STATE OF COLORADO
DEPARTMENT OF TRANSPORTATION
REGION 1 I-70 MTN CORRIDOR PROGRAM
425A CORPORATE CIRLCE - GOLDEN, CO 80401
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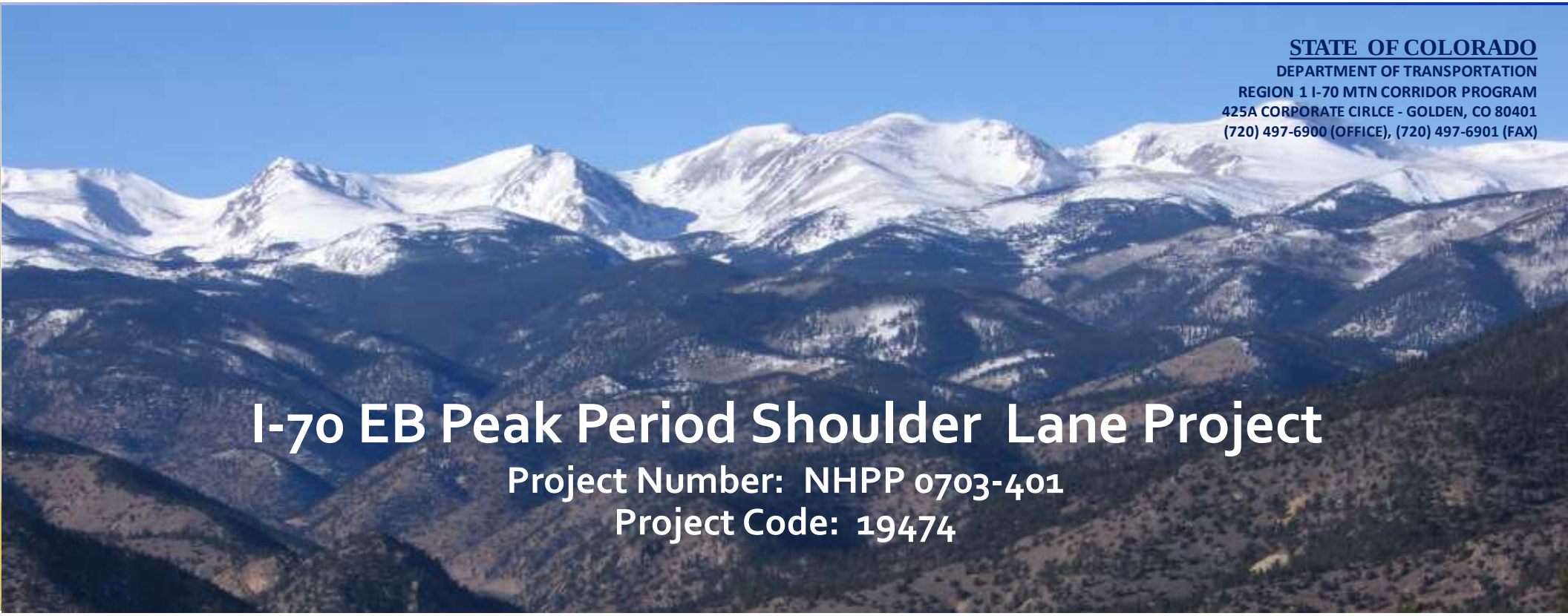


I-70 EB Peak Period Shoulder Lane Project

Project Number: NHPP 0703-401

Project Code: 19474

Technical Team Meeting #6

October 28, 2013

CDOT I-70 Mountain Corridor | HDR Engineering, Inc.

AGENDA

1. INTRODUCTIONS AND OVERVIEW
   - Project Schedule
   - Other Project Efforts
2. RESPONSES TO TECHNICAL TEAM ISSUES
   - Definition of Interim
   - ROD Compatibility
   - Enhancement Opportunities
3. OUTCOMES FROM ISSUES TASK FORCE MEETINGS
   - SH 103
   - Section 106
4. ISSUES TIMELINE
5. FOLLOW UP
   - Retaining Walls
   - Emergency Response
6. REVIEW PROPOSED SOLUTIONS
   - SH 103 Bridge
   - I-70 Bridges
7. DEVELOP CRITERIA FOR:
   - Pull Out Locations
   - Signage
   - Managed Lane Access
8. NEXT STEPS

CORE VALUES

- SAFETY
- MOBILITY
- CONSTRUCTABILITY
- COMMUNITY
- ENVIRONMENT
- ENGINEERING CRITERIA AND AESTHETICS
- SUSTAINABILITY

STEP 1
Define Desired Outcomes and Actions

STEP 2
Endorse the Process

STEP 3
Establish Criteria

STEP 4
Develop Alternatives and Options

STEP 5
Evaluate, Select and Refine Alternatives and Options

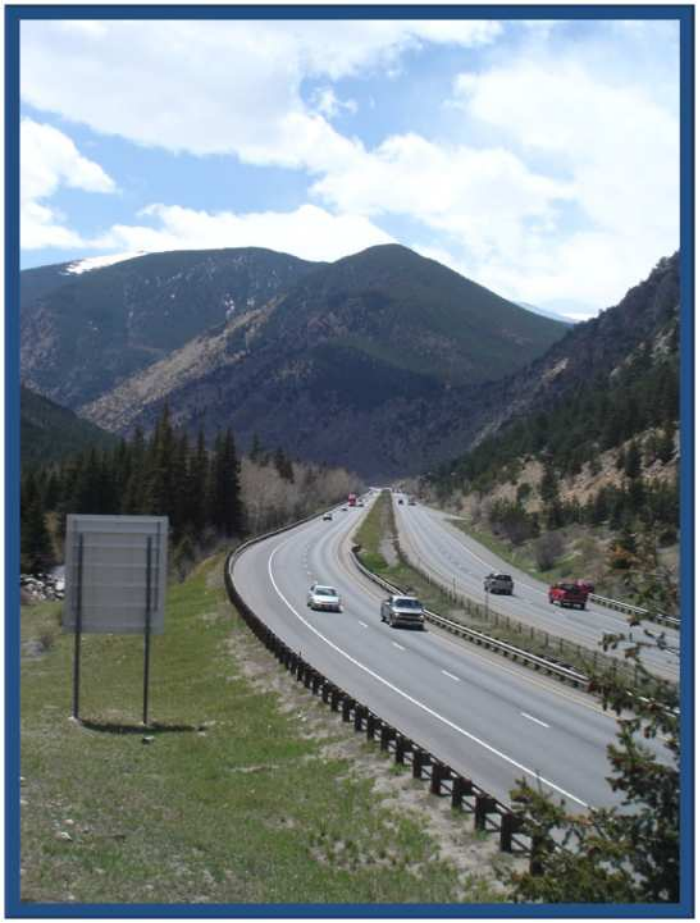
STEP 6
Finalize Documentation and Evaluation Process

PROJECT SCHEDULE

- **CONCEPT OF OPERATIONS REPORT**
  - LATE FALL 2013
- **PRELIMINARY DESIGN MEETING**
  - NOVEMBER 2013
- **ENVIRONMENTAL ANALYSIS**
  - JANUARY 2014
- **OPEN TO TRAFFIC**
  - JULY 2015

OTHER PROJECT EFFORTS

- RAMP Recommendations
- Traffic and Revenue
- Twin Tunnels
- AGS
- CCC Transportation Visioning



RESPONSES TO TECHNICAL TEAM ISSUES

➢ PARKING LOT

- Interim definition
- Highway 103 bridge
- Enhancement opportunities along creek (revegetation etc.)
- ROD Compatibility
- EA versus Cat Ex
- Snow removal
- Whole transportation system Including local roads
- Cooperative Agreements (revegetation, greenway, transportation, etc.)
- Online Meeting Update

DEFINITION OF INTERIM

Definition of Interim

- Consists of Two Parts
  - Time Frame (# of Years)
  - Days/Hours of Operation
- Documentation
  - MOU with FHWA
  - Form 464 (Variance Package)
  - Concept of Operations

DEFINITION OF INTERIM

Definition of Interim

- Time Frame
  - CDOT commits to reassess the PPSL in 2020 corresponding with ROD reassessment
  - CDOT will continually collect data annually and conduct a reassessment prior to 2020 if needed
  - Data collected:
    - I-70 Travel Time Reliability
    - I-70 Traffic Volume and Traffic Type
    - I-70 Safety/Crash Data

DEFINITION OF INTERIM

Definition of Interim

- Hours of Operation
  - Need a generalized time frame for staffing and driver expectancy
  - PPSL will run as needed between 11:00am and 8:00pm
  - Saturdays and Sundays from Dec – March & July – September
  - Holidays throughout the year
  - During emergency closures of general purpose lanes when necessary (not included in normal operation count)
  - PPSL operations are weather dependent
  - CDOT commits to run PPSL as described above and not to exceed 20% of the annual days or 7.5% of the annual hourly time

DEFINITION OF INTERIM

Definition of Interim

- MOU Status
  - Currently being drafted for review by FHWA
  - Tech Team review by November/December

ROD Compatibility

- PPSL Does not preclude improvements in the ROD
- Does not clearly fit within a definition of expanded use of existing infrastructure
- Is categorized as a "Separate Action" (per CEQ guidance)

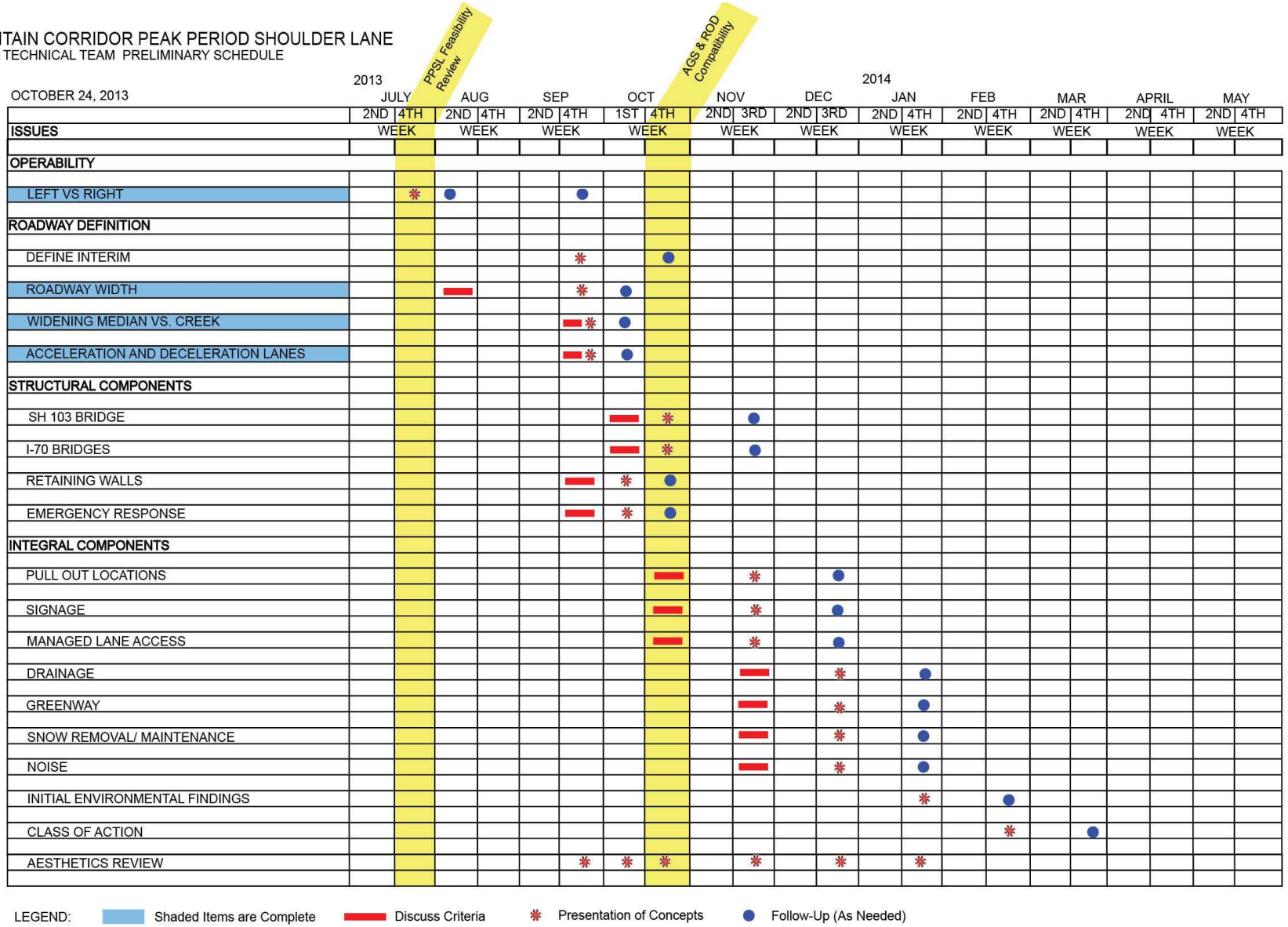
OUTCOMES FROM ISSUE TASK FORCE MEETINGS

- SH 103
  - Held October 11, 2013 and October 24, 2013
- Section 106
  - Held October 8, 2013

CSS TRACKING SCHEDULE

I-70 MOUNTAIN CORRIDOR PEAK PERIOD SHOULDER LANE

ISSUES FOR TECHNICAL TEAM PRELIMINARY SCHEDULE



GLOSSARY OF TERMS

Acceleration Lane	A lane adjacent to the primary travel lane that allows drivers to accelerate before merging into traffic on the main road
Active Traffic Management	A method of increasing peak capacity and smoothing traffic flows on busy major highways. Techniques include variable speed limits, hard-shoulder running, ramp-metering and may be controlled by overhead variable message signs .
Auxiliary Lane	Along a highway an auxiliary lane connects entrance and exit ramps, with the entrance ramp or acceleration lane from one interchange leading to the exit ramp or deceleration lane of the next.
Breakdown Lane	A strip of ground with a hard surface beside a major road where vehicles can stop in an emergency.
Deceleration Lane	A lane adjacent to the primary travel lane that allows drivers to pull off the main road and decelerate safely in order to turn or exit without slowing the traffic behind.
Dynamic Toll	A toll per vehicle that increases or decreases depending on the level of congestion in order to maintain the smooth flow of traffic.
EOP	Edge of pavement.
General Purpose Lane	A traffic lane that does not have any restrictions, such as time of day or type of vehicle that may use the lane.
Interim Solution	A capacity improvement on a roadway that will not be a permanent solution.
Managed Lane	In this case, the managed lane operates during a peak period and traffic utilizing that lane will be required to pay a toll.
Median	The central area between divided highway lanes with traffic traveling in opposite directions.
Peak Period Shoulder Lane	This is a lane of traffic that may function either as a shoulder and a managed lane or a shoulder and a general purpose lane, depending on left versus right.
Rumble Strips	A series of raised strips across a road or along its edge that make a loud noise when a vehicle drives over them in order to warn the driver to go slower or that he or she is too close to the edge of the road
Traffic Management Operations	A coordinated approach to road traffic management where ITS traffic data is utilized to provide traffic information across various platforms to allow for more effective incident management and more efficient management of traffic. This could include continual monitoring of video feed from the corridor.

CSS PROCESS

Context Statement

The I-70 mountain corridor is Colorado's only east-west interstate and the primary access route from Denver to the mountains of western Colorado.

The segment of the I-70 corridor that runs from Empire Junction to the Twin Tunnels at Idaho Springs has spectacular view sheds and is one of the most heavily populated areas of Clear Creek County. It also is one of the narrowest sections in the corridor, with the roadway located on the canyon floor adjacent to Clear Creek. This segment of interstate is an important link for the community, acting as a major arterial throughout the area and also providing multi-modal forms of transportation. Improvements to the interstate in this area directly impact established communities as well as unique environmental, historic and recreational resources.

This segment of the corridor experiences heavy flows of eastbound traffic causing severe congestion and traffic delays during peak periods, especially at the I-70/US 40 interchange at Empire Junction.

Short term operational strategies need to be explored until sufficient funding can be obtained to implement the corridor's ultimate vision.

Core Values	Critical Issues	Evaluation Criteria
Safety	• Emergency Response • Safety of Travelling Public • Local and Tourist Driver Expectancy • Incident Management	1. Address Safety During PPSL Operations? 2. Maintain Safety During non-peak times?
Mobility	• Reliability • Operations • Maintenance • Active Management • Roadway Connectivity/Network	3. Improves mobility and reliability during peak times for both I-70 and the local roadway network? 4. Minimize the effort required to maintain the option?
Constructability	• Fiscally Responsible Costs • Limit Throw Away Work • Adverse Impacts to Enviro/Community • Minimize Infrastructure Improvements • Keep to Operations Project • Adaptability	5. Enable the project team to achieve the goal of opening PPSL by July 1, 2015? 6. Create infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function and purpose.
Community	• Recreation • Historical and Cultural Resources • Tourism and Economy • Local Access • Signing • Livability • Effects to low-income and minority populations	7. Allow for a process to engage and communicate with all the local, regional and national users of the I-70 Mountain Corridor? 8. Create opportunities to "correct past damage"? 9. Provides access and protects opportunities for enhancements to tourist destinations, community facilities, interstate commerce and also limits disproportionate effects to the community?
Environment	• Clear Creek • Wildlife Habitat and Movement • Mining and Metals • Water Quality • Sediment • Air Quality • Noise • Wetlands	10. Incorporate sustainability by using locally available materials and environmentally-friendly processes? 11. Protect or create unique features for the area as a gateway? 12. Protect wildlife needs? 13. Protect Clear Creek? 14. Protect the defining historical elements of Clear Creek County?
Engineering Criteria & Aesthetic Guidelines	• Balance Design Using CSS Guidance • Aesthetics Inspired By Surroundings • Adherance to ROD • Use of Most Recent Technology	15. Meet CDOT and industry standards? 16. Achieve the mountain mineral belt aesthetic guidelines? 17. Meet the I-70 Mountain Corridor design criteria?
Sustainability	• Blends with Future Possibilities (AGS, Transit, Greenway, etc.) • Definition of Interim • Idaho Springs Visioning	18. Preserve opportunities for the AGS and the ultimate preferred alternative? 19. Adaptable for future changes/projects (including Idaho Springs Visioning)?

WIDENING MEDIAN VS. CREEK/ RETAINING WALLS

WIDENING MEDIAN VS. CREEK/ RETAINING WALLS

Preliminary Wall Summary					
Wall Location Description	**Mainline or Ramp Widening**	**Station Range**	**Length Wall (LF)**	**Maximum Exposed Wall Height (FT)**	**Square Feet Wall (Exposed) (SF)**
Lawson	Mainline	354+00 to 361+50	750	3.8	1474
East of Lawson	Mainline	366+00 to 369+50	350	2.0	624
West of Downieville (Existing Wall)	Mainline	373+85 to 382+85	900	Existing	Existing
Dumont On-Ramp	Ramp	451+50 to 454+00	250	2.3	459
B/T Dumont and Fall River	Mainline	468+50 to 477+00	850	2.3	837
Fall River On-Ramp Wall #1	Ramp	591+00 to 594+00	300	3.2	823
Fall River On-Ramp Wall #2	Ramp	596+00 to 599+00	300	2.7	435
SH 103 Off-Ramp	Ramp	676+00 to 678+10	210	5.8	TBD
SH 103 Off-Ramp (Existing Wall)	Ramp	678+10 to 682+10	400	Existing	Existing
SH 103 On-Ramp	Ramp	TBD	TBD	TBD	TBD
Approach to Bridge over Clear Creek	Ramp	701+25 to 702+00	75	2.0	150
		Totals:	**4385**	**N/A**	**4802**

WIDENING MEDIAN VS. CREEK/ RETAINING WALLS

DRAFT

Widening Median vs. Creek

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Widen to Creek	Widen to Median
Evaluation Criteria			
1	Addresses safety during PPSL operations	•Not a differentiator	
2	Maintains safety during non-peak times	•Not a differentiator	
3	Improves mobility during peak times	•Not a differentiator	
4	Minimizes the effort required to maintain the option	•More difficult to maintain taller walls along creek	•Easier to maintain shorter walls and access from roadway.
5	Enables the project team to achieve the goal of opening PPSL by 1-Jul-15	•More wall area to design & build increases schedule	•Less wall area to design & build reduces schedule
6	Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function, and purpose.	•More wall area has more impacts, is more expensive, and requires more maintenance	•Less wall area has less impacts, is less expensive, and requires less maintenance

WIDENING MEDIAN VS. CREEK/ RETAINING WALLS

Widening Median vs. Creek

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Widen to Creek	**Widen to Median**
Evaluation Criteria			
7	Allows for a process to engage and communicate with all the local, regional and national users of the I-70 Mountain Corridor	•Not a differentiator	
8	Creates opportunities to "correct past damage"	•Not a differentiator	
9	Provides access and protects opportunities for enhancements to tourist destinations, community facilities, interstate commerce and also limits disproportionate effects to the community.	• More impacts to riparian vegetation affects river recreational experience	• More impacts to the median vegetation
10	Incorporates sustainability by using locally available materials and environmentally-friendly processes	•Not a differentiator	
11	Protects or creates unique features for the area as a gateway	•Not a differentiator	
12	Protects wildlife needs	•More barrier effect impeding highway permeability	•Less barrier effect impeding highway permeability
13	Protects Clear Creek	•More potential for creek encroachment •More visual impact from walls and tree removal •Less space for WQ features to be added • Degrades recreational experience	•Less potential for encroachment into creek •Less visual impact for walls and tree removal •More space for WQ features to be added
14	Protects the defining historical elements of Clear Creek County	•More infrastructure, more visual impact	•Less infrastructure, less visual impact

WIDENING MEDIAN VS. CREEK/ RETAINING WALLS

Widening Median vs. Creek

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Widen to Creek	**Widen to Median**
Evaluation Criteria			
15	Meets CDOT's and industry standards	•Not a differentiator	
16	Achieves the mountain mineral belt aesthetic guidelines	• More impacts to riparian vegetation	• Minimizes the area of walls
17	Meets the I-70 Mountain Corridor design criteria	• Meets the corridor design criteria by not decreasing median width	• Narrows the median
18	Preserves opportunities for the AGS and the ultimate preferred alternative	•Not a differentiator	
19	Adaptable for future changes/projects	• More infrastructure to remove in future	• Less infrastructure to remove in future
ID	**Criteria**	**Options Ranking (Fair / Better / Best)**	
		Widen to Creek	**Widen to Median**
Issue Specific Criteria			
1	Impacts to creek users	• More visual impacts to creek users	• No visual impacts to creek users
2	Allows access to the north side of the creek from I-70.	Requires a retaining wall with guard rail that impedes access.	Requires a guard rail but no wall, providing easier access.
3			
4			
Identification of Preferred Option: Summary		**Lawson & East of Lawson:** Widen to Creek due to no available median. **Dumont On-Ramp, East of Dumont:** Widen to Creek to reduce rdwy runoff on slope and encourge vegetation growth & maintain median width. **Fall River On-Ramp**: Widen to Creek to reduce rdwy runoff on slope and encourage vegetation growth & maintain median width, widening to median still requires creek-side retaining wall.	**At & East of Downieville:** Walls eliminated by shifting into median providing less riparian impacts.

10/22/2013

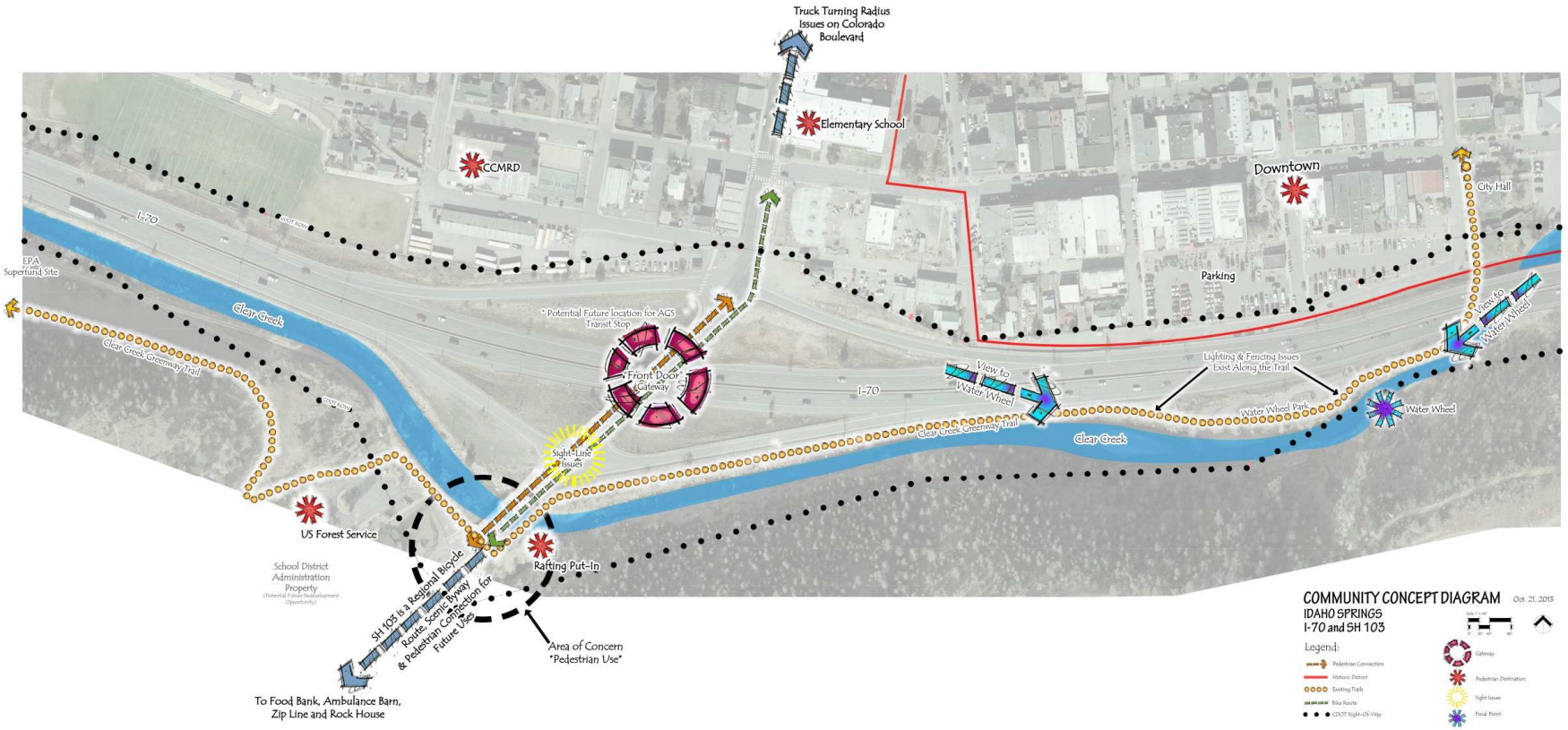
EMERGENCY RESPONSE

Emergency Response Strategies

- **Staged Assets**
  - Light duty vehicles
  - Courtesy patrol
- **Manned Traffic Management Operations**
  - Continuous camera coverage
  - Traffic monitoring
  - Facilitation of dispatch
  - Dedicated staff to Corridor
- **ATM – active traffic management**
  - Ability to close lane through technology
    - Cameras
    - Signs
    - Person

SH 103 Interchange

SH 103 - EXISTING CONDITIONS



SH 103 – ALIGNMENT OPTIONS REQUIRED FOR WIDENING ROADWAY ALIGNMENT

NORTH ALIGNMENT

SH 103 – ALIGNMENT OPTIONS REQUIRED FOR WIDENING ROADWAY ALIGNMENT

SOUTH ALIGNMENT

SH 103-INTERCHANGE
North vs. South Alignment

PEAK PERIOD SHOULDER LANE CRITERIA

DRAFT

SH 103 - I-70 Widening North vs. South

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Shift to North	**Shift to South**
Evaluation Criteria			
1	Addresses safety during PPSL operations	•Not a differentiator	
2	Maintains safety during non-peak times	•Not a differentiator	
3	Improves mobility during peak times	•Not a differentiator	
4	Minimizes the effort required to maintain the option		• Requires maintenance of park improvements.
5	Enables the project team to achieve the goal of opening PPSL by 1-Jul-15	•Not a differentiator	
6	Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function, and purpose.	• Requires significant and costly impacts to drainage, utilities, and City parking.	• Minor impacts to the park. • Creates opportunities for park improvements.
7	Allows for a process to engage and communicate with all the local, regional and national users of the I-70 Mountain Corridor	• By impacting drainage, utilities, and City parking, users along the I-70 corridor will be less likely to visit due to increased construction and reduced parking.	• Park improvements will engage I-70 travelers with community amenities and history
8	Creates opportunities to "correct past damage"	• Increases impacts to the City	• Provides opportunity for park improvements which may increase usage of the facility.

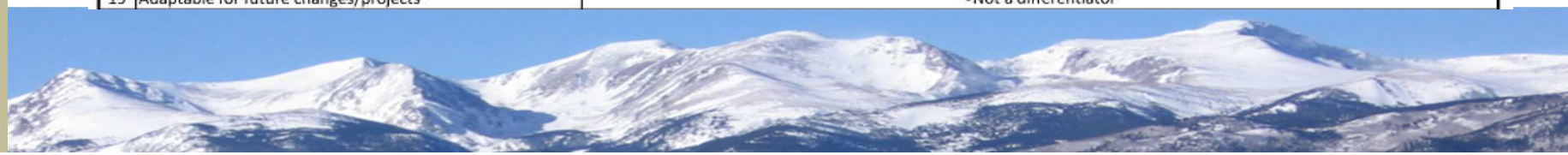
SH 103- INTERCHANGE
North vs. South Alignment

PEAK PERIOD SHOULDER LANE CRITERIA

DRAFT

SH 103 - I-70 Widening North vs. South

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Shift to North	Shift to South
Evaluation Criteria			
9	Provides access and protects opportunities for enhancements to tourist destinations, community facilities, interstate commerce and also limits disproportionate effects to the community.	• Increases impacts to the City	• Provides opportunity for park improvements which may increase usage of the facility.
10	Incorporates sustainability by using locally available materials and environmentally-friendly processes	•Not a differentiator	
11	Protects or creates unique features for the area as a gateway	• Increases impacts to the City parking	• Provides opportunity for park improvements which may increase usage of the facility.
12	Protects wildlife needs	•Not a differentiator	
13	Protects Clear Creek	•Less potential for encroachment into creek •Less visual impact for walls	•More potential for creek encroachment •More visual impact from walls •Positively impacts recreational experience
14	Protects the defining historical elements of Clear Creek County	• No impacts to historical elements	•Park enhancements may lead to a greater awareness and more frequent visits to the water wheel
15	Meets CDOT's and industry standards	•Not a differentiator	
16	Achieves the mountain mineral belt aesthetic guidelines	• No opportunity for park improvements	• Provides opportunity for park improvements
17	Meets the I-70 Mountain Corridor design criteria	•Not a differentiator	
18	Preserves opportunities for the AGS and the ultimate preferred alternative	•Not a differentiator	
19	Adaptable for future changes/projects	•Not a differentiator	



SH 103 INTERCHANGE
North vs. South Alignment

PEAK PERIOD SHOULDER LANE CRITERIA

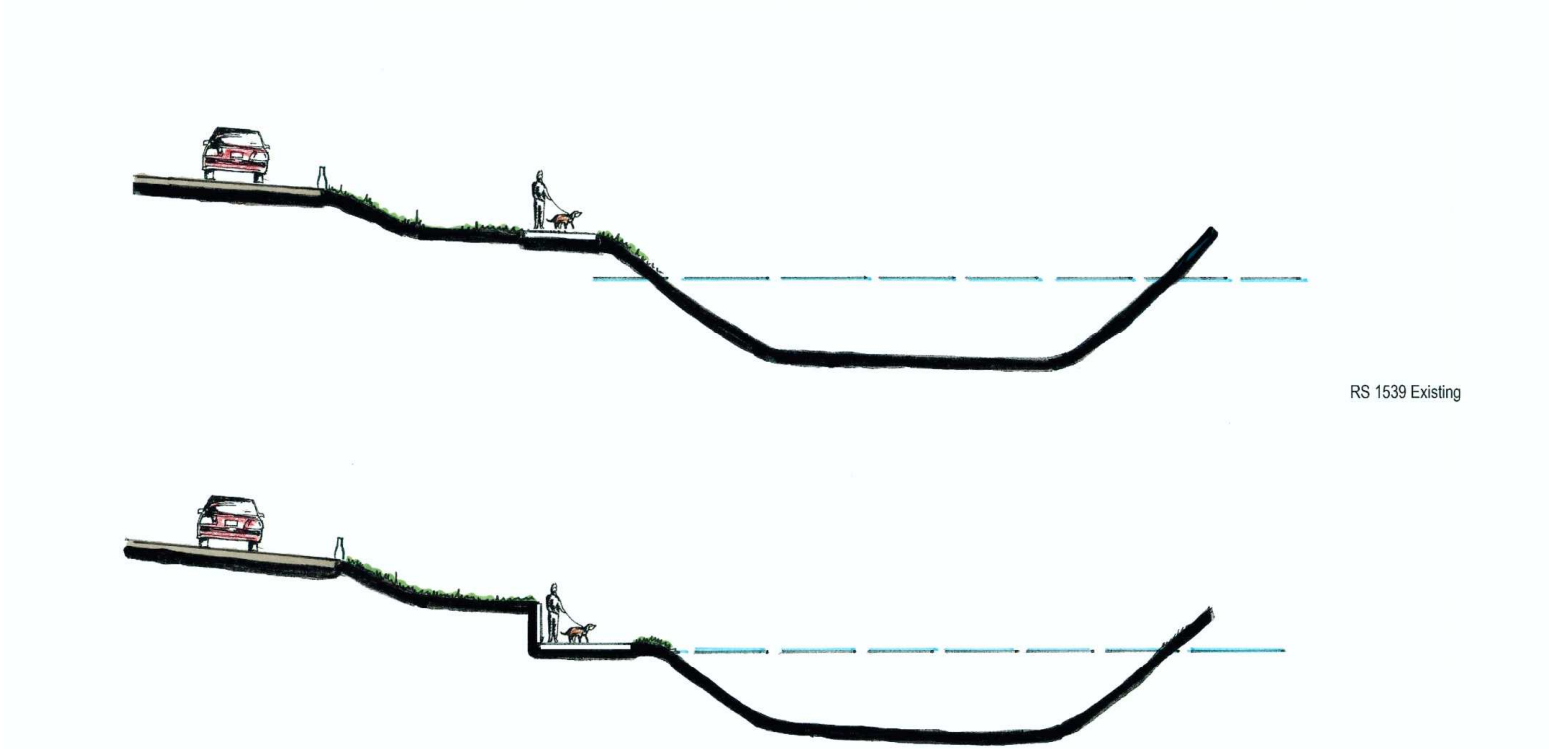
DRAFT

SH 103 - I-70 Widening North vs. South

ID	Criteria	Options Ranking (Fair / Better / Best)	
		Shift to North	**Shift to South**
Evaluation Criteria			
1	Appropriate Cost/Benefit	• More costs associated with utility and drainage impacts	• Less costs and more benefits associated with Park improvements.
2	How well does the solution support pedestrian movement?	• Does not impact pedestrian movements	• Improves pedestrian movements
3	How does the solution affect the Bikeway and Water Wheel Park?	• Does not impact Bikeway or Park	• Greatly improves Bikeway and Park (connectivity, aesthetically)
4	How does the solution affect emergency services?	• Not a differentiator	
5	How does the CDOT parking lot (currently in use by Kramer) integrate with the activities of the interchange?	• Not a differentiator	
6	How is access to Idaho Springs and Mt. Evans affected during construction and in the long term?	• Not a differentiator	
Identification of Preferred Option:			

10/24/2013

SH 103 INTERCHANGE
Potential Trail and Park Enhancements

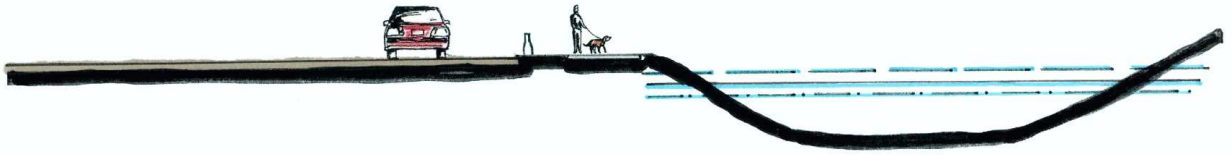


RS 1539 Existing

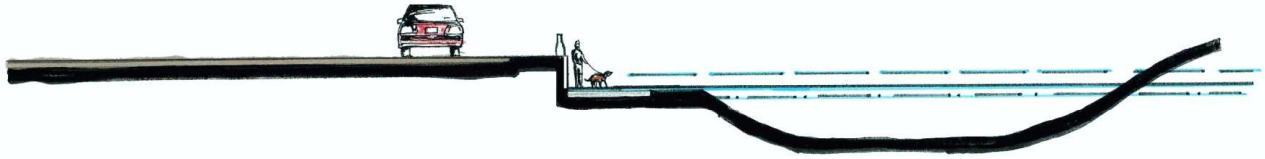
RS 1539 Proposed

Water Wheel Trail Cross Sections

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



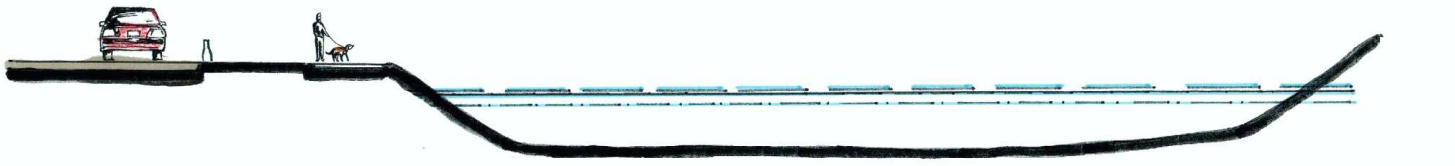
RS 1040 Existing



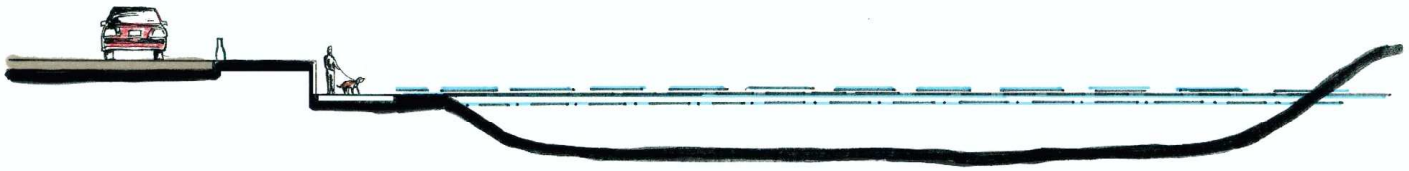
RS 1040 Proposed

Water Wheel Trail Cross Sections

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



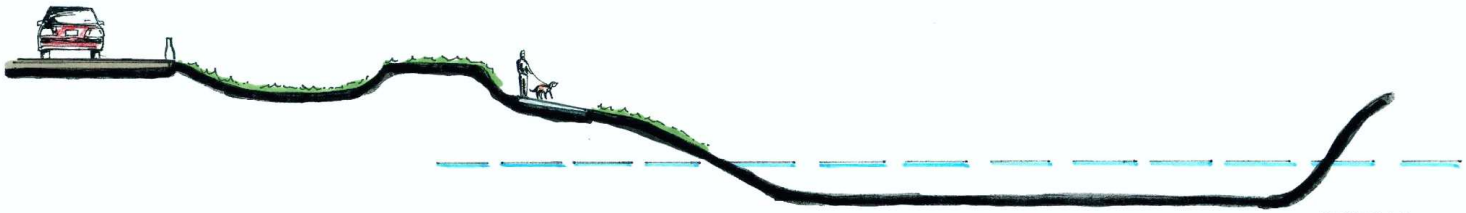
RS 848 Existing



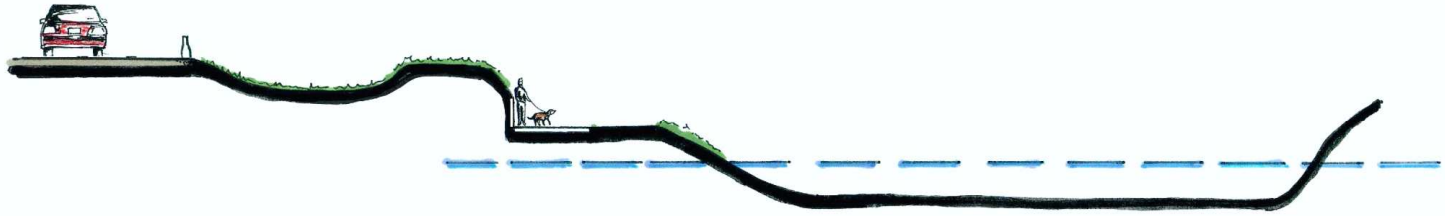
RS 848 Proposed

Water Wheel Trail Cross Sections

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



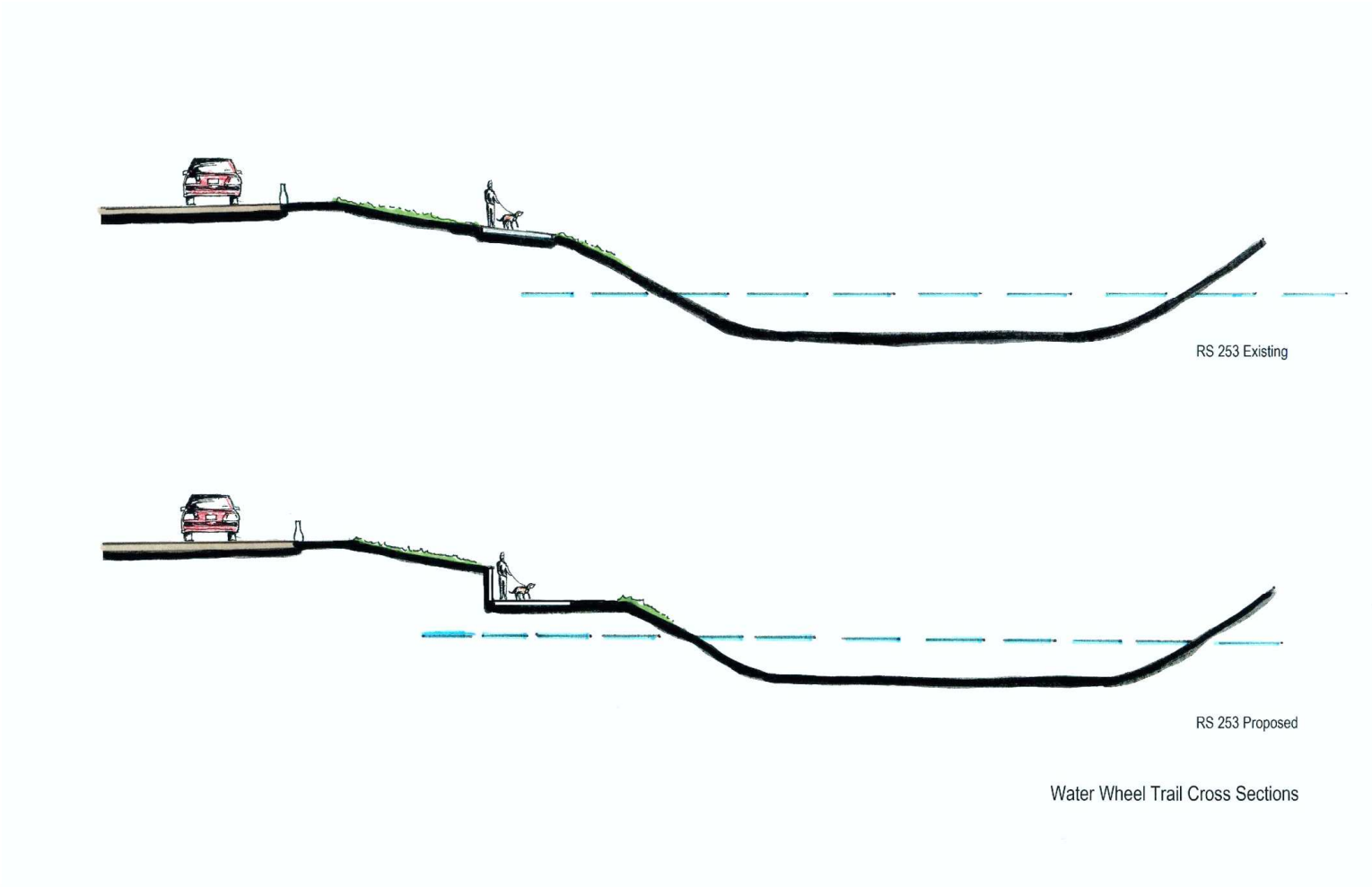
RS 533 Existing



RS 533 Proposed

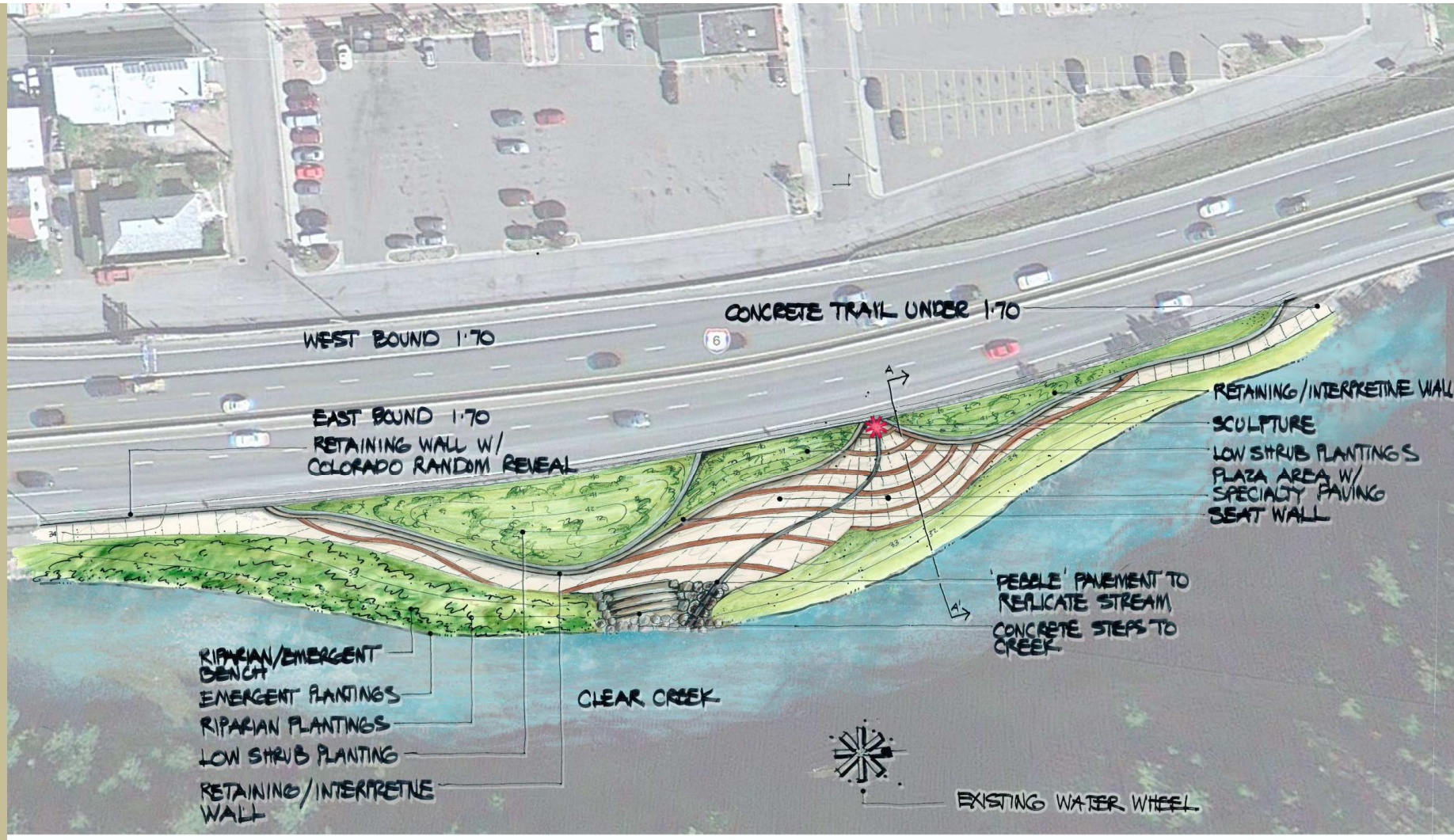
Water Wheel Trail Cross Sections

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



Water Wheel Trail Cross Sections

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



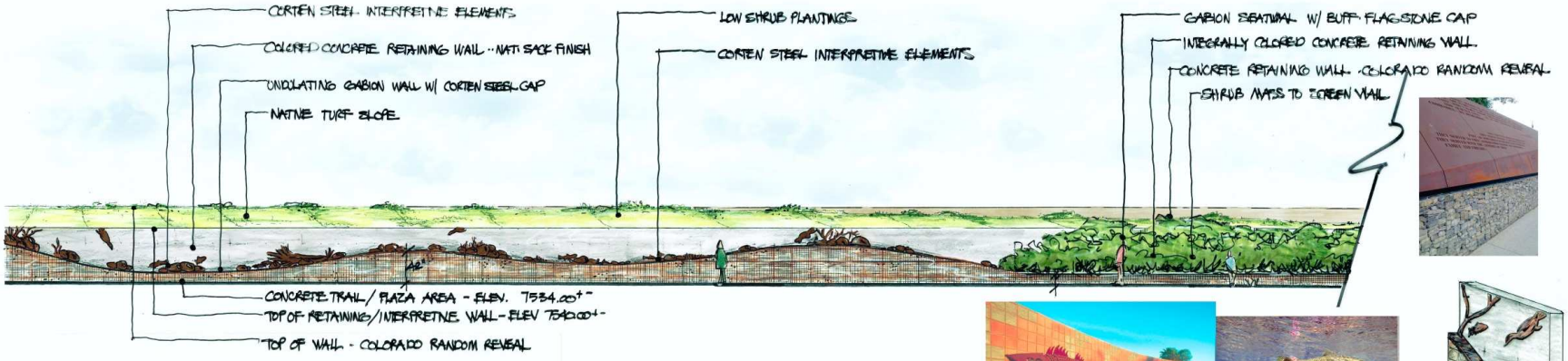
Conceptual Site Plan

HK associates, inc.
2953 South Peoria Street, Suite 101
Aurora, Colorado 80014
303.770.7201 fax 303.770.7132

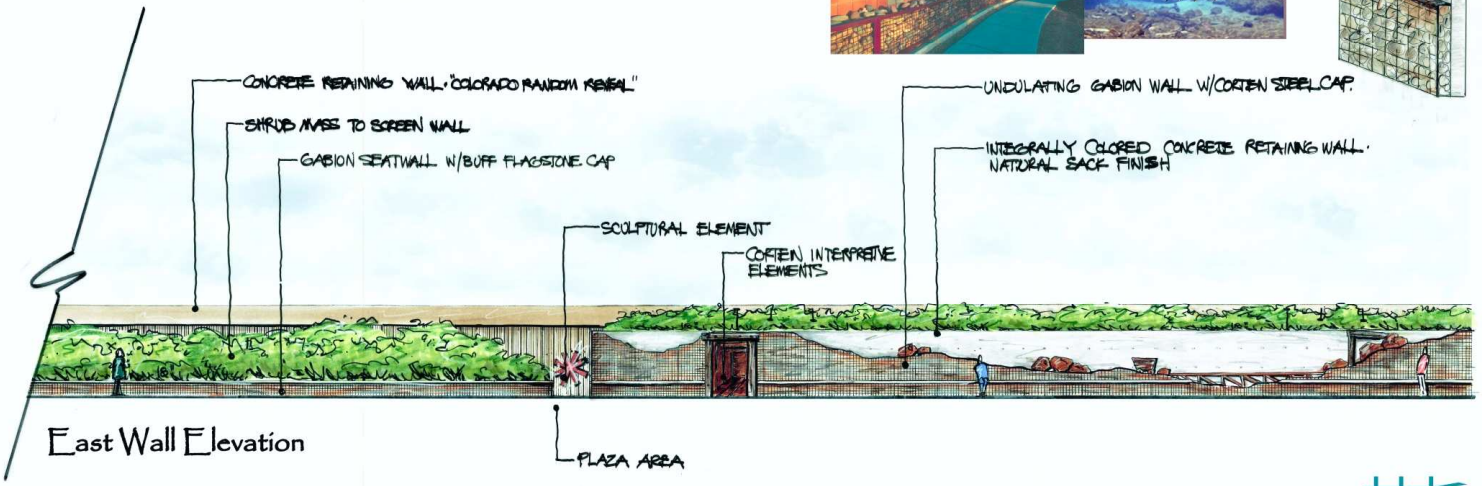
Scale: 1"=20'

0 10 20 40

SH 103 INTERCHANGE
Potential Trail and Park Enhancements



West Wall Elevation



East Wall Elevation

Conceptual Wall Elevations

THK associates, inc.
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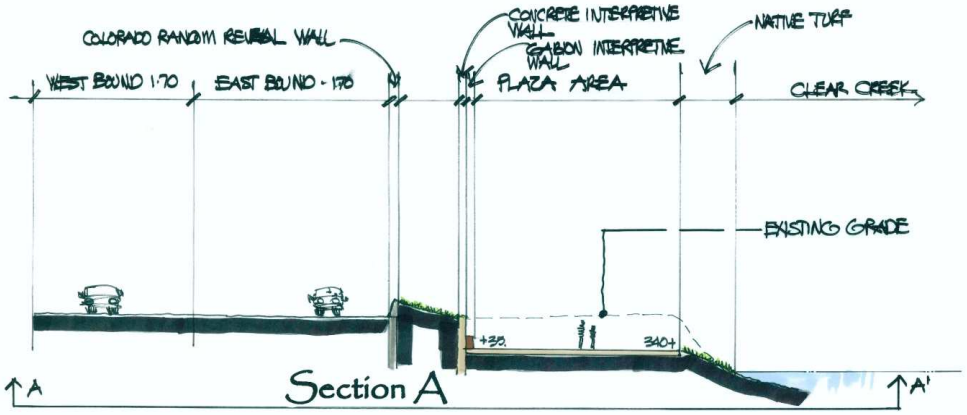
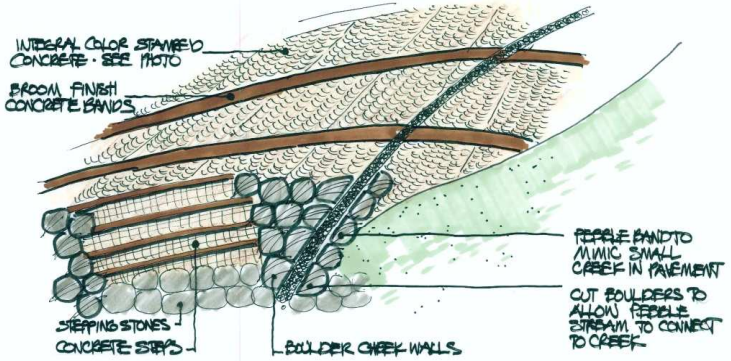
Aurora, Colorado 80014
303.770.7201 fax 303.770.7132

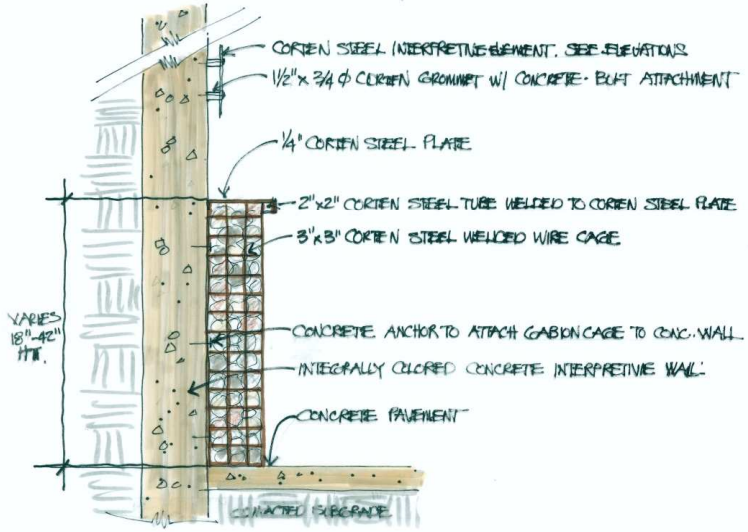
SH 103 INTERCHANGE
Potential Trail and Park Enhancements



Section A



Stamped Concrete - Plaza Enlargement



Gabion Interpretive Wall

Conceptual Sections and Details

Plaza Area Character Photos

THK associates, inc.
2953 South Peoria Street, Suite 101
Aurora, Colorado 80014
303.770.7201 fax 303.770.7132

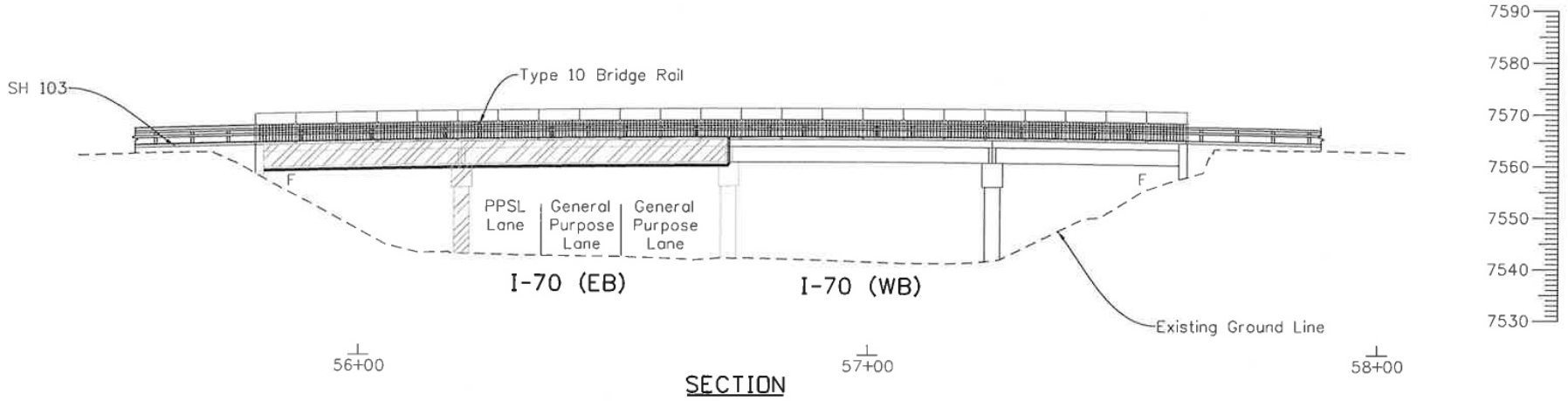
SH 103 INTERCHANGE
BRIDGE OPTIONS

Bridge Options

- Reuse of Existing Bridge
- Clear Span Option
- Two Span Option

SH 103 INTERCHANGE
BRIDGE OPTIONS

REUSE OF EXISTING BRIDGE



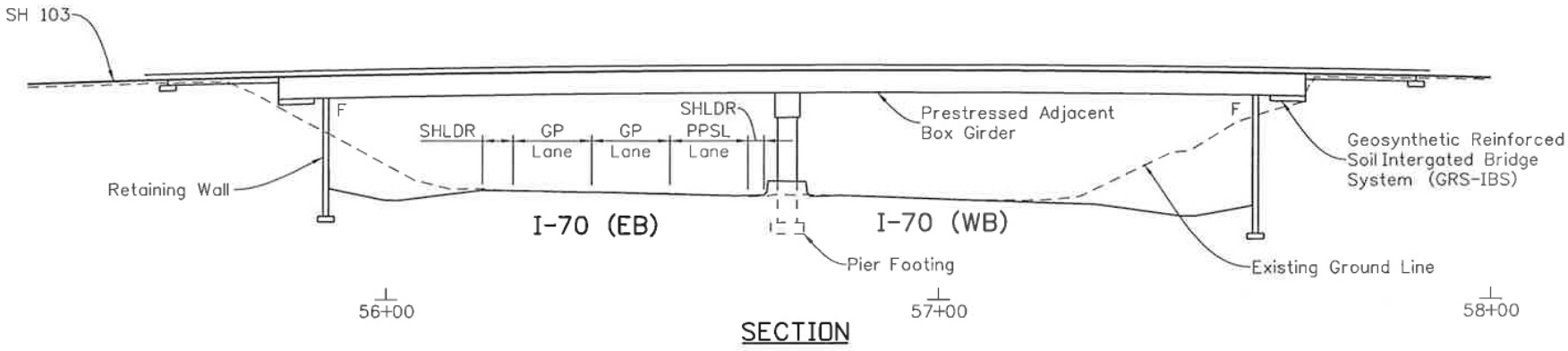
SECTION

SH 103 INTERCHANGE
BRIDGE OPTIONS

CLEAR SPAN OVER I-70

SH 103 INTERCHANGE
BRIDGE OPTIONS

TWO-SPAN BRIDGE



SECTION

SH 103 INTERCHANGE

PEAK PERIOD SHOULDER LANE CRITERIA

DRAFT

SH 103 Bridge

ID	Criteria	Options Ranking (Fair / Better / Best)		
		Reuse Existing	Clear Span	Two Span
Evaluation Criteria				
1	Addresses safety during PPSL operations	• Not a differentiator		
2	Maintains safety during non-peak times	• Not a differentiator		
3	Improves mobility during peak times	• This option is limited to the existing conditions.	• Improves mobility on SH 103	• Improves mobility on SH 103
4	Minimizes the effort required to maintain the option	• This type of major retrofit would require additional effort to maintain in comparison to a new structure.	• These type of structures can be designed and detailed to provide durability and low maintenance.	• This more traditional type of bridge would provide a very durable structure with minimal maintenance.
5	Enables the project team to achieve the goal of opening PPSL by 1-Jul-15	• Not a differentiator		
6	Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function, and purpose.	• A retrofit of even this magnitude may still provide some initial investment savings. However, life cycle cost analysis will illustrate that it is not a best value. This option also limits the pedestrian and vehicle functions to the existing conditions.	• This option is vey expensive and typically warranted when traditional alternatives are not feasible.	• This option is cost effective and provides the best value when considering the life cycle cost. This option provides the most flexibility for the future.
7	Allows for a process to engage and communicate with all the local, regional and national users of the I-70 Mountain Corridor	• Not a differentiator		

SH 103 INTERCHANGE

PEAK PERIOD SHOULDER LANE CRITERIA

DRAFT

SH 103 Bridge

ID	Criteria	Options Ranking (Fair / Better / Best)		
		Reuse Existing	Clear Span	Two Span
Evaluation Criteria				
8	Creates opportunities to "correct past damage"	• Not a differentiator		
9	Provides access and protects opportunities for enhancements to tourist destinations, community facilities, and interstate commerce.	• Limited to existing conditions	• Provides opportunities for aesthetic and mobility enhancements	• Provides opportunities for aesthetic and mobility enhancements
10	Incorporates sustainability by using locally available materials and environmentally-friendly processes	• Not a differentiator		
11	Protects or creates unique features for the area as a gateway	• This option will appear as a temporary retrofit bridge.	• This option could be a signature structure.	• This option would meet the corridor guidelines and match well with the rest of this corridor.
12	Protects wildlife needs	• Not a differentiator		
13	Protects Clear Creek	• Not a differentiator		
14	Protects the defining historical elements of Clear Creek County	• Not a differentiator		
15	Meets CDOT's and industry standards	• This option would require some variances, since it is a retrofit with an older structure.	• This option would meet CDOT and industry standards.	• This option would meet CDOT and industry standards.
16	Achieves the mountain mineral belt aesthetic guidelines	• This option is limited to the existing conditions.	• This option would meet the aesthetic guidelines.	• This option would meet the aesthetic guidelines.
17	Meets the I-70 Mountain Corridor design criteria	• This option is limited to the existing conditions.	• This option would meet the design criteria.	• This option would meet the design criteria.
18	Preserves opportunities for the AGS and the ultimate preferred alternative	• This option is limited to the existing conditions.	• This option provides flexibility for AGS and the ultimate preferred alternative.	• This option provides flexibility for AGS and the ultimate preferred alternative.
19	Adaptable for future changes/projects	• This option is limited to the existing conditions.	• This option provides flexibility for future changes.	• This option provides flexibility for future changes.

SH 103 INTERCHANGE

PEAK PERIOD SHOULDER LANE CRITERIA

DRAFT

SH 103 Bridge

ID	Criteria	Options Ranking (Fair / Better / Best)		
		Reuse Existing	Clear Span	Two Span
Issue Specific Criteria				
1	How well does the solution support pedestrian movement?	• This option maintains the existing pedestrian conditions and does not provide enhancement opportunity.	• This option provides the opportunity to have a wider sidewalk for pedestrian movements and also a wider roadway shoulder for safety.	• This option provides the opportunity to have a wider sidewalk for pedestrian movements and also a wider roadway shoulder for safety.
2	Provide flexibility for the construction/traffic phasing	• This option is limited to the existing two lane bridge width, which would restrict the bridge to one lane during construction. • Significant impacts to SH 103 and I-70 traffic	• This option would require a full closure of SH103. The closure period would depend on if the structure was built on-site or if it was built off-line and moved into place.	• This option provides the flexibility of two lane phasing during construction. Accelerated bridge technology provides opportunity to reduce traffic impacts.
3	Minimizes the construction schedule	• The construction time frame for this option with a full closure would be approximately 2 months and with a phased approach the construction time frame would be in the 6 to 9 month range. A retrofit structure has a higher risk of impacts to schedule, construction and traffic phasing.	• The construction time frame for this option is on the order of two times more than traditional bridge construction.	• The construction time frame for this option with a full closure would be approximately 2 months and with a phased approach the construction time frame would be in the 6 to 9 month range.
Identification of Preferred Option: Summary				

10/24/2013

I-70 BRIDGES

I-70 BRIDGES

17 Structures Within Project

1. E-14-S *
2. E-14-AV
3. E-14-AM
4. E-14-AL
5. E-14-AK
6. E-14-O
7. E-14-AX *
8. E-14-B MINOR
9. E-14-AZ
10. F-14-H
11. F-14-G MINOR
12. F-14-E *
13. F-14-N
14. F-14-X
15. F-14-C MINOR
16. F-14-Y *
17. F-14-BV

* OVERPASS

Meeting with FHWA

- No widening required on bridges carrying I-70
- Replacement of SH 103 Bridge
- East Idaho Springs Bridge requires lowering of I-70 for vertical clearance

EVALUATION CRITERIA

1. Addresses safety during PPSL operations
2. Maintains safety during non-peak times
3. Improves mobility and reliability during peak times for both I-70 and the local roadway network
4. Minimizes the effort required to maintain the operation
5. Enable the project team to achieve the goal of opening the PPSL
6. Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function and purpose.
7. Allows for a process to engage and communicate with all the local, regions and national users of the I-70 Mountain Corridor
8. Creates opportunities to "correct past damage"
9. Provides access and protects opportunities for enhancements to tourist destinations, community facilities, interstate commerce and also limits disproportionate effects to the community.

EVALUATION CRITERIA

10. Incorporates sustainability by using locally available materials and environmentally- friendly process
11. Protects or creates unique features for the areas as a gateway
12. Protects wildlife needs
13. Protects Clear Creek
14. Protects the defining historical elements of Clear Creek County
15. Meets CDOT's and industry standards
16. Achieves the Mountain Mineral Belt aesthetic guidelines
17. Meets the I-70 Mountain Corridor design criteria
18. Preserves opportunities for the AGS and the ultimate preferred alternative
19. Adaptable for future changes/projects (including Idaho Springs Visioning)

ISSUE SPECIFIC CRITERIA

- Pull Out Locations
  - ??
  - ??
- Signage
  - ??
  - ??
- Managed Lane Access- Frequency and Location
  - ??
  - ??

NEXT STEPS

- Public Involvement
- Issue Taskforce Meeting
  - Local Roadway Network
  - SWEEP, ALIVE and Section 106

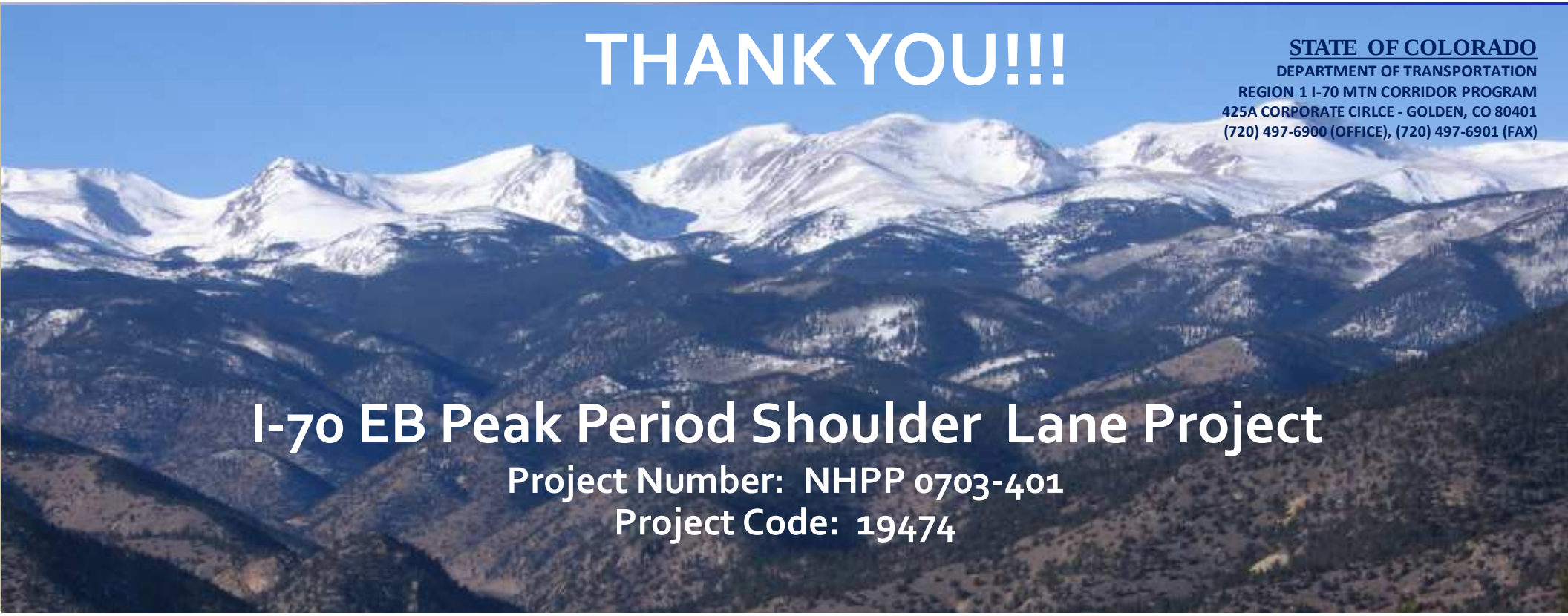
FUTURE MEETINGS

FUTURE TECH TEAM MEETINGS

- DATES

  11/18 8:30 – 2:30pm at Idaho Springs

  12/16 8:30 – 2:30pm at CDOT



THANK YOU!!!

STATE OF COLORADO
DEPARTMENT OF TRANSPORTATION
REGION 1 I-70 MTN CORRIDOR PROGRAM
425A CORPORATE CIRLCE - GOLDEN, CO 80401
(720) 497-6900 (OFFICE), (720) 497-6901 (FAX)

I-70 EB Peak Period Shoulder Lane Project

Project Number: NHPP 0703-401
Project Code: 19474

Technical Team Meeting #6

October 28, 2013

CDOT I-70 Mountain Corridor | HDR Engineering, Inc.