

Welcome

Granby Pumping Plant – Windy Gap Substation Transmission Line Rebuild Project

EIS Scoping Meeting
August 30, 2007
4:00-7:00pm



*Table Mountain, Willow
Creek Pumping Plant*



*Lake Granby, from
Stillwater Campground*



*Existing line, southwest of
County Road 40*

Welcome

What is the purpose of this public scoping meeting?

- Explain the decision to proceed with an EIS
- Provide an updated schedule
- Solicit public input on the scope of the EIS
- Obtain public feedback on the benefits and disadvantages of each alternative

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Welcome

How can I participate?

- Visit the various information stations
- Fill out a comment card
- Review the project purpose
- Understand why the process has changed from an EA to an EIS
- Review findings and data collection efforts
- Identify benefits and disadvantages of each Alternative



Existing lines, east of Cutthroat Trout Bay, Lake Granby

Welcome

Project Schedule

<i>Public Meeting #1*</i>	<i>July 2005</i>
<i>Data Collection & Analysis</i>	<i>Summer 2005 - Fall 2006</i>
<i>Public Meeting #2*</i>	<i>November 2006</i>
<i>Internal Draft EA</i>	<i>Fall 2006 – Winter 2007</i>
<i>Decision to Prepare EIS</i>	<i>June 29, 2007</i>
<i>Federal Register Notice</i>	<i>August 10, 2007</i>
EIS Scoping Meeting*	August 30, 2007
Public Draft EIS*	Spring 2008
Final EIS*	Summer 2008
Record of Decision Anticipated*	Fall 2008
Construction Would Begin	2009 - 2010
Planned In Service	Spring 2010

**Public involvement opportunity*

Welcome

Who is involved?

Western Area Power Administration (Western)

Western owns the existing 69-kV transmission line. Western is the lead agency for this project and has the primary responsibility for conducting the environmental review and preparing the NEPA document.

U.S. Forest Service (USFS)

Cooperating agency on this project because of its legal jurisdiction and expertise with respect to environmental impacts.

Bureau of Land Management (BLM)

The BLM has requested cooperating agency status on this project because of its legal jurisdiction and expertise with respect to cultural and environmental impacts.

Tri-State Generation & Transmission (Tri-State)

Owns the Windy Gap Substation and serves MPEI.

Mountain Parks Electric (MPEI)

Provides the electrical service in Grand County.

Northern Colorado Water Conservancy District (NCWCD)

Operates the Granby and Willow Creek Pumping Plants.

Purpose, Need and Issues

Background & Regional Electrical Service

The transmission system in the Granby-Grand Lake area is currently fed by two 69-kV transmission lines: one from the west at Windy Gap Substation (near Granby) and one through the Alva B. Adams Tunnel (Adams Tunnel) from the east at Mary's Lake Substation (Estes Park). This two-way feed arrangement allows the town of Granby, Granby Pumping Plant, and Willow Creek Pumping Plant substations to be fed from the Windy Gap Substation, Mary's Lake Substation, or both.

Substations receiving electricity from more than one source create "looped" (two-way) systems, which are more reliable than if "radially" (one-way) fed from a single source. Substations fed from a looped system can remain in service as long as one of the lines feeding the substation remains in service, whereas one-way feed substations are out of service whenever the single line feeding them is out of service.

The electric cable in the Adams Tunnel between Estes Park and Grand Lake has exceeded its predicted useful life (40 years) and, upon failure, will not be replaced. The failure of the cable will leave 6,750 MPEI customers with only a one-way transmission supply. Without the completion of this project, these customers risk extended power outages, especially during adverse winter weather and periods of line maintenance, due to the lack of an alternate transmission circuit to supply the area. Installing a double-circuit line from the Windy Gap substation to the Granby Pumping Plant and the Willow Creek Pumping Plant substations will address the electrical efficiencies that will be created when the cable fails.

Regional Electrical Service Concept

Alternative A, Existing Condition

With Adams Tunnel Cable: "Looped"/two-way feed



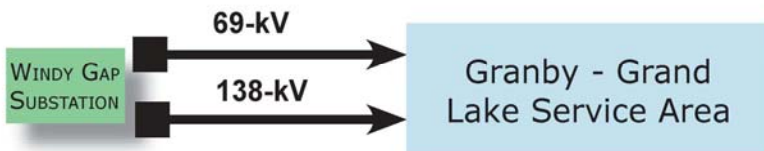
Alternative A, After Cable Failure

Without Adams Tunnel: "Radial"/one-way feed



Alternative B or C

Independent of the Adams Tunnel Cable: "Looped"/two-way feed



This conceptual graphic shows the possible power-source scenarios involving the Adams Tunnel Cable. "Looped"/two-way feeds provide redundancies within the system that are necessary to ensure reliable electric service.

Purpose, Need and Issues

Purpose

The project would ensure that the electrical system in the area would continue to operate within established electrical criteria during motor starting operations at Granby and Willow Creek Pumping Plants. Engineering studies indicate that once the Adams Tunnel cable is out of service, the voltage drop upon starting the pumping plant motors will exceed acceptable limits by the year 2010, if load growth in the area continues at the current rate. *The purpose of this project is to:*

- Provide a second power source to the Grand Lake-Granby area **before** the failure of the Adams Tunnel cable.
- Continue to provide reliable, looped transmission supply to MPEI customers in advance of the Adams Tunnel cable failure.
- Ensure that the area's electric system will continue to operate within acceptable voltage criteria while accommodating future load growth in the area and the operations of the pumping plants.
- Allow Tri-State to serve its local member (MPEI) with reliable power.
- Allow Western to provide reliable service to the area.
- Replace a 60-year old transmission line and add shield wires for improved lightning protection.

Purpose, Need and Issues

Why is the Project Now an EIS?

Consistent with Department of Energy NEPA Guidelines, Western initially determined that an Environmental Assessment (EA) would be prepared for this project.

Western initiated the EA process (2005), including public scoping and analysis of issues, as a tool to determine the level of public controversy and to identify the potential for significant effects.

Based on a review of public concerns, Western has subsequently determined that an Environmental Impact Statement (EIS) will be prepared for this project. A Notice of Intent to Prepare an EIS was published in the Federal Register on August 10, 2007.

The primary differences between an EA and an EIS are:

- Level of significance of impacts
- Public scoping requirements
- Precise timing and review periods
- Notification in the Federal Register

Purpose, Need and Issues

July 2005
Public Meeting Comments

The public voiced concerns about:

- Increase in avian-powerline collisions
- Effects on fire danger
- Effects on human health and safety
- Effects on cultural sites and properties
- Effects on property values and land uses
- Effects of site disturbance, vegetation clearing, and taller poles on visual resources
- Effects on Grand County's scenic and rural character
- Effects on vegetation and wildlife, particularly threatened, endangered and sensitive species, winter range, and species of concern, including greater sage grouse
- Effects on wetlands and fens
- Effects on recreation sites and the Arapaho National Recreation Area (ANRA)

Purpose, Need and Issues

November 2006 Public Meeting Comments

The public voiced concerns about:

- Effects on Scanloch Subdivision
- Effects on future residences/planned development
- Effects to visual resources in Willow Creek valley
- Effects on human health/safety due to structures in proximity to the transmission line
- Effects on important wildlife habitat west of Table Mountain, including boreal toad habitat
- Effects on existing/proposed conservation easements
- Effects on traditional agricultural values and landscapes
- Potentially connected actions related to water development

Purpose, Need and Issues

Key Issues (Preliminary)

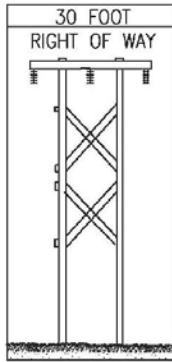
Based on public and agency scoping to date, the following concerns have emerged as **Key Issues** to be addressed in the EIS (this list is not final):

- Avian-powerline collisions
- Scenic quality and character
- Human health/safety
- Wildlife and wildlife habitat
- Local economics
- Wetlands, fens, and floodplains
- Cultural resources
- Ensuring reliable electric service

Alternatives

Alternative A – No Action

Alternative A would not upgrade or rebuild the existing transmission line between the Granby Pumping Plant and Windy Gap substations. Repairs and other maintenance activities would be necessary, with increasing frequency, as the transmission line ages. Both of the existing 69-kV circuits into the Granby Pumping Plant at the north end would remain in operation on separate ROWs. When the Adams Tunnel cable fails, the existing transmission line would be the only source of power for the Grand Lake-Granby area and the Granby, Willow Creek, and Granby Pumping Plant substations.

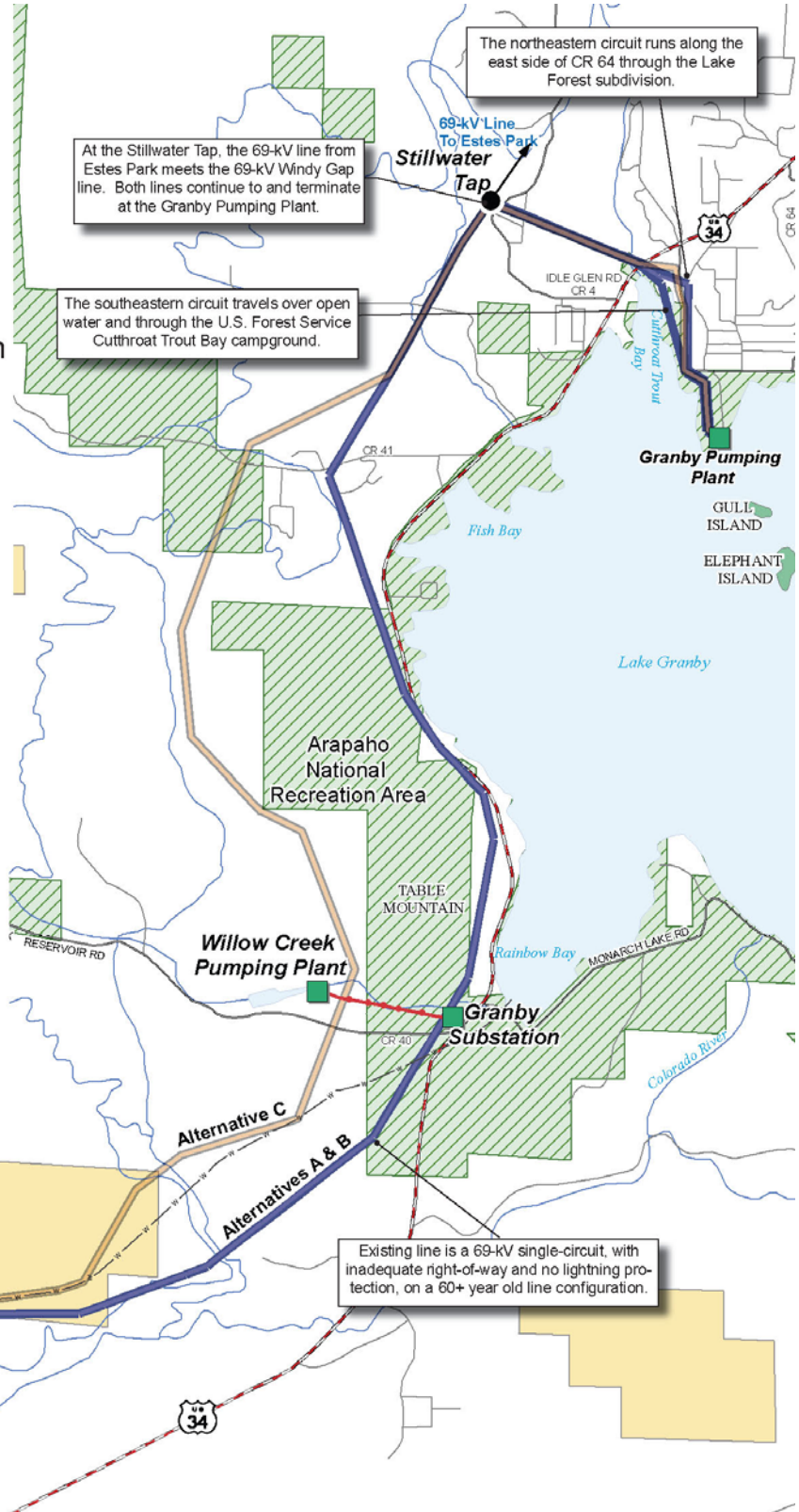


EXISTING WOOD H-FRAME STRUCTURE
69-kV SINGLE CIRCUIT

HEIGHT SHOWN - 50 FEET ABOVE GROUND
RANGE OF HEIGHTS - 55-65 FEET ABOVE GROUND

Existing line consists of H-frame wood poles.

Existing line is a 69-kV single-circuit, with inadequate right-of-way and no lightning protection, on a 60+ year old line configuration.



The northeastern circuit runs along the east side of CR 64 through the Lake Forest subdivision.

At the Stillwater Tap, the 69-kV line from Estes Park meets the 69-kV Windy Gap line. Both lines continue to and terminate at the Granby Pumping Plant.

The southeastern circuit travels over open water and through the U.S. Forest Service Cutthroat Trout Bay campground.

Arapaho National Recreation Area

Willow Creek Pumping Plant

Granby Substation

Granby Pumping Plant

GULLY ISLAND

ELEPHANT ISLAND

Lake Granby

TABLE MOUNTAIN

Alternative C

Alternatives A & B

CR 34

125

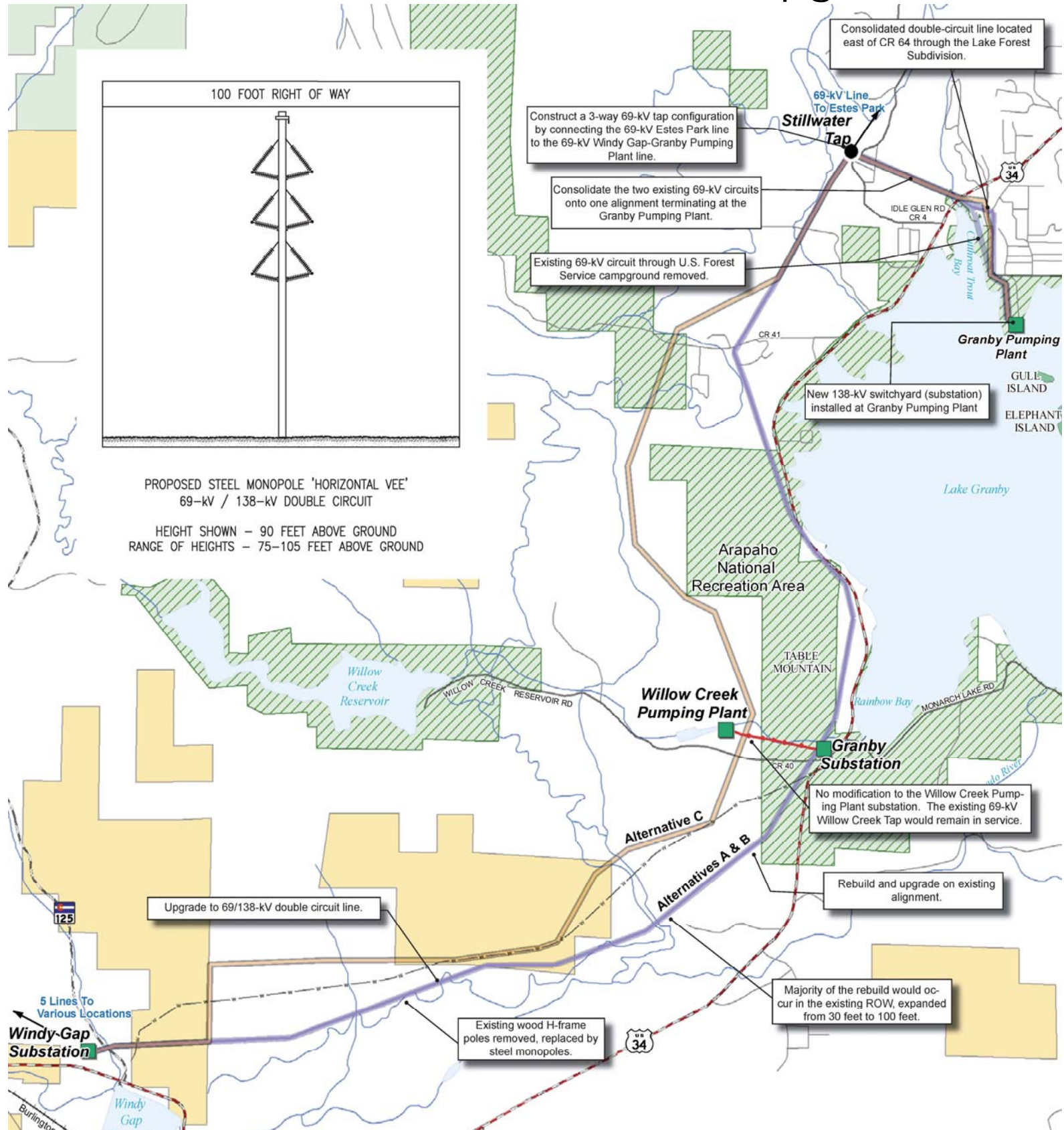
5 Lines To Various Locations

Windy-Gap Substation

Windy

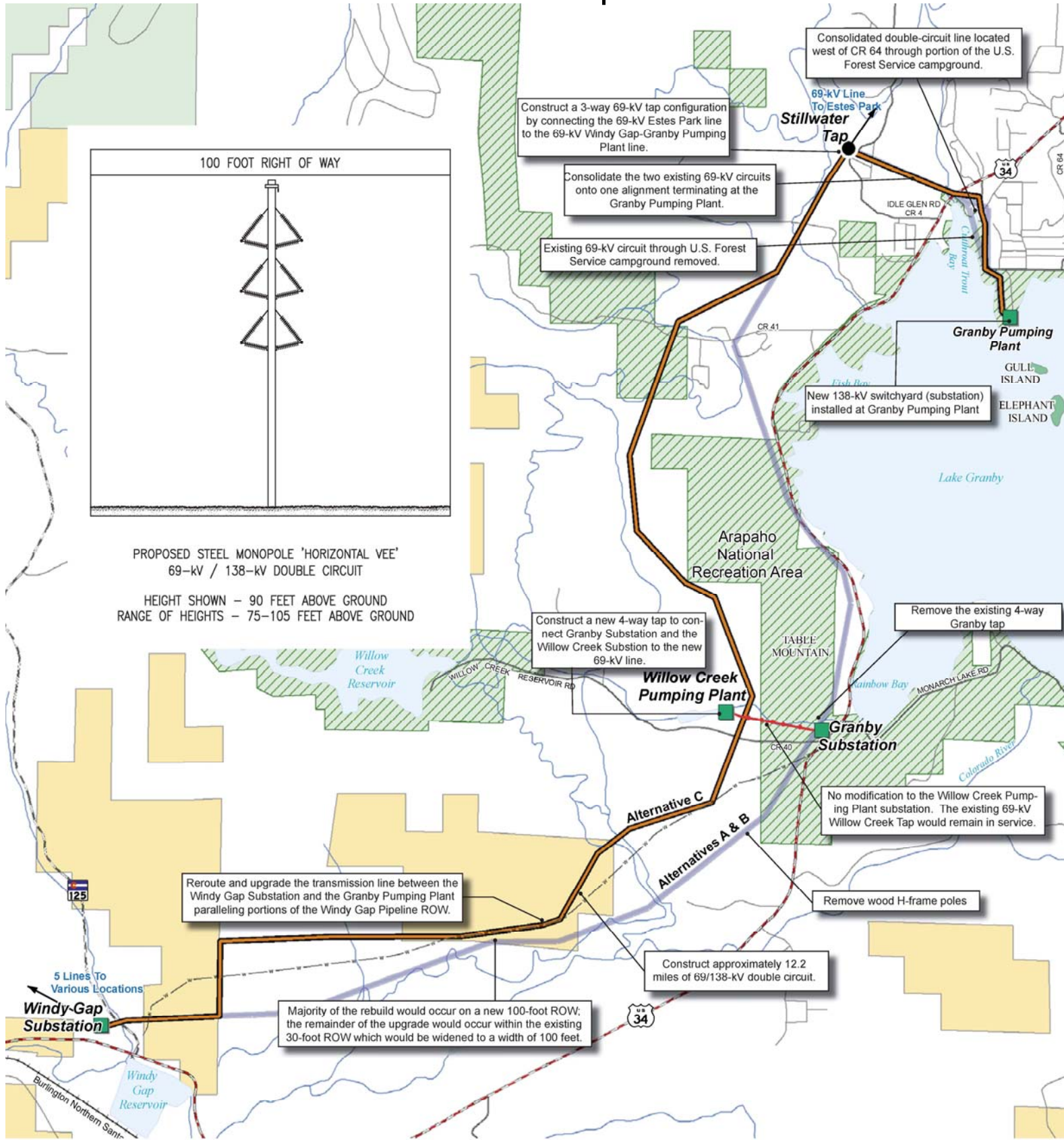
Alternatives

Alternative B – Rebuild & Upgrade



Alternatives

Alternative C – Proposed Action



Alternatives

Proposed Action

The Proposed Action (Alternative C) involves rebuilding and upgrading the single-circuit 69-kV line as a double-circuit 69/138-kV transmission line in a new alignment corridor. A new substation would be built at the Granby Pumping Plant to accommodate the second line and a new power transformer. The 138-kV double-circuit would be added to ensure that the area's electric system would continue to operate within acceptable voltage criteria, while accommodating future load growth in the area and the operations of the Granby and Willow Creek Pumping Plants. A new line connection would be added at the Windy Gap Substation to accommodate the second circuit.

Alternative C has been identified as Western's Proposed Action because:

- It reduces the mileage of transmission line in the Arapaho National Recreation Area
- It relocates the line away from the Colorado Headwaters National Scenic and Historic Byway
- It removes the line from existing residential subdivisions and reduces the number of properties crossed
 - For example, Alternative B crosses approximately 80 properties, 20 of which were not previously crossed by the existing line. Whereas Alternative C crosses approximately 20 properties, only 4 (approx.) of which were not previously crossed by the existing line.

Alternatives

Other Alternatives Considered

Alternative	Description
#1	The alternative would rebuild 6 miles of the existing line with a double-circuit 138/69-kV line; enlarge the Granby Substation to accommodate a second power transformer and expanded switchyard; and would leave the existing transmission line between Granby Substation and Granby Pumping Plant Switchyard intact.
#2	The alternative would rebuild 10 miles with double-circuit 138/69-kV line, construct a new substation at Stillwater Tap to house a power transformer and switchyard, and would leave the existing lines between Stillwater Tap and Granby Pumping Plant Switchyard intact.
#3	This alternative would underground all of the 12.2 miles of 69/138-kV double-circuit transmission line. All of the rebuilt and upgraded transmission line would be constructed underground on a new ROW. The ROW would be widened to accommodate construction, operation and maintenance of the underground facilities.
#4	This alternative would underground approximately 1.7 miles of the 12.2 mile double-circuit transmission line. The 1.7 mile segment of the rebuilt and upgraded transmission line from the Granby Pumping Plant Switchyard to the Stillwater Tap would be constructed underground on new ROW. The ROW would be widened to accommodate construction, operation, and maintenance of the underground facilities. The existing 11.8 mile single circuit 69-kV H-frame wood pole transmission line would be removed.
#5	This alternative would replace the 13.2-mile Adams Tunnel 69-kV cable with a 138-kV cable, but would not rebuild the existing transmission line from the Granby Pumping Plant to Windy Gap Substation.
#6	This alternative would install approximately 6 miles of double-circuit transmission line inside of the Windy Gap Water Tunnel, from near the Windy Gap Substation to Lake Granby. The remaining 6.2-mile double-circuit transmission line would be similar to Alternative C.
#7	This alternative would install 3 miles of double-circuit transmission line below Lake Granby. The remaining 6 miles of double-circuit transmission line, Lake Granby to the Windy Gap Substation, would be constructed similar to Alternative C. The line segment from Rainbow Bay to the Granby Pumping Plant Switchyard would be constructed by laying the cable on the lake bed of Lake Granby.

Preliminary Comparison of Alternatives

	Alternative A No Action	Alternative B Rebuild & Upgrade	Alternative C Reroute & Upgrade
ENGINEERING SPECIFICATION			
Pole structure type	Wood H-Frame 2 poles set 8 ft apart, 1.5 ft diameter	Steel Monopole 1 pole, 3 ft diameter	Steel Monopole 1 pole, 3 ft diameter
Voltage	69-kV single circuit	138-kV double circuit	138-kV double circuit
New alignment	No	No	Yes
New construction	No	Yes	Yes
Number & location of new taps	None	1 new, 0 removed	2 new, 1 removed
Substations	4 existing, 0 new	4 existing, 1 new	4 existing, 1 new
Length of transmission line	13.6 miles	11.8 miles	12.2 miles
Approx. acreage of new ROW acquired ¹	None	55 acres	125 acres
Approx. length of existing or parallel ROW ¹	All	All	5 miles
Total number of structures (approximate)	144	104	107
ROW width	30 - 100 ft	100 ft max	100 ft max
Average span (distance between poles)	500 ft	600 ft	600 ft
Maximum span	800 ft	800 ft	800 ft
Average height range of poles	55 - 65 ft	75 - 105 ft	75 - 105 ft
Min. ground clearance beneath lowest wire	21 ft	25 ft	25 ft
Max. height of machinery that can be operated under the line safely	15 ft	15 ft	15 ft
LAND USE			
Ownership, miles crossed (approx.) ²	BLM 1.1 USFS 3.2 NCWCD 0.7 Private 8.3	BLM 1.1 USFS 2.3 NCWCD 0.7 Private 7.5	BLM 2.2 USFS 1.3 NCWCD 3.3 Private 5.0
ANRA, miles crossed	3.2	2.4	1.3
Properties crossed ¹	80	80	20
VISUAL			
Residences within foreground (0.5-mile) ¹	325	325	255

¹ Preliminary estimates only; final figures will be shown in the EIS.

² Remainder of mileage includes road crossings, existing utility ROW crossings, etc.

Preliminary Comparison of Alternatives

	Benefits	Disadvantages
Alternative A “No Action” (Keep existing line)	<ul style="list-style-type: none"> • No expansion of ROW (length or width) • No new disturbance • No increased pole heights 	<ul style="list-style-type: none"> • Would not provide reliable electric service after the failure of the Adams Tunnel cable due to the loss of looped transmission service • Does not satisfy projected electrical load-growth for the Granby-Grand Lake area • Maintenance needs would become more frequent • Because of its age, the line would still require rebuilding in the near future • Both 69-kV circuits into the Granby Pumping Plant at the north end of project area would remain in operation on separate ROWs • The existing line does not meet current National Electric Safety Code (NESC) requirement (the existing line met the then current NESC requirements when it was constructed, therefore it was grand-fathered into acceptable status) • Leaves the existing in a 60-year old, antiquated line configuration • Crosses approximately 80 properties
Alternative B (Upgrade, expand existing ROW)	<ul style="list-style-type: none"> • Parallels existing ROW • Disturbance partially occurs in previously disturbed areas • Provides reliable looped electrical service • Consolidates the two circuits into the Granby Pumping Plant at the north end of project area onto one alignment • Would satisfy National Electric Safety Code (NESC) ROW standards • Removes existing 60-year old, antiquated line configuration • Removes approximately 2 mi. of line at Cutthroat Trout Bay • Removes an open water crossing of Cutthroat Trout Bay 	<ul style="list-style-type: none"> • Requires up to an additional 70 feet of ROW • Existing buildings and structures are built adjacent to the existing ROW • Visual effects of increased pole heights • Increased visual contrast within the Arapaho National Recreation Area, Lake Granby, and along the Colorado Headwaters National Scenic and Historic Byway • Increased risk of avian power line collisions at Table Mountain • Crosses approximately 80 properties, 20 of which were not previously crossed by the existing line
Alternative C “Proposed Action” (Upgrade line, new ROW)	<ul style="list-style-type: none"> • Provides reliable looped electrical service • Consolidates the two circuits into the Granby Pumping Plant at the north end of project area onto one alignment • Removes the alignment from the Scanloch and Stillwater Tracts subdivisions • Removes the alignment from the Lake Forest neighborhood at north end of project area • Reduces the number of properties crossed by the line • New alignment reduces visibility of poles from Arapaho National Recreation Area, Lake Granby, and along the Colorado Headwaters National Scenic and Historic Byway • Would satisfy NESC ROW standards • Removes existing 60-year old, antiquated line configuration • Removes approximately 2 mi. of line at Cutthroat Trout Bay • Removes an open water crossing of Cutthroat Trout Bay 	<ul style="list-style-type: none"> • The majority of the line would be located on a new ROW • Sage grouse habitat and critical winter range for elk and deer could be affected during construction • Visual effects of increased pole heights • Crosses approximately 20 properties, approx. 4 of which were not previously crossed by the existing line

Preliminary Comparison of Alternatives

Please add your comments....

	Benefits	Disadvantages
Alternative A “No Action” (Keep existing line)		
Alternative B (Upgrade line, expand existing ROW)		
Alternative C “Proposed Action” (Upgrade line, new ROW)		
Other Alternatives Considered (please include Alternative #)		