



# Welcome

## Welcome to the Granby Pumping Plant Switchyard – Windy Gap Substation Transmission Line Project

### Draft EIS Open House & Public Hearing

The Western Area Power Administration requests your comments on the Draft Environmental Impact Statement (EIS).

**April 24, 2012**

**Open House, 4:00-6:00 pm**

**Hearing, 6:00-8:00 pm**





# What to Expect at This Open House & Public Hearing

This public hearing is a formal way for the public to comment on the Draft EIS. All comments are part of the public record and will be considered by Western in their decisions on the proposal.

You do not have to make oral comments at the hearing, and you do not have to attend the hearing. You may also give your comments in writing using the provided comment forms, send your comments by e-mail, or send in your comments by letter. All comments are treated equally, regardless of how you provide them.

## OPEN HOUSE

- Review the public meeting materials.
- Ask questions of project proponents and resource specialists.
- Provide written comments on a comment form, by e-mail, or letter.
- You may speak separately with the Court Reporter, who will record your comment. If you wish you may sign up to speak at the Public Hearing.

## PUBLIC HEARING

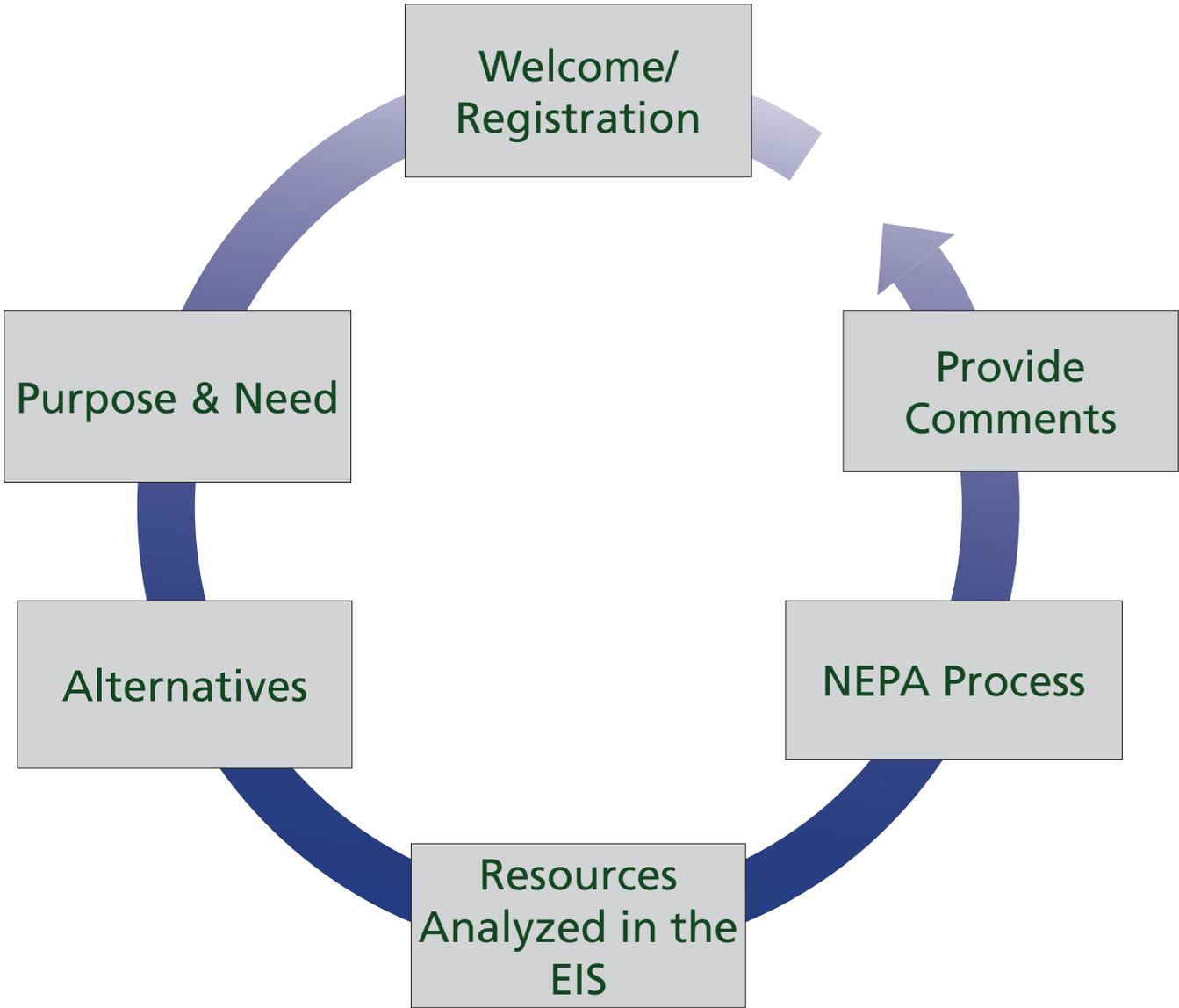
- Sign up to speak at the public hearing at the Welcome & Sign-In table.
- Provide oral comments. A Court Reporter will record all comments.
- A facilitator will preside over the hearing.

Oral comments will be limited by the meeting facilitator to ensure there is time for everyone to be heard. For longer comments, the comment can be left with the Court Reporter or sent to Western by e-mail or letter.





# Open House Format





# Purpose & Need

Western Area Power Administration proposes to rebuild the electric transmission line between the Granby Pumping Plant Substation and Windy Gap Substation as a double-circuit line and upgrade the voltage from 69-kilovolts to 138-kilovolts (kV).

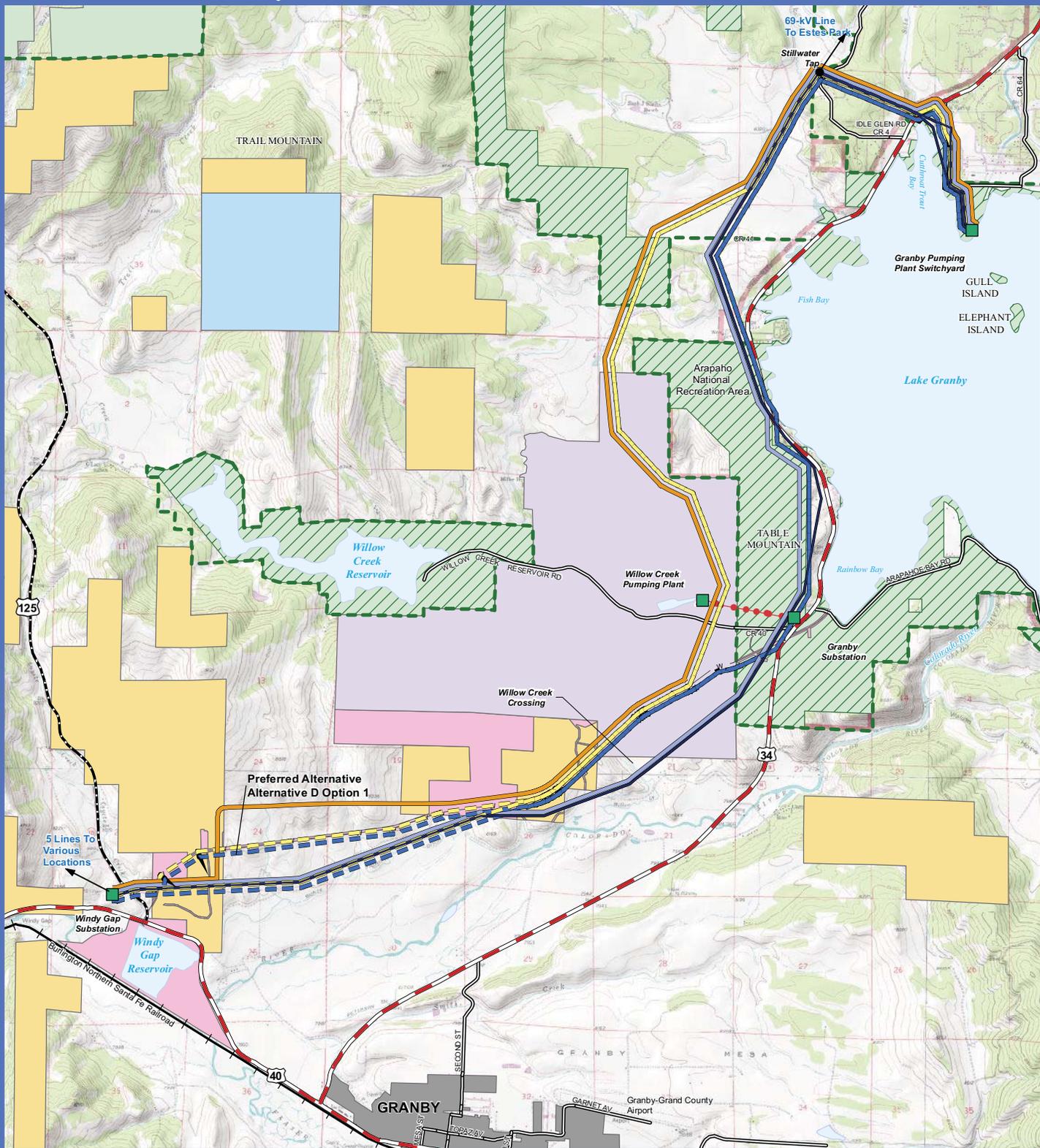
## The proposed project is needed to:

- **Upgrade** voltage to ensure that the electrical system will continue to operate within acceptable voltage criteria
- **Ensure** that the electrical system in the area would continue to operate within established electrical criteria after the eventual failure of the Adams Tunnel power line cable.
- **Ensure** that Western, Tri-State, and Tri-State's cooperative member (MPEI) are able to serve their customers with reliable service.
- **Maintain** reliable power supply for existing operations at the Colorado-Big Thompson Project (C-BT) facilities, regardless of future demand in the valley.
- **Improve** transmission safety by updating facilities and rebuilding a 70-year-old transmission line to be compliant with current standards.
- **Reduce** long-term transmission line maintenance costs for Western and NCWCD.

The proposed project would provide a redundant transmission feed ("looped" transmission service) in the Grand Lake and Granby service areas, in advance of the loss of the Adams Tunnel cable. This would improve electric reliability for power customers in the area.



# Project Alternatives



## Legend

### Base Data

- Existing Willow Creek Tap (69-kV)
- Windy Gap Water Pipeline (NCWCD)

### Transmission Line Alternatives

- Alternative A - Existing
- Alternative B1
- Alternative C1
- Alternative C2
- Alternative C2 - Options 1 and 2
- Alternative D
- Alternative D - Option 1 and 2

### Land Status

- Northern Colorado Water Conservancy District (NCWCD)
- Municipal Subdistrict - Northern Colorado Water Conservancy District (MS-NCWCD)
- Forest Service Land within Arapaho National Recreation Area
- Bureau of Land Management (BLM)
- Colorado State Land Board (SLB)
- U.S. Forest Service (USFS)
- Private or Other Land Ownership
- U.S. Forest Service Boundary

## All Alternatives

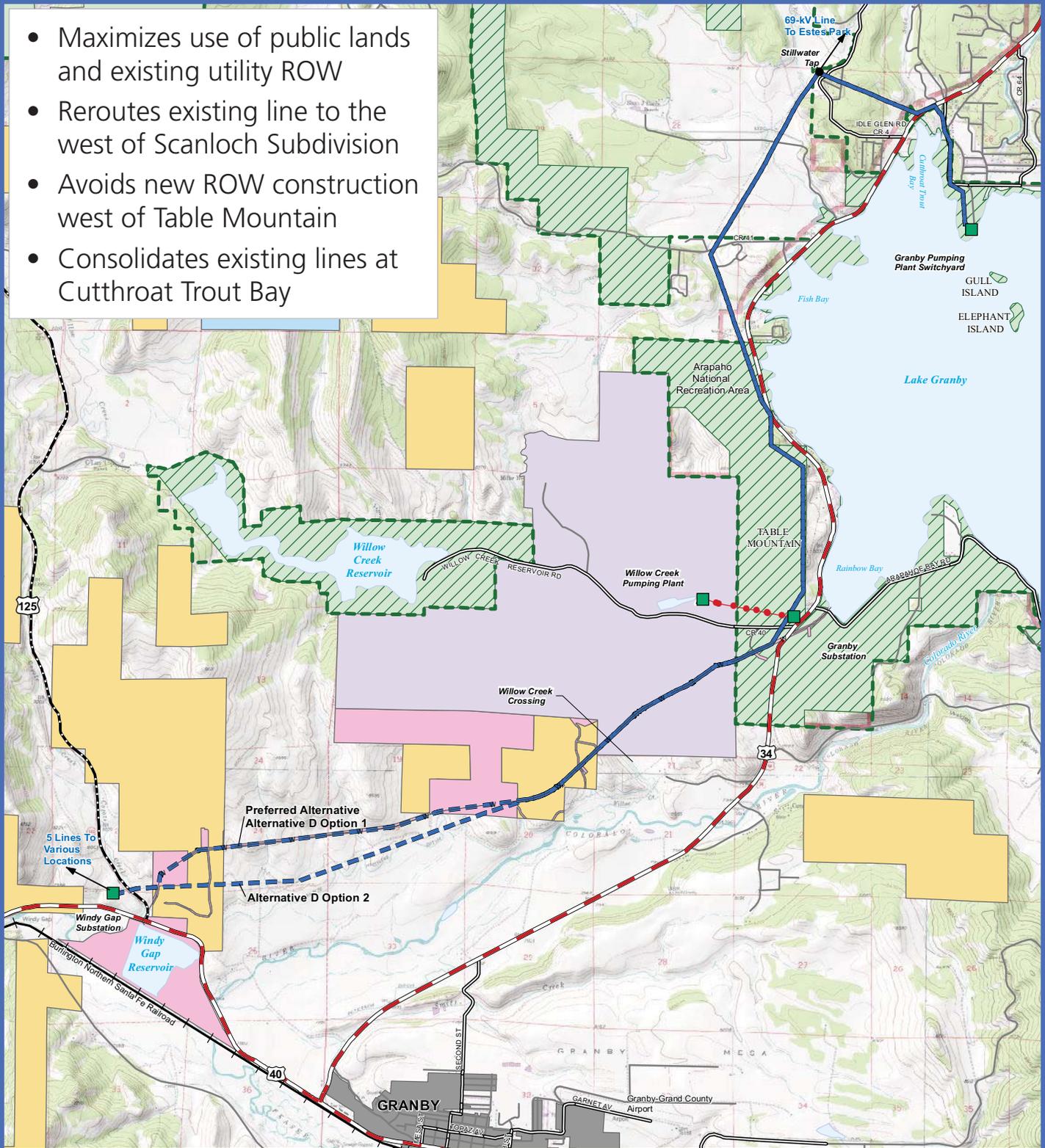
November 7, 2011



Source: Bureau of Land Management (BLM), Northern Colorado Water Conservancy District (NCWCD), U.S. Forest Service (USFS), Grand County, and Colorado State University

# Preferred Alternative D - Option 1

- Maximizes use of public lands and existing utility ROW
- Reroutes existing line to the west of Scanloch Subdivision
- Avoids new ROW construction west of Table Mountain
- Consolidates existing lines at Cutthroat Trout Bay



## Legend

### Base Data

- Existing Willow Creek Tap (69-kV)
- Windy Gap Water Pipeline (NCWCD)

### Transmission Line Alternatives

- Alternative D
- Alternative D - Route Options

### Land Status

- Northern Colorado Water Conservancy District (NCWCD)
- Municipal Subdistrict - Northern Colorado Water Conservancy District (MS-NCWCD)
- Forest Service Land within Arapaho National Recreation Area
- Bureau of Land Management (BLM)
- Colorado State Land Board (SLB)
- U.S. Forest Service (USFS)
- Private or Other Land Ownership
- U.S. Forest Service Boundary

## Alternative D (Preferred Alternative)

November 7, 2011



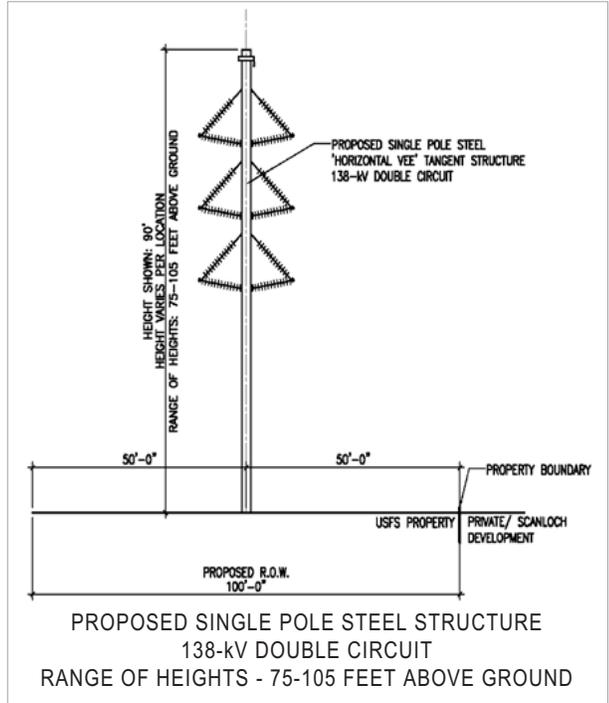
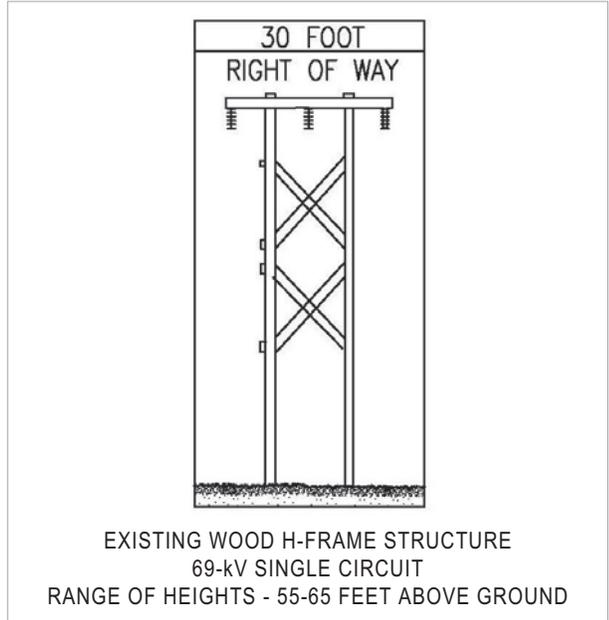
Source: Source: Bureau of Land Management (BLM), Northern Colorado Water Conservancy District (NCWCD), U.S. Forest Service (USFS), Grand County, Colorado State University



# Engineering Specifications

Engineering Specification	Alternative A No Action	Alternatives B1, C1, C2, D
Pole Structure Type	Wood H-frame	Single-pole steel
Voltage	69-kV single-circuit	138-kV double-circuit (operated at 69-kV and 138-kV)
New construction and yard preparation necessary	No	Yes
Surveying	No	Yes
Structure Demolition	No	Yes
Materials hauling	No	Yes
Foundation excavation	No	Yes
Structure assembly	No	Yes
Structure erection	No	Yes
Ground wire and conductor stringing	No	Yes
Cleanup	No	Yes
Seeding and reclamation	No	Yes
ROW width	~10 miles of 30-ft ROW ~2 miles of 100-ft ROW	100 ft. maximum
Average span	500 ft.	600 ft.
Maximum span	800 ft.	800 ft.
Average height range of poles	55 - 65 ft.	75 - 105 ft.
Pole diameter	2 poles set 8 ft. apart, pole diameter: 1.5 ft.	5 ft.
Approximate area needed for construction staging	0 sq. ft.	2 staging areas, each 62,500 sq. ft.
Temporary land disturbed at each structure base (area)	None	900 sq. ft. at each structure base; <2.25 acres of temp. disturbance
Permanent land disturbed at each structure	n/a	<0.05 acre total
Minimum ground clearance beneath conductor	21 ft.	22 ft.
Maximum height of any machine that can be operated safely under the line	14 ft.	14 ft.
Conductor size	4/0 AWG	397 kCM

AWG = American Wire Gauge  
 ft = feet  
 sq. ft. = square feet  
 kCM = kilo Circular Mil (1,000)





# Alternatives Eliminated from Further Analysis

Western Area Power Administration investigated, but ultimately eliminated the following alternatives from further analysis in the EIS:

Alternative	Reasons for Elimination
<b>Underground Line Construction</b> (Full or Partial)	<ul style="list-style-type: none"> <li>• Long-term operational and maintenance difficulties</li> <li>• Cost-prohibitive for construction and maintenance</li> <li>• Substantial ground disturbance</li> </ul>
<b>Rebuild of the Adams Tunnel Cable</b>	<ul style="list-style-type: none"> <li>• Construction and maintenance access constraints</li> <li>• Health and safety concerns for workers</li> <li>• Cost-prohibitive for construction and maintenance</li> <li>• Does not ensure looped transmission service for residents</li> </ul>
<b>Construction of an Underwater Transmission Line</b> (Lake Granby)	<ul style="list-style-type: none"> <li>• Construction difficulties</li> <li>• Long-term maintenance difficulties</li> <li>• Public safety at Lake Granby</li> <li>• Potential for extended outages if cable fails</li> <li>• Cost-prohibitive for a small project</li> </ul>
<b>Partial Rebuild of Transmission Lines</b>	<ul style="list-style-type: none"> <li>• Not a long-term solution</li> <li>• Does not ensure looped transmission service for residents</li> <li>• Does not address rebuild of 70 year old line</li> </ul>

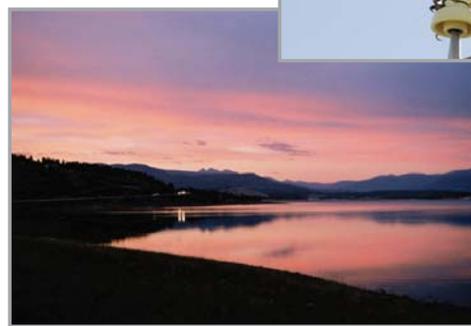




# Resources Analyzed in the EIS

Impacts to the following resources were analyzed in the EIS:

- Air Quality, Climate & Global Climate Change
- Soil Resources
- Paleontological Resources
- Cultural & Historic Resources
- **Electric & Magnetic Fields**
- **Land Use**
- **Visual Resources**
- Socioeconomics & Environmental Justice
- Recreation & Wilderness
- Aquatic Resources
- Vegetation
- Wetlands
- **Terrestrial & Avian Wildlife**
- Special Status Species



Topics in **bold** are resources with key differences between alternatives and are described in more detail on the following displays.





# Land Use & Ownership

## Effects Common to All Action Alternatives

- Acquisition of easements required for new or expanded ROW
- Constraints on new structures within ROW easements
- No existing residential structures or buildings within the ROW would be removed
- Effects on property values would depend on the characteristics of each individual property

## Alternative Effects on Residential Parcels

The number of improved and vacant residential parcels within 100 feet of the centerline of each alternative is shown below:

Alternative	Improved Residential Parcels (within 100 ft. of centerline)	Vacant Residential Parcels (within 100 ft. of centerline)
<b>Alternative A</b> (No Action)	60	55
<b>Alternative B1</b>	43	18
<b>Alternatives C1 &amp; C2</b>	35	10
<b>Alternative D - Options 1 &amp; 2</b>	41	18





# Land Use & Ownership

Distance through public, private, and other categories of land ownership for each alternative are shown below:

Alternative	Total Length (miles)	Land Ownership Crossed (miles)	
<b>Alternative A</b> (No Action)	13.6	BLM:	0.8
		NCWCD:	0.7
		MS-NCWCD:	0.4
		Forest Service:	3.3
		Private:	8.5
<b>Alternative B1</b>	11.9	BLM:	0.8
		NCWCD:	0.7
		MS-NCWCD:	0.4
		Forest Service:	3.8
		Private:	6.2
<b>Alternative C1</b>	12.3	BLM:	0.7
		NCWCD:	3.4
		MS-NCWCD:	1.4
		Forest Service:	1.5
		Private:	5.3
<b>Alternative C2 - Option 1</b>	11.9	BLM:	<0.1
		NCWCD:	3.4
		MS-NCWCD:	3.5
		Forest Service:	1.5
		Private:	3.5
<b>Alternative C2 - Option 2</b>	11.9	BLM:	0.5
		NCWCD:	3.4
		MS-NCWCD:	1.0
		Forest Service:	1.5
		Private:	5.5
<b>Alternative D - Option 1</b> (Preferred Alternative)	11.8	BLM:	0.0
		NCWCD:	1.2
		MS-NCWCD:	3.8
		Forest Service:	3.3
		Private:	3.5
<b>Alternative D - Option 2</b>	11.7	BLM:	0.5
		NCWCD:	1.2
		MS-NCWCD:	1.3
		Forest Service:	3.3
		Private:	5.4





# Visual Resources

## Effects Common to All Action Alternatives

Short and long-term direct impacts to visual resources would occur from components of all action alternatives. Visual resource objectives of the U.S. Forest Service (USFS), Bureau of Land Management (BLM), Grand County Three Lakes Design Review Area, and views from U.S. Highway 34 (a scenic byway) would be affected.

## Effects to U.S. Highway 34

Degree of Visibility	Alt A	Alt B1	Length Affected (Miles)				Alt D-01	Alt D-02
			Alt C1	Alt C2-01	Alt C2-02	Alt D-01		
Miles of Byway where poles are highly visible <sup>1</sup>	0.8	3.2	3.6	2.8	3.1	2.0	2.4	
Miles of Byway where poles are moderately visible	6.1	5.3	3.5	3.9	3.5	6.4	6.1	
Miles of Byway where poles have low visibility	7.1	5.5	6.9	7.2	7.3	5.5	5.5	

<sup>1</sup> A visibility rating of “highly visible” indicates that more than 3.5 miles of transmission line would be visible from a given location if vegetation and viewing distance were not considered. “Moderately visible” indicates that up to 3.5 miles of transmission line would be visible, and a rating of “low visibility” indicates that less than 1.5 miles of transmission line would be visible.



KOP 12: Existing Conditions Looking North (March 2009)



KOP 12: Simulation of Alternative D (Options 1 and 2)



# Visual Resources

## Design Criteria and Mitigation Measures

The following mitigation measures and project-specific design criteria, would reduce the visual contrast created by the action alternatives:

- At the scenic byway crossing, **underground MPEI distribution lines** (similar to the existing conditions of the MPEI distribution line) in order to keep the height of new poles to a minimum and limit visual clutter.
- Along CR 64, **overlap the CR 64 ROW with the new ROW** in order to place new poles as close to CR 64 as feasible, and away from campground facilities.
- All steel structures will be a **rust-colored COR-TEN® steel**.
- Structures will be placed at the **maximum feasible distance from highway and trail crossings**, within the limits of the design of the structure, to reduce potential visual impacts at crossings.
- Access roads will **follow the lay of the land** rather than a straight line along the ROW where steep features will result in a higher disturbance.
- Western will **coordinate closely with the Forest Service** on the placement and design of both access roads and gates/closures.



KOP 3: Existing Conditions Looking Northwest (March 2009)



KOP 3: Simulation of Alternatives B1, C1, C2, D (Options 1 and 2)





# Terrestrial & Avian Wildlife

The alternatives analyzed in the EIS would have the following effects on terrestrial and avian wildlife along the transmission line alignments:

Alternative	Terrestrial and Avian Wildlife Impacts
<b>Alternative A</b> (No Action)	<ul style="list-style-type: none"> <li>• Potential for avian collision and electrocution. Perching opportunities for foraging raptors (existing impacts).</li> </ul>
<b>Effects Common to All Action Alternatives (B1, C1, C2, D)</b>	<ul style="list-style-type: none"> <li>• Short- and long-term minor adverse effects from widened ROW clearing.</li> <li>• Long-term minor adverse effects due to increased potential for avian collisions and habitat fragmentation and alteration.</li> <li>• Greater risk of avian collision as a result of increased pole height.</li> <li>• Potential for increased sage grouse predation due to an increase in raptor perches</li> </ul>

## Additional Effects

<b>Alternative B1</b>	<ul style="list-style-type: none"> <li>• Lower impacts to the greater sage grouse (located slightly further from existing lek).</li> </ul>
<b>Alternatives C1 and C2</b>	<ul style="list-style-type: none"> <li>• Higher level of impact due to construction along a previously undisturbed alignment.</li> <li>• Moderate to significant long-term impacts to the greater sage grouse and associated sagebrush habitats.</li> <li>• Adverse effects to golden eagles as a result of new construction in the vicinity of an active nest.</li> <li>• Alternative C1: Spans the greatest number of acres of sagebrush habitat (for greater sage grouse and other wildlife species).</li> </ul>
<b>Alternative D</b>	<ul style="list-style-type: none"> <li>• Construction along previously disturbed ROW would minimize impacts.</li> <li>• Moderate to significant long-term impacts to the greater sage grouse and associated sagebrush habitats, but located further from existing lek than Alternative C1.</li> </ul>





# Terrestrial & Avian Wildlife

## Design Criteria and Mitigation Measures:

- Project design and construction in conformance with the **Suggested Practices for Protection of Raptors on Powerlines** (APLIC 2006) to minimize the potential for raptor electrocution.
- **Seasonal Restrictions:** Construction will not occur within pronghorn, mule deer, or elk winter concentration areas or severe winter range between November 15 and April 30 on public and private lands, unless an exception is granted by the BLM or CDOW.
- The siting of structure locations and/or timing of construction related activities will adhere to **CDOW's 2008 Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors**. When distance buffers are not possible because of project proximity, then seasonal restrictions will be implemented.
- **Avian nesting surveys** will be conducted prior to construction to ensure ground disturbing activities do not result in the "take" of an active nest or migratory bird.
- **Perch deterrents** will be placed on structures that span sagebrush habitats to mitigate raptor predation on avian and other wildlife species.
- **Flight diverters** will be placed in areas that are determined to be "high risk" for avian collision.
- During removal of the existing 69-kV transmission line, some structures will be left in place to **provide osprey nesting opportunities**.
- Western will use a seed mix that will **restore sagebrush habitats** in the ROW.
- If it is not feasible to construct outside of the 4-mile sagegrouse lek buffer during the March through mid July breeding season, Western will develop methods that would **minimize impacts to breeding sage grouse activities**, including placing perch deterrents near lek areas and areas that cross greater sage grouse wintering, summer, spring, nesting, and brooding habitats.





# Electric & Magnetic Fields

## Effects Common to All Action Alternatives

- No effect on FM radio
- No effect on Global Positioning Systems (GPS) signal
- All action alternatives have higher levels of audible noise on the ROW and at the ROW edges. However, predicted levels are very low and corona-related audible noise would not be heard under most practical conditions

**All action alternatives have higher maximum electric fields on the ROW, but have lower electric fields at the ROW edges due to the expanded ROW width.**

Transmission Line	Calculated Electric Field (kV/m)		
	ROW Edge	Max on ROW	ROW Edge
Existing 69-kV	0.956	0.956	0.956
Proposed 69/138-kV	0.052	1.406	0.031

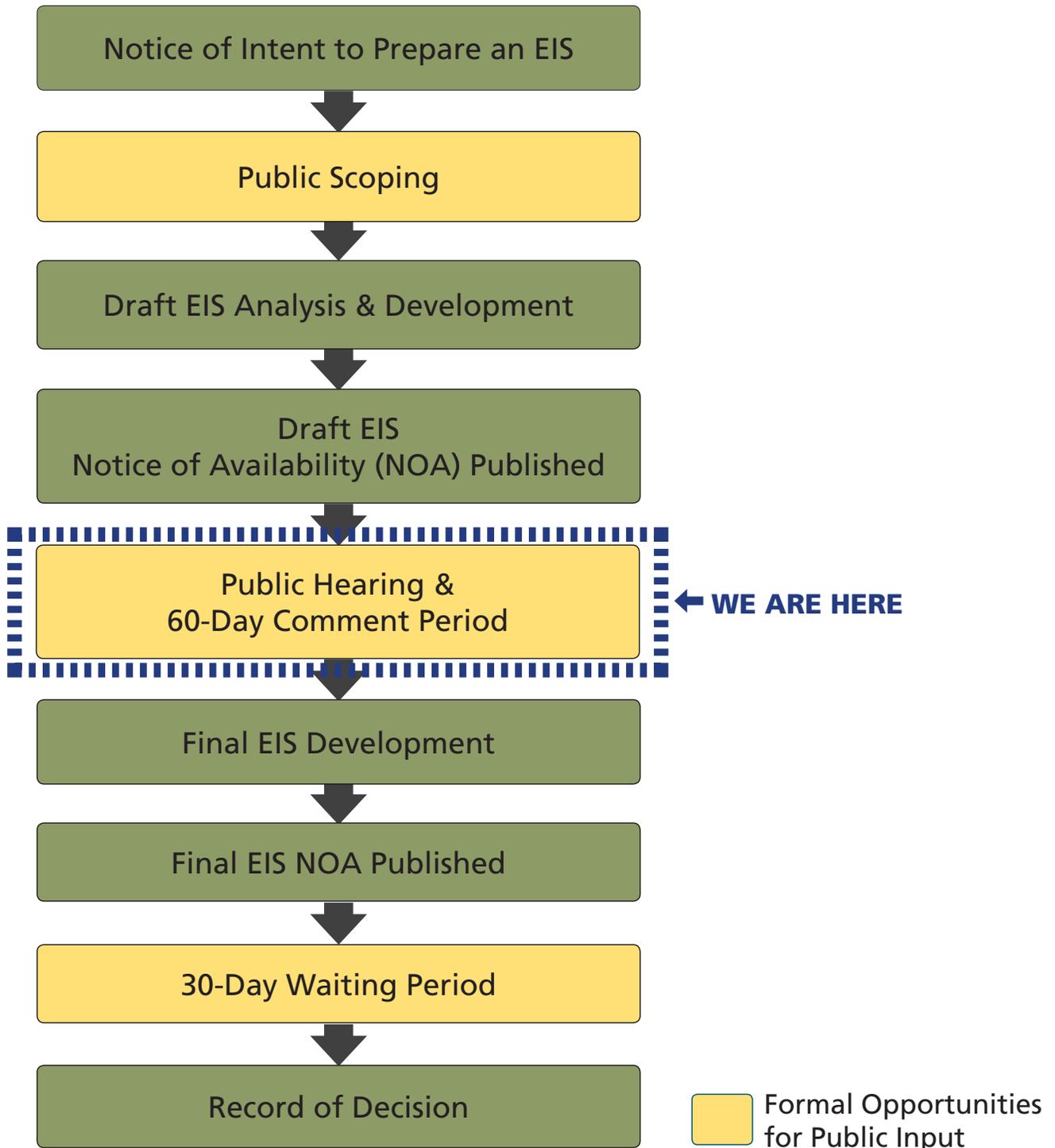
**All action alternatives have reduced magnetic fields, both on the ROW and at the ROW edges.**

Transmission Line	Calculated Magnetic Field (mG)					
	Normal Load			Maximum Load		
	ROW Edge	Max on ROW	ROW Edge	ROW Edge	Max on ROW	ROW Edge
Existing 69-kV	23.1	31.0	23.1	80.4	108.2	80.4
Proposed 69/138-kV	1.6	6.5	0.5	8.0	33.3	2.8





# EIS Process





# Project Partners

## LEAD AGENCY

- Western Area Power Administration (WAPA)

## COOPERATING AGENCIES

- United States Forest Service (USFS)
- Bureau of Land Management (BLM)
- Grand County, CO

## OTHER PROJECT PARTNERS

- Tri-State Generation and Transmission Association
- Mountain Parks Electric, Inc. (MPEI)
- Northern Colorado Water Conservancy District (NCWCD)
- Municipal Subdistrict - Northern Colorado Water Conservancy District (MS-NCWCD)





# How to Comment on the EIS

We welcome your comments on the information and analyses in the Draft EIS. All comments received during the 60-day comment period will be considered in developing the Final EIS.

## Submit your comments at this meeting:

- Written Comments
- Oral Comments at the Hearing or to the Court Reporter

## Submit your comments after this meeting to:

### Jim Hartman

NEPA Document Manager  
Western Area Power Administration  
Corporate Services Office  
12155 W. Alameda Parkway  
Lakewood, CO 80228

**E-mail:** [gppwgp@wapa.gov](mailto:gppwgp@wapa.gov)

Mailed comments must be postmarked by **May 29, 2012**. Emailed comments must be received on or before this date.

