Comparative Routing Analysis

Comparative Analysis Process

A comparative analysis is a multi-disciplinary approach that measures the effects of a project and aids selection of a proposed route from a set of alternative routes.

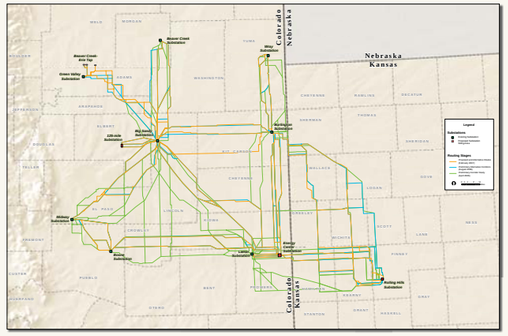
- Step 1: Collect existing information.
- Step 2: Assess each alternative using 47 criteria in seven broad categories:
  - Land Use
  - Engineering
  - Geology and Soils
  - Water Resources
  - Vegetation
  - Wildlife
  - Cultural Resources
- Step 3: Use the criteria in the table below to compare routes.

ENGINEERING
Length (miles)
Structures (number)
Angle structures, total (number)
Transmission line (115kV or higher) crossings (number)
Interstate, U.S., or state highways crossings (number)
Railroad crossings (number)
Length of new roads to be constructed (miles)
Length of existing access (miles)
Length of overland access (miles)
Opportunity - Length within 300 feet of existing transmission lines (Rolling Hills-Energy Center, Rolling Hills-Burlington, Energy Center-Burlington, Energy Center-Lamar, Energy Center-Big Sandy, Big Sandy-Beaver Creek, Burlington-Wray, Burlington-Big Sandy, Big Sandy-Green Valley, Big Sandy-125-mile, Green Valley-Beaver Creek/Erie Tap) (feet)
Opportunity - Length within 0.25-mile of existing transmission lines up to 115-kV (Energy Center-Boone) (feet)
Opportunity - Length within 0.25-mile of existing transmission lines up to 115-kV outside stewardship trust lands and all lines on stewardship trust lands (Midway-Boone, Big Sandy-Midway) (feet)
Constraint - Length within 1-mile of existing 230-kV and higher transmission lines (Energy Center-Boone) (feet)
Constraint - Length within 1-mile of existing 230-kV and higher transmission lines, outside of stewardship trust lands (Midway-Boone, Big Sandy-Midway) (feet)
GEOLOGY & SOILS
Length crossing slopes greater than 15% (miles)
Length crossing slopes greater than 15% (miles)
Length within soil types characterized as highly erodible (water) (miles)
Length within soil types characterized as sandy (miles)
Length within soil types characterized as having low reclamation potential (miles)
WATER RESOURCES
Crossings of perennial streams, lakes, wetlands, riparian areas, seeps, and springs greater than 800 feet (number)
Length within floodplains (miles)
River/perennial stream crossings (number)
VEGETATION
Length within untilled landscapes (miles)
Length requiring removal of trees (miles)
WILDLIFE
Length within big game (antelope, mule deer, white-tailed deer, elk) severe winter range, winter concentration areas, or production areas (miles)
Length within turkey production or roosting areas (miles)
Length within great blue heron nesting or roosting areas (miles)
Length within bald eagle habitats (nesting, roosting, or winter concentration) (miles)
Length within greater and lesser prairie chicken overall range or production areas (miles)
Length within raptor (other than bald eagle) nest buffers (miles)
LAND USE
Length in prime farmland, including prime farmland when irrigated (miles)
Length in irrigated agriculture (miles)
Length in dryland agriculture (miles)
Length in rangeland (miles)
Length following existing linear features (miles)
Structures in (not at edge of) irrigated agriculture fields (number)
Residences within 500 feet (number)
Residences within 0.5-mile (number)
Structures (including residences) to be acquired/relocated (number)
Crossings of (or areas adjacent to) existing or planned subdivisions (number)
Landowners affected (number)
Length within 5,000 feet of a private airport, 7,000 feet of a public airport (including DIA), or 12,000 feet of Pueblo airport (feet)
Existing oil and gas wells within 200 feet (number)
Existing communications towers within 200 feet (number)
Length within conservation areas or easements, stewardship trust lands, recreation areas, wildlife areas, state parks, or other non-wilderness designated areas (miles)
Length crossing state lands (other than designated areas considered above) (miles)
Length crossing BLM lands (miles)
Length within 0.5-mile of town or municipal boundaries (miles)
Length within 0.5-mile (foreground) of a designated scenic area or route (miles)
CULTURAL RESOURCES
Designated or eligible NRHP sites, landmarks, or monuments within ROW (number)

- Step 4: Identify potential proposed and alternative routes based on the lowest level of effects.
- Step 5: Consider overriding concerns (for example, effects to homes) in modifying the choice between proposed and alternative routes.
- Step 6: Present the proposed and alternative routes to the public and agencies to get additional information and comments.

The map below shows each of the major steps in routing the transmission lines that are part of the EPTP, including:

- Preliminary Corridor Study (April 2006)
- Preliminary alternative corridors (August 2006)
- Proposed and alternative routes (February 2007)



Rolling Hills Substation to Energy Center Substation

- The proposed route would affect fewer homes. It also would have fewer effects to soils, vegetation, and wildlife.

Rolling Hills Substation to Burlington Substation

- The proposed route would have fewer effects to water resources, vegetation, wildlife, and engineering. It also minimizes effects to agricultural lands and lesser prairie chicken habitat.

Energy Center Substation to Burlington Substation

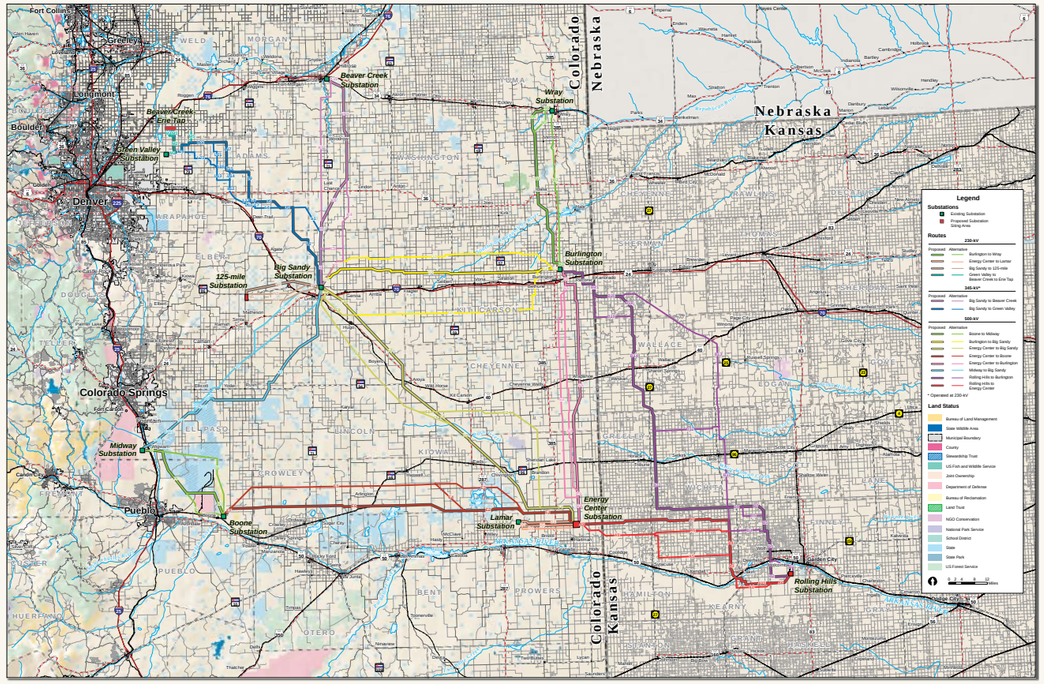
- The proposed route would affect the fewest number of homes, although it would have greater effects to some natural resources and is less desirable from an engineering perspective.

Energy Center Substation to Lamar Substation

- The first proposed route would be more direct, have better access, and affect less prime and irrigated farmland, as well as fewer landowners.
- The second proposed route was chosen because it would affect fewer homes.

Energy Center Substation to Boone Substation

- The proposed route is more favorable for natural resources, land use, and engineering, and would affect far fewer homes.



Energy Center Substation to Big Sandy Substation

- The proposed route would not be visible from the Sand Creek Massacre Site, would avoid many areas of sandy soils, and would affect fewer homes in the Limon area.

Burlington Substation to Big Sandy Substation

- The proposed route would follow an existing transmission line, minimizing disturbance to natural resources, prime farmland, and homes.

Burlington Substation to Wray Substation

- The proposed route would affect fewer homes and would not affect Bonny Lake State Park.

Boone Substation to Midway Substation

- The proposed route would affect fewer homes, avoid sandy soils, and cross the Chico Basin adjacent to the Pueblo Chemical Depot, avoiding a new transmission line across the middle of stewardship trust lands.

Midway Substation to Big Sandy Substation

- The proposed route would stay away from the largest concentrations of homes. It would follow an existing transmission line to minimize effects to stewardship trust lands at Chico Basin and the Bohart Ranch.

Big Sandy Substation to Beaver Creek Substation

- The proposed route would follow an existing transmission line while minimizing effects to homes.

Big Sandy Substation to Green Valley Substation

- The proposed route would minimize effects to homes.

Green Valley Substation to Beaver Creek-Erie Tap

- The proposed route would follow an existing transmission line, and have fewer effects to natural resources.

Big Sandy Substation to 125-mile Substation

- The proposed route would minimize effects to homes.