

MT. GARFIELD CULVERT STUDY

VIRTUAL PUBLIC ENGAGEMENT PRESENTATION

PRESENTED BY



COLORADO
Department of Transportation

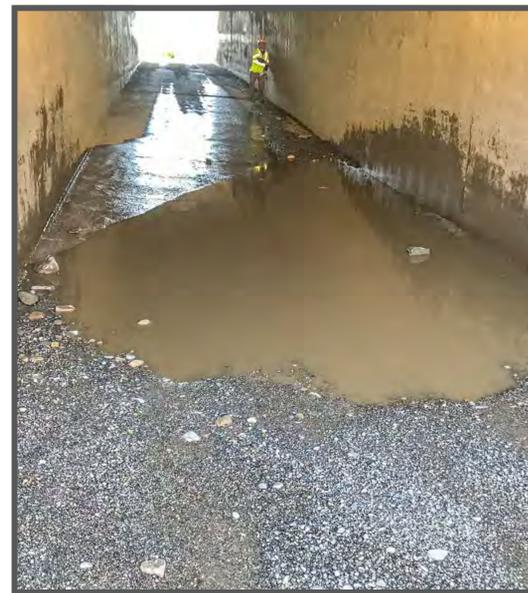
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EXISTING CONDITIONS

MT. GARFIELD CULVERT STUDY



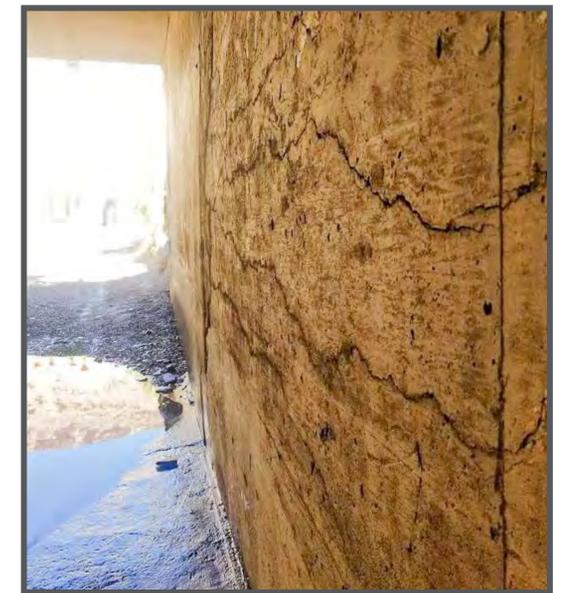
- CONCRETE BOX CULVERT BUILT UNDER I-70 IN 1962 ORIGINALLY FOR MINE ACCESS
- PROVIDES ACCESS TO ADJACENT PRIVATE PROPERTY OWNERS AND MT. GARFIELD TRAILHEAD
- IDENTIFIED AS A CRITICAL CULVERT: SUFFICIENCY RATING OF 22.4 OUT OF 100 DEFICIENCIES INCLUDE:
 - BULGING CULVERT WALLS
 - CRACKING IN CULVERT WALLS
 - ADVERSE SLOPE
 - PONDING
 - SIGNIFICANT DIFFERENTIAL SETTLEMENT AT THE JOINTS
- IF LEFT UNMITIGATED, THE CONCRETE BOX CULVERT COULD FAIL STRUCTURALLY, POTENTIALLY LEADING TO SEVERE DAMAGE TO I-70 AND ALTERING ACCESS TO THE TRAILHEAD AND ADJACENT PROPERTIES



STANDING WATER IN LOW POINT CAUSED BY DIFFERENTIAL SETTLEMENT



SEPARATION IN CULVERT CEILING



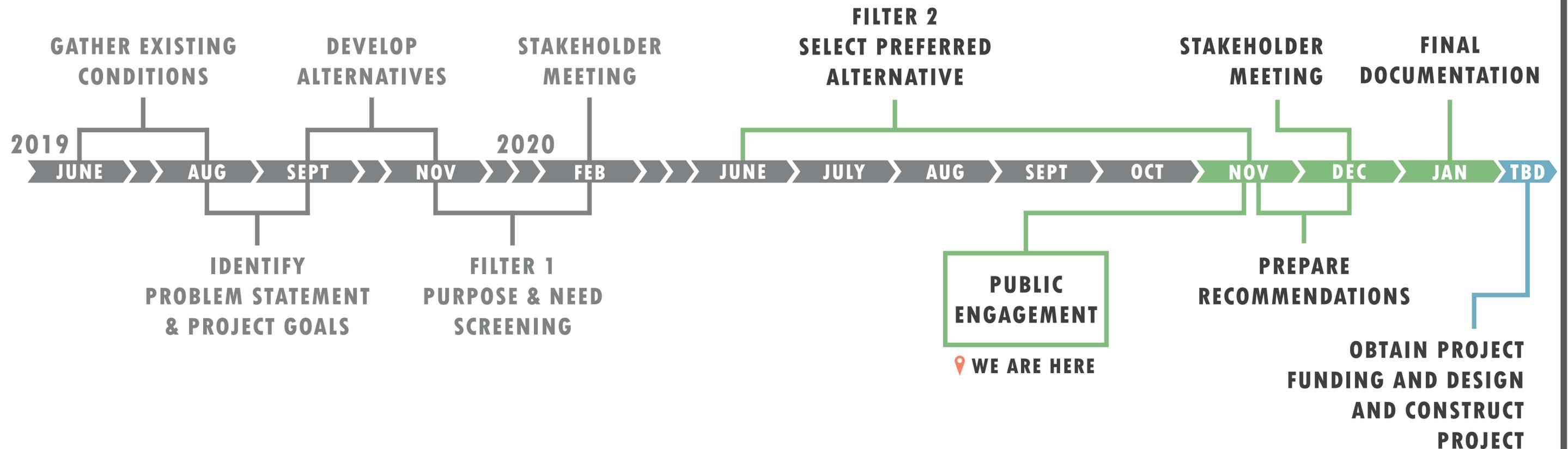
BULGING AND CRACKING IN CULVERT WALLS

PROJECT GOAL

MT. GARFIELD CULVERT STUDY

MAINTAIN THE INTEGRITY OF I-70 AT THE EXISTING BOX CULVERT (STRUCTURE NO. 070A039961BL) AND MAINTAIN ACCESS TO ADJACENT PROPERTY OWNERS AND MT. GARFIELD TRAILHEAD.

PROJECT PROCESS & SCHEDULE



EVALUATION PROCESS

MT. GARFIELD CULVERT STUDY

FILTER 1 - PURPOSE & NEED SCREENING

A POSITIVE RESPONSE TO EACH OF THE FOLLOWING QUESTIONS IS REQUIRED FOR AN ALTERNATIVE TO MEET THE PROJECT'S PURPOSE & NEED AND ADVANCE TO FILTER 2.



SAFETY

- DOES THE OPTION MAINTAIN OR IMPROVE SAFETY ALONG I-70?



TRAILHEAD

- DOES THE OPTION PROVIDE REASONABLE ACCESS TO THE MT. GARFIELD TRAILHEAD?



STRUCTURE

- DOES THE OPTION ADDRESS THE STRUCTURAL DEFICIENCIES OF THE EXISTING BOX CULVERT?



DRAINAGE

- DOES THE OPTION REDUCE OR MAINTAIN STORMWATER RUNOFF VOLUMES DIRECTED TOWARD DOWNGRAIDENT PROPERTIES?



ACCESS

- DOES THE OPTION MAINTAIN LEGAL ACCESS TO ADJACENT PROPERTIES?

EVALUATION PROCESS

MT. GARFIELD CULVERT STUDY

FILTER 2 - PREFERRED ALTERNATIVE SCREENING

FILTER 2 EVALUATION CRITERIA WILL ASSIST THE TEAM IN IDENTIFYING THE PROJECT'S PREFERRED ALTERNATIVE. FACTORS UNDER CONSIDERATION INCLUDE:

- **PROVIDE EFFICIENT AND EFFECTIVE ACCESS TO ADJACENT PROPERTY OWNERS**
 - **OUT-OF-DIRECTION TRAVEL FOR PRIVATE PROPERTY OWNERS**
 - **CROSS-ACCESS EASEMENTS**
 - **INTERSTATE ACCESS CONTROL LINE (A-LINE)**
 - **CONDITION OF ACCESS ROUTE**
- **PROVIDE COMPATIBILITY WITH EXISTING PROGRAMS, PRACTICES, & RESOURCES**
 - **LEVEL OF ENVIRONMENTAL IMPACTS**
 - **EXPECTED LIFE OF SOLUTION**
 - **CURRENT DESIGN STANDARDS**
 - **CONSTRUCTION COSTS**
 - **PROJECT FUNDING OPPORTUNITIES**
 - **LONG-TERM MAINTENANCE**
 - **CONSTRUCTABILITY**
- **MANAGE IMPACTS TO ADJACENT COMMUNITY AND TRAVELING PUBLIC**
 - **CONSTRUCTION IMPACT TO USERS**
 - **UTILITY IMPACTS**
 - **PERMANENT IMPACT TO I-70 TRAFFIC**
 - **COMMUNITY SUPPORT**
 - **PRIVATE PROPERTY IMPACTS (ROW)**





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Mount Garfield Culvert Alternatives Evaluation

Project Goal: Maintain the integrity of I-70 at the existing box culvert (Structure Number 070A039961BL) and maintain access to adjacent property owners and Mt. Garfield Trailhead.



SAFETY



STRUCTURE



ACCESS



TRAILHEAD

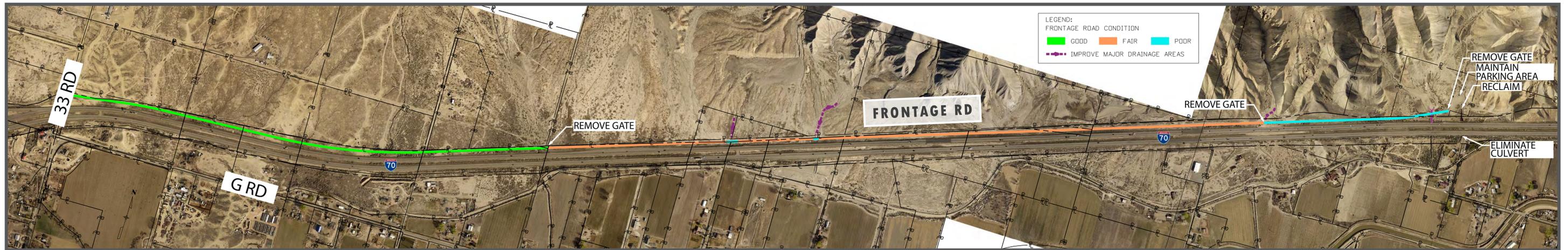


DRAINAGE

| Option | Action | Pass Filter One/ Move Forward for consideration | | | | | |
|--------|---|---|--|--|--|--|--|
| 0 | No Action | NO | | | | | |
| 1A | Eliminate Culvert-Frontage Road Access (No Improvements) | NO | | | | | |
| 1B | Eliminate Culvert-Frontage Road Access (Improve water crossings) | YES | | | | | |
| 1C | Eliminate Culvert-Frontage Road Access (Improved Section/Graded Roadway) | YES | | | | | |
| 1D | Eliminate Culvert-Frontage Road Access (Upgrade Intersection) | YES | | | | | |
| 1E | Eliminate Culvert-Frontage Road Access (BLM parking lot) | YES | | | | | |
| 2 | Eliminate Culvert-Interchange | NO | | | | | |
| 3 | Eliminate Culvert-Rest Area | NO | | | | | |
| 4 | Eliminate Culvert-Scenic Pull-off with Parking | NO | | | | | |
| 5 | Repair Culvert | NO | | | | | |
| 6 | Replace Culvert-Pedestrian Crossing | YES | | | | | |
| 7 | Replace Culvert-New Box Culvert (single lane) | YES | | | | | |
| 8 | Replace Culvert-Bridge (two-lane) | YES | | | | | |

FRONTAGE ROAD OPTIONS (1B-1E)

MT. GARFIELD CULVERT STUDY



ADVANTAGES:

- REDUCES NUMBER OF STRUCTURES CDOT MAINTAINS
- MINIMAL IMPACT TO I-70
- PROVIDES LONG-TERM ACCESS TO ADJACENT PROPERTIES AND THE TRAILHEAD

DISADVANTAGES:

- CHANGES ESTABLISHED ROUTE TO TRAILHEAD FOR USERS
- OUT OF DIRECTION TRAVEL FOR EMERGENCY SERVICES AND PROPERTY OWNERS
- POTENTIAL INCREASED MAINTENANCE ON FRONTAGE ROAD

OPTION 1B

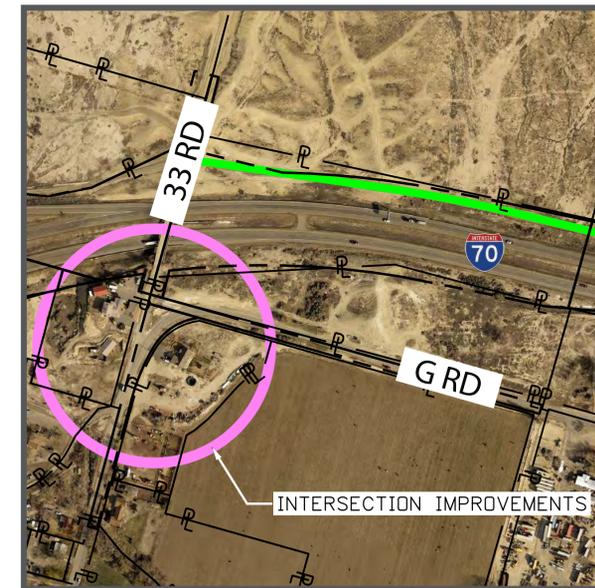
- ELIMINATE THE EXISTING BOX CULVERT AND UTILIZE THE EXISTING FRONTAGE ROAD ON THE NORTH SIDE OF I-70 AS IS.
- IMPROVE DRAINAGE CROSSINGS.

OPTION 1C

- OPTION 1B+
- UPGRADE THE EXISTING FRONTAGE ROAD TO ALL-WEATHER GRADED SURFACE.

OPTION 1D

- OPTION 1C+
- IMPROVE THE INTERSECTION OF 33 ROAD AND G ROAD.



OPTION 1E

- OPTION 1B+, 1C+, OR 1D+
- CONSTRUCT A PARKING LOT ON BLM PROPERTY WITH A WALKING PATH TO THE MT. GARFIELD TRAILHEAD.



REPLACE EXISTING CULVERT (OPTIONS 6-8)

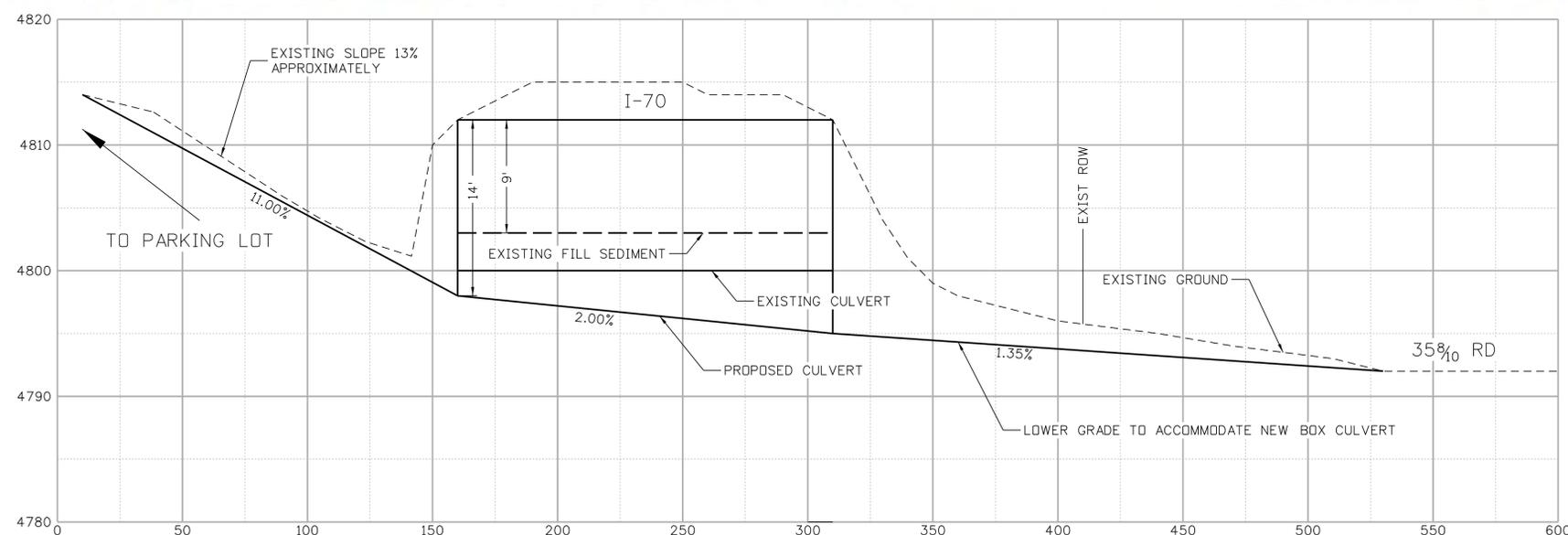
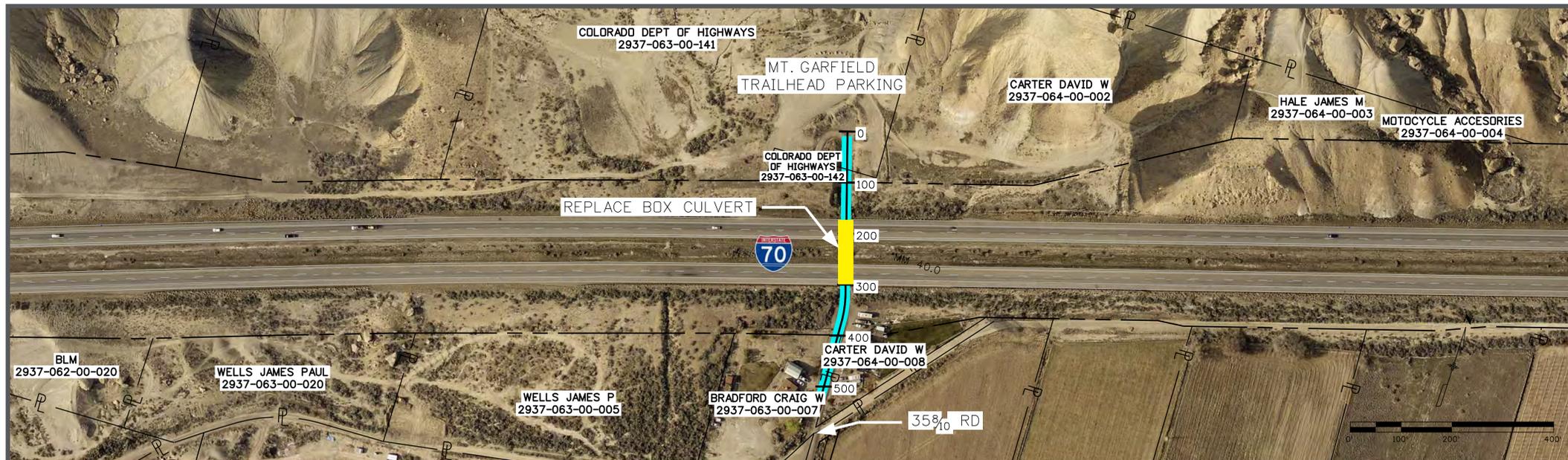
MT. GARFIELD CULVERT STUDY

ADVANTAGES:

- ADDRESSES STRUCTURAL DEFICIENCIES OF THE EXISTING BOX
- MAINTAINS EXISTING ROUTE TO ADJACENT PROPERTIES AND THE TRAILHEAD

DISADVANTAGES:

- POTENTIAL IMPACTS TO PROPERTIES ON THE SOUTH SIDE OF THE CULVERT DUE TO LOWER ROAD GRADE
- IMPACTS TO I-70 DURING CONSTRUCTION
- LONG-TERM MAINTENANCE OF STRUCTURE
- IMPACTS TO I-70 DURING CONSTRUCTION



OPTION 6

- REPLACE THE EXISTING CULVERT OR SLEEVE THE EXISTING CULVERT TO PROVIDE A PEDESTRIAN CROSSING.
- PROVIDE PARKING FOR TRAILHEAD SOUTH OF I-70.

OPTION 7

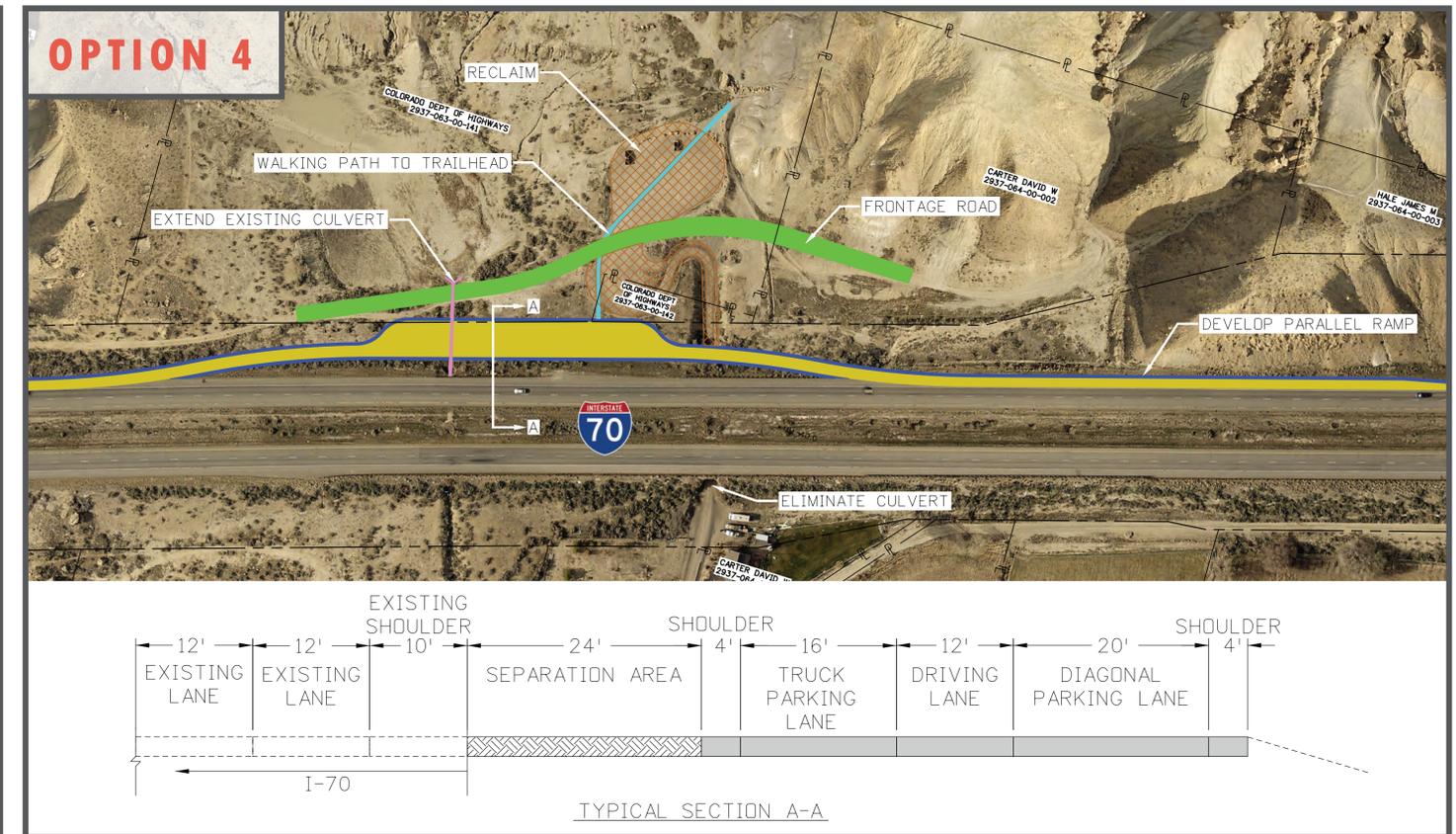
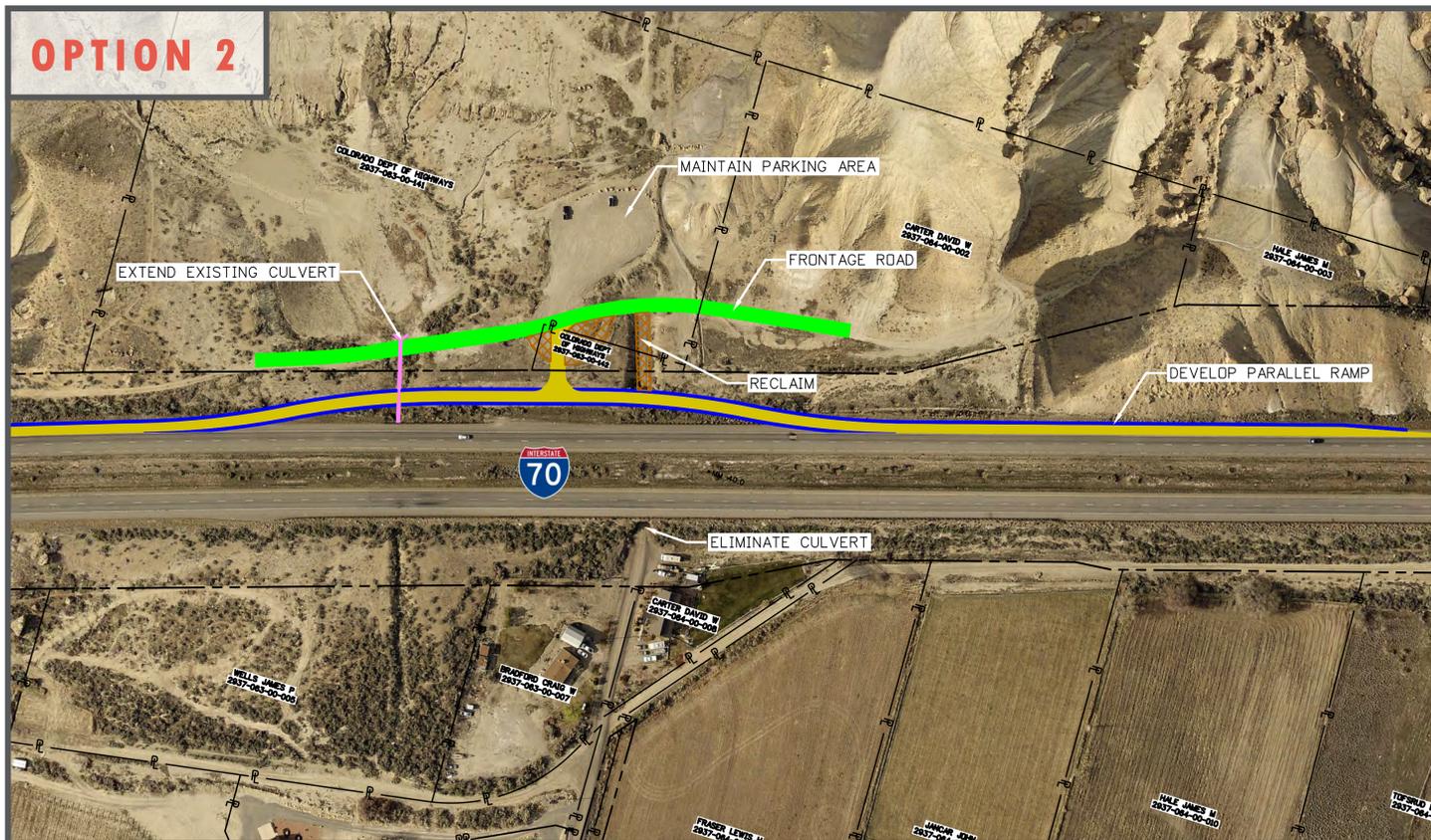
- REPLACE THE EXISTING CULVERT WITH A NEW 14 FT X 16 FT BOX CULVERT.

OPTION 8

- REPLACE THE EXISTING CULVERT WITH A NEW BRIDGE ALLOWING FOR TWO-WAY

ELIMINATED ALTERNATIVES

MT. GARFIELD CULVERT STUDY



OPTION 1A - ELIMINATE CULVERT (FRONTAGE ROAD ACCESS WITH NO IMPROVEMENTS)

- CONDITION OF ACCESS ROUTE MAY LIMIT VEHICLE TYPES

OPTION 2 - ELIMINATE CULVERT (INTERCHANGE)

- POTENTIAL I-70 SAFETY ISSUES DUE TO VEHICLES MERGING AT RAMPS
- ACCESS TO PRIVATE PROPERTIES WOULD NOT BE PERMITTED FROM THE INTERCHANGE
- DOES NOT MEET FHWA STANDARDS

OPTION 3 - REST AREA

- POTENTIAL I-70 SAFETY ISSUES DUE TO VEHICLES MERGING AT RAMPS
- ACCESS TO PRIVATE PROPERTIES MAY NOT BE PERMITTED FROM THE REST AREA
- DOES NOT MEET FHWA & CDOT STANDARDS

OPTION 4 - ELIMINATE CULVERT (SCENIC PULL-OFF)

- POTENTIAL I-70 SAFETY ISSUES DUE TO VEHICLES MERGING AT RAMPS
- DOES NOT MEET FHWA STANDARDS

OPTION 5 - REPAIR CULVERT

- DOES NOT ADDRESS STRUCTURAL DEFICIENCIES LONG-TERM
- POTENTIAL I-70 SAFETY ISSUES DUE TO CONDITION OF THE CULVERT

THANK YOU

**WE VALUE YOUR INPUT!
PLEASE COMPLETE THE PROJECT SURVEY:**

www.surveymonkey.com/r/VYY8DT6

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