated in the siting efforts and preparation of a siting report for a competitive bid transmission proposal to Southwest Power Pool (SPP).

Grain Belt Express Clean Line, Clean Line Energy.
GIS lead and siting specialist for the siting of 780 miles of 600 kV HVDC transmission line from western Kansas to Indiana. Participated in supporting agency coordination, public outreach, and siting efforts throughout the project.

Environmental Impact Statement for Acquisition of FPL Lands in the East Everglades Expansion Area of the Everglades National Park, NPS, Florida

Provided siting and analysis in transmission line routing effort on behalf of The National Park Service (NPS) to support an EIS analyzing a proposal to exchange or acquire Florida Power & Light Company (FPL) land within Everglades National Park for development of three transmission lines (one 500 kV and two 230 kV). Supported the transmission line corridor alternate routing study to develop a transmission line corridor that was buildable and minimized adverse impacts to the Everglades National Park, environmental resources, and human resources. Provided GIS analysis, siting support, and expert witness testimony for the preparation of the alternate corridor selection study.

Greater Fort Wayne Area Reliability Project, AEP, Fort Wayne, IN.
Siting team member for two projects providing siting and permitting of 15 miles of double circuit 345/138 kV transmission line and ~15 miles of 765 kV transmission line to support Indiana Michigan Power Company, a subsidiary of AEP.

Wythe Area Improvement Project, AEP, Wytheville, Virginia
Siting and environmental analysis team member for a ~20 mile double circuit 138 kV transmission line from the Jacksons Ferry Substation to the Wythe Substation, in Southern Virginia with one circuit terminating at the Progress Park Substation.

Allegheny Energy/American Electric Power, Potomac Appalachian Transmission Highline (PATH) Siting and Environmental Study, Virginia and West Virginia.
GIS and data management expert for the route selection studies and permitting efforts associated with the West Virginia and Virginia portions (230 miles) of the PATH 765 kV transmission line. Project extended across three states, from just north of Charleston, West Virginia, through Frederick, Virginia and into Kemptown, Maryland and included the siting of a 500/765 kV substation. Before PJM demand projections removed the project from further consideration, all siting studies were completed, direct testimony was submitted, and field surveys for cultural resources, wetlands, and T&E species were completed for more than half of the project.

Confidential Transmission Feasibility Study, AEP, Ohio.
Siting specialist for a feasibility study investigating the potential siting and permitting constraints, opportunities, timelines, and costs for six different potential major transmission connections.

Meadow Brook to Loudoun 500 kV Transmission Line Permitting, Dominion Virginia Power, Virginia.
GIS team member for permitting and regulatory compliance for 62 miles of 500 kV line. This effort included the preparation of two Environmental Assessments under National Environmental Policy Act (NEPA) compliance for the line's crossing of two National Parks; the Appalachian Trail and the Manassas National Battlefield.

Osage - Whiteley 138 kV Transmission Project, Allegheny Energy, Pennsylvania and West Virginia.
GIS and siting expert for the route selection studies and permitting efforts associated with this interstate project involving 15 miles of 138 kV transmission line between Pennsylvania and West Virginia.

Montville Whippany 115/230 kV Project, First Energy, New Jersey.
GIS and siting expert for siting of a 230 kV connection between the Montville and Whippany Substations in central NJ. Efforts included data management, GIS support, and siting for the 10-15 mile 230 kV project.

Red Bank 230 kV Project, First Energy, New Jersey.

GIS and siting expert for siting of a 230 kV connection between the Montville and Whippany Substations in central NJ. Efforts included data management, GIS support, and siting for the ~15 mile 230 kV project.

Oceanview – Larabee 230 kV Project, First Energy, New Jersey.
GIS and siting expert for siting of ~15 miles of 230 kV line. Efforts included data management, GIS support, and siting for the 15 mile 230 kV project.

Hooper Springs Environmental Impact Statement, Bonneville Power Administration, Idaho.
GIS lead for a 32-mile 115 kV transmission line for the Hooper Springs EIS for the Bonneville Power Administration. Responsible for management of mapping efforts, data management, SharePoint development, and avian risk collision model creation.

FEDERAL AGENCIES

Environmental Indefinite Delivery Indefinite Quantity (IDIQ) for Missouri River Ecosystem Restoration Plan and EIS, USACE, Kansas City.
GIS team member supporting the USACE in development of a research compendium to support the development of a Restoration Management Plan for the Missouri River Recovery Program.

Anacostia Subwatershed Provisional Restoration Project Identification and Inventory, USACE, District of Columbia and Maryland.
GIS and technical lead for site identification and mapping in the Anacostia Subwatershed Provisional Restoration Project. Responsible for coordinating the site identification process, designing and maintaining automated data collection application, and creating a database for streamlining data input and report production.

Base Realignment and Closure Environmental Compliance (BRAC), Department of Defense, New York.
GIS team member responsible for site analysis and map creation for the West Point Base Realignment and Closure (BRAC). Involved in integrating design alternatives with existing GIS data layers, preparing GIS data for use in viewshed analysis, and creating maps for use in reports.

Aid the MDEQ for NRDA-OPA of 1990, Mississippi Department of Environmental Quality, Mississippi.
SharePoint developer and trainer responsible for developing and managing a SharePoint site for use by the Technical Working Groups involved in the Natural Resource Damage Assessment (NRDA) for the State of Mississippi occurring as a result of the Deepwater Horizon Gulf Oil Spill. The site was built based on custom requirements to provide archived documentation for the NRDA process for 15 Technical Working Groups. On-site training and instruction materials were provided to the working groups.

Defense Policy Review Initiative Planning Group Support Services, U.S. Marine Corps, Marine Corps Air Station, Iwakuni, Japan.
SharePoint developer and trainer assisting in the development of a custom SharePoint solution to provide management tools for more than 130 concurrent construction projects on the Marine Corps Air Station in Iwakuni, Japan. Provided three weeks of on-site development and training sessions with the Marine Corps and contract staff.

OTHER UTILITIES

Fiber Optic Permitting and Design Project, Confidential Client, Austin, TX
Project Manager and Technical Director on a permitting and design project for underground installation of 1,200 miles of new fiber optic network in a major US city (population ~2 million). This interdisciplinary project requires the preliminary design of the proposed alignment within dense urban conditions, verification of potential conflicts with existing utilities using available GIS and as-built information, and preparation of city permit application documents including detailed plan and profile drawings of proposed underground fiber conduit installations. Responsibilities included initial project setup and methodology design for all portions of the project, technical supervision for GIS, CAD and engineering staff to meet frequently changing project requirements, development of training materials for new staff, overall project organization and coordination with the client.

GIS Spatial Realignment of Water System Features, City of Shelby, NC.
GIS technical lead on a project to digitally map the City of Shelby's existing water system. Responsibilities included coordinating survey-grade GPS data collection of the City's 4,200 water system features; integrating hand-drawn block sheets, field collected data, and legacy GIS datasets into a complete and accurate representation of the municipal water system; performing comprehensive quality control in order to ensure model-quality data; and working on-site for geodatabase installation and setup.

Stormwater GIS Conversion, City of Greensboro, NC.
GIS team member on a data migration project for the City of Greensboro's existing stormwater utility system. Assisted in a review of the City's existing stormwater inventory, converted legacy databases to a format compatible with ArcGIS software, and improved accuracy and functionality of the database by integrating data from hand-drawn block sheets, establishing feature photo hotlinks, and performing quality control to ensure feature connectivity.

GIS Services for Utility Infrastructure, City of Burlington, NC.
GIS team member on a project involving conversion of the City of Burlington's water and sewer data from AutoCAD to GIS. Responsible for integrating comments and feature data into GIS, assisting in establishment of utility geodatabases to meet current and future data management requirements, and creating custom tools to automate data migration.

Water System Data Collection, City of Greensboro, NC.
GIS team member on a project involving paper and CAD to GIS conversion of the City of Greensboro's water utility system. Responsible for reviewing data from 20,000 hand-drawn block sheets, integrating survey-grade GPS field data with legacy utility department datasets, and performing complex quality control that ensured seamless import of more than 60,000 features into hydraulic modeling software.

Sanitary Sewer GPS Data Collection, City of Greensboro, NC.
GIS team member on a project to integrate new sanitary sewer data with existing sewer GIS database for the City of Greensboro. Responsibilities included assisting in GPS field data collection, training surveying staff on custom designed GIS data entry templates using ruggedized-tablet PCs, and reviewing GPS data points after entry into GIS.

Water System Expansion, Onslow County, NC.
Lead GIS team member on a project to design optimal routes to connect a new above ground storage tank to the existing water utility system in the City of Jacksonville. Responsible for mapping route alternatives, providing support for

system design meetings, and integrating new alternate system designs into existing GIS utility datasets.

Reclaimed Water System Expansion, University of North Carolina at Chapel Hill, NC.
Lead GIS team member on a project to design optimal routes of expansion of the University's reclaimed water system. Provided assistance in analyzing reclaimed water demand scenarios, mapped routing alternatives for proposed infrastructure expansion, and provided maps and graphics throughout the project.

Reclaimed Water System Development, Town of Wendell, NC.
GIS team member on a project to create a reclaimed water utility system for the Town of Wendell. Responsibilities included mapping routes of proposed infrastructure, identifying potential reclaimed water customers, and providing maps and graphics for design meetings and presentations.

Utility Staff GIS training, City of Shelby, NC.
GIS instructor providing a two week on-site GIS training session with the City of Shelby Utility Department staff. Provided customized training and support to the four-person GIS staff and field data collection group on several topics, including network data management, hardware and software troubleshooting, editing within an ArcGIS environment, cartography, and GPS data collection.

ADDITIONAL INFORMATION

Education

MA, Geography, Syracuse University, 2008
Master of Public Administration, Syracuse University, 2008
BA, Geography, University of North Carolina at Chapel Hill, 2004

Registrations/Certifications

Certified GIS Professional (GISP)