

## AGENDA

---

### ALIVE ISSUES TASK FORCE MEETING

September 24, 2013

1:00 p.m. to 4:00 p.m.

CDOT Homestead Conference Room 425C Corporate Circle, Golden

#### 1. Introductions

#### 2. PPSL Project Overview

- a. Project background/purpose and need
- b. Current design and operating assumptions
- c. Schedule

#### 3. ALIVE MOU Review

- a. MOU development and commitments
- b. LIZ locations within the project and recommended mitigations
  - Empire Junction (MP 231.6 to 232.9)
  - Clear Creek Junction (MP 243.0 to 244.9) – signage improvements only in this area

#### 4. Current Information and Updates

- a. Clear Creek SCAP
- b. Twin Tunnels
- c. *A Regional Ecosystem Framework for Terrestrial and Aquatic Wildlife along the I-70 Mountain Corridor in Colorado*
- d. *Guidelines for Improving Connectivity for Terrestrial and Aquatic Wildlife on the I-70 Mountain Corridor*

#### 5. Role of ALIVE on the PPSL Project

- a. Identify ALIVE-related issues in this project segment
- b. Develop recommendations through the ALIVE implementation process

#### 6. Implementation Process

- a. Initial list of issues
- b. Identification of information and data needs
- c. Initial recommendations

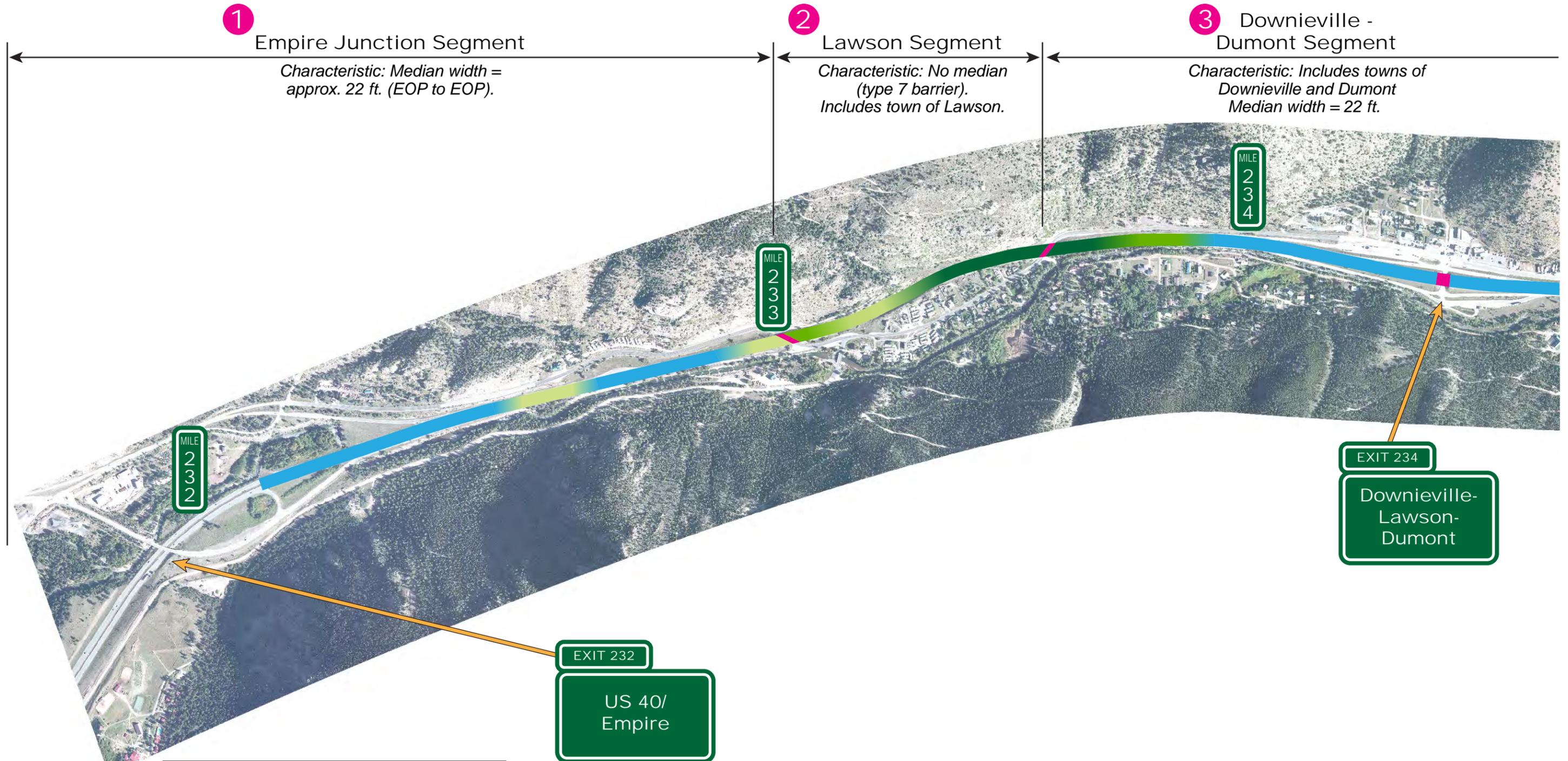
#### 7. Next Steps

- a. Assignments for next meeting
- b. Need for an additional meeting

## LIKELY COMPONENTS OF THE PPSL PROJECT (as of 9/11/13)

-  A hybrid cross-section that utilizes the existing pavement width in as many places as possible in the corridor (with an estimate of up to half of the length of the corridor). This may reduce the need for retaining walls, but some retaining walls will still be needed to avoid private property or encroachment into Clear Creek.
-  Minimal widening at either two or three of the eight interchange off-ramp deceleration lanes in the project corridor.
-  Minimal widening at interchange acceleration lanes to include sliver widening at on-ramp tapers.
-  Investigation of modifying the SH 103 bridge rather than replacing it. Also looking to see if we can design something that can be easily expanded in the future for unknown corridor improvements.
-  Trying to minimize the need to widen other bridges.
-  Minimize new signs—maximizing opportunities to use existing bridges for signs.
-  Minimize the inclusion of new emergency refuge areas. The concept is to investigate use of already existing flat areas adjacent to the existing highway and at interchanges.
-  Consider noise walls at locations both north and south of I-70 where residential uses are closest to the travel lanes.
-  Water quality and air quality best management practices where feasible.

# Draft: Eastbound PPSL Hybrid Alternative Overview (1 of 4)



**Legend:**

- █ = Potentially No Widening Required
- █ = Widening Requirements Unknown

---

Widening Anticipated:

- █ = 0 - 1 foot
- █ = 1 - 2 feet
- █ = 2 - 3.5 feet

# Draft: Eastbound PPSL Hybrid Alternative Overview (2 of 4)

## 3 Downieville - Dumont Segment

Characteristic: Includes towns of Downieville and Dumont  
Median width = 22 ft.

## 4 Fall River Segment

Characteristic: Median width = 21 ft.  
Includes Fall River Rd exit.



**Legend:**

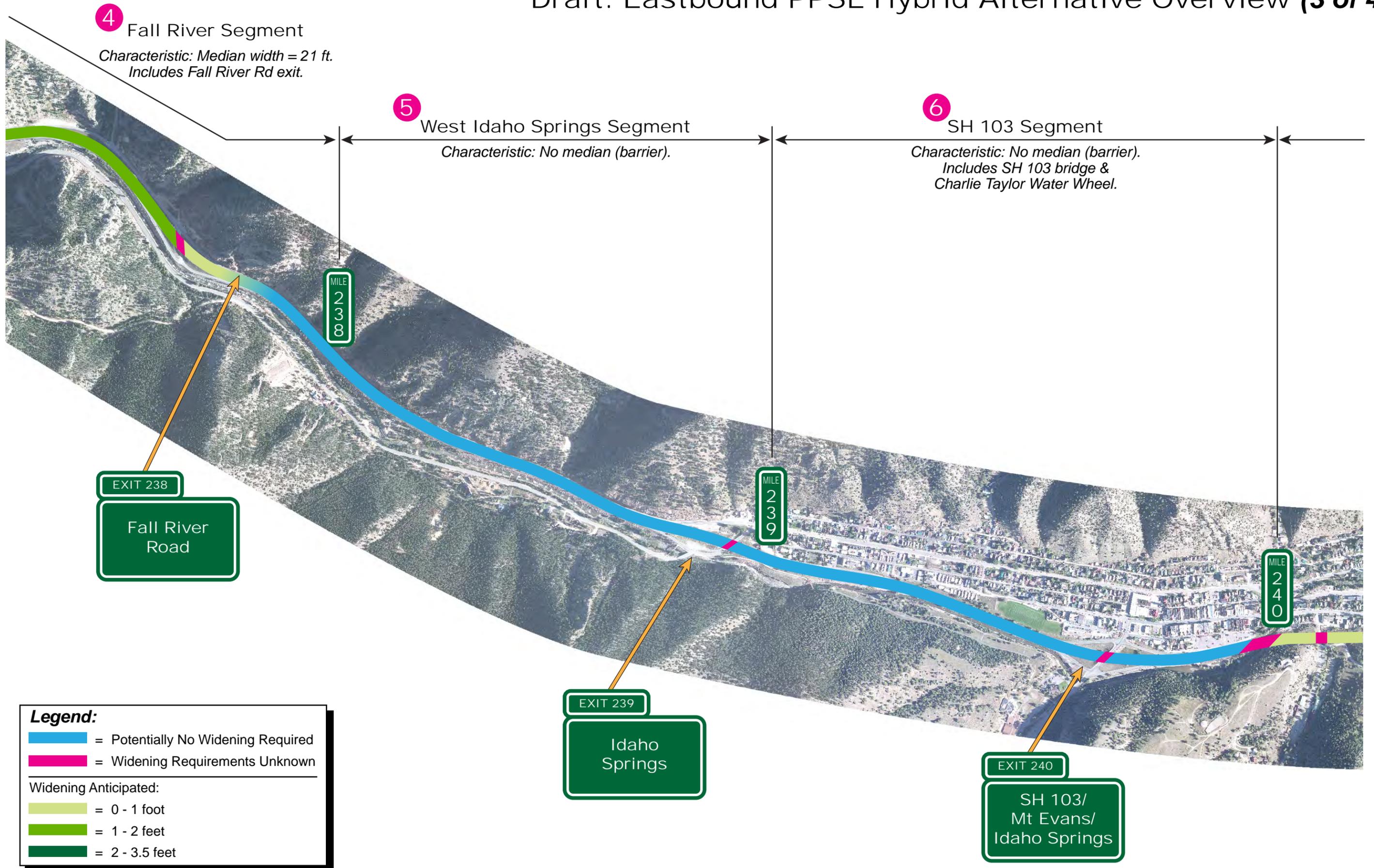
- Blue = Potentially No Widening Required
- Pink = Widening Requirements Unknown

---

Widening Anticipated:

- Light Green = 0 - 1 foot
- Medium Green = 1 - 2 feet
- Dark Green = 2 - 3.5 feet

# Draft: Eastbound PPSL Hybrid Alternative Overview (3 of 4)



# Draft: Eastbound PPSL Hybrid Alternative Overview (4 of 4)

## 7 East Idaho Springs Segment

*Characteristic: No median (barrier).  
End at Twin tunnels widening.*

## 8 Twin Tunnels Segment

*Characteristic: Twin Tunnels widened area.  
Signage improvements only,  
no roadway improvements anticipated.*



**Legend:**

- █ = Potentially No Widening Required
- █ = Widening Requirements Unknown

---

Widening Anticipated:

- █ = 0 - 1 foot
- █ = 1 - 2 feet
- █ = 2 - 3.5 feet

## LIZ N: Empire Junction

LIZ N: Empire Junction

Mileposts: 231.6 – 232.9

Early Enhancement Opportunities in LIZ? No

LIZ Length: 1.4 miles

<i>Target Species</i>	<i>Species Movement Guilds</i>
Canada Lynx	Adaptive High Mobility Fauna

### *Secondary Target Species*

Bighorn Sheep*	Black Bear
Elk	Mule Deer
Northern Leopard Frog	

\*East-west movement across Highway 40 is more important for Bighorn sheep than connectivity across I-70.

*Animal-Vehicle Collisions:* High

*Status of Adjacent Lands:* Mostly private, some county

*Site Discussion:* Confluence of two large drainages (Clear Creek and the West Fork) and junction with Highway 40. Likely these two drainages provided historical movement pathways for many species. Interchange and other infrastructure create a large barrier at this confluence. Clear Creek has forced meanders around highway infrastructure, reinforced by riprap banks throughout this segment

### **Connectivity Recommendations**

Coordinate visioning and planning for this segment with visioning and planning for Highway 40. Preferred alternative is to construct an extensive span bridge and raised interchange through this section to accommodate terrestrial and aquatic passage between the two drainages and restore the flow of Clear Creek and its riparian banks to a more natural condition. Alternatively, construct new crossing structures at mileposts 231.2 (JP064 - just beyond west end of LIZ) and 231.6-231.9. Investigate using jersey barriers or other barrier structures to keep sheep away from I-70 road edge on north side (2004 LIZ recommendation).

<b>Site-Specific Recommendations</b>				
<b>Loc. #</b>	<b>MP</b>	<b>Site Description</b>	<b>Recommendations</b>	<b>EEO*</b>
JP064	231.2	Clear Creek concrete box culvert. Outside of LIZ, but possible location for a larger crossing structure.	Replace with a bridge structure and restore riparian banks. Bridge should have a wide enough span to include dry pathways for terrestrial species on both sides of the creek. Install limited guide fencing to direct animals towards structure and investigate use of scent lures to attract lynx towards structure.	No

JP066	232.3	Clear Creek concrete box culvert. Structure goes under traffic lanes and eastbound on-ramp.	None. See preferred alternative.	No
n/a	231.6-231.9	No existing structure	Identify a location to install a new large arch culvert in this segment suitable for lynx, elk, deer and bear. Install limited guide fencing to direct animals towards structure and investigate use of scent lures to attract lynx towards structure.	No
n/a	Hwy 40	No existing structure	Identify a location and construct an overpass for bighorn sheep over Hwy 40 (2004 LIZ recommendation)	No

\*Early Enhancement Opportunity

†Indicates wildlife monitoring conducted at site

## LIZ O: Clear Creek Junction

Mileposts: 243.0 – 244.9  
LIZ Length: 2 miles

Early Enhancement Opportunities in LIZ? No

<i>Target Species</i>	<i>Species Movement Guilds</i>
Elk	Very High Openness Fauna
Mule Deer	Adaptive Ungulates

<i>Secondary Target Species</i>	
Bighorn Sheep	Canada Lynx
Mountain Lion	Preble's Jumping Mouse

*Animal-Vehicle Collisions:* Low to Moderately-Low

*Status of Adjacent Lands:* Private

*Site Discussion:* Highway 6/Clear Creek Canyon Interchange. Western Portion of LIZ parallels Clear Creek; eastern portion ascends Floyd Hill.

### **Connectivity Recommendations**

Land bridge over Twin Tunnels just beyond LIZ to the west. Existing bridges over Clear Creek provide little opportunity for terrestrial passage. There is a proposal in the Final PEIS to tunnel eastbound lanes from milepost 243.5 to 245.0 to remove the sharp curve at the bottom of Floyd Hill; Westbound lanes would continue on the current alignment. This tunneling option may offer the opportunity to minimize the roadway footprint through this segment.

<b>Site-Specific Recommendations</b>				
<b>Loc. #</b>	<b>MP</b>	<b>Site Description</b>	<b>Recommendations</b>	<b>EEO*</b>
JP131	243.0	Divided bridge at Central City exit with additional bridges to north (exit ramp and local road). Extensive riprap under all bridges. Dirt path with 2m clearance under hwy bridges.	Open up terrestrial pathway under highway bridges (particularly on west side of creek) and restore natural stream banks. Re-design exit ramp to provide greater clearance under bridge. Facilitate at-grade crossing over local road until that bridge can also be replaced with a larger structure encompassing riparian banks and providing dry terrestrial pathways.	No
JP017	244.2	Divided bridge with concrete support walls at Hwy 6 junction. Spans Clear Creek and bike path.	Open up north side of eastbound structure by replacing walls with pillar supports. Open up and restore riparian banks on both sides of the creek (including low cover for Preble's jumping mouse). Cliffs act as natural funnel towards structure.	No

JP043†	244.9	Fill slope; Hwy 40 frontage road parallel and below interstate to north/east	Construct bridge wildlife crossing - possibly also under Hwy 40. Relocate dirt pull-out to reduce roadway footprint at this location and to discourage human activity. Install limited guide fencing.	No
--------	-------	------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----

\*Early Enhancement Opportunity

†Indicates wildlife monitoring conducted at site

## ALIVE IMPLEMENTATION MATRIX

### WILDLIFE CONNECTIVITY AND HABITAT

Objective: To increase the permeability of the I-70 Corridor to terrestrial and aquatic species, including the development of management strategies that will result in the long-term protection and restoration of wildlife linkage areas that intersect the I-70 Corridor, improve habitat connectivity, and preserve essential ecosystem components. (MOU Purpose and Intent).

Corridor Planning	Project Development	Project Design	Project Construction	Operations, Maintenance, and Monitoring
<b>Inputs</b> <ul style="list-style-type: none"> <li>Wildlife data</li> <li>Land use information (incl. local use, USFS management plans, BLM, etc.)</li> <li>Existing LIZ and Ecological information and recommendations</li> </ul>	<b>Inputs</b> <ul style="list-style-type: none"> <li>Target species movements and habitats</li> <li>Wildlife guidelines and BMPs (I-70 Guidelines for Enhancing Wildlife Permeability)</li> <li>Avoidance and mitigation strategies (I-70 Connectivity Recommendations)</li> <li>Existing recovery efforts (USFWS/CDOW)</li> <li>Coordination with CDOW, USFWS, USFS, BLM, local governments, other stakeholders)</li> </ul>	<b>Inputs</b> <ul style="list-style-type: none"> <li>Species specific needs and compatible project designs</li> <li>Terms and conditions from Biological Opinion, if applicable</li> </ul>	<b>Inputs</b> <ul style="list-style-type: none"> <li>Terms and conditions from Biological Opinion, if applicable</li> <li>New species &amp; habitat data since PS&amp;E relative to all target species (or new target species) – NEPA reevaluation</li> </ul>	<b>Inputs</b> <ul style="list-style-type: none"> <li>Implementation and Monitoring Plan</li> <li>Terms and conditions from Biological Opinion, if applicable</li> </ul>
<b>Considerations</b> <ul style="list-style-type: none"> <li>What opportunities exist to improve, protect or restore permeability and habitat components?</li> <li>How have wildlife habitat and populations changed since the original or last updated analyses?</li> </ul>	<b>Considerations</b> <ul style="list-style-type: none"> <li>Are these permeability concerns outside of identified LIZs?</li> <li>Where are there existing barriers to wildlife movement?</li> <li>What opportunities exist to improve, protect or restore permeability and habitat components?</li> </ul>	<b>Considerations</b> <ul style="list-style-type: none"> <li>Will project designs improve or restore habitat and permeability?</li> <li>Will project designs minimize impacts to habitat and permeability during construction?</li> </ul>	<b>Considerations</b> <ul style="list-style-type: none"> <li>Are there unforeseen issues affecting habitat &amp; permeability during construction?</li> <li>Are there changes to the construction timeline that could affect habitat &amp; permeability?</li> </ul>	<b>Considerations</b> <ul style="list-style-type: none"> <li>Are the mitigations successful relative to the permeability goals set during corridor planning and project development?                             <ul style="list-style-type: none"> <li>What could be done differently?</li> </ul> </li> </ul>

## ALIVE IMPLEMENTATION MATRIX

### WILDLIFE CONNECTIVITY AND HABITAT

Objective: To increase the permeability of the I-70 Corridor to terrestrial and aquatic species, including the development of management strategies that will result in the long-term protection and restoration of wildlife linkage areas that intersect the I-70 Corridor, improve habitat connectivity, and preserve essential ecosystem components. (MOU Purpose and Intent).

Corridor Planning	Project Development	Project Design	Project Construction	Operations, Maintenance, and Monitoring
<p>Considerations (cont'd)</p> <ul style="list-style-type: none"> <li>• What types of changes in wildlife habitat, populations or movements might occur in the reasonably foreseeable future?</li> </ul>	<p>Considerations (cont'd)</p> <ul style="list-style-type: none"> <li>• How have wildlife habitat and populations changed since the original or last updated analyses?</li> <li>• What types of changes in wildlife habitat, populations or movements might occur in the reasonably foreseeable future?</li> <li>• Do opportunities exist to enhance recovery efforts (e.g., approved Recovery Plans for ESA-listed species and State analog)?</li> <li>• Does the target species list include ESA-listed T&amp;E species, species of state economic importance, USFS and BLM sensitive species, USFS MIS, &amp; state spp. of concern?</li> <li>• Are there potentially conflicting mitigation/BMPs actions (crosswalk proposed mitigations)</li> </ul>	<p>Considerations (cont'd)</p> <ul style="list-style-type: none"> <li>• Will project designs minimize impacts to habitat and permeability during operations and maintenance?</li> <li>• Are there potentially conflicting mitigation/BMPs actions (crosswalk proposed mitigations)</li> </ul>		<p>Considerations (cont'd)</p> <ul style="list-style-type: none"> <li>– How could a structure be built better, cheaper next time?</li> </ul>

## ALIVE IMPLEMENTATION MATRIX

### WILDLIFE CONNECTIVITY AND HABITAT

Objective: To increase the permeability of the I-70 Corridor to terrestrial and aquatic species, including the development of management strategies that will result in the long-term protection and restoration of wildlife linkage areas that intersect the I-70 Corridor, improve habitat connectivity, and preserve essential ecosystem components. (MOU Purpose and Intent).

Corridor Planning	Project Development	Project Design	Project Construction	Operations, Maintenance, and Monitoring
<b>Outcomes and Products</b> <ul style="list-style-type: none"> <li>Identify measurable permeability goals for the corridor</li> <li>Avoidance strategies Mitigation strategies (I-70 Connectivity Recommendations)</li> <li>Revised or refined LIZ information for that corridor segment (LIZs-2011)</li> <li>Identify partnership and acquisition or easement opportunities (permanent protection opportunities for adjacent habitat)</li> </ul>	<b>Outcomes and Products</b> <ul style="list-style-type: none"> <li>Biological Evaluation (USFS sensitive spp.), Biological Assessment (USFS), Biological Opinion (USFWS), Biological Report (USFS)                             <ul style="list-style-type: none"> <li>Identify project-specific mitigation strategies relative to all target species</li> <li>Establish commitment to monitoring</li> </ul> </li> </ul>	<b>Outcomes and Products</b> <ul style="list-style-type: none"> <li>Final Plan Specifications and Estimates (i.e., final designs) including specific mitigation measures</li> <li>Monitoring plan, estimates and identified funding for monitoring &amp; ongoing maintenance</li> </ul>	<b>Outcomes and Products</b> <ul style="list-style-type: none"> <li>Mitigation modifications</li> </ul>	<b>Outcomes and Products</b> <ul style="list-style-type: none"> <li>Monitoring results</li> <li>Lessons learned</li> </ul>

### INFORMATION NEEDS AND UPDATES

Objective: Identify and acquire information needed to inform decision-making and outcomes at each life cycle phase.

<ul style="list-style-type: none"> <li>Changing and shifting habitats and wildlife populations</li> <li>Ongoing LIZ revisions</li> </ul>	<ul style="list-style-type: none"> <li>General and species-specific BMPs</li> </ul>	<ul style="list-style-type: none"> <li>Species-specific and site-specific monitoring needs- what protocols should be implemented to evaluate the functionality of mitigation measures?</li> </ul>	<ul style="list-style-type: none"> <li>Surveys prior to implementation</li> </ul>	<ul style="list-style-type: none"> <li>Are there new or improved monitoring techniques which could provide greater efficiency and effectiveness in monitoring?</li> </ul>
------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------



## Twin Tunnels EA and Frontage Road Project ALIVE Issues Work Plan

<b>Wildlife Connectivity and Habitat</b>			
<i>Issue</i>	<i>How it will be addressed/ Recommendation</i>	<i>Information and data needs</i>	<i>CDOT Lead</i>
Barrier separation along Clear Creek Greenway	Identify location for breaks and consider various designs and types	Drainage locations	David Singer
Need to provide pathway for deer and elk under Hidden Valley bridge over Clear Creek	Will include deer passage under bridge and improve bench in project design		
Sheep get stuck in the fence along north side of I-70 at the west portal of the westbound tunnel	Minimal fencing. If needed, must meet CPW guidelines	Identify existing fence ownership	Jim Eussen
Fencing needed on south side of the tunnel during I-70 construction to redirect wildlife downstream away from the detour	Temporary fencing will be installed on the north side of old US 40 from the west portal to the doghouse bridge. Temporary lighting will be used during detour.		

<b>Wildlife Connectivity and Habitat</b>			
<i>Issue</i>	<i>How it will be addressed/ Recommendation</i>	<i>Information and data needs</i>	<i>CDOT Lead</i>
Consider opportunities to accommodate wildlife in culvert west of the Twin Tunnels near Clear Creek Rafting	Maintain access on the south end to allow animals to move up and down Clear Creek. Improve drop from outlet.	Set cameras to inventory use.	Jim Eussen
Aquatic and fish permeability and passage	Develop design with CPW and USACE for permitting.	CPW to conduct fish survey in the fall of 2012 as baseline.	Jim Eussen
Limit lighting on the frontage road and at wildlife crossings	Directional light at Hidden Valley bridge. No permanent lighting on the frontage road.	Confirm frontage road lighting.	David Singer
Coordinate between the two projects to enhance connectivity	Ongoing		David Singer
<b>Information Needs and Updates</b>			
<i>Issue</i>	<i>How it will be addressed</i>	<i>Information and data needs</i>	<i>CDOT Lead</i>
Need project specific and small species data not included in the recent I-70 inventory	Add to CSS inventory on website	<ul style="list-style-type: none"> <li>- CPW aquatic survey</li> <li>- Camera inventory in culvert</li> <li>- Landowner observation documentation</li> <li>- Migratory bird survey</li> </ul>	Janet Gerak/David Singer