

## PURPOSE FOR MEETING

#### CONCEPT DEVELOPMENT

- Discuss What Happened Since Last Public Meeting (March 14)
- Provide Responses to Comments Received on March 14
- Present Recommendations from the Concept Development Process
- Request Feedback on Recommendations from Concept Development Process

#### NATIONAL ENVIRONMENTAL POLICY ACT: TWO PROJECTS

- Initiate National Environmental Policy Act (NEPA) Processes for WB Peak Period Shoulder Lane (PPSL) and for Floyd Hill Projects
  - WB Peak Period Shoulder Lane Project considers adding a Westbound Mountain Express Lane from the Veterans Memorial Tunnels to Empire Junction at US 40 and I-70 interchange.
  - Floyd Hill Project considers adding an additional travel lane in the westbound direction, interchange and safety improvements from the top of Floyd Hill to the Veterans Memorial Tunnels as well as replacement of the westbound bridge at the bottom of Floyd Hill.
- Request input on issues to consider during the two NEPA processes
- Request input on design solutions for two NEPA processes



# CONCEPT DEVELOPMENT PROCESS AND CORE VALUES

#### CONCEPT SENSITIVE SOLUTIONS PROCESS



Establish context statement



Define core values & issues



Develop concepts



Evaluate, select, refine options



Determine which option(s) to advance to NEPA



Finalize documents and evaluate process

#### **CORE VALUES**







Implementability



Community \_\_\_\_ Environment



Engineering Criteria & Aesthetic Guidelines



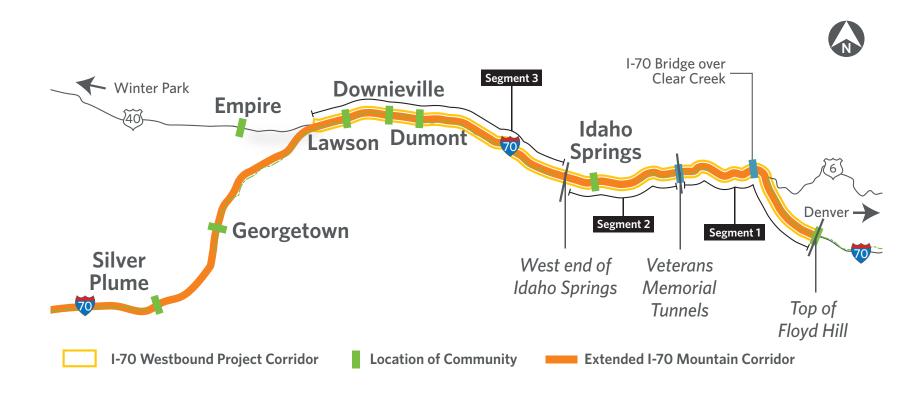
**Historic Context** 



**Decision Making** 



### PROJECT CORRIDOR





#### COMMENTS HEARD AT MARCH 14TH PUBLIC MEETING

#### **COMMENTS ON NEED**

Improvements are needed

Make sure safety issues are addressed

Existing interchanges have problems

Emergency access needs to be considered

At the bottom of Floyd Hill, consider improving conditions for the Greenway, existing businesses and rafting industry

Account for traffic from the Gaming Areas in addition to traffic on I-70 and traffic generated from local developments and subdivisions

#### COMMENTS ON CONCERNS

Neighborhood concerns must be incorporated

Noise, air quality, historic building and economic development are important in Idaho Springs

(Please see handout for response to all comments received)







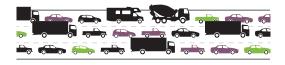


### EASTBOUND DATA

WINTER 2016-2017 VOLUMES (HIGHER THAN PREVIOUS YEAR)

#### 1.12 million vehicles

2015-2016 winter volumes: 1.03 million vehicles



# Eastbound PPSL: 89,800 vehicles

2015-2016: 42,600 vehicles

#### CORRIDOR SAFETY IMPROVED



Corridor incidents were down 22 percent in the winter season.

Incident response times were 4 minutes quicker than last year.

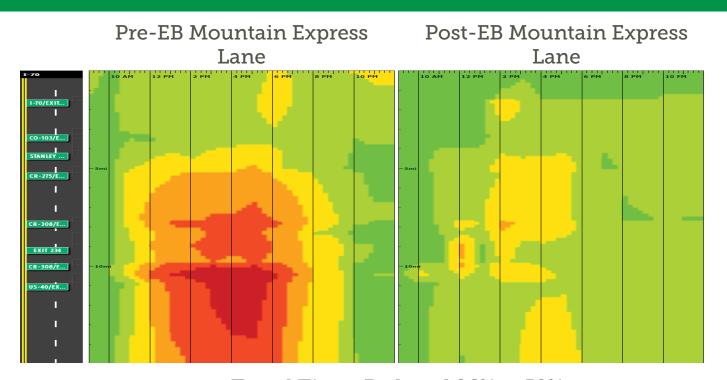
#### TRAVEL TIMES IMPROVED



In a worst-day comparison between 2015 and 2016, eastbound travel times between Georgetown and US 40 improved by 21 minutes with Mountain Express Lanes.



### EASTBOUND TRAVEL SPEEDS



Travel Times Reduced 26% to 52%

These figures depict average speed by location and by time-of-day. Areas of dark green reflect normal highway speeds, while areas of dark red show times and locations of very slow congested speeds.



# EASTBOUND IMPACT

#### POSITIVE EFFECT OF RECENT CONSTRUCTION



Travel times for all lanes has improved 22 to 52 percent



Time to clear corridor back-ups has substantially improved



Express Lane has been well received by public and the media



Time to clear incidents has improved

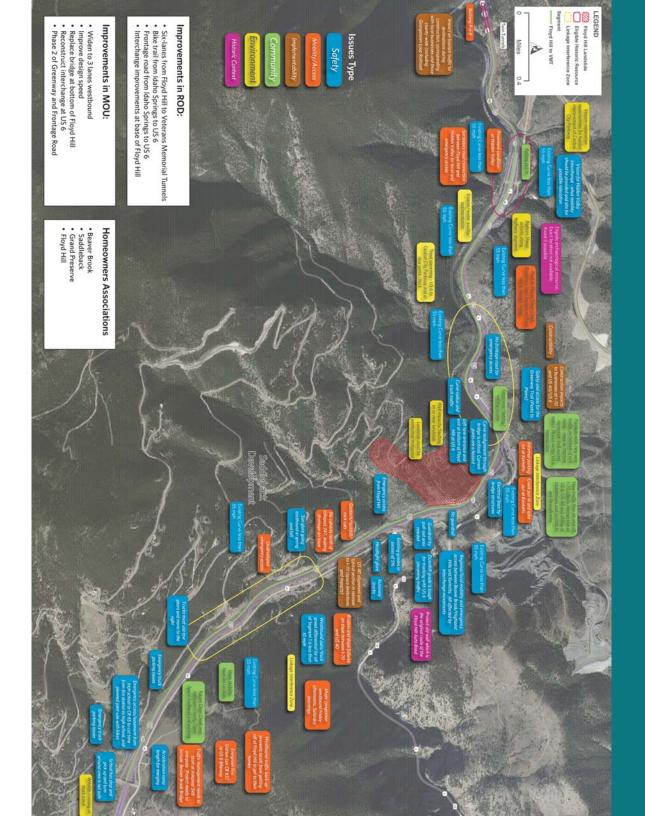


Frontage Road congestion has been alleviated

Data is from the I-70 Mountain Express Lane January 1 through April 10, 2016 and May 30 through September 5, 2016 Summary of Findings Report

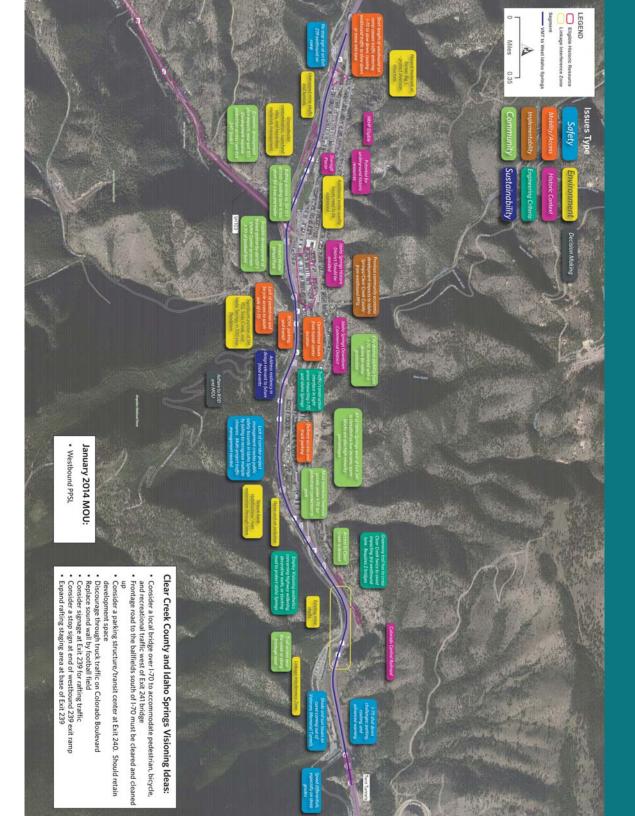


# ISSUES:

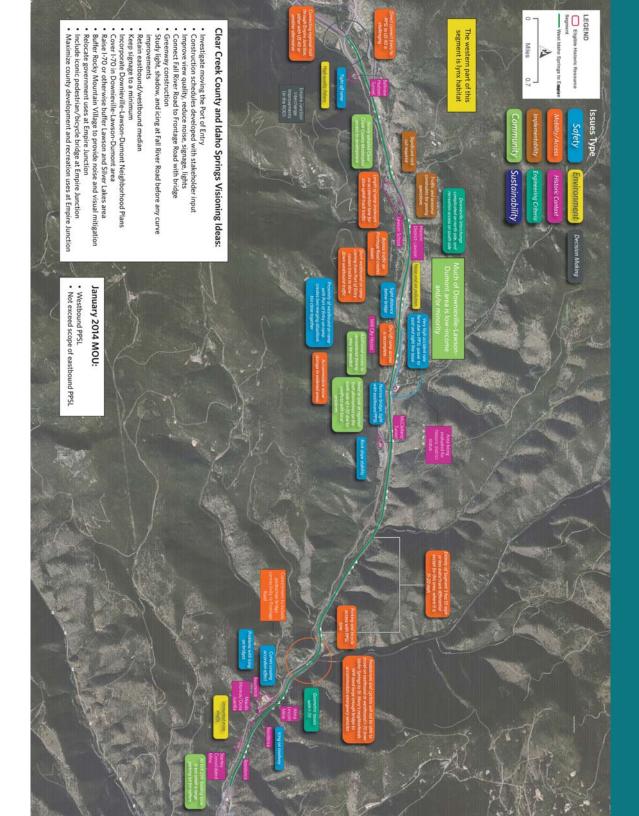




# L ISSUES: T 2



# L ISSUES: T 3

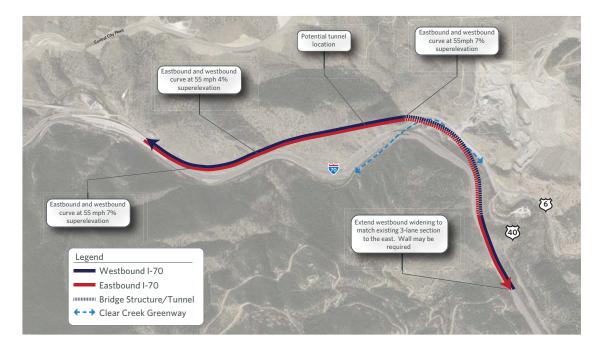


# ALIGNMENT CONCEPTS

**SEGMENT 1 (FLOYD HILL)** 

#### NORTH ALIGNMENT CONCEPT

Consider an option of realigning I-70 slightly to the north of its current alignment, including a new bridge from Floyd Hill.



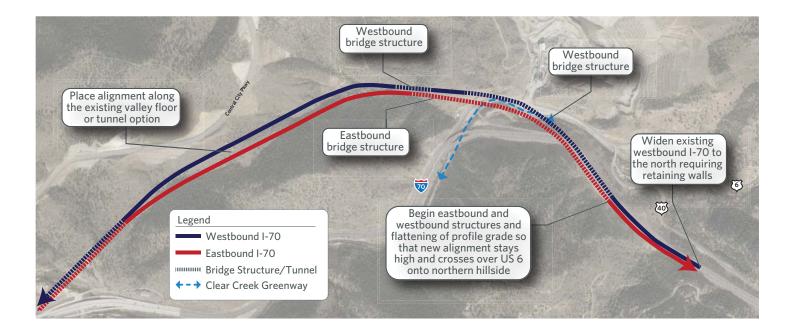


# **ALIGNMENT CONCEPTS**

**SEGMENT 1 (FLOYD HILL)** 

#### OFF ALIGNMENT CONCEPT

Consider an option of realigning I-70 to the north off of its current alignment, including new bridges from Floyd Hill and a tunnel on the west.



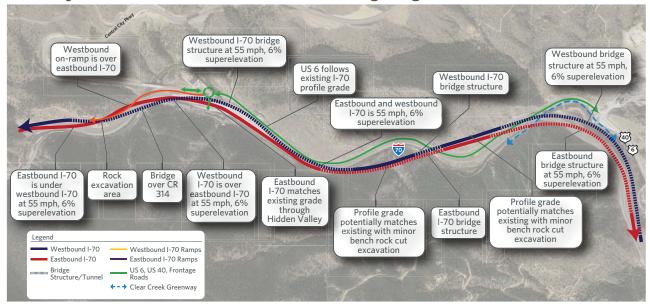


# ALIGNMENT CONCEPTS

**SEGMENT 1 (FLOYD HILL)** 

#### SOUTH ALIGNMENT CONCEPT

Consider straightening curves generally along the existing I-70 alignment, including new bridges from Floyd Hill and south of the existing alignment.

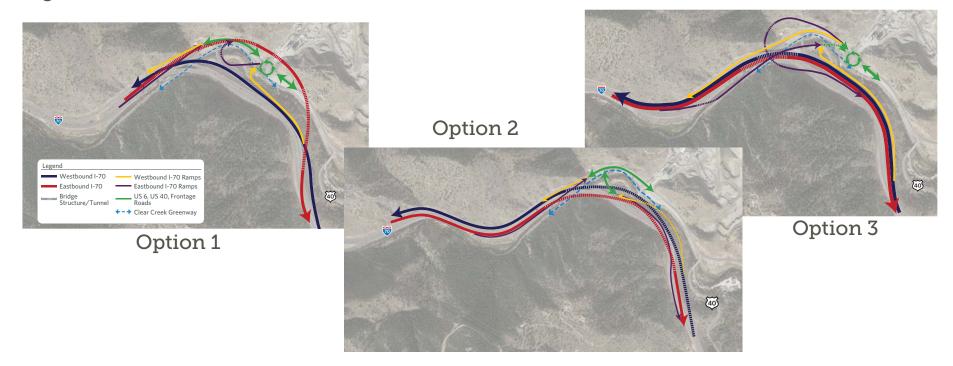




SEGMENT 1 (FLOYD HILL)

#### FULL MOVEMENTS AT CURRENT LOCATION

Consider reconfiguring the US-6 interchange at its current location. Options include consideration of roundabouts and flyover ramp structures, along with associated realignments of I-70.

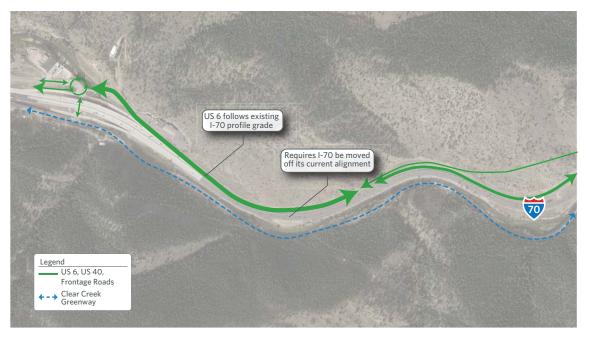




SEGMENT 1 (FLOYD HILL)

#### CLOSE INTERCHANGE AT US 6, MOVE TO WEST (HIDDEN VALLEY)

Consider closing the US-6 interchange access at its current location, and moving US-6 access to the Hidden Valley interchange. Some Hidden Valley interchange improvements would be included.

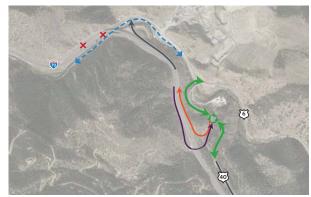


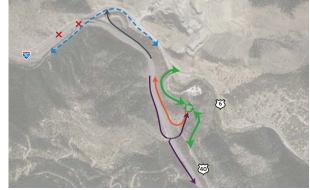


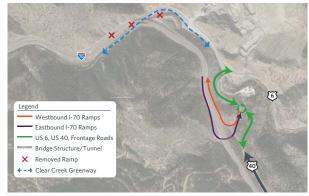
#### SEGMENT 1 (FLOYD HILL)

#### SHIFT OTHER MOVEMENTS TO THE EAST

Consider moving some US-6 interchange movements up Floyd Hill to the east. Options include consideration of roundabouts and flyover or tunnel ramp structures.







Option 1

Option 2

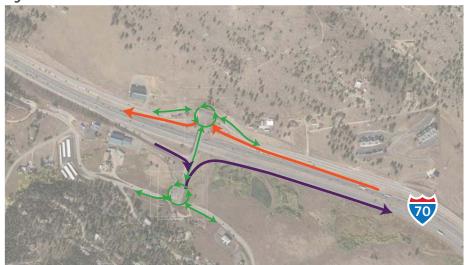
Option 3



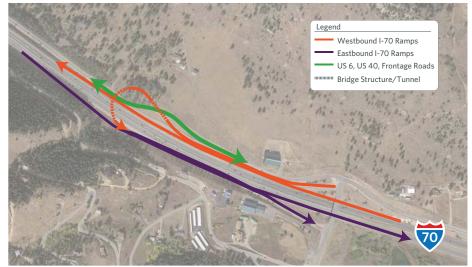
#### SEGMENT 1 (FLOYD HILL)

#### MOVE INTERCHANGE EAST (TOP OF FLOYD HILL)

Consider closing the US-6 interchange access at its current location, and moving US-6 access to the top of Floyd Hill. Options include consideration of roundabouts and ramp flyover or tunnel structures.



Option 1



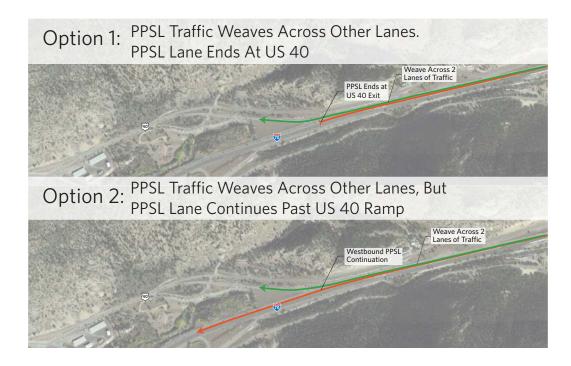
Option 2



#### **SEGMENT 3**

#### **EMPIRE JUNCTION INTERCHANGE**

Consider where peak period shoulder lane (PPSL) will end heading westbound. For PPSL traffic headed to US-40, cutting across the general purpose lanes is an option, with variations on where to end the PPSL lanes for westbound I-70 traffic.

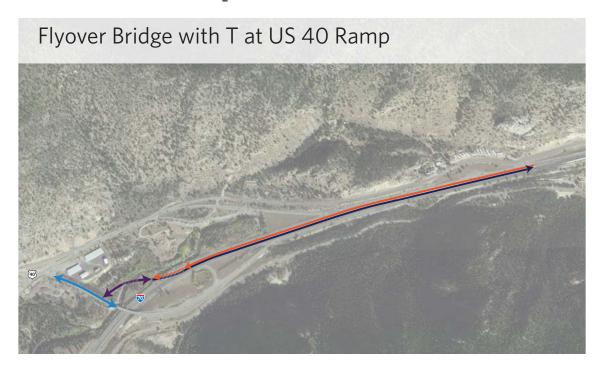




#### **SEGMENT 3**

#### **EMPIRE JUNCTION INTERCHANGE**

Consider where peak period shoulder lane (PPSL) will end heading westbound. For PPSL traffic headed to/from US-40, a direct connect flyover bridge across I-70 and Clear Creek ending at a T-intersection is an option.





#### **SEGMENT 3**

#### **EMPIRE JUNCTION INTERCHANGE**

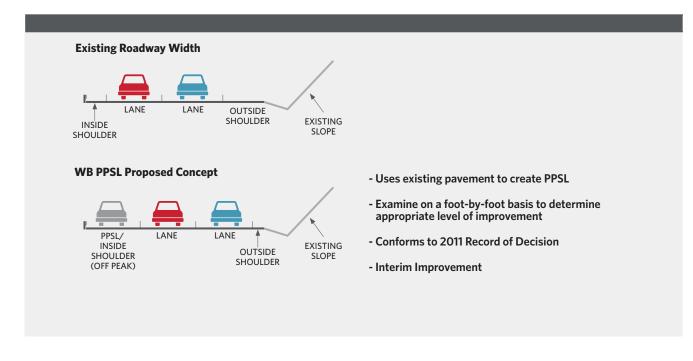
Consider where peak period shoulder lane (PPSL) will end heading westbound. For PPSL traffic headed to US-40, a direct connect flyover bridge across I-70 and Clear Creek ending at a roundabout is an option.





# WESTBOUND PEAK PERIOD SHOULDER LANE PROPOSED CONCEPT

#### SEGMENTS 2 & 3



- The Project Leadership Team and Technical Teams agree on the proposed concept for a westbound peak period shoulder lane.
- It provides safety and mobility benefits while minimizing impacts to communities and natural resources.
- It is consistent with the 2011 Record of Decision and mirrors the improvements made in the eastbound direction.

The following three boards provide information used to determine alignment and interchange concepts developed for Segment 1 and the cross section concepts developed for Segments 2 and 3 to be forwarded for more detailed review in the upcoming National Environmental Policy Act processes. The evaluation criteria along the sides were taken from the issues developed by the Project Leadership Team and the Technical Team during the Concept Development Process. Then the concepts were compared to each other and a recommendation was developed based on this information.



### COLORADO Department of

# Segment 1 Interchange Decision Matrix

5/24/2017					- 1
Most impact	Less of an impact	Partial impact	Partial impact. Roundabout will have to be designed to accommodate CMVs.	2 Impact to CMV (Tractor trailer and buses)	
Partially responsive to mater plan, Master plan suggests no land use changes at the bp of Floyd Hill.	Partially responsive	Fully responsive	Fully responsive	Consistency with 2017 CCC Master plan. The Master plan calls for 1 improvements to the Floyd Hill interchange but not a diamond interchange.	
		SEGMENT SPECIFIC CRITERIA			
Fair Better Best Option D	Option C	Option B	Option A	ID Criteria	_
Not Consistent	Not Consistent	improvements.	Greenway.	18. County Visioning?	-
Adheres	Adheres	Adheres	Adheres	17. Study?	_
No Issues.	Potential to effect archeological resource	No Issues.	No Issues.		
WIIIOT COHOMBIGINATIO	Took outs may be costly to maintain	to maint	costly to maintain.	_	
Minor considerations	Book sute may be postly to maintain	Minimal structures in the canyon. Less costly	Multiple structures in the canyon. Most	Criteria and Aesthetic Guidance?  Minimizes effort and cost to	٠ -
Minor considerations	Dod out potential	Missional structures in the consume.	Multiple attractures in the service		· -
No ornelied	Minimal risk mokeut patential	Lesser impact to Clear Creek.	Most impact to clear Creek	resource and water quality, including Minimizes conflicts with geologic	
Impacts are easily mitigated.	Less impacts to wildlife	Least impact to wildlife.	Most impacts to wildlife	11. Protects / enhances wildlife?  Protects Clear Creek, its fishery	- 4
Enhances tourism potential because it removes infrastructure from bottom of Floyd Hill  I east impact to wildlife	Reduces tourism potential. Access to recreational opportunities is more difficult.	removes infrastructure from bottom of Floyd Hill.	Reduces tourism potential.		-
Residents not supportive of encouraging economic development at top of Floyd Hill.	No change to current opportunities	No change to current opportunities	No change to current opportunities.	Supports private development and economic development opportunities?	9.
Enhances recreation potential at bottom of Floyd Hill.	Reduces recreation access.	Enhances recreation potential.	Reduces recreation access.	Supports / enhances recreation access and facilities?	ço .
Better value for the life cycle. Simplest to build.	Not the best value for the life cycle. Difficult construction.	Better value for the life cycle. Less difficult to build.	Not the best value for the life cycle. Complicated construction.	Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function and purpose?	7.
Minimal impact to traveling public.	Extensive impact to traveling public.	Moderate impact to traveling public.	Extensive impact to traveling public.	Minimizes cor (construction	6
Opens canyon for AGS and Greenway alignment(s)	Extension of US 6 potentially impacts AGS and Greenway alignments	Opens canyon for AGS and Greenway alignment(s)	Challenging geometrics for accommodating AGS and/or Greenway	<ol> <li>Blends or does not preclude other modes (AGS, Greenway)?</li> </ol>	Çi,
Multiple operational conflicts have been identified. Further study will be undertaken during the NEPA process.	Multiple operational conflicts have been identified. Further study will be undertaken during the NEPA process.	Operations information not available	Multiple operational conflicts have been identified. Further study will be undertaken during the NEPA process.	Improves traffic operations at interchanges?	4.
Adds out of direction travel. Reduces travel options.	Adds out of direction travel. Reduces travel options.	Direct access to Interstate.	Direct access to Interstate.	3. Improves mobility and reliability?	ω
Eliminates conflicting and confusing interchange at US6, however traffic will have to move up the steep hill in both directions. If a roundabout it part of the design, it will need to be designed to accommodate commercial vehicles.	Eliminates conflicting and confusing interchange	Improves safety issues - steep grades possible	Unresolved safety issues - steep grade and sharp curves. If a roundabout is part of the design, it will need to be designed for commercial vehicles.	Addresses safely of the traveling public and the community?	N.
Limits emergency access points. A concentration of truck traffic conflicting with residential traffic could hinder operations	Limits emergency access points.	Provides additional access points.	Provides additional access points.	Accommodates emergency access and response?	-1
Recommended to be advanced into the NEPA process. This concept has some benefits (so impact to Ceal Creek, no impact to the landside, no impact to brown archaeological or historic resources, penter to US camput of recreational potential, immail impact to the true string public during construction) but also some regative features (inconsistent with 2017 Cear Creek County makes plan, out of dreation travel up a steep in II, miste emergency access points, residential are not supportive of economic development potential on top of Poyd Hill put incince in an iman the concepts should not be further sudded in the NEPA process.	mmended to ss. This condi- dies a confut dies a confut the feature si se traveling put traveling put that mean th d in the NEP	Recommended to be advanced into the Recommended to the Recomm	Recommended to be advanced into the NEPA process. This concept has NEPA process. This concept has several benefits (provides additional access points, improves mobility and refeability, does not affect known historic resources and is fully seponsive to CCC Master family and more negative features (unresolved addressures of the process	Summary of findings	
Close US 6 Interchange and move to the East (Top of Floyd Hill)	Options Ranking Close US 6 Interchange and move to the West (Hidden Valley)	Shift - Interchange slightly to the East (full closure option)	Reconfigure - Full Movement at Current Location	ID Criteria	
Table Doct	Segment 1: I-70 and US 6 Interchange	Seg	011	Timbod California	





# Segment 1 Alignments Decision Matrix

All alignments assume the same closs section as was used for the veterans Memorial Lumbers.

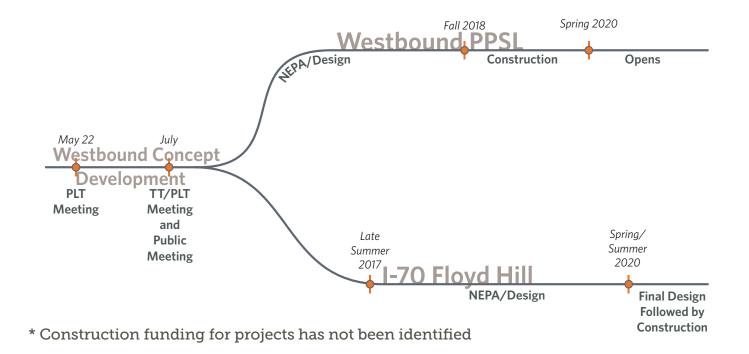


	3 C	2 S D	7	Segme	ō		18. C		16. P	15. N	14.	13. N	1,2 Q P	Ш	ō , ю	,ο.	7. fc tc C	Б. Х	.5 G B	4. Ir	3. lr	,2 O A	.1 >	Evalua	į	5
Summary of Findings	Conforms with Interim Definition	Does it have adverse impacts to parking in Idaho Springs?	Conforms with current State of Practice for Shoulder usage?	Segment Specific Criteria	Segment Specific Criteria		Consistency with Clear Creek County Visioning?	Adheres to ROD and Design Speed Study?	Protects historic and archaeological resources?	Minimizes effort and cost to maintain (includes rockfall removal, snow plowing, etc.)?	Meets I-70 Design Criteria and Aesthetic Guidance?	Minimizes conflicts with geologic hazards?	Protects Clear Creek, its fishery resource and water quality, including wells?	Protects / enhances wildlife?	Supports private development and economic development opportunities?  Enhances tourism and the economy?	acilities?	Creates infrastrudure investments that are reasonable to construct (5 year goal) and provide the best value for their life cycle, function and purpose?	Minimizes construction efforts (construction traffic impacts)?	Blends or does not preclude other modes (AGS, Greenway)?	Improves traffic operations at interchanges?	Improves mobility and reliability?	Addresses safety of the traveling public and the community?	Accommodates emergency access and response?	Evaluation Criteria	1	Critoria
This concept is recommended to be advanced into the NEPA process. It has numerous benefits (least impact to other modes, least construction impacts, least cost, most supportive of economic development, most responsive to tourism, least impact to wildlife and Clear Creek, most consistent with 1-70 Design Criteria and Aesthetic Guidance, least impact to historic properties, conforms to ROD. MOU and interim definition and has the least impacts to patking in Idaho Springs) and only a few negative features (safety challenges, reliability issues, emergency access issues, extensive rockfall maintenance). This concept should be further studied in NEPA.	Conforms	Least impact	Does not conform		Minimal Section Op	Segments 2 ar	Not a Differentiator		Most protective	Most costly because of extensive rock fall mitigation maintenance	Least challenging	Moderate conflicts	Most protective	Most protective	Most supportive  Most responsive	Not a Differentiator	Least cost, Acceptable value	Least impact	Least impact	Not a Differentiator	Least reliable, Moderate mobility	Least Safe	Most challenging	k	Cp Existing/Variable Section	Segments 2 ar
This concept is recommended to be advanced into the NEPA MIEPA process. It has numerous benefits (least impact to other modes, least construction impacts, least cost, most supportive of economic development, most responsive to fundish. Heast impact to wildlife and Clear Creek, most consistent with I-70 Design Criteria and Aesthetic Collidance, least impact to wildlife and Clear Creek, most impact to wildlife and Clear Creek, most collidance, least impact to wildlife and Aesthetic consistent with I-70 Design Criteria and Aesthetic consistent with I-70 Design Criteria and Aesthetic impacts to fundish. Clear Creek, wildlife habitat, historic properties, conforms to Clidance, least impact to wildlife and Clear Creek, most impact to wildlife and Clear Creek, most impact to wildlife and Clear Creek, most impact to wildlife habitat, historic properties, conforms to Clidance, least impact to historic properties, conforms to the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was considered during the EB Peak Period the large section flat was c	Does not conform	Most impacts	Conforms		Options Ranking  Maximum Section	dway Widths	Not a Differentiator	Does not conform	Least protective	Least costly	Most challenging	Extensive conflicts	Least protective	Least protective	Least responsive	Not a Differentiator	Most cost, Acceptable Value	Expensive	Impacts to Greenway and AGS	Not a Differentiator	Most reliable	Safest	Best accommodates	c	Uptions Ranking Fair Best   Be	Segments 2 and 3—Roadway Widths



#### CONCEPT DEVELOPMENT TRANSITION TO TWO NEPA PROJECTS

NEPA = National Environmental Policy Act, a federal environmental law that applies to federally funded projects



# INFORMATION FROM THE CONCEPT DEVELOPMENT PROCESS TO BE INCORPORATED INTO TWO NEPA PROJECTS

- Issues of concern to the general public, the Project Leadership Team, the Technical Team and the Issue Task Force
- Issues of concern to state and federal resource agencies
- Environmental resources
- Alternatives that should be brought forward into the NEPA process
- Alternatives that should not be advanced into the NEPA process

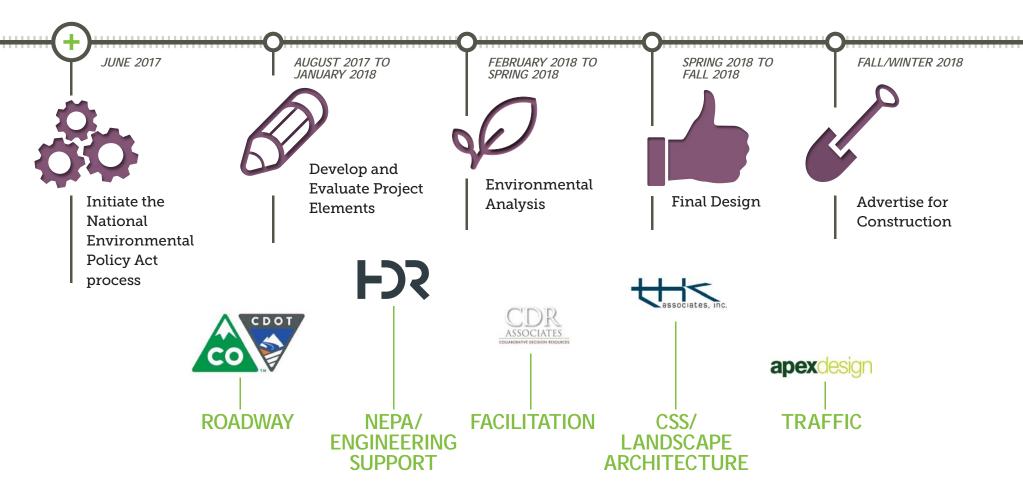




# WB PEAK PERIOD SHOULDER LANE (PPSL) NEPA PROJECT

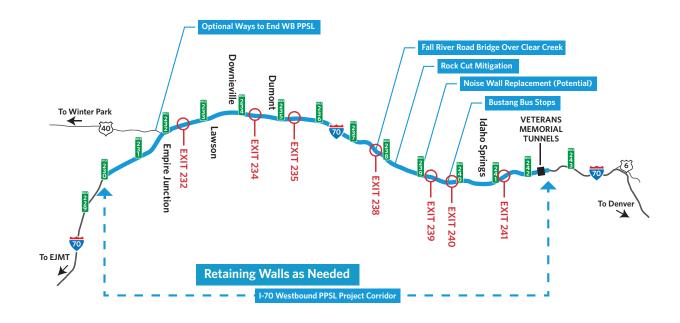


# WB PPSL SCHEDULE AND PROJECT TEAM





# WESTBOUND PEAK PERIOD SHOULDER LANE PROJECT ELEMENTS

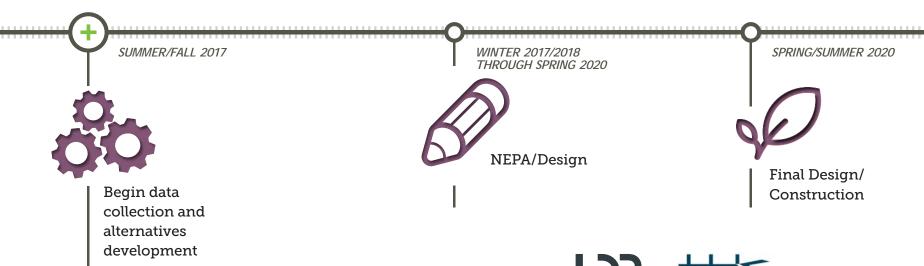




# FLOYD HILL NEPA PROJECT



# FLOYD HILL SCHEDULE AND PROJECT TEAM







**SUBS** 



### CRITICAL ISSUES



