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# COTTONWOOD PASS CONCEPT DESIGN (EAGLE AND GARFIELD COUNTIES)

## FINAL REPORT AUGUST 2023

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Prepared by:



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AND ASSOCIATES INC.



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## FINAL REPORT

**AUGUST 2023**

Submitted to:

Colorado Department of Transportation, Region 3  
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# ACKNOWLEDGEMENTS

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## INTRODUCTION

The Colorado Department of Transportation (CDOT) is supporting Eagle and Garfield counties to identify safety improvements on county roads that traverse Cottonwood Pass. Cottonwood Pass is a critical roadway used by local stakeholders. It is imperative improvements continue to be evaluated on this roadway to improve safety and reliability.

As a first step towards making this alternate route safer, a collaborative Cottonwood Pass Concept Design Study identified 14 specific locations along the county roads that cross through both Eagle and Garfield counties (six locations in Eagle County, eight in Garfield County). This process included the public, subject matter experts, and elected officials though Garfield and Eagle county stakeholders were more engaged from those in other nearby areas like Mesa County. These improvements and locations were defined by the counties based on known safety issues.

Eagle County has been considering Cottonwood Pass improvements for many years. The ability to move local traffic, commuters, hospital workers, and emergency responders along this route is beneficial to the counties and the local community – especially when I-70 is closed. The road system on the Garfield County side is mostly paved, but they identified issues impacting local traffic when additional traffic uses Cottonwood Pass. These impacts were heightened during the closures of Interstate 70 (I-70) through Glenwood Canyon during the flooding in 2021, when local traffic was using Cottonwood Pass as a local detour. Eagle and Garfield counties spent a significant amount of money flagging and respond to incidents, and at one point the National Guard was involved. The 14 specific locations in the Concept Design Study were identified as problem areas during this time.

The Concept Design Study assessed existing conditions and defined concept level improvements as a short-term solution to the safety challenges along the road. Potential site improvements include curve softening, improved sight distance, improved intersection geometry, and increased road width in specific areas to accommodate two vehicles passing.

The Concept Design Study documents the results of the concept design effort conducted to identify and evaluate design options at the 14 sites along Cottonwood Pass. With the information provided by this project, Eagle and Garfield counties will ultimately determine if and when improvements at each site would move forward. Further design and construction of potential improvements is not funded at this time.

# PROJECT SITE SELECTION

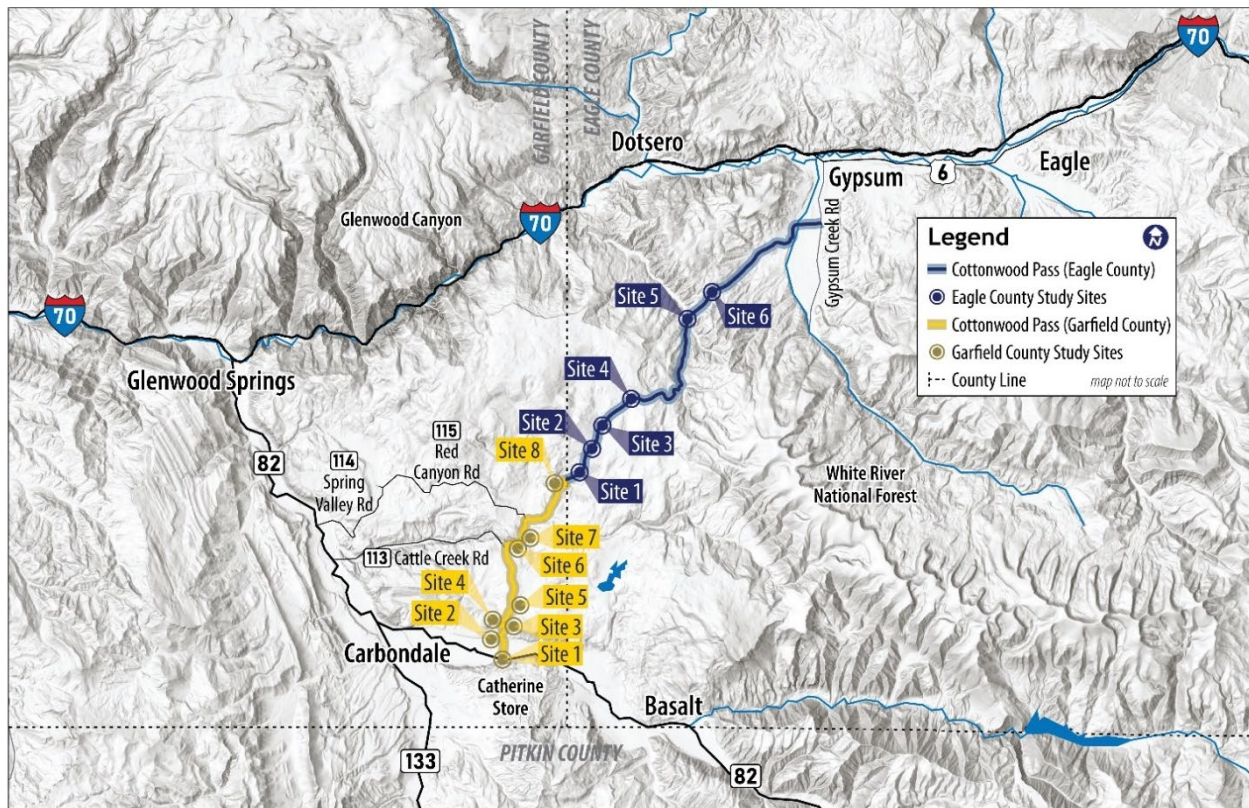
The Cottonwood Pass Concept Design project is located with Eagle and Garfield counties along the western slope of Colorado. Eagle and Garfield counties selected the 14 locations along the Cottonwood Pass route based on reported and recurring safety concerns including: limited sight distance, tight curves, narrow roadway width, and lack of guardrail. The sites are illustrated in **Figure 1**.

There are multiple roadways in Garfield County that connect Cottonwood Pass Road from Eagle County to CO 82. During the summer of 2021, Garfield County evaluated multiple options for consideration as the official Cottonwood Pass route for evaluation by this project.

- ◆ County Road (CR) 114 (Spring Valley Road/CR 115 (Red Canyon Road))
- ◆ CR 113 (Cattle Creek Road)
- ◆ Catherine Store Road

The county concluded that the Catherine Store Road route was the most feasible for consideration of improvements because the other two routes have significant challenges and constraints, including extremely narrow (one-lane) roadway widths and multiple residences directly adjacent to the roadway. Additionally, the intersection of CO 82 and Catherine Store Road is currently signalized and provides better visibility for traffic as compared to the other routes.

**Figure 1. Project Site Key Map**







# CONTEXT SENSITIVE SOLUTIONS (CSS) PROCESS

CDOT developed CSS guidelines for all planning, design, and construction projects along the I-70 Mountain Corridor. Given the high-profile nature of this corridor, the project team applied the CSS process to the Cottonwood Pass project. The CSS process is designed to foster collaboration, partnerships, transportation innovation, and environmental sustainability. The process also considers the unique context of the corridor in design option development and evaluation.

## PRINCIPLES INHERENT IN THE CSS DECISION-MAKING PROCESS INCLUDE THE FOLLOWING:

- ◆ **Collaborative Decision-making** – The project involved an open, comprehensive, and fair public process. Input from stakeholders and project teams was highly valued.
- ◆ **Teams** – The following collaborative stakeholder teams were formed for this project:
  - ✦ Project Leadership Team (PLT)/Technical Team (TT): Multidisciplinary team of technical experts who focus on the decision-making process and moving the process forward
  - ✦ Issue Task Forces (ITFs): Teams of technical experts brought together to address specific issues, which for this project included a Natural Resources ITF and a Residential/Property Owner ITF
  - ✦ Project Staff: CDOT and Consultant staff focused on the day-to-day work of the project
- ◆ **Six-Step Process** – This project generally applied the six-step CSS process, which included:
  - ✦ Establishing project goals
  - ✦ Establishing participant roles and responsibilities
  - ✦ Establishing criteria for evaluating alternatives
  - ✦ Developing alternatives for improvements
  - ✦ Evaluating alternatives based on established criteria
  - ✦ Documenting the process and final recommendations

See the Agency Coordination and Public Engagement section of this report for more information on the team members and meetings held throughout the project.

As part of the CSS process, the PLT-TT was formed of technical experts from multiple disciplines and agencies to focus on moving the decision-making process forward during this concept design project. This group included representatives from CDOT, Eagle County, Garfield County, Town of Gypsum, United States (U.S.) Forest Service, and Bureau of Land Management (BLM). This group guided decisions for the concept design project. Following this phase, work products including the summary report, concept designs, and public feedback received will be provided to Eagle and Garfield county staff. The county staff and their elected officials will ultimately determine if and when they would like to work toward implementation of safety improvements at any of the site locations.



## CONTEXT STATEMENT AND CORE VALUES

The context statement and core values for Cottonwood Pass were developed collaboratively by the PLT-TT with review and input from the two project ITFs.

### WHAT MAKES COTTONWOOD PASS UNIQUE?

Cottonwood Pass, in Eagle and Garfield Counties, provides a critical connection for local residents between the towns of Gypsum and Carbondale, including access to medical care. The rural mountain county road provides access to numerous private properties, including primary residences, equestrian facilities, and ranches. The winding and narrow road provides sweeping views of the Elk Range and provides access to recreation areas on BLM and U.S. Forest Service land. The surrounding federal land supports valuable natural resources, including habitat for numerous state and federal threatened and endangered species. The corridor is also traversed by numerous waterways and wetlands, which provide habitat and foraging areas for wildlife.

Cottonwood Pass is currently unpaved in Eagle County, with several one-lane sections located on steep embankments with sharp curves without guardrail. While the alignment is primarily paved in Garfield County, there are several sharp curves with limited visibility and narrow roadway sections. These roadway conditions create safety and operational problems for all travelers, which became especially problematic for local residents during recent long-term closures of I-70 through Glenwood Canyon. Improvements to Cottonwood Pass must provide safer conditions for drivers while maintaining the rural nature of the route and minimizing impacts to private properties and natural resources.

### CORE VALUES

The core values are the goals and elements that are most important to consider when developing and evaluating improvements. The core values identified below were used to evaluate the design options at the 14 locations as part of this concept design project:

- ◆ **Safety** - Improve driver safety by making improvements at critical areas of geometric deficiencies
- ◆ **Respecting Corridor Character** - Maintain the rural feel of road, minimize impacts to private property, mitigate visual impacts from improvements
- ◆ **Natural Resource Preservation** - Minimize impacts to nearby wildlife habitat and waterways
- ◆ **Collaborative Improvements** - Engage public and stakeholders to provide meaningful input into the concept design process



# EXISTING CONDITIONS

Existing conditions at the 14 project sites along Cottonwood Pass were collected to inform the development and evaluation of potential safety improvements. Data was collected and/or compiled for traffic and safety, geotechnical conditions, and environmental resources. The data collected also included right-of-way (ROW) boundaries and ownership and topographic survey within the roadway ROW at the 14 project sites. The ROW and topographic data were utilized in the development of the design options.

## TRAFFIC AND SAFETY

Available traffic data collected along the Cottonwood Pass route was compiled and reviewed (no new traffic counts were collected). Crash data was also gathered from Eagle and Garfield counties, but it is limited and incomplete data for crashes along the Cottonwood Pass route, and no crashes could be attributed to the specific project locations. This is normal for rural areas and roads like this, as data includes only fully-reported crashes and does not reflect near-misses and unreported crashes, and it does not reflect the safety conditions at the project sites. Safety concerns and crash descriptions from county staff, adjacent property owners, and the general public were noted and used in the evaluation of potential roadway improvements.

Traffic counts were collected by the counties at a few key places along the corridor within the last five years (2019 and 2021). The traffic count data is summarized in **Table 1**.

**Table 1. Cottonwood Pass Area Traffic Counts**

ROAD	LOCATION	YEAR	DAILY TRAFFIC - WEEKDAY	DAILY TRAFFIC - WEEKEND
Catherine Store Road	0.5 mile north of CO 82	April 2019	1,390 vehicles/day	930 vehicles/day
CR 113 (Cattle Creek Road)	North of Upper Cattle Creek Road intersection	June/July 2019	345 vehicles/day	310 vehicles/day
Cottonwood Pass Road	Eagle County Line	Summer 2021 I-70 Glenwood Canyon Open	370 vehicles/day	470 vehicles/day
Cottonwood Pass Road	Eagle County Line	Summer 2021 I-70 Glenwood Canyon Closed	3,790 vehicles/day	3,650 vehicles/day

Source: Garfield County; Eagle County

Garfield County collected traffic counts on Catherine Store Road above the first curves from CO 82 (approximately 0.5 mile north of CO 82) in April 2019. Traffic volumes on CR 113 (Cattle Creek Road) are substantially lower than the volumes on Catherine Store Road. Both of the roadways had less traffic



volume on weekends than weekdays, indicating higher use as a local commuter corridor than a recreational route.

Eagle County provided traffic counts collected over two months in the summer of 2021 noting the days when I-70 through Glenwood Canyon was closed. The data for volumes when the canyon was closed are after the Cottonwood Pass route was removed from Google Maps. When the route was shown on Google Maps, the traffic volumes were reportedly much higher.

The traffic counts show an increase of eight to ten times the typical traffic volumes on Cottonwood Pass Road when I-70 through Glenwood Canyon is closed, even when it is not signed as a detour and not shown on Google Maps as a viable route.

The speed data collected on Catherine Store Road show a mean speed of 34.6 miles per hour (mph). The 85th-percentile speed, which typically defines the speed limit of a roadway, was 39.6 mph. This is substantially higher than the 25-mph speed limit. Count and speed data on Catherine Store Road were also collected at the same location in May 2017 and the results were similar with no growth in traffic volumes or increases in speeds.

While the proposed site improvements will improve safety at specific locations with improved curve geometry and increased road width to accommodate two-way traffic, the overall Cottonwood Pass corridor will remain mountainous with steep grades and low speeds. Therefore, there are no expected changes in average traffic volume along the Cottonwood Pass corridor from what is experienced today, with the canyon open and closed, due to the site improvements. Also, the improvements considered by this project would not allow access by vehicles over 45 feet in length. The current length and size restrictions on large vehicles would remain the same as they are today with no expected increase in truck traffic along the corridor.

## GEOTECHNICAL

Given the unique geological context and conditions along the Cottonwood Pass route, the existing geologic and geotechnical setting were evaluated, including geologic hazards that may impact the feasibility and/or cost of potential roadway improvements. The geotechnical constraints were evaluated via research of published information and field reconnaissance along and immediately adjacent to the roadway. The full geological and geotechnical evaluation memorandum is provided in **Appendix A**.

The most prominent geologic and geotechnical features along Cottonwood Pass are collapsible soils, evaporite soils and karst, and landslide features. The collapsible soils are due to the dry, low density silty and sandy soils with high void space or air gaps between the soil particles where the soil particle binding agents are highly sensitive to water. The evaporite soils consist primarily of gypsum and anhydrite that were deposited during the cyclic evaporation of shallow seas that existed in central Colorado millions of years ago. The evaporite soils can dissolve in the presence of fresh water and causing caverns, sink holes and subsidence. The landslides described along Cottonwood Pass occur either in the surficial deposits or deeper into bedrock.

Geologic hazards are natural phenomena, or a geologic process, capable of inflicting harm to people or property (U.S. Geological Survey (USGS), 2017). Geotechnical features are modifications to the geologic



setting and have similar effect as geologic hazards. The complex and problematic subsurface conditions along Cottonwood Pass have developed zones of marginally stable conditions, and potential of developing problematic conditions. These developments are the results of natural processes and land use activities, they can pose a risk to public either directly by an encounter with the hazard or indirectly through structures including roadways and buildings. The geologic conditions, precipitation, wind, temperature, seismic, ground modifications and drainage features can directly or indirectly impact the geologic hazards. The severity and risk factors of these geologic hazards can be mitigated through identifications of the potential issues, evaluating the conditions and engineering design.

The risk factors for the geologic hazards and geotechnical features were identified for the project sites along Cottonwood Pass and considered as part of the evaluations of the design options. All geotechnical conditions found to date would be mitigable and would not preclude the proposed improvements.

## ENVIRONMENTAL RESOURCES

Important environmental resources were summarized and mapped from existing and readily available documentation to identify opportunities and constraints that may affect the ability to implement future improvements in a timely and costly manner. No new data or field surveys were conducted. An ITF was formed of regulatory agency staff to solicit review and input on natural resources at the Cottonwood Pass project sites, including wetlands, water quality, and wildlife. This group included U.S. Forest Service, BLM, Colorado Parks & Wildlife (CPW), and U.S. Fish and Wildlife Service (USFWS) representatives. More in depth review and environmental evaluation of individual sites will be conducted if and when projects move forward with design development and construction.

The following section summarizes the existing environmental conditions within a study area which encompasses the limits of potential improvements at each site (approximately 0.5-mile length of Cottonwood Pass at each site plus a 150-foot buffer of the roadway center line except for Eagle Sites 5 and 6, which used a 400-foot buffer). The described environmental resources were selected based on the characteristics of the study area and input from stakeholders. The resources are generally consistent with National Environmental Policy Act (NEPA), its implementing regulations, and the Federal Highway Administration (FHWA) and CDOT guidelines.

## THREATENED AND ENDANGERED SPECIES

### FEDERALLY LISTED SPECIES

A review of the USFWS Information for Planning and Consultation (IPaC) system (USFWS, 2023a) indicates that there is a potential for nine federally threatened and endangered species, one proposed federally threatened species, and one candidate species to occur in, or potentially be affected by the project. No critical habitat exists within the study area for any federally listed species. **Table 2** lists the species, their federal status and basic habitat description, and their potential for occurrence in the study area based on habitat requirements and distribution.



**Table 2. Federally Listed Species**

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
<b>Birds</b>				
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	FT	Occurs at elevations below 9,100 feet in large steep canyons with exposed cliffs and dense old growth mixed coniferous forests.	No, suitable habitat does not exist
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	FT	Nest in shrubs and forage in trees within riparian areas.	Yes (Garfield Sites 6-8)
<b>Fishes</b>				
Bonytail Chub	<i>Gila elegans</i>	FE	Rocky runs, riffles, and rapids in swift, deep rivers. Mainstem Colorado River and major tributaries	No, suitable habitat does not exist
Colorado Pikeminnow	<i>Ptychocheilus Lucius</i>	FE	Medium to large rivers with small quiet backwaters within the Colorado River system.	No, suitable habitat does not exist
Humpback Chub	<i>Gila cypha</i>	FT	Rocky runs, riffles, and rapids in swift, deep rivers. Mainstem Colorado River and major tributaries	No, suitable habitat does not exist
Razorback Sucker	<i>Xyrauchen texanus</i>	FE	Deep, slow runs, pools, and eddies. Spawning in silt to gravel substrates in shallow water and seasonally flooded overbank areas.  Mainstem Colorado River and major tributary rivers	No, suitable habitat does not exist
<b>Insects</b>				
Monarch Butterfly	<i>Danaus plexippus</i>	C	Widespread, but requires milkweeds for caterpillars	Yes
Silverspot Butterfly	<i>Speyeria nokomis</i>	PT	Wetlands, wet meadows, and riparian areas	Yes



COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
<b>Mammals</b>				
Canada Lynx	<i>Lynx canadensis</i>	FT	Found primarily within the subalpine and upper montane forests zones typically from 8,000 to 12,000 feet in elevation. Early successional spruce/fir and lodgepole pine forests used for foraging, mature and old growth spruce/fir and lodgepole pine containing large downed woody debris used for denning. Riparian areas, mixed aspen/conifer, mature spruce/fir, and shrublands to forested lynx habitat also used for foraging	No, suitable habitat does not exist
Gray Wolf	<i>Canis lupus</i>	FE	May be present throughout Colorado but only requires evaluation for projects that include a predator management program.	No, project does not include species management
<b>Plants</b>				
Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	Occurs in seasonally moist soils and wet meadows of drainages below 7,750 feet elevation.	Yes (Garfield Sites 6-8)

Source: USFWS 2023a, USFWS 2023b

Notes:

FE=Federally Endangered

FT=Federally Threatened

PT=Proposed Threatened

C=Candidate

## STATE LISTED SPECIES

According to the Colorado Natural Heritage Program (CNHP) Tracking List (CNHP 2023), 18 state-listed species were identified with the potential to occur in the study area. **Table 3** lists the species, their state status and basic habitat description, and their potential for occurrence in the study area based on habitat requirements and distribution. Federal species previously discussed that are also state-listed are not repeated.



**Table 3. State Listed Species**

COMMON NAME	SCIENTIFIC NAME	STATE STATUS	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
<b>Amphibians</b>				
Boreal Toad (Southern Rocky Mountain Population)	<i>Anaxyrus boreas pop. 1</i>	SE	Mountain lakes, ponds, meadows, and wetlands at 8,500 to 11,500 ft.	No, outside of species overall range
Northern Leopard Frog	<i>Lithobates pipiens</i>	SC	Wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches.	Yes
<b>Birds</b>				
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	SC	Nest on steep precipitous cliffs; forages over forests and shrublands in proximity to cliffs. Primarily below 10,000 ft.	No, suitable habitat does not exist
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	In Central Colorado, primarily uses low elevation riparian habitat along the Colorado, Eagle, and White River drainages and their major tributaries. Roosts and nests in trees near open water. Active nests and roost sites on the Roaring Fork River.	Yes
Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>	SC	Mid elevation mountain sagebrush/grassland habitat usually adjacent to forested areas. Grouse production area in north central Eagle Co.	No, outside of species overall range
Ferruginous Hawk	<i>Buteo regalis</i>	SC	Open grasslands and shrub steppe communities. Nests in tall trees or shrubs along streams or on steep slopes. Occasional fall migrant in Garfield, Eagle, Pitkin, and Rio Blanco Counties.	Yes





COMMON NAME	SCIENTIFIC NAME	STATE STATUS	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	SC	Found only in areas with abundant sagebrush, preferably open sagebrush flats or rolling sagebrush hills at elevations between 6000-8500 ft. Known populations north of I-70 in Gypsum and in central-western Garfield Co.	No, outside of species overall range
Greater Sandhill Crane	<i>Antigone canadensis tabida</i>	SC	Found along watercourses and ponds; nests in wetlands and shallow marshes	No, outside of species overall range
<b>Fishes</b>				
Colorado River Cutthroat Trout	<i>Oncorhynchus clarkii pleuriticus</i>	SC	Cold, clear, gravely headwater streams and mountain lakes that provides an abundant food supply of insects.	Yes
Roundtail Chub	<i>Gila robusta</i>	SC	Warm streams and large rivers, usually in habitats with slow-flowing water adjacent to areas of faster water; occupy pools and eddies, often concentrating in swift, swirling water below rapids.	No, suitable habitat does not exist
<b>Mammals</b>				
Kit Fox	<i>Vulpes macrotis</i>	SE	Sparsely-covered, semi-desert shrublands of saltbrush, shadscale and greasewood	No, suitable habitat does not exist
Townsend's Big-eared Bat Subsp.	<i>Corynorhinus townsendii pallescens</i>	SC	Semidesert shrublands, pinyon-juniper woodlands and open montane forests below 10,000 ft. (Siemers 2002). Requires caves or abandoned mines for roost sites during all seasons and stages of its life cycle, and its distribution is strongly correlated with the availability of these features.	Yes
Wolverine	<i>Gulo</i>	SE	High elevation areas with arctic and subarctic conditions	No, suitable habitat does not exist



COMMON NAME	SCIENTIFIC NAME	STATE STATUS	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
<b>Reptiles</b>				
Longnose Leopard Lizard	<i>Gambelia wislizenii</i>	SE	Areas with bare ground or sparse vegetation, including greesewood, sagebrush, and rabbitbrush. The presence of rodent burrows is also preferred.	No, outside of species overall range
Midget Faded Rattlesnake (Western Rattlesnake)	<i>Crotalus oreganus concolor</i>	SC	Semidesert shrubland, mountain shrubland, riparian zones, piñon-juniper woodland, and montane woodland; soils may be sandy to rocky; absent from perennially wet areas and high mountains	No, outside of species overall range

Source: CNHP 2023, CNHP 2022, CPW 2023, NatureServe 2023

Notes:

SC= Species of Concern

SE=State Endangered

## BLM SENSITIVE SPECIES

According to the CNHP Tracking List, 21 BLM sensitive species that were not previously identified as federal or state listed, have the potential to occur in the study area. **Table 4** lists the species, their basic habitat description, and their potential for occurrence in the study area based on habitat requirements and distribution.

**Table 4. BLM Sensitive Species**

COMMON NAME	SCIENTIFIC NAME	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
<b>Amphibians</b>			
Great Basin Spadefoot	<i>Spea intermontana</i>	Breeds in pools and stock ponds filled by heavy rains or flooding in basins and rocky canyons, in areas with sagebrush, semidesert shrubland, or pinyon-juniper woodland	Yes
<b>Birds</b>			
Northern Goshawk	<i>Accipiter gentilis</i>	Mature forest generalist. Often found in mixed conifer/aspen stands. Nests primarily in mature aspen and pine trees.	Yes



COMMON NAME	SCIENTIFIC NAME	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
Black Swift	<i>Cypseloides niger</i>	Nests behind or next to waterfalls and wet cliffs. Forages over forests and open areas.	No, suitable habitat does not exist
White-faced Ibis	<i>Plegadis chihi</i>	Marshes, swamps, ponds and rivers, mostly in freshwater habitats	No, outside of species overall range
<b>Fish</b>			
Flannelmouth Sucker	<i>Catostomus latipinnis</i>	Medium to large streams in the Upper Colorado River Basin.	No, suitable habitat does not exist
<b>Mammals</b>			
White-tailed Prairie Dog	<i>Cynomys leucurus</i>	Open shrublands, semidesert grasslands, and open valleys.	No, outside of species overall range
Spotted Bat	<i>Euderma maculatum</i>	Cliff/rock/scree in arid Douglas-fir or Ponderosa Pine canyons associated with water. Occurs in western semi-desert canyonlands in Colorado. (Armstrong et al. 1994, Adams 2003).	No, outside of species overall range
Fringed Myotis	<i>Myotis thysanodes</i>	Conifer, Gambel oak shrublands, caves, mines, building roosts, including Rio Blanco, Garfield, and Mesa Counties up to 7,500 ft.	Yes
<b>Plants</b>			
DeBeque Milkvetch	<i>Astragalus debequaeus</i>	Among Pinyon-juniper woodlands and desert shrubs. Clustered on toe slopes and along drainages, but many occur on steep sideslopes. Soils are clayey but littered with sandstone fragments	Yes
Ferron's Milkvetch	<i>Astragalus musiniensis</i>	Gullied bluffs, knolls, benches and open hillsides; in pinyon-juniper woodlands or desert shrub communities, mostly on shale, sandstone, or alluvium derived from them (Spackman et al. 1997).	Yes
Naturita Milkvetch	<i>Astragalus naturitensis</i>	Pinyon-juniper woodlands in areas with shallow soils over exposed bedrock (Peterson 1981)	Yes
Crandall's Rockcress	<i>Boechera crandallii</i>	This plant grows in limestone chip-rock and stony areas, often among sagebrush, ridges, and steep hill slopes (Rollins 1993)	Yes
Eastwood Evening-primrose	<i>Camissonia eastwoodiae</i>	Found on clay soils derived from Mancos shale with Gardner's saltbush ( <i>Atriplex gardneri</i> ) a dominant associate.	No, suitable habitat does not exist



COMMON NAME	SCIENTIFIC NAME	BASIC HABITAT DESCRIPTION	POTENTIAL FOR OCCURRENCE IN THE STUDY AREA
Slender Rock- brake	<i>Cryptogramma stelleri</i>	Found scattered on moss and duff, in the shade of moist coniferous forests. Found in crevices in calcareous rocks in shaded localities with dripping water (Hulten 1968). Grows in horizontal crevices of moist, shaded limestone cliffs, which tend to be mossy, and are often associated with waterfalls and under shallow rock overhangs.	No, suitable habitat does not exist
Grand Buckwheat	<i>Eriogonum contortum</i>	Mancos shale badlands, with shadscale and other salt desert shrub communities (Spackman et al. 1997).	No, suitable habitat does not exist
Roan Cliffs Blazingstar	<i>Nuttallia rhizomata</i> ( <i>Mentzelia rhizomata</i> )	Known only from steep, shaley talus slopes derived from the Parachute Creek Member of the Green River Formation (Holmgren and Holmgren 2002, Reveal 2002)	No, suitable habitat does not exist
Rollins' Cat's- eye	<i>Oreocarya rollinsii</i> ( <i>Cryptantha rollinsii</i> )	White shale slopes of the Green River Formation in pinyon-juniper or cold desert shrubland communities.	No, suitable habitat does not exist
Harrington Beardtongue	<i>Penstemon harringtonii</i>	Open sagebrush or, less commonly, pinyon-juniper habitats, on gentle slopes. Soils are typically rocky loams and rocky clay loams derived from coarse calcareous parent materials (Spackman et al. 1997).	Yes, known to occur near Garfield Site 6 and Eagle Site 6
Piceance Bladderpod	<i>Physaria parviflora</i> ( <i>Lesquerella parviflora</i> )	Endemic to outcrops of the Green River Shale Formation in the Piceance Basin. It grows on ledges and slopes of canyons in open areas of pinon juniper communities. The soils are Torriorthent Rock outcrop complex (Peterson and Baker 1982).	No, suitable habitat does not exist
Montrose Bladderpod	<i>Physaria vicina</i> ( <i>Lesquerella vicina</i> )	Grows on Mancos shale at the ecotone between pinyon-juniper woodland and salt desert scrub (Anderson et al. 1997)	No, suitable habitat does not exist
Sun- loving Meadowrue	<i>Thalictrum heliophilum</i>	Found in open sunny sites on sparsely vegetated, dry shale slopes. Soils usually consist of Green River Shale Formation. Associated vegetation is usually very sparse (Scheck 1994).	No, suitable habitat does not exist

Source: CNHP 2023, CNHP 2022, CPW 2023, NatureServe 2023



## OTHER WILDLIFE HABITAT

Portions of the study area overlap with the following CPW seasonal activity areas (CPW 2023) and high priority habitat areas (CPW 2021):

- ◆ Aquatic Native Species Conservation Waters: Streams and lakes managed by CPW for native fish species. In the study area, this designation applies only to Cattle Creek.
- ◆ Aquatic Sportfish Management Waters: Streams and lakes managed by CPW for native fish species. This designation applies all study area streams.
- ◆ Elk Summer Range: That part of the range of a species where 90% of the individuals are located between spring green-up and the first heavy snowfall, or during a site specific period of summer as defined for each data analysis unit (DAU). Summer range is not necessarily exclusive of winter range; in some areas winter range and summer range may overlap. This designation applies to all of Cottonwood Pass.
- ◆ Elk Severe Winter Range: That portion of the species range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten. In the study area, this designation includes a portion of Cottonwood Pass within Garfield County.
- ◆ Elk Winter Concentration Area: That portion of the species winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten. In the study area, this designation includes the southern portion of Cottonwood Pass.
- ◆ Mule Deer Summer Range: That part of the range of a species where 90% of the individuals are located between spring green-up and the first heavy snowfall, or during a site specific period of summer. Summer range is not necessarily exclusive of winter range; in some areas winter range and summer range may overlap. This designation applies to all of Cottonwood Pass.
- ◆ Mule Deer Severe Winter Range: Portion of the species overall range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures area at a minimum in the two worst winters out of ten. In the study area, this designation includes the northern and southern extents of Cottonwood Pass.
- ◆ Mule Deer Winter Concentration Area: Portion of the species overall range where higher quality habitat supports significantly higher densities than surrounding areas. These areas are typically occupied year round and are not necessarily associated with a specific season. Includes rough break country, riparian areas, small drainages, and large areas of irrigated cropland. In the study area, this designation includes northern and southern extents of Cottonwood Pass.

## WATERS OF THE US AND WETLANDS

The Clean Water Act (CWA) of 1972 protects the physical, biological, and chemical quality of waters of the U.S. (WUS). As of March 20, 2023 the U.S. Army Corps of Engineers' (USACE) defines waters of the U.S. to mean 1) traditional navigable waters, the territorial seas, and interstate waters; 2) impoundments of waters of the U.S.; 3) tributaries to traditional navigable waters, the territorial seas, and interstate waters when the tributaries meet either the relatively permanent standard or the significant nexus standard; wetlands adjacent to traditional navigable waters, the territorial seas, and



interstate waters; wetlands adjacent to and with a continuous surface connection to relatively permanent impoundments of waters of the U.S. or jurisdictional tributaries when the jurisdictional tributaries meet the relatively permanent standard; and wetlands adjacent to impoundments of waters of the U.S. or jurisdictional tributaries when the wetlands meet the significant nexus standard; and 5) intrastate lakes and ponds, streams, or wetlands not identified in paragraphs 1) through 4) that meet either the relatively permanent standard or the significant nexus standard.

The USACE defines wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas”.

The USACE regulates and enforces Section 404 of the CWA. Under Section 404, a USACE permit is required for the discharge of dredged or fill material into jurisdictional waters of the U.S., including wetlands. The USACE is responsible for determining jurisdictional status. Impacts to WUS, including wetlands, must be avoided, minimized, or mitigated (in order of preference) to ensure that there is no net loss of functions and values of jurisdictional wetlands. CDOT’s policy is to mitigate unavoidable impacts to all wetlands, not just those considered jurisdictional under Section 404.

According to the USFWS National Wetland Inventory (NWI), the study area contains numerous potential wetlands including both palustrine emergent (PEM) and palustrine scrub-shrub (PSS) (USFWS 2022). Generally, PEM wetlands are dominated by emergent (herbaceous) vegetation and PSS wetlands are dominated by shrubs. The study area wetlands occur in topographic swales, roadside and irrigation ditches, and/or in association with streams and ponds. During the site visit, potential wetlands were observed at Garfield Sites 4 (not in NWI) and 7, and Eagle Sites 4-5. A detailed field investigation and boundary delineation would be required to verify the presence of hydrology, hydrophytic vegetation, and hydric soils at each potential wetland.

The field investigation would also be required to verify the presence of any fens, which are a type of wetland fed by groundwater and with organic soils that typically support sedges and low stature shrubs (Rydin et al. 2017; Mitsch and Gosselink 2015). No fens were observed during the site visit. CDOT with support from Colorado State University and CNHP, mapped all potential fens within a 500 meter buffer of all state and federal highway segments in Colorado which did not include the study area.

In addition to wetlands, other surface waters occur in or adjacent to the study area including East Coulter Creek (Eagle Site 2-4), Cottonwood Creek (Eagle Site 5), Cattle Creek (Garfield Site 7), Von Springs Reservoir 1 (Eagle Site 3), Shippees Draw (Garfield Site 8), one unnamed irrigation ditch (Garfield Sites 2, 6), one unnamed tributary (Garfield Site 3), and one unnamed pond (Garfield Site 8).

## WATER QUALITY

The Colorado Department of Public Health & Environment (CDPHE), Water Quality Control Commission (WQCC) has divided and defined all Colorado water bodies into various segments and classified them as defined in the *Integrated Water Quality Monitoring & Assessment Report* (CDPHE, 2022). Based on this document, the project lies in the Upper Colorado-North Platte River Basin and the stormwater from Cottonwood Pass drains to several different streams.



The WQCC regulations pertinent to surface water quality in the project study area include Regulations 31 and 33. WQCC Regulation 31: *The Basic Standards and Methodologies for Surface Water* establishes beneficial use categories together with basic standards, an antidegradation rule, and numeric tables that define the conditions generally necessary to maintain and attain such beneficial uses. Regulation 33: *Classifications and Numeric Standards for the Upper Colorado River Basin and North Platte River* establishes classifications and numeric standards for the study area river basin.

Additionally, water bodies that are impaired or identified for monitoring and evaluation are listed in WQCC Regulation 93: *Colorado’s Section 303(d) List of Impaired Waters and Monitoring and Evaluation List*. Each state is required to assess and report the water quality status of all surface water bodies and classify the intended uses of each water body in order to develop criteria to protect the designated uses of these water bodies. The current 303(d) list of water bodies that are not meeting their designated uses because of excess pollutants was published in 2022 and for each water body that is included on the list, Colorado identifies the pollutant causing the impairment and a priority is assigned for development of Total Maximum Daily Loads (TMDL) based on the severity of the pollution and the sensitivity of the uses to be made of the waters (CDPHE 2021). Colorado’s Monitoring and Evaluation (M&E) List identifies water bodies where there is reason to suspect water quality challenges, but there is also uncertainty regarding one or more factors.

**Table 5** summarizes beneficial use classifications, attainment status, and 303(d) and M&E listings for each stream segment in the study area.

**Table 5. CDPHE Stream Segment Classifications and Water Quality Standards**

WATERBODY ID	STREAM NAME(S) IN THE STUDY AREA	DESCRIPTION	DESIGNATED BENEFICIAL USES AND ATTAINMENT	303(D) AND M&E LISTINGS
COUCEA10a_A	Gypsum Creek	All tributaries to the Eagle River, including all wetlands, from a point immediately below the confluence with Lake Creek to the confluence with the Colorado River, except for specific listings in Segments 10b, 11 and 12, and those waters included in Segment 1	Agriculture – fully supporting Aquatic Life – impaired Recreational – fully supporting	M&E: dissolved oxygen (2016)



WATERBODY ID	STREAM NAME(S) IN THE STUDY AREA	DESCRIPTION	DESIGNATED BENEFICIAL USES AND ATTAINMENT	303(D) AND M&E LISTINGS
COUCRF03a_F	East Coulter Creek, Coulter Creek, Cattle Creek	Mainstem of the Roaring Fork River, from a point immediately below the confluence with Trentaz Gulch, to a point immediately below the confluence with the Fryingpan River. All tributaries to the Roaring Fork River, including wetlands, from a point immediately below the confluence with Hunter Creek to the confluence with the Colorado River, except for those tributaries included in Segment 1, 3b, 3d, 4-10b, West Sopris, Capital, Roaring Fork, Cattle Creek, and Three Mile Creek Portions.	Agriculture – fully supporting Aquatic Life – fully supporting Recreational – fully supporting	M&E: arsenic- total (2018)
COUCUC04_C	Cottonwood Creek	All tributaries to the Colorado River, including all wetlands, from the outlet of Lake Granby to above the confluence with the Roaring Fork River, which are on National Forest lands, except for the specific listings in Segments 2, 8, 9 and 10a.	Agriculture – fully supporting Aquatic Life – fully supporting Recreational – fully supporting	Not listed
COUCUC07a_D	Cottonwood Creek	All tributaries to the Colorado River, including wetlands from a point above the confluence with the Blue River to below confluence with Roaring Fork, which are not on NF lands except Alkali Slough and Muddy Creek	Agriculture – fully supporting Aquatic Life – fully supporting Recreational – fully supporting	Not listed

Source: CDPHE 2021

## FLOODPLAINS

A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. For streams and other watercourses where Federal Emergency Management Agency (FEMA) has provided Base Flood Elevations (BFEs), but no floodway has been designated, the community must review floodplain development on a case-by-case basis to ensure that increases in water surface elevations do not occur, or identify the need to adopt a floodway if adequate information is available. Executive Order (EO) 11988, Floodplain Management (1977): Requires federal agencies to avoid to the greatest extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative (FEMA, 2015).





The study area is located within five FEMA flood insurance rate maps (FIRMs): 08037C0550D, 08037C0575D, 08037C0750D, 0802051880B, and 0802051500B (unprinted). A review the of FIRMs was conducted and Van Springs Reservoir 1 and 2 are designated Zone A special flood hazard areas subject to a 1 percent annual chance of flooding (FEMA, 2022). The remainder of the study area is Zone X which are outside of special flood hazard areas and have minimal flood hazard risk.

## CULTURAL RESOURCES

A cultural resources database and literature review was performed to identify known and potentially occurring historic and archaeological resources in the study area. The results of the evaluation are included in **Appendix B** and summarized in **Table 6**.

**Table 6. Cultural Resources in the Study Area**

SITE	CULTURAL RESOURCES
Garfield County Site 1	<ul style="list-style-type: none"> <li>Patterson Ditch (5EA2753): another segment of the ditch outside of the study area was surveyed in 2009 and was recommended as needs data for National Register of Historic Places (NRHP) eligibility</li> <li>1972 residential building</li> <li>SH82-Segment and CR100</li> <li>Catherine Building (5GF1254) : previously surveyed but not assessed for listing in the NRHP</li> </ul>
Garfield County Site 2	<ul style="list-style-type: none"> <li>CR100</li> <li>1960 residential building</li> </ul>
Garfield County Site 3	CR100
Garfield County Site 4	CR100
Garfield County Site 5	CR100
Garfield County Site 6	<ul style="list-style-type: none"> <li>Hopkins-Basalt Section 15kv Transmission Line (5GF2456.1) : previously surveyed in 2012 and determined eligible for listing in the National Register of Historic Places (NRHP)</li> <li>Needham Ditch (5GF.4623.2): previously surveyed in 2012 and determined eligible for listing in the NRHP</li> <li>CR100</li> <li>CR170</li> </ul>
Garfield County Site 7	<ul style="list-style-type: none"> <li>CR100</li> <li>CR113</li> </ul>
Garfield County Site 8	CR113
Eagle County Site 1	CR10A
Eagle County Site 2	<ul style="list-style-type: none"> <li>CR10A</li> <li>1908 Trail</li> </ul>
Eagle County Site 3	Von Springs Reservoir and Dam
Eagle County Site 4	CR10A
Eagle County Site 5	<ul style="list-style-type: none"> <li>CR10A</li> <li>Road 8350</li> </ul>
Eagle County Site 6	CR10A



Due to the lack of previous survey in the study area, the potential for undocumented Native American resources is unknown, but their presence is likely. The likelihood for buried archaeological resources is moderate to low because most of the sites are located in areas of Pleistocene alluvium and colluvium. Pleistocene deposits typically predate the generally accepted range for human occupation in North America.

## RIGHT-OF-WAY (ROW) AND SURVEY

The control network was established for the sites along the study corridor using GPS Static Methods. The control network was post processed using Trimble TBC software and met CDOT accuracy requirements. The control monuments met the standards of a CDOT Work Point, consisting of a No. 5 rebar with aluminum cap stamped with the control point number. Right of Entry was acquired from the private property owners prior to performing any survey work requiring access. Survey work was coordinated with the Forest Service and the BLM as required prior to performing the aerial mapping over the public land controlled by those agencies.

Existing plats and deeds were obtained via research of the Garfield and Eagle County records to determine ROW lines for Cottonwood Pass where the roadway crosses private property. In the areas where Cottonwood Pass falls within the Forest Service and BLM boundaries, the survey team worked with those agencies to determine the width of the prescriptive easement. The controlling section corners were surveyed with property corners and other boundary evidence sufficient to determine the recorded ROW lines.

Mapping of the project sites was conducted using a SUAS (aerial drone) with a photographic sensor to collect aerial photogrammetric mapping of the area. The road was mapped with a 300- to 500-foot-wide corridor. In the areas where the aerial photography was obscured by terrain and foliage, additional ground shots were collected using conventional survey methods to confirm the ground elevations.

Pix4D software was used to register aerial photographs and generate a point cloud. TopoDOT software was used to extract the planimetric linework and develop a surface model. A CAD file in Civil 3D format was created for the existing ROW and the SUAS acquired topographic mapping for the concept design of potential improvements at the 14 project sites.



# DESIGN OPTION DEVELOPMENT AND EVALUATION

## EVALUATION CRITERIA

The criteria used to evaluate the options were developed directly from the Core Values that were reviewed and confirmed by the project stakeholders and general public. The Core Values and the associated evaluation criteria represent what is most important to reflect the unique context of the Cottonwood Pass corridor. They focus on safety, respecting corridor character, natural resource preservation, and collaboration. The criteria outlined in **Table 7** were applied in the evaluation of the design options at each site.

**Table 7. Evaluation Criteria**

CORE VALUE	CRITERIA / PERFORMANCE MEASURE
Safety	Assessment of changes to vehicular safety concerns at site (speed, off-road vehicles, two-way traffic conflicts)
Respecting Corridor Character	<ul style="list-style-type: none"> <li>• Ability to maintain rural feel of road</li> <li>• Potential ROW impacts to private property</li> <li>• Potential visual impacts</li> </ul>
Natural Resource Preservation	Potential impacts to wildlife habitat and waterways
Collaborative Improvements	<ul style="list-style-type: none"> <li>• Concerns and support from adjacent property owners</li> <li>• Concerns and support from corridor travelers and general public</li> </ul>

## DESIGN OPTIONS EVALUATION

The development of potential design concepts at each site focused on balancing improved driver safety without increasing traffic volumes or speeds. To address safety concerns, improvements focused on:

- ◆ Smoothing curves in ways that do not increase the radius or design speed of the curve, but improves the driver path through the curve
- ◆ Increasing the lane and/or shoulder widths to provide more room for drivers to avoid on-coming traffic or recover to get back into the curve
- ◆ Improving sight distance at intersections and curves with rock outcroppings, so drivers can see on-coming traffic or bicyclists or animals in the road

The following pages describe the design options considered at each of the project sites and the evaluation of the options based on the project evaluation criteria. The potential ROW and property impacts are based on the conceptual level of design and actual ROW impacts will be determined during future design. There would be temporary construction easements in addition to any permanent ROW acquisitions noted. Cost estimates were also developed for each design option, based on the broad, conceptual level of design. These costs do not include ROW or easements.



## GARFIELD COUNTY SITE 1

Safety issues at this site include conflicts with long vehicular queues on Catherine Store Road at the signal.

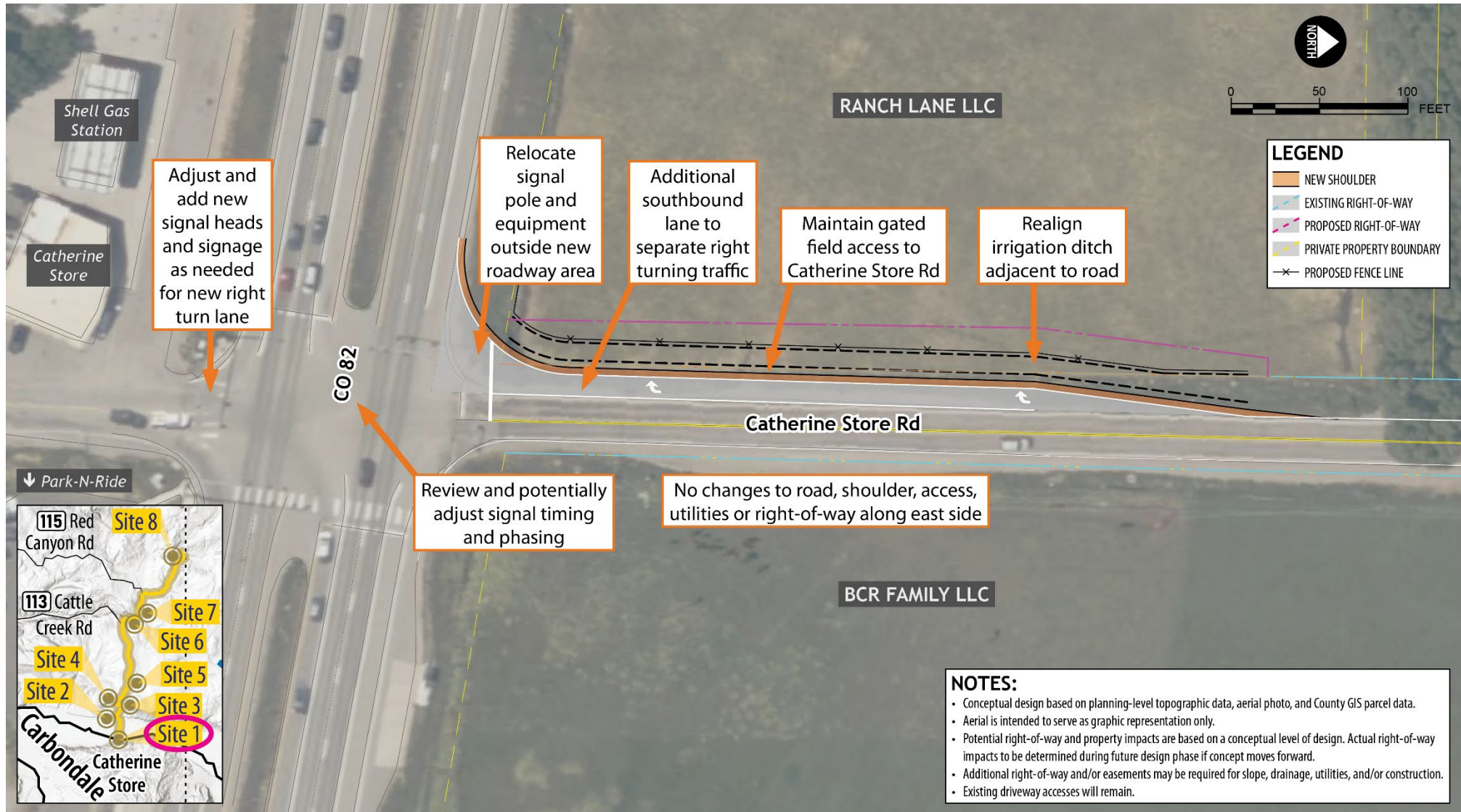
Adding a dedicated right turn lane for southbound Catherine Store Road would facilitate vehicles turning westbound on CO 82 toward Glenwood Springs. The existing ditch on the west side of Catherine Store Road would be shifted. The gated field access would be maintained. The existing traffic signal layout and timing and phasing would be reviewed and potentially adjusted with the new turn lane. This project would improve safety by reducing queue lengths and conflicts at the signal.

**Table 8. Garfield County Site 1 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – NEW SOUTHBOUND RIGHT TURN LANE
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate improvement in safety with reduced potential for rear-end crashes on southbound approach with reduced queue lengths and separation of right-turning traffic
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in traffic control or roadside environment
Potential right-of-way (ROW) impacts to private property	Less than 0.25 acres of potential ROW impacts to one property on west side of road
Potential visual impacts	Minimal visual impacts with added width, but no change in roadside environment and no additional infrastructure elements
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	Irrigation ditch, presumed to be non-jurisdictional water, must be realigned adjacent to road No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	No comments or concerns received
Concerns and support from corridor travelers and general public	General agreement with benefit of proposed changes Additional changes should be made to accommodate parking on east side of road
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$300,000 - \$350,000

T&E = Threatened and Endangered Species

Figure 2. Garfield County Site 1 - New Southbound Right Turn Lane





## GARFIELD COUNTY SITE 2

Safety issues at this site include driver speeds and two-way traffic conflicts through the curve.

Two options were considered to improve safety through the curve. Option 1 would realign the road to better guide drivers through the curve, which would require a wall along the outside of the curve.

Option 2 would minimize the road realignment, reducing the need for a wall, and would widen the shoulders to provide more room for drivers through the curve.

**Table 9. Garfield County Site 2 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – REALIGNED CURVE WITH RETAINING WALLS	DESIGN OPTION 2 – MODIFIED CURVE WITH GRADING
<b>Core Value: Safety</b>		
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve to guide drivers through curve Maximum grades reduced from 10% to less than 9%	Moderate improvement in safety with modified curve and widened shoulders for more room through curve Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>		
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or property access	Rural feel maintained with no change in number of lanes or property access
Potential right-of-way (ROW) impacts to private property	Less than 0.10 acres of total potential ROW impacts to two properties	No expected permanent ROW impacts, but would have temporary construction easements
Potential visual impacts	Moderate visual impacts with added guardrail and walls	Minimal visual impacts with added guardrail
<b>Core Value: Natural Resource Preservation</b>		
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>		
Concerns and support from adjacent property owners	Strong concern that improving curve will increase speeds	Strong concern that improving curve will increase speeds
Concerns and support from corridor travelers and general public	Some public preference for this option Support for guardrail to reduce vehicle roll-offs	Public noted this option seems easier and just as beneficial Support for guardrail to reduce vehicle roll-offs
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$1.4 - \$1.5 Million	\$600,000 - \$700,000

T&E = Threatened and Endangered Species

Figure 3. Garfield County Site 2 Option 1 - Realigned Curve with Retaining Walls

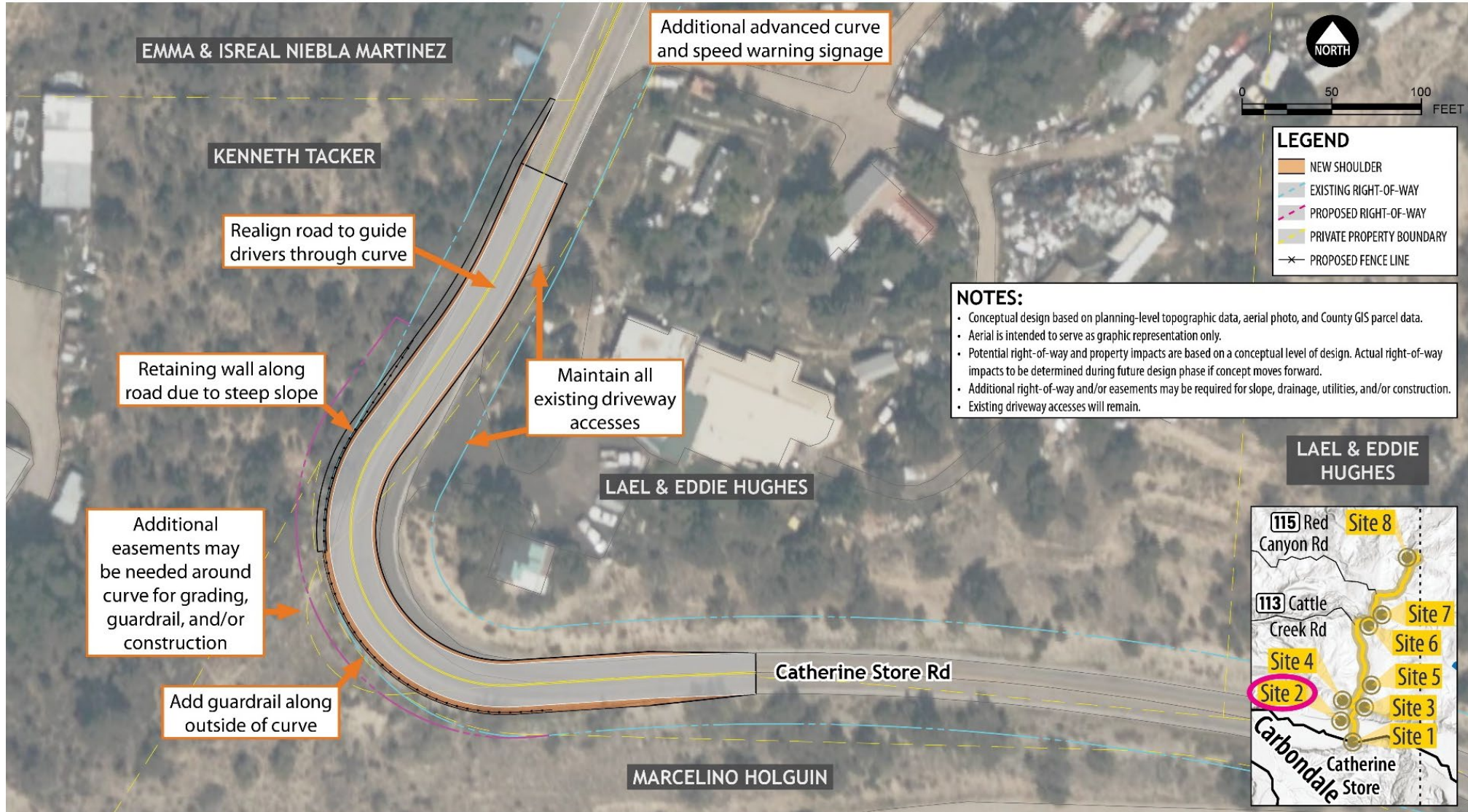
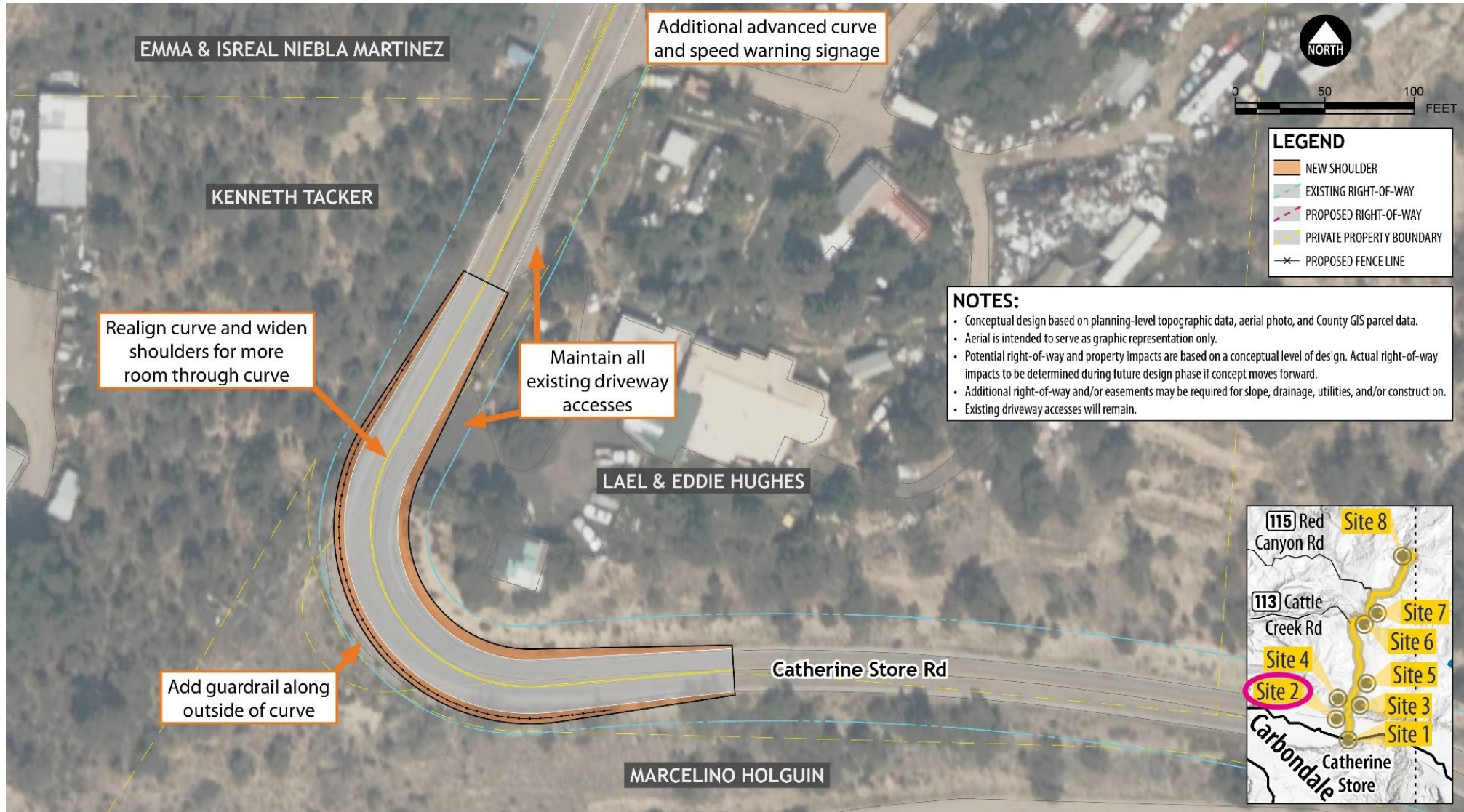


Figure 4. Garfield County Site 2 Option 2 - Modified Curve with Grading



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.





## GARFIELD COUNTY SITE 3

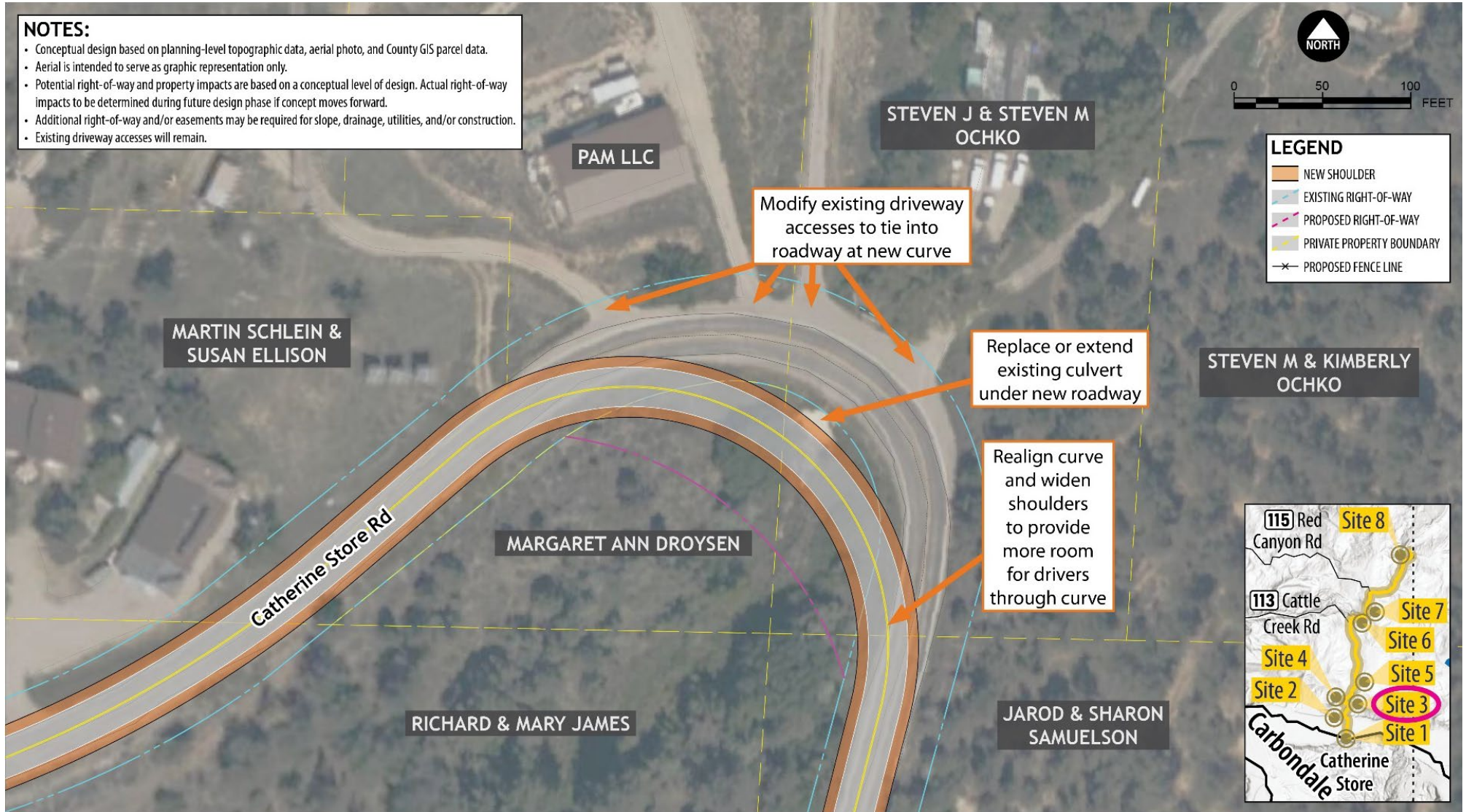
Safety issues at this site include driver speeds, two-way traffic conflicts through the curve, and lack of driveway delineation along the outside of the curve.

Road modifications would improve safety by realigning the curve and widening shoulders to provide more room for drivers through the curve. The existing driveways would be modified to tie into the new curve and the existing culvert would be replaced or extended along the inside of the curve.

**Table 10. Garfield County Site 3 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED SHOULDERS
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Minor improvement in safety with modified curve and widened shoulders for more room through curve Access consolidation along outside of curve would improve safety further by improving sight distance and reducing conflicts Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or property access
Potential right-of-way (ROW) impacts to private property	Less than 0.25 acres of total potential ROW impacts to three properties along curve
Potential visual impacts	Minor visual benefits with shifting roadway away from residential properties
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unnamed) No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	Strong concern with property impacts when the change seems unnecessary
Concerns and support from corridor travelers and general public	Some support for improvements, but also concern that improving curve will increase speeds
T&E = Threatened and Endangered Species	
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$1.0 - \$1.1 M

Figure 5. Garfield County Site 3 - Modified Curve with Widened Shoulders





## GARFIELD COUNTY SITE 4

Safety issues at this site include driver speeds, two-way traffic conflicts through the curve, and off-road crashes after the curve in the downhill (southbound) direction.

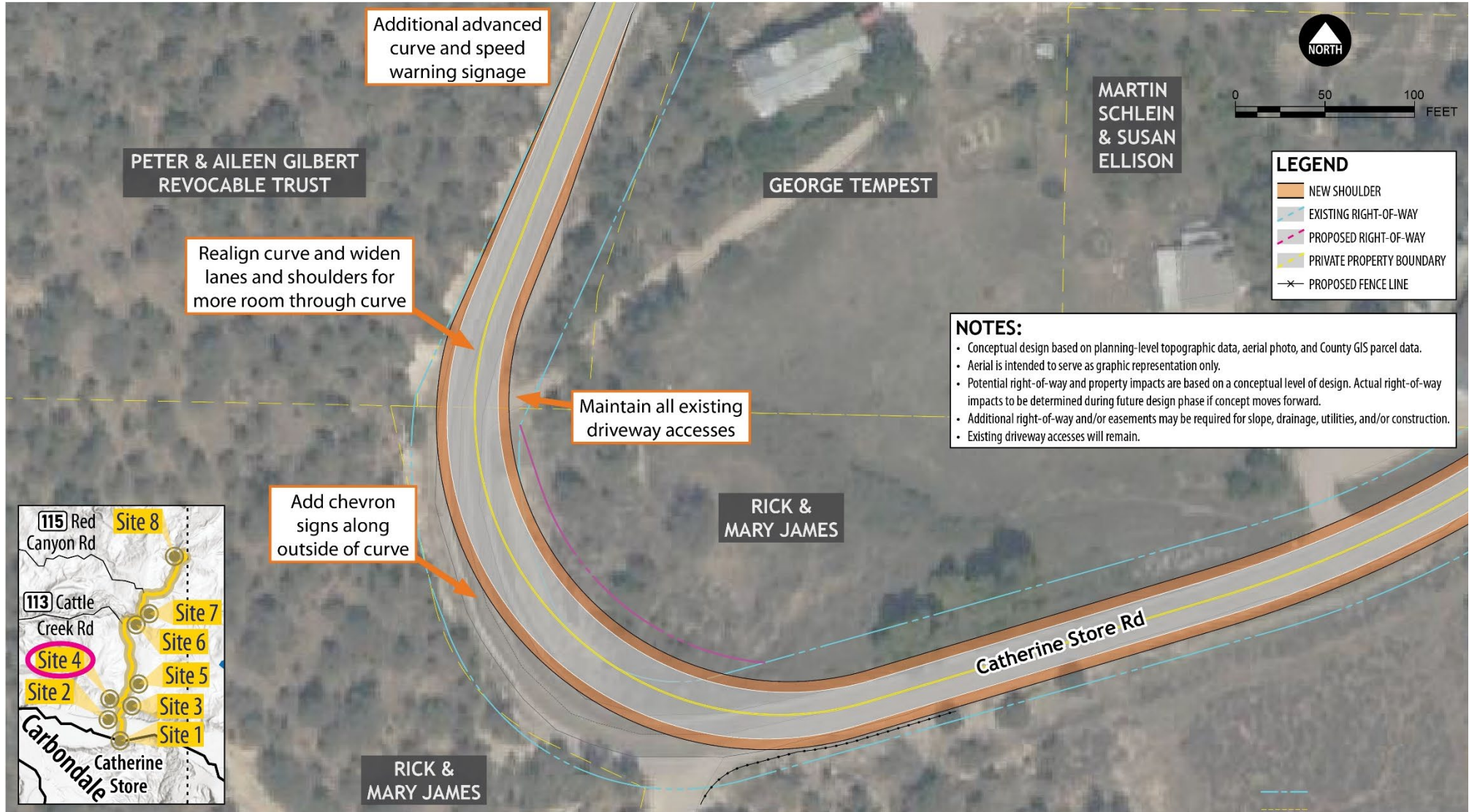
Road modifications are being considered to improve safety by realigning the curve and widening the lanes and shoulders to provide more room for drivers through the curve. Additional advanced curve and speed warning signage would be installed for drivers approaching the curve, along with chevron signs along the outside of the curve. Guardrail may be added along the downhill edge of the existing driveway to direct errant vehicles.

**Table 11. Garfield County Site 4 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED SHOULDERS
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve and widened shoulders for more room through curve Maximum grades reduced from over 10% to 8.5%
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or property access
Potential right-of-way (ROW) impacts to private property	Less than 0.10 acres of potential ROW impacts to one property along curve
Potential visual impacts	Minimal visual impacts with added guardrail
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	Strong concern that improving curve will increase speeds
Concerns and support from corridor travelers and general public	General agreement with benefit of improvements, but also concern that improving curve will increase speeds
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$1.3 - \$1.4 M

T&E = Threatened and Endangered Species

Figure 6. Garfield County Site 4 - Modified Curve with Widened Shoulders





## GARFIELD COUNTY SITE 5

Safety issues at this site include limited driver sight distance and the associated two-way traffic conflicts through the curve.

Road modifications would improve safety by cutting into the hillside on the west side of the road and widening the inside shoulder to increase the sight distance around the curve. It is assumed that the new roadside grading along the west side of the road would be constructed and maintained with an easement, not requiring permanent ROW acquisition. The increased sight distance will improve visibility for drivers and bicyclists through the curve.

**Table 12. Garfield County Site 5 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – HILLSIDE GRADING
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate improvement in safety with increased sight distance around curve Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or roadside environment
Potential right-of-way (ROW) impacts to private property	No expected permanent ROW impacts, but would have temporary construction easements
Potential visual impacts	Minimal visual impacts with new hillside slope
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	Concern for stream and spring impacts Concern that improving sight distance will increase speeds
Concerns and support from corridor travelers and general public	Some agreement with benefits of improvements, but also concern that improvements will increase speeds
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$1.3 - \$1.4 M

T&E = Threatened and Endangered Species

Figure 7. Garfield County Site 5 - Hillside Grading





## GARFIELD COUNTY SITE 6

Safety issues at this site include limited sight distance and turning vehicle conflicts at the intersection.

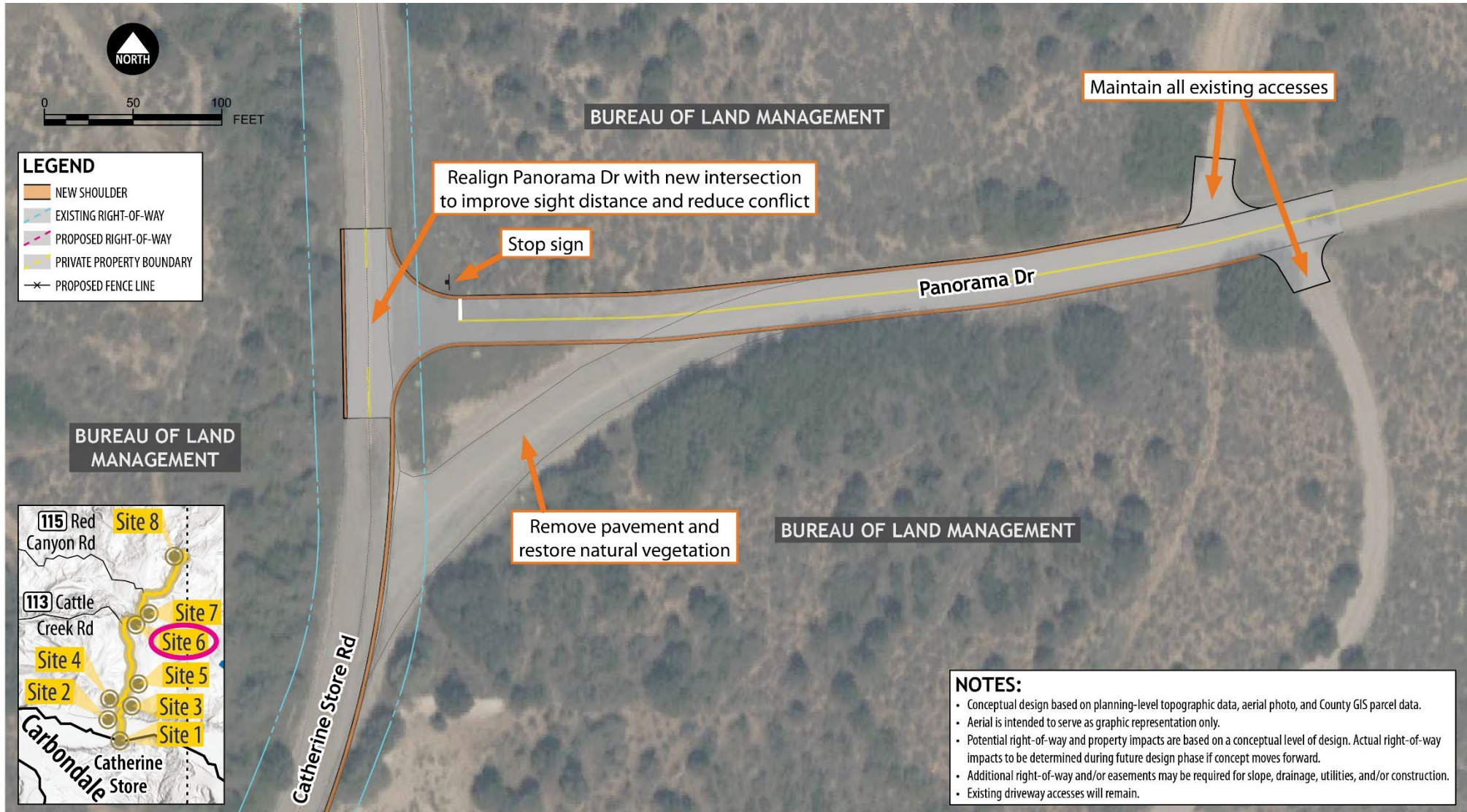
The Panorama Drive intersection with Catherine Store Road would be realigned to intersect at a better angle for turning traffic. The new intersection alignment would improve safety by increasing sight distance and reducing conflicts for vehicles turning to/from Panorama Drive. The existing pavement at the Panorama Drive leg of the intersection would be removed and restored to natural vegetation. No private property or driveway access would be impacted with these improvements.

**Table 13. Garfield County Site 6 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – PANORAMA DR INTERSECTION REALIGNMENT
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate to major improvement in safety with increased sight distance and reduced conflicts for turning drivers at intersection Minimum grades at intersection reduced from over 4% to less than 2%
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in traffic control, number of lanes, or roadside environment
Potential right-of-way (ROW) impacts to private property	No expected permanent private ROW impacts, but would have temporary construction easements to BLM property around intersection
Potential visual impacts	Minimal visual impacts with intersection shifts and restored vegetation
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unnamed) Potentially suitable habitat for federal T&E species
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	No comments or concerns received
Concerns and support from corridor travelers and general public	General agreement with benefits of proposed changes
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$500,000 - \$600,000

T&E = Threatened and Endangered Species  
BLM = Bureau of Land Management

Figure 8. Garfield County Site 6 - Panorama Drive Intersection Realignment







## GARFIELD COUNTY SITE 7

Safety issues at this site include driver confusion with navigation at the intersection and turning vehicle conflicts.

Two options were considered to improve safety at the Cattle Creek Road intersection with Catherine Store Road. Both options would reduce driver confusion and conflicts with a traditional three-legged, stop-controlled intersection. The north-south movement between Cattle Creek Road and Catherine Store Road would be the free-flow through movement while Cattle Creek Road to the west would continue to be controlled by a stop sign. Option 1 would realign Cattle Creek Road to intersect Catherine Store Road and a retaining wall or grading would be required. Option 2 would minimize the realignment of Cattle Creek Road, but it would potentially have more impacts to the Cattle Creek crossing.

**Table 14. Garfield County Site 7 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – REALIGNED INTERSECTION	DESIGN OPTION 2 – REALIGNED AND SHIFTED INTERSECTION
<b>Core Value: Safety</b>		
Changes to vehicular safety concerns at site	Moderate improvement in safety with better wayfinding and reduced conflicts for turning drivers Minimal change in grades (<0.5%)	Moderate improvement in safety with better wayfinding and reduced conflicts for turning drivers Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>		
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes, road surface, or roadside environment	Rural feel maintained with no change in number of lanes, road surface, or roadside environment
Potential right-of-way (ROW) impacts to private property	Less than 0.10 acres of potential ROW impacts to one property	Less than 0.20 acres of potential ROW impacts to one property
Potential visual impacts	Minor visual impacts with added wall	Minimal visual impacts with intersection shifted closer to creek
<b>Core Value: Natural Resource Preservation</b>		
Potential impacts to wildlife habitat and waterways	Impacts to Cattle Creek and associated wetlands, presumed to be jurisdictional waters Potentially suitable habitat for federal T&E species	Impacts to Cattle Creek and associated wetlands, presumed to be jurisdictional waters Potentially suitable habitat for federal T&E species
<b>Core Value: Collaborative Improvements</b>		
Concerns and support from adjacent property owners	No comments or concerns received	No comments or concerns received
Concerns and support from corridor travelers and general public	General agreement with benefits of modifying intersection, without preference of design option	General agreement with benefits of modifying intersection, without preference of design option

T&E = Threatened and Endangered Species BLM = Bureau of Land Management

<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$3.0 - \$3.2 M	\$1.7 - \$1.8 M
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Figure 9. Garfield County Site 7 Option 1 - Realigned Intersection

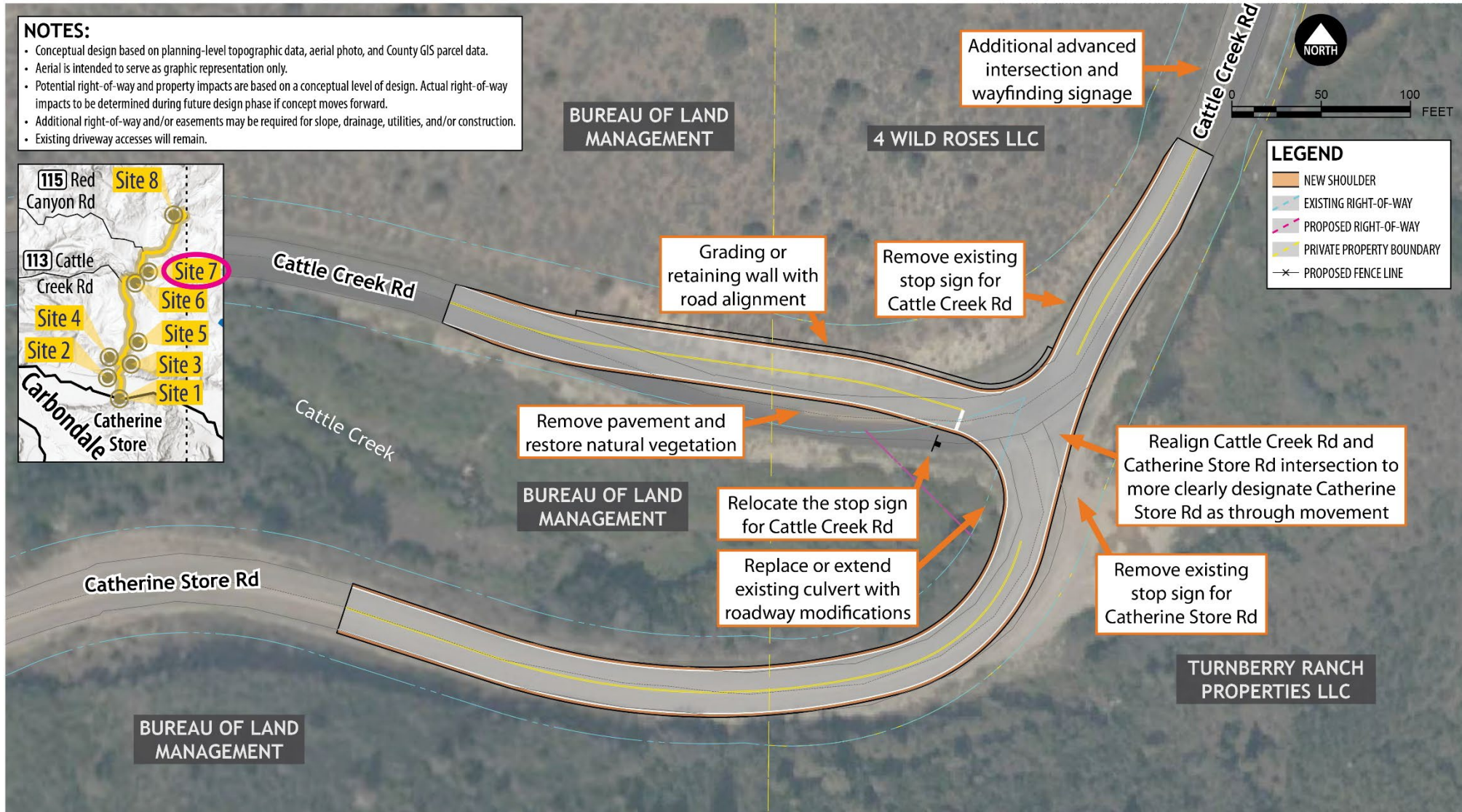
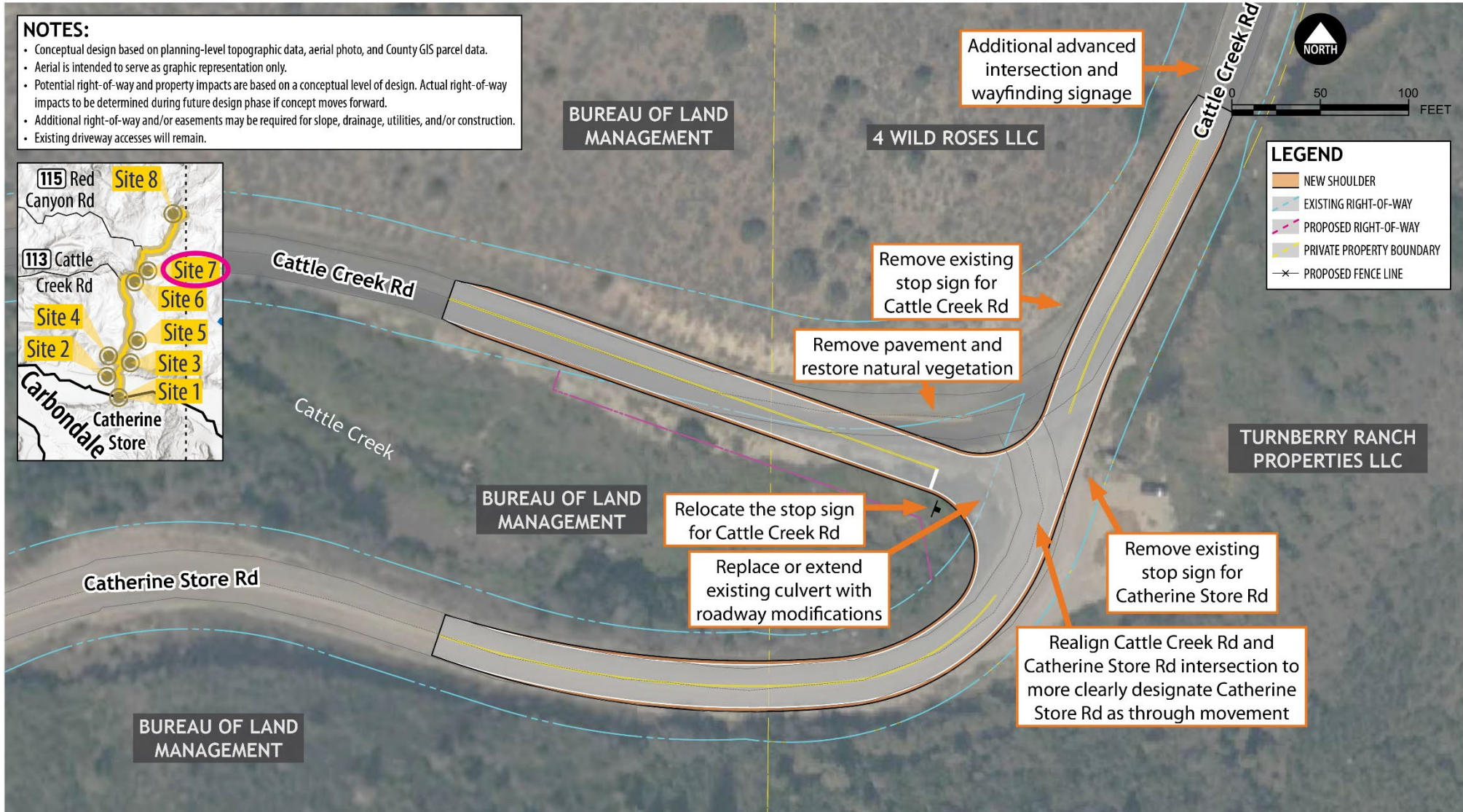


Figure 10. Garfield County Site 7 Option 2 - Realigned and Shifted Intersection





## GARFIELD COUNTY SITE 8

Safety issues at this site include limited driver sight distance and the associated two-way traffic conflicts through the curve.

Road modifications would improve safety by cutting into the hillside on the west side of the road and widening the lanes and shoulders to increase the sight distance around the curve. It is assumed that the new roadside grading along the west side of the road would be constructed and maintained with an easement, not requiring permanent ROW acquisition. The increased sight distance will improve visibility for drivers and bicyclists through the curve.

**Table 15. Garfield County Site 8 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – HILLSIDE GRADING
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate improvement in safety with increased sight distance around curve Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes, road surface, or roadside environment
Potential right-of-way (ROW) impacts to private property	No expected permanent ROW impacts, but would have temporary construction easements
Potential visual impacts	Minimal visual impacts with new hillside slope
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands Potentially suitable habitat for federal T&E species
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	No comments or concerns received
Concerns and support from corridor travelers and general public	General agreement with benefits of improvements, but also concern that improving curve will increase speeds
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$600,000 - \$700,000

T&E = Threatened and Endangered Species

Figure 11. Garfield County Site 8 - Hillside Grading





## EAGLE COUNTY SITE 1

Safety issues at this site include driver speeds and two-way traffic conflicts through the closely spaced curves. Road modifications would improve safety through the multiple curves. Option 1 would realign the curves and widen lanes to provide more room for drivers through the curves. Option 2 would soften the curve alignments further to improve sight distance and guide drivers. Based on stakeholder input, a refined option (Option 3) was developed that realigns the curves to minimize property impacts. With all options, existing driveways would be modified to tie into the road and guardrail may be added to direct errant vehicles.

**Table 16. Eagle County Site 1 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – SOFTEN CURVES	DESIGN OPTION 2 – REALIGN CURVES	DESIGN OPTION 3 – REALIGN AND SOFTEN CURVES
<b>Core Value: Safety</b>			
Changes to vehicular safety concerns at site	Minor improvement in safety with minor curve softening and widened shoulders through curves Maximum grade at middle curve increased by <0.5%	Moderate improvement in safety with realigned curves and widened shoulders through curves Maximum grade at all curves reduced by <0.5%	Moderate improvement in safety with combination of realigned and softened curves with widened shoulders Maximum grade at middle curve increased by <1%
<b>Core Value: Respecting Corridor Character</b>			
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or road surface	Rural feel maintained with no change in number of lanes or road surface	Rural feel maintained with no change in number of lanes or road surface
Potential right-of-way (ROW) impacts to private property	Less than 0.5 acres of potential ROW impacts to two properties at curves	0.5 - 1.0 acre of potential ROW impacts to two properties at curves	Less than 0.5 acres of potential ROW impacts to three properties at curves
Potential visual impacts	Minor visual impacts with shifting roadway closer to residential properties	Moderate visual impacts with shifting roadway closer to residential properties	Minor visual impacts with shifting roadway closer to residential properties
<b>Core Value: Natural Resource Preservation</b>			
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat	No mapped streams or wetlands No federal or state-listed T&E species habitat	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>			
Concerns and support from adjacent property owners	Strong concern about property impacts	Strong concern about property impacts	Concern about property impacts
Concerns and support from corridor travelers and general public	Some support for option to minimize property impacts and speed increase	General agreement with benefits of improvements	Preference for option to minimize property impacts

T&E = Threatened and Endangered Species

<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$900,000 - \$1.1 Million	\$900,000 - \$1.1 Million	\$900,000 - \$1.1 Million
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Figure 12. Eagle County Site 1 Option 1 - Soften Curves

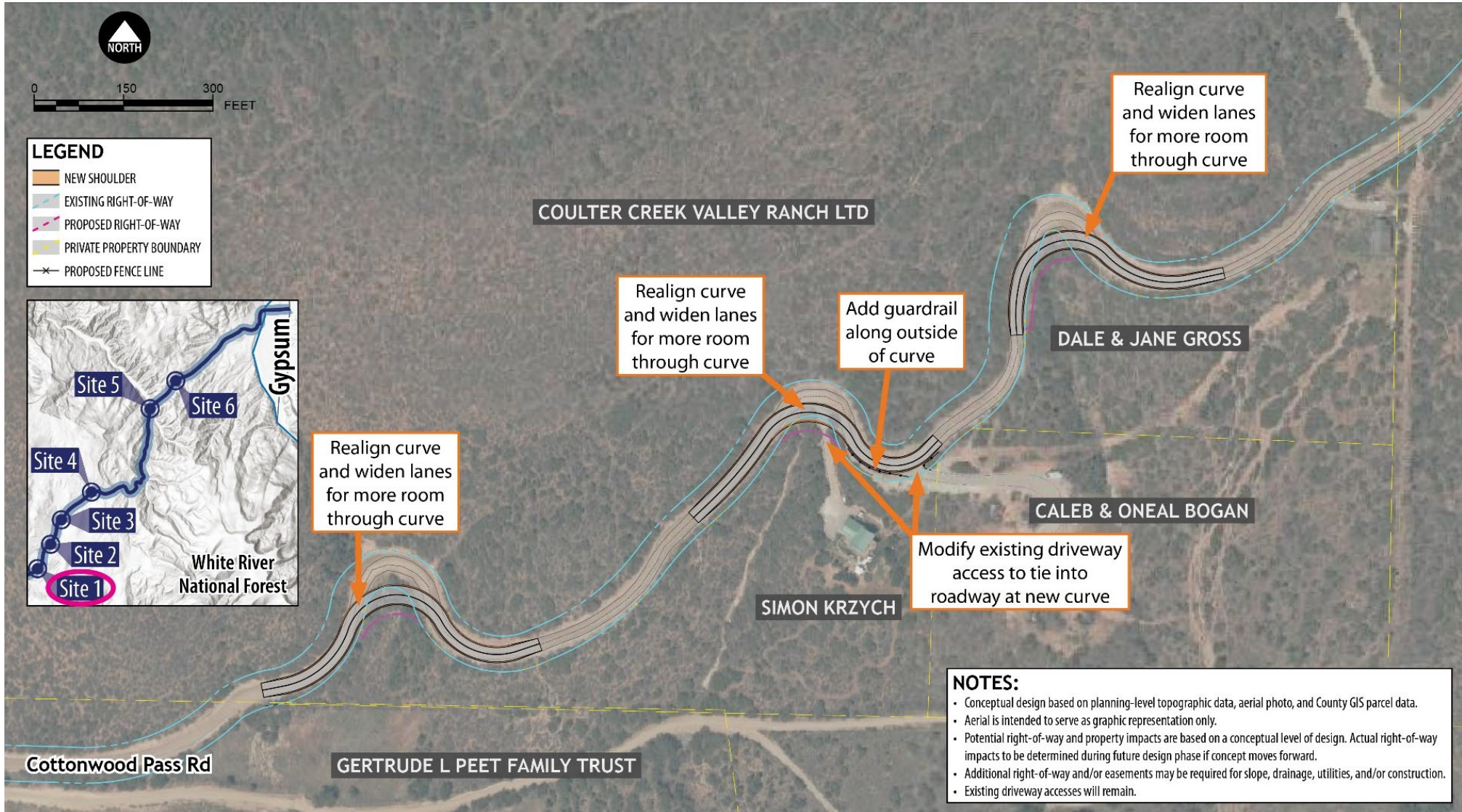
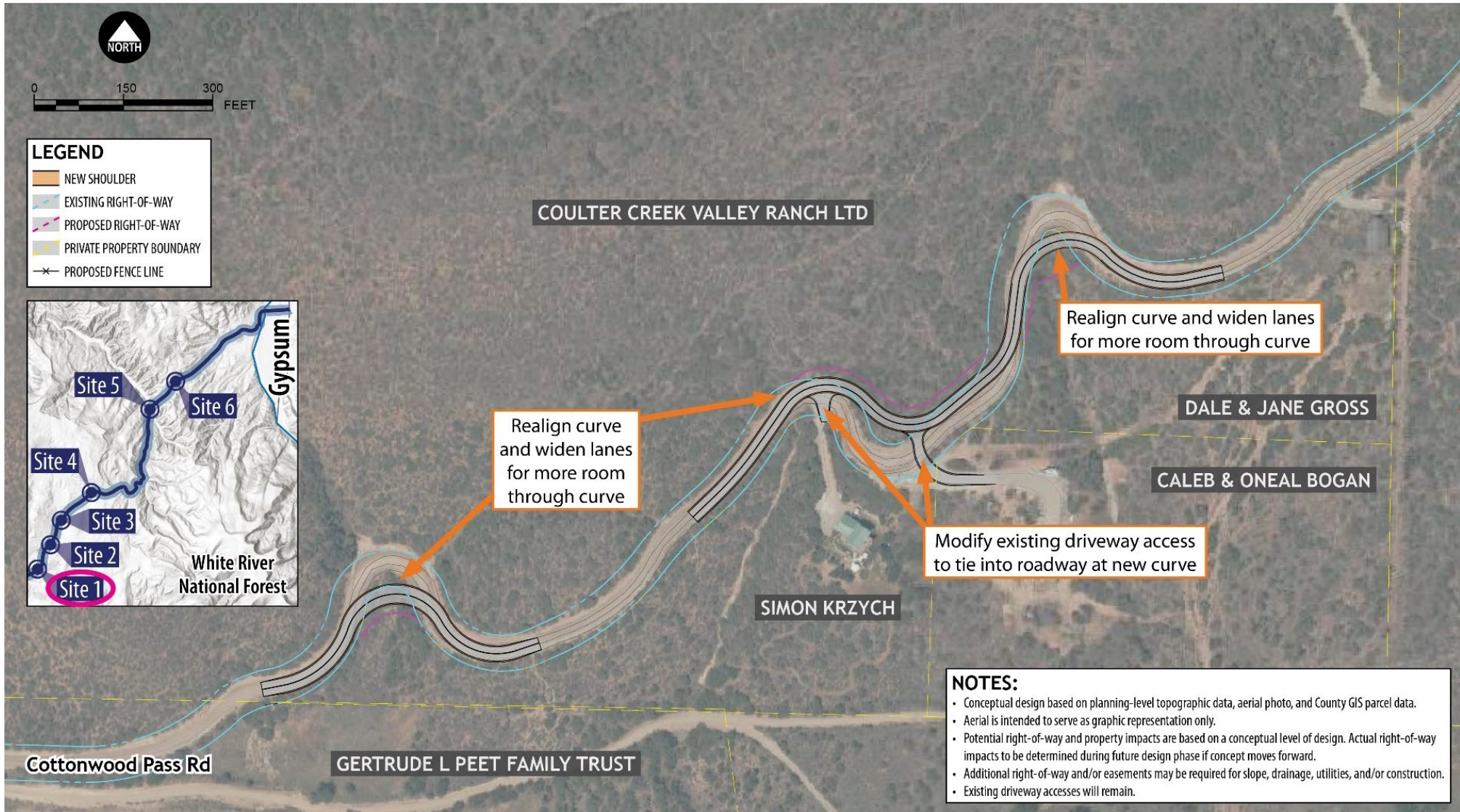


Figure 13. Eagle County Site 1 Option 2 - Realign Curves





Figure 14. Eagle County Site 1 Option 3 - Realign and Soften Curves





## EAGLE COUNTY SITE 2

Safety issues at this site include driver speeds and two-way traffic conflicts through the narrow stretch.

Road modifications would improve safety by widening the lanes and shoulders to provide room for two-way traffic and increase sight distance along the road. The widening along the east side of the road would require a retaining wall or grading with property impacts. There are no changes expected to the west side of the road. Based on stakeholder input, a refined option (Option 2) was developed that extends improvements further south to incorporate widening at a tight curve.

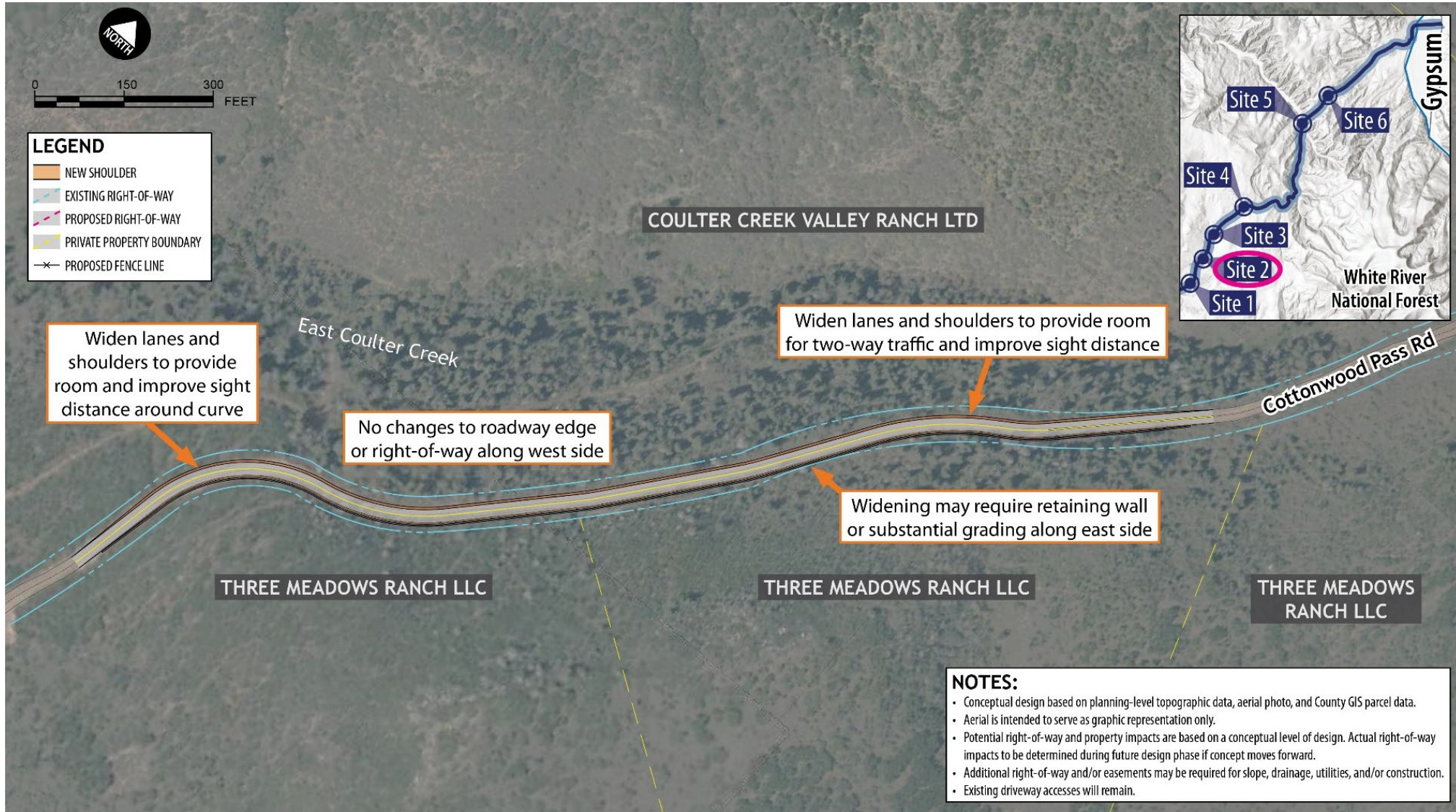
**Table 17. Eagle County Site 2 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – WIDENED LANES AND SHOULDERS	DESIGN OPTION 2 – FURTHER WIDENED LANES AND SHOULDERS
<b>Core Value: Safety</b>		
Changes to vehicular safety concerns at site	Moderate improvement in safety with shoulders and room for two-way traffic No change in grades	Moderate to major improvements in safety with shoulders and room for two-way traffic (longer distance) No change in grades
<b>Core Value: Respecting Corridor Character</b>		
Ability to maintain rural feel of road	Rural feel maintained although road surface hardened to protect wall	Rural feel maintained although road surface hardened to protect wall
Potential right-of-way (ROW) impacts to private property	No expected permanent ROW impacts, but would have temporary construction easements	No expected permanent ROW impacts, but would have temporary construction easements
Potential visual impacts	Minimal visual impacts with wall/grading	Minimal visual impacts with wall/grading
<b>Core Value: Natural Resource Preservation</b>		
Potential impacts to wildlife habitat and waterways	Potential impacts to Coulter Creek and associated wetlands, presumed to be jurisdictional waters No federal or state-listed T&E species habitat	Potential impacts to Coulter Creek and associated wetlands, presumed to be jurisdictional waters No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>		
Concerns and support from adjacent property owners	Strong concern for impacts to Coulter Creek and surrounding habitat	Strong concern for impacts to Coulter Creek and surrounding habitat
Concerns and support from corridor travelers and general public	General agreement with benefits of improvements	General agreement with benefits of improvements
		T&E = Threatened and Endangered Species
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$3.7 - \$4.0 M	\$4.2 - \$4.4 M

Figure 15. Eagle County Site 2 Option 1 - Widened Lanes and Shoulders



Figure 16. Eagle County Site 2 Option 2 - Further Widened Lanes and Shoulders





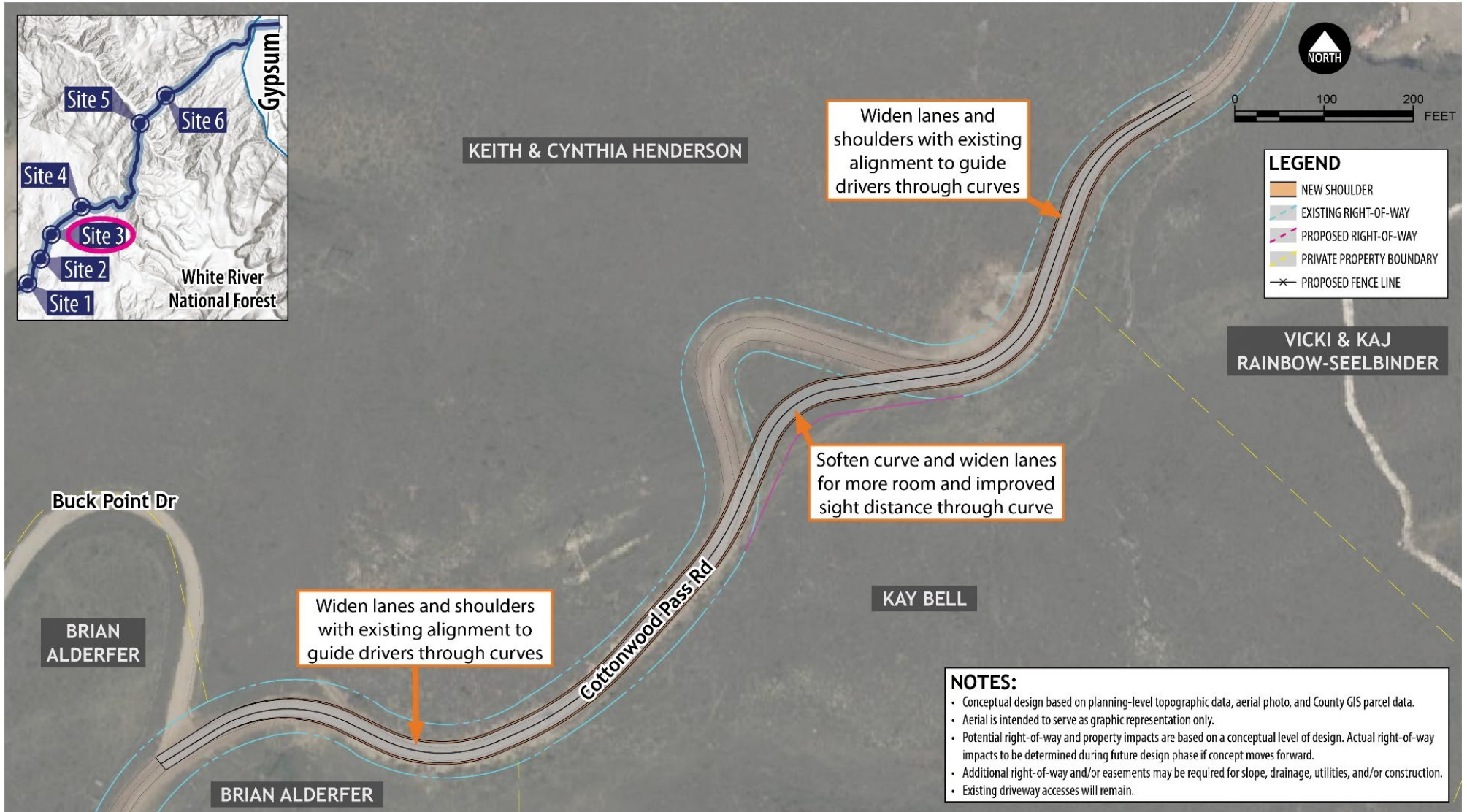
## EAGLE COUNTY SITE 3

Safety issues at this site include driver speeds and two-way traffic conflicts through the curve. Road modifications would improve safety through the curves. Option 1 would soften the curves and widen lanes to increase sight distance and provide more room for drivers through the curves. Option 2 would realign the main sharp curve and widen lanes, but with reduced length of improvements along Cottonwood Pass Road and minimized property impacts. Based on stakeholder input, a refined option (Option 3) was developed to minimize property impacts at the curve and extend the improvements through Buck Point Drive.

**Table 18. Eagle County Site 3 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – REALIGN CURVES	DESIGN OPTION 2 – SOFTEN CURVES	DESIGN OPTION 3 – FURTHER SOFTEN CURVES
<b>Core Value: Safety</b>			
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve and widened shoulders Maximum grades reduced from 7% to 5.5%	Minor improvement in safety with minor curve softening and widened shoulders Maximum grades reduced from 7% to almost 6%	Moderate improvement in safety with softened curve and widened shoulders Maximum grades reduced from 7% to almost 6%
<b>Core Value: Respecting Corridor Character</b>			
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes, road surface, or roadside environment	Rural feel maintained with no change in number of lanes, road surface, or roadside environment	Rural feel maintained with no change in number of lanes, road surface, or roadside environment
Potential right-of-way (ROW) impacts to private property	About 0.30 acres of potential ROW impacts to one property at curve	Less than 0.10 acres of potential ROW impacts to one property at curve	Less than 0.10 acres of potential ROW impacts to one property at curve
Potential visual impacts	Minimal visual impacts	Minimal visual impacts	Minimal visual impacts
<b>Core Value: Natural Resource Preservation</b>			
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unnamed) and wetlands No federal or state-listed T&E species habitat	Potential jurisdictional mapped stream (unnamed) and wetlands No federal or state-listed T&E species habitat	Potential jurisdictional mapped stream (unnamed) and wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>			
Concerns and support from adjacent property owners	Strong concern about property impacts	Strong concern about property impacts	Preference for option to minimize property impacts with improvements
Concerns and support from corridor travelers and general public	General agreement with benefits of improvements	General agreement with benefits of improvements	Preference for option to minimize property impacts and speed increase
T&E = Threatened and Endangered Species			
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$1.2 – \$1.4 M	\$550,000 - \$700,000	\$1.2 – \$1.4 M

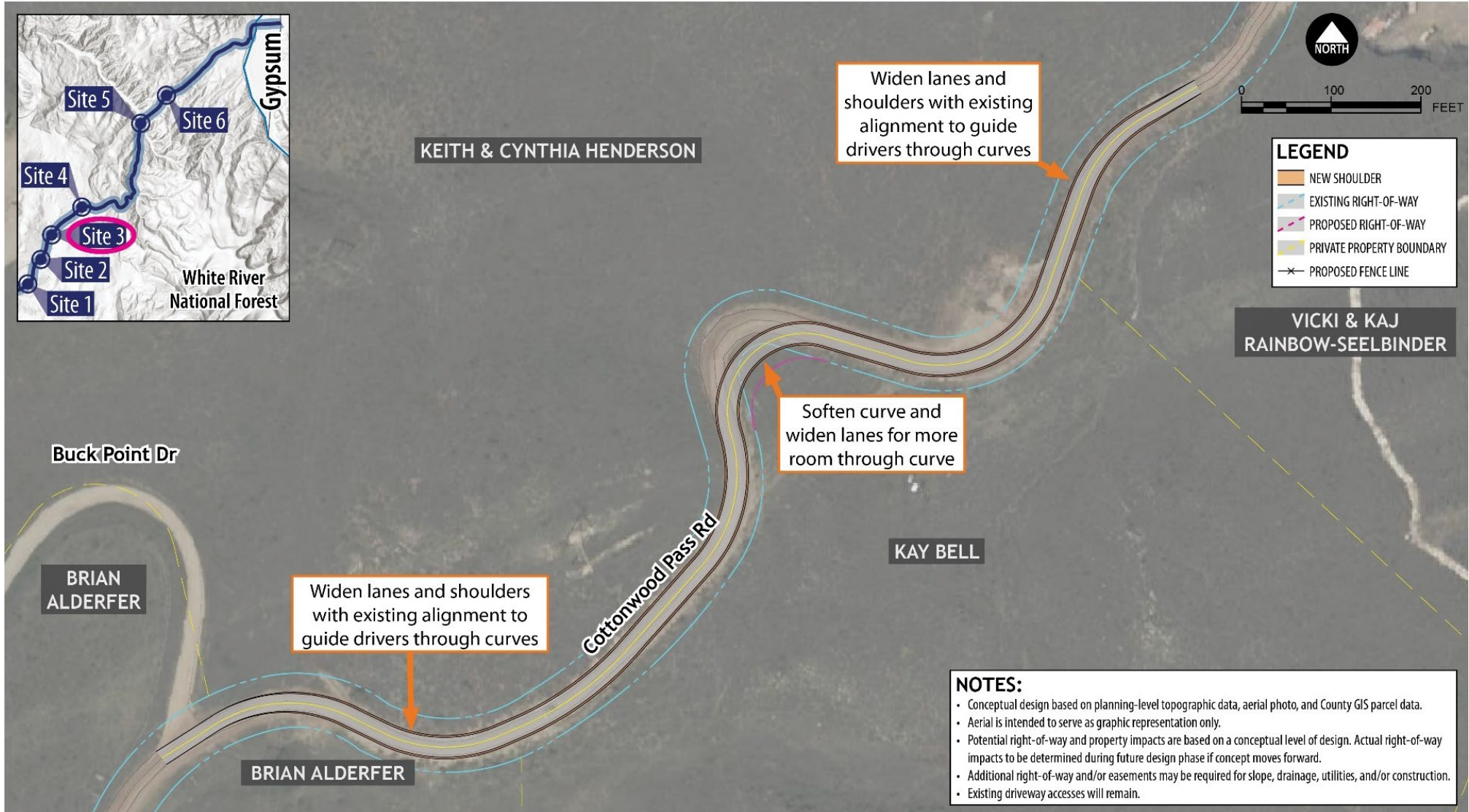
Figure 17. Eagle County Site 3 Option 1 - Realign Curves



**Figure 18. Eagle County Site 3 Option 2 - Soften Curves**



Figure 19. Eagle County Site 3 Option 3 - Further Soften Curves







## EAGLE COUNTY SITE 4

Safety issues at this site include driver speeds and two-way traffic conflicts through the curve.

Road modifications are being considered to improve safety by softening the curve and widening lanes to provide more room for drivers through the curve.

**Table 19. Eagle County Site 4 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED LANES
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Minor improvement in safety with softened curve and widened lanes for more room through curve Minimal change in grades (<0.5%)
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes, road surface, or roadside environment
Potential right-of-way (ROW) impacts to private property	Less than 0.10 acres of potential ROW impacts to one property at curve
Potential visual impacts	Minimal visual impacts with grading
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	No comments or concerns received
Concerns and support from corridor travelers and general public	Concern that improving curve will increase speeds and input that the change seems unnecessary

T&E = Threatened and Endangered Species

<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$200,000 - \$250,000
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Figure 20. Eagle County Site 4 - Modified Curve with Widened Lanes





## EAGLE COUNTY SITE 5

Safety issues at this site (also known as Blue Hill) include two-way traffic conflicts through the narrow stretch, combined with tight curves with limited sight distance and steep grades. Road modifications would improve safety and traffic operations by softening the curves and grades of Cottonwood Pass Road. Lanes would be widened to provide more room for two-way traffic through this section. Option 1 provides improvements in the grades and curves with a section of new road alignment, which would allow a section of existing road to remain open during the complicated construction. Option 2 improves grades and curves as much as possible with minimal new road alignment. Property access would remain open during construction with either option.

**Table 20. Eagle County Site 5 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – IMPROVED GRADES AND CURVES WITH NEW ALIGNMENT	DESIGN OPTION 2 – IMPROVED GRADES AND CURVES
<b>Core Value: Safety</b>		
Changes to vehicular safety concerns at site	Major improvement in safety with reduced grades, improved curves, and room for two-way traffic Maximum grades reduced from some areas above 20% to <9%	Moderate improvement in safety with reduced grades, improved curves, and room for two-way traffic Maximum grades reduced from some areas above 20% to <15% and most areas <10%
<b>Core Value: Respecting Corridor Character</b>		
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes or road surface	Rural feel maintained with no change in number of lanes or road surface
Potential right-of-way (ROW) impacts to private property	About 27 - 28 acres of potential ROW impacts to one private property and BLM	About 2.5 - 3 acres of potential ROW impacts to one private property and BLM
Potential visual impacts	Major visual impacts with shifting roadway and walls along new alignment	Moderate visual impacts with shifting roadway and walls
<b>Core Value: Natural Resource Preservation</b>		
Potential impacts to wildlife habitat and waterways	Potential impacts to Cottonwood Creek and associated wetlands, presumed to be jurisdictional waters No federal or state-listed T&E species habitat	Potential impacts to Cottonwood Creek and associated wetlands, presumed to be jurisdictional waters No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>		
Concerns and support from adjacent property owners	Strong concern with property impacts	Concern for property impacts and requested further reduction in new road to be constructed off existing alignment
Concerns and support from corridor travelers and general public	Strong concern with property impacts and cost	General agreement with benefits of improvements, but concern for cost
		T&E = Threatened and Endangered Species
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	\$350 - \$360 M	\$55 - \$59 M

Figure 21. Eagle County Site 5 (Blue Hill) Option 1 - Improved Grades and Curves with New Alignment

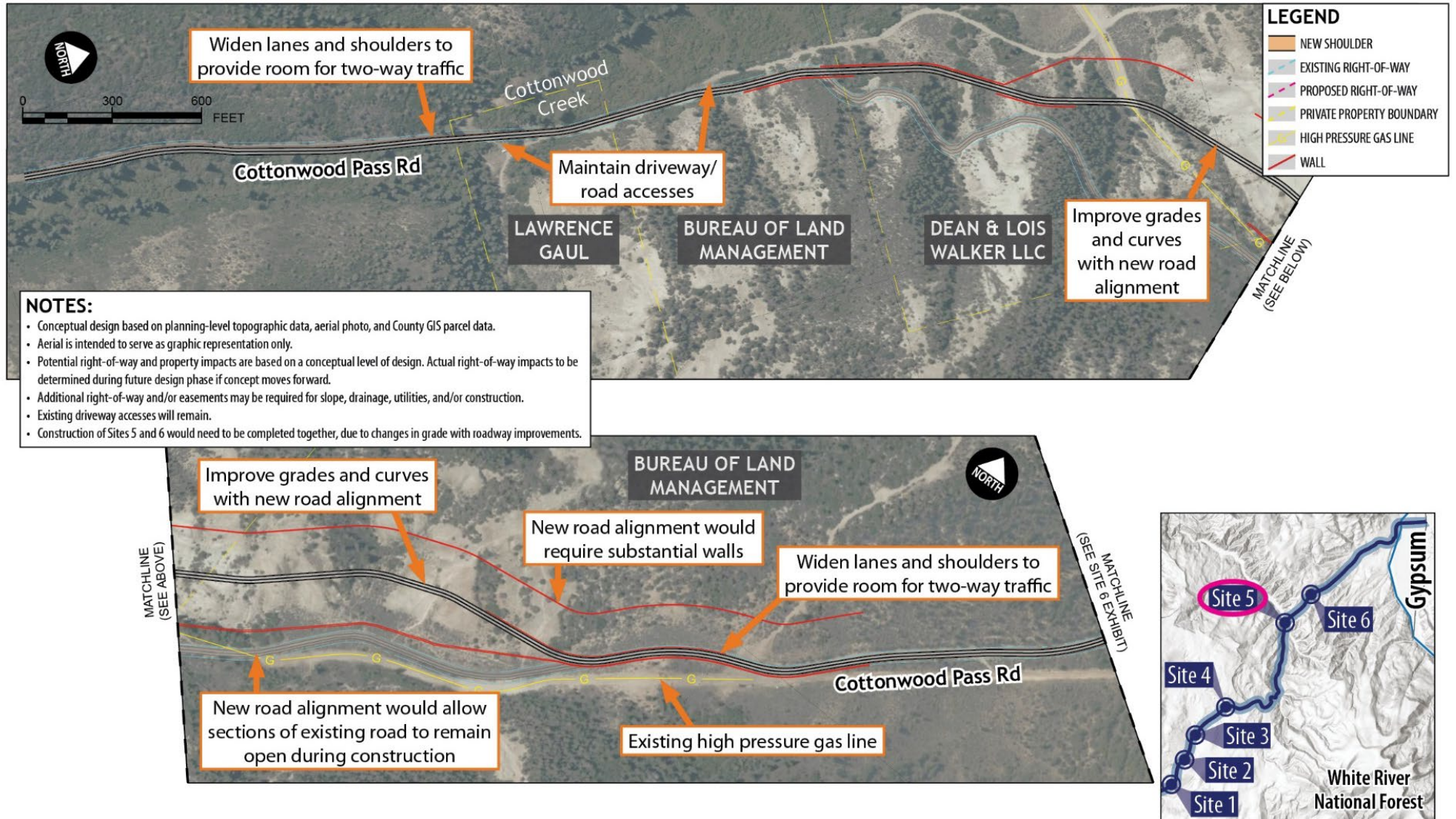
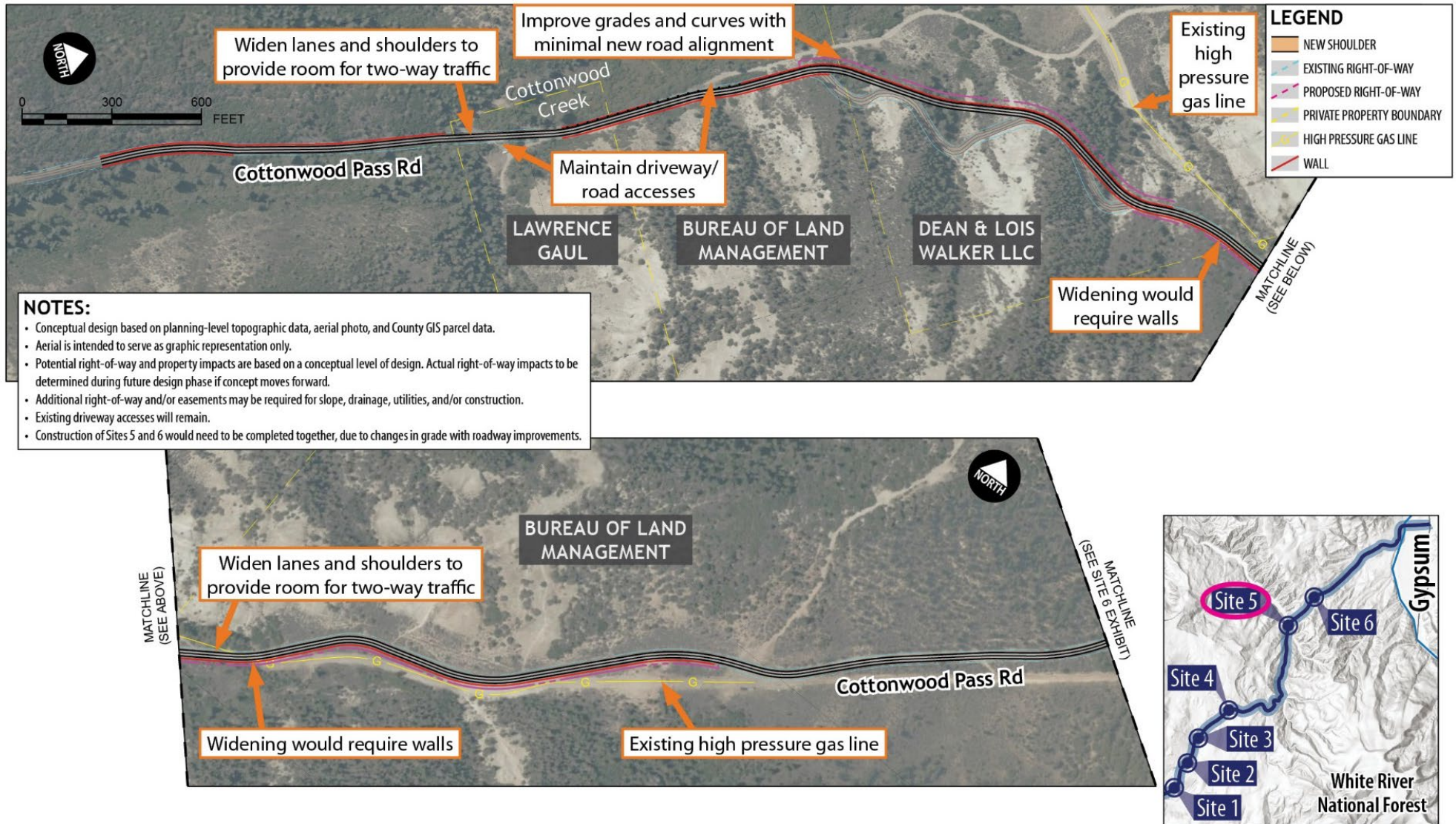


Figure 22. Eagle County Site 5 (Blue Hill) Option 2 - Improved Grades and Curves





## EAGLE COUNTY SITE 6

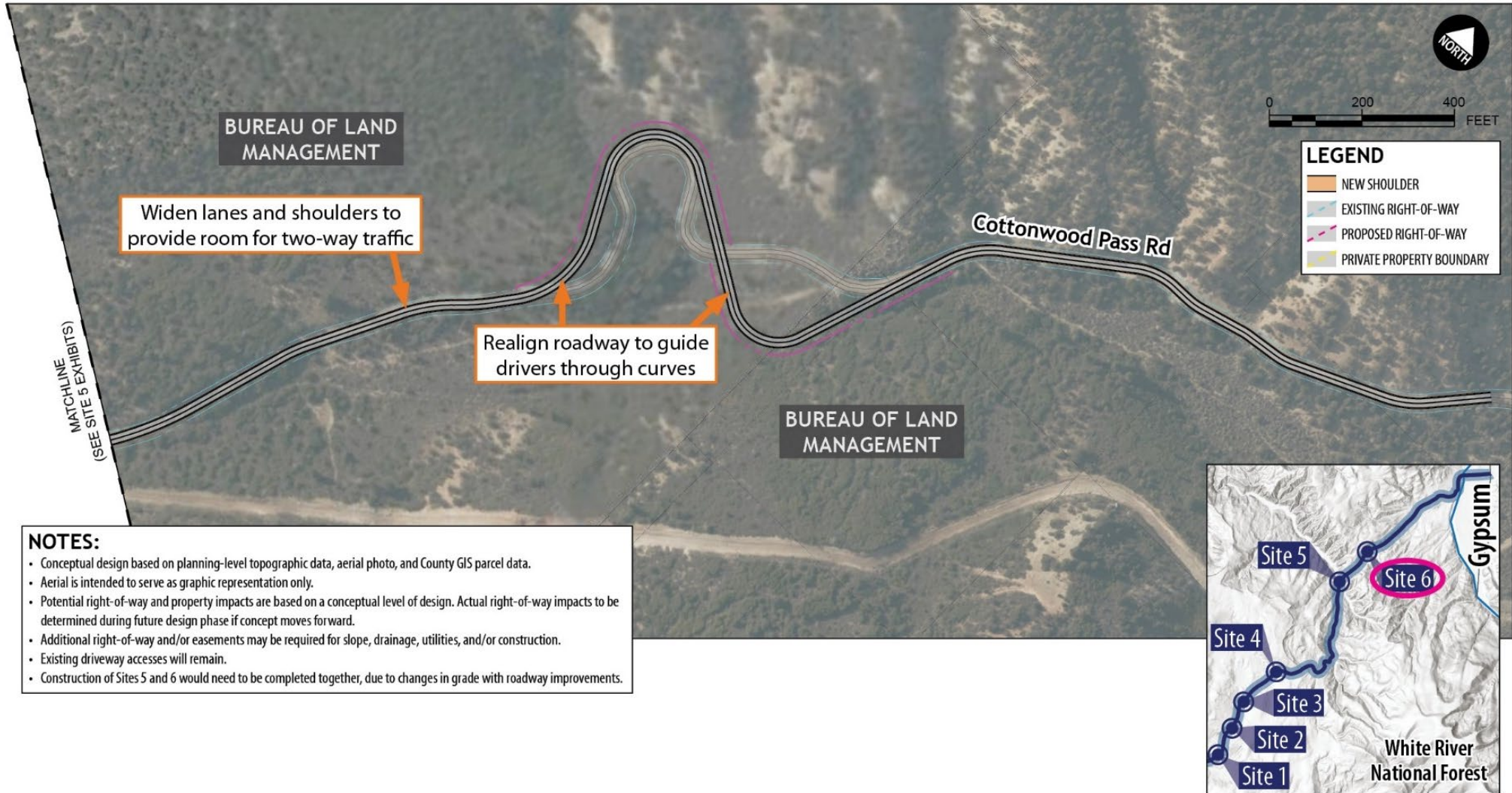
Safety issues at this site include two-way traffic conflicts through the curve.

Road modifications are being considered to improve safety by realigning the road through the tight curve to guide drivers through the curves and widening lanes to provide more room for drivers through the area. Due to changes in grade, improvements at this site would be constructed together with the improvements at the adjacent Eagle County Site 5 (Blue Hill). The concepts developed for the two sites were designed to work together.

**Table 21. Eagle County Site 6 - Design Option Evaluation**

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – ROAD REALIGNMENT THROUGH CURVES
<b>Core Value: Safety</b>	
Changes to vehicular safety concerns at site	Moderate improvements in safety with curve realignment and widened lanes for more room through area Grades reduced from 7-8% to areas with <5%
<b>Core Value: Respecting Corridor Character</b>	
Ability to maintain rural feel of road	Rural feel maintained with no change in number of lanes, road surface, or roadside environment
Potential right-of-way (ROW) impacts to private property	No expected permanent private ROW impacts, but would have temporary construction easements to BLM property around curve
Potential visual impacts	Moderate visual impacts with grading and road realignment
<b>Core Value: Natural Resource Preservation</b>	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
<b>Core Value: Collaborative Improvements</b>	
Concerns and support from adjacent property owners	No comments or concerns received
Concerns and support from corridor travelers and general public	General agreement with benefits of improvements
T&E = Threatened and Endangered Species	
<b>Conceptual Construction Cost Estimate:</b> (not including ROW or easements)	Included with Eagle County Site 5 (to be constructed together due to grade changes)

Figure 23. Eagle County Site 6 - Road Realignment through Curves





# AGENCY COORDINATION AND PUBLIC ENGAGEMENT

The concept design process emphasized involvement from Federal, State, and local agencies and the general public. Feedback was solicited from agency partners and the community to lead to development of design options and recommendations.

## AGENCY COORDINATION

This study included a Project Management Team (PMT), County Team, PLT-TT, and a Natural Resources ITF. These groups were formed to facilitate close coordination between the project team and local and regional partners.

### PMT MEETINGS

The PMT was comprised of CDOT project leadership staff and consultant team leadership staff. During PMT meetings, the overall project process was discussed. Meetings were held every two weeks throughout the project.

### COUNTY TEAM MEETINGS

The County Team included representatives from Eagle and Garfield counties, CDOT staff, and consultant team members. County representatives kept their elected officials apprised of project progress. Twelve meetings were held as listed below:

- ◆ County Team Meeting #1 (Kick-off meetings and field visits): June 7, 2022 with Eagle County; June 8, 2022 with Garfield County
- ◆ County Team Meeting #2: July 13, 2022
- ◆ County Team Meeting #3: August 17, 2022
- ◆ County Team Meeting #4: September 14, 2022
- ◆ County Team Meeting #5: October 5, 2022
- ◆ County Team Meeting #6: October 19, 2022
- ◆ County Team Meeting #7: November 9, 2022
- ◆ County Team Meeting #8: December 7, 2022
- ◆ County Team Meeting #9: January 11, 2023
- ◆ County Team Meeting #10: February 9, 2023
- ◆ County Team Meeting #11: March 8, 2023
- ◆ County Team Meeting #12: June 5, 2023





In addition to those regular coordination meetings, a meeting was held on December 20, 2022 to discuss enforcement along Cottonwood Pass with county law enforcement staff. The meeting included a Patrol Commander from the Garfield County Sheriff's Office and two Sergeants from the Eagle County's Sheriff's Office. A project overview was provided and enforcement-related public comments were shared and discussed to consider with potential improvements.

## PLT-TT MEETINGS

The PLT-TT was made up of technical experts from multiple disciplines and agencies, including CDOT, Eagle County, Garfield County, Town of Gypsum, U.S. Forest Service, and BLM. This group focused on moving the decision-making process forward. Four meetings were held as listed below:

- ◆ PLT-TT Meeting #1: June 30, 2022
- ◆ PLT-TT Meeting #2: August 30, 2022
- ◆ PLT-TT Meeting #3: December 1, 2022
- ◆ PLT-TT Meeting #4: February 23, 2023

## NATURAL RESOURCES ITF

The Natural Resources ITF was comprised of regulatory agency staff from CDOT, U.S. Forest Service, BLM, CPW, USFWS, USACE, and Eagle County. This group focused on the presence of existing natural resources such as wetlands, water quality, and wildlife, identifying potential impacts with design options, and discussing potential mitigation of impacts. Two meetings were held as listed below:

- ◆ Natural Resources ITF Meeting #1: September 12, 2022
- ◆ Natural Resources ITF Meeting #2: November 17, 2022

## PUBLIC ENGAGEMENT

Public engagement included public meetings, ITF meetings of property owners and nearby residents, direct coordination with adjacent property owners, and general public outreach efforts.

## PUBLIC OPEN HOUSE MEETINGS

The project included two main public engagement points to facilitate two-way information sharing with the larger community.

### ENGAGEMENT POINT #1

The first round of public engagement for the Cottonwood Pass Concept Design project consisted of two public open house meetings. The meetings were held on July 19, 2022 in Glenwood Springs and July 20, 2022 in Gypsum to introduce the project and gather feedback regarding the project Core Values and conditions at project sites.



Approximately 60 members of the public attended the meeting in Glenwood Springs and 45 attended in Gypsum. Display boards focused on outlining the project background, concept design process, and Core Values. Maps and photos were used to illustrate the existing conditions and potential types of improvements at each of the 14 project sites.

Meeting display boards and handouts were posted to the project web page following the meetings and two additional weeks were allowed for public comment. Comments received during the first engagement point can be found in **Appendix C**.

## ENGAGEMENT POINT #2

The second round of public engagement for the Cottonwood Pass Concept Design project consisted of two public open house meetings. The meetings were held on March 22, 2023 in Glenwood Springs and March 23, 2023 in Gypsum to present design concept options and evaluation of those options.



Approximately 45 members of the public attended the meeting in Glenwood Springs and 55 attended in Gypsum. Display boards focused on providing a project overview, presenting site design options and the draft evaluation, and outlining next steps.

Meeting display boards and handouts were posted to the project web page the day following the meetings and an additional week was provided for public comment. Comments received during the second engagement point can be found in **Appendix C**.



## PROPERTY OWNER/RESIDENTIAL ITF

The Property Owner/Residential ITF met three times during the project to discuss the needs for residents along Cottonwood Pass and provide input to inform decision making. More than 70 property owners and residents were included in this group, with less than half of the group participating in each meeting. Meetings were held via videoconference to make participation convenient and were interactive, including a presentation by the project team combined with interactive survey questions with real-time displayed results and an open discussion portion reserved for answering audience questions and gathering comments.

All ITF members (including those unable to attend) received a link to the presentation following each meeting and the survey remained open for an additional day or two to allow their input.

### PROPERTY OWNER/RESIDENTIAL ITF MEETING #1: AUGUST 15, 2022

The information presented was largely the same as was displayed at the round 1 public open house meetings, with discussion focused on issues important to property owners and residents along Cottonwood Pass. Participants were asked to provide thoughts about the Core Values and issues and opportunities for improvement at each of the project sites.

### PROPERTY OWNER/RESIDENTIAL ITF MEETING #2: NOVEMBER 15, 2022

The draft concepts for each site were shared, along with a summary of existing conditions being considered. Participants were asked how improvements at each site would benefit or impact private properties, and suggestions for design tweaks were solicited.

### PROPERTY OWNER/RESIDENTIAL ITF MEETING #3: FEBRUARY 15, 2023

The draft concepts were reviewed (they had been presented at the second meeting of this group) and newly developed refined options for some sites and design options for Eagle County Sites 5 and 6 (Blue Hill sites) were shared, along with a summary of differentiators found during the design option evaluation. Participants were asked to share their thoughts on the refined options and Blue Hill options, and to give suggestions for best presenting this information at the upcoming public meetings.

Detailed summaries of conversations during the Property Owner/Residential ITF meetings are included in **Appendix C**.

## ADJACENT OWNER COORDINATION

Once conceptual design options were developed, personalized letters were sent to notify property owners adjacent to the potential improvements being considered at each site. Feedback was requested and considered as design options were refined and before conceptual design recommendations were made for each site. After design refinements were made, additional outreach occurred with some owners that could be more impacted by the new design option. Property owners submitted comments via email, the project web page, phone calls, and letters.



## INFORMATION DISTRIBUTION

A robust media campaign was used to spread the word to inform travelers in the surrounding area of each round of public open house meetings. Advertisements were placed in the print versions of the Glenwood Post Independent, Vail Daily, and Aspen Times that ran twice in the week prior to the public meetings. A digital campaign also ran in the online versions of those publications targeting Eagle and Garfield counties. This resulted in more than 120,000 total impressions and 80 new visits to the project web page.

To notify adjacent and nearby property owners and tenants, a postcard was mailed to 2,400 people prior to each round of public meetings. Other advertisements included news releases distributed to CDOT, Eagle County, and Garfield County’s contact lists, articles by Vail Daily, Denver Gazette, and 9 News, CDOT social media posts, emails to the project contact list, and notice on Town of Gypsum’s welcome board on US 6.

Throughout the concept design effort, project information and updates were made online at: [www.codot.gov/projects/cottonwood-pass-concept-design](http://www.codot.gov/projects/cottonwood-pass-concept-design).

## PUBLIC COMMENTS

Comments were gathered from community members and potentially impacted property owners throughout the concept design process. **Table 22** includes a list of public comment overall themes and how they were addressed.

**Table 22. Public Comment Themes and Responses**

PUBLIC COMMENT THEME	RESPONSE
Safety and respecting corridor character are the most important Core Values.	Noted and reflected in recommendations and design options for each site that minimize impacts to neighboring properties and strike a balance of improving the safety without full improvements to bring the roadway to meet roadway design standards throughout (which would be much more impactful).
Improving Cottonwood Pass will draw more traffic, which is detrimental to the rural way of life residents prefer. Additional traffic is already being experienced when Glenwood Canyon closes, causing a host of issues.	Comment noted and shared with Eagle and Garfield counties. The counties will determine if and when improvements at individual project sites should move forward.
Widening narrow sections and improving curves will encourage drivers to speed more than they already do. Speed bumps should be considered.	Speed mitigation strategies such as increased signage, enhanced signs with lights, speed feedback signs, and rumble strips could be implemented with projects as they move forward at individual sites. Speed bumps/humps/dips are not appropriate for this situation.
Safety improvements along Cottonwood Pass are supported because this is a crucial route for many people, including emergency services.	Agreed.



PUBLIC COMMENT THEME	RESPONSE
<p>Google Maps and other wayfinding apps direct travelers to Cottonwood Pass when Glenwood Canyon is closed. Cottonwood Pass should not be a detour for I-70 traffic.</p>	<p>Eagle County has been actively working with wayfinding companies to ensure Cottonwood Pass is not shown as a detour route. This project is not working towards making Cottonwood Pass an official I-70 detour, but safety improvements are needed for those who will travel the road whether Glenwood Canyon is open or closed.</p>
<p>Additional traffic may use Cattle Creek Road and something should be done to prevent this.</p>	<p>This project is considering modifications to the geometry of the intersection of Catherine Store Road and Cattle Creek Road (Garfield County Site 7) to a T intersection with free-flow through movements between Cottonwood Pass and Catherine Store Road, rather than the current configuration that naturally directs southbound traffic onto Cattle Creek Road. Other improvements such as advanced intersection and wayfinding signage will be considered to direct traffic and distinguish the routes.</p>
<p>Large trucks often go over the roadway edge causing damage and they also can get stuck on the road blocking traffic.</p>	<p>The current length and size restrictions on large vehicles are proposed to remain.</p>
<p>More enforcement is needed for speeding, trash, and large truck restrictions.</p>	<p>Enforcement-related comments were shared with deputies from Eagle and Garfield county Sheriff's offices in a meeting convened with them by CDOT to draw attention to the matter.</p>
<p>Additional maintenance on Cottonwood Pass would help alleviate some of the safety issues.</p>	<p>Comment noted and shared with Eagle and Garfield counties.</p>
<p>Blue Hill is the location most in need of improvements along Cottonwood Pass.</p>	<p>Blue Hill (Eagle County Sites 5 and 6) has been identified as Eagle County's top priority but will require a substantial amount of funding that is not available at this time. CDOT assisted Eagle County in pursuing a grant to fund a first phase of Blue Hill improvements and funding will continue to be pursued.</p>
<p>Focus on improving I-70 through Glenwood Canyon to mitigate issues that cause I-70 closures rather than spending money changing Cottonwood Pass.</p>	<p>Minimizing closures of Glenwood Canyon and making I-70 through the canyon more reliable remains a focus for CDOT; funding is actively being pursued for this effort. CDOT and Eagle and Garfield counties agree that spot safety improvements are also needed on Cottonwood Pass.</p>



## RECOMMENDATIONS

The Cottonwood Pass Concept Design project assessed existing conditions and defined and evaluated concept level safety improvements at 14 specific locations along the Cottonwood Pass corridor through both Eagle and Garfield counties. The safety improvements are intended to serve local traffic with roadway modifications to reduce the occurrence of vehicular crashes (and near-misses) while minimizing property impacts and preserving the character of the area. Corridor-wide changes to the curved alignment, grades, and road surface were not considered.

Garfield County plans to take all of the information from this study to make decisions later and any future action on potential projects will be at the discretion of the Board of County Commissioners.

At sites in Eagle County with multiple options, Eagle County staff identified the following recommendations that the County would likely move forward at the site, if funding is secured:

- ◆ Eagle County Site 1: Realign and Soften Curves
- ◆ Eagle County Site 2: Further Widened Lanes and Shoulders
- ◆ Eagle County Site 3: Further Soften Curves
- ◆ Eagle County Site 5 (Blue Hill): Improved Grades and Curves

## SPEED MITIGATION

Property owner and general public feedback noted many comments about speeding along the corridor, and concerns that the safety improvements will make it worse. In addition to the roadway design concepts, the project team is considering other ways to address speeding concerns that could be implemented with projects as they move forward at each site:

- ◆ Increased signage – more curve warning and reduced speed signs
- ◆ Enhanced signs – signs with flashing yellow lights above or in the sign
  - ◇ These can reduce speeds by a few miles per hour, but they are relatively expensive
  - ◇ They are difficult to maintain in unpopulated and low volume areas
  - ◇ There are visual impacts to adjacent homes with lights at night
- ◆ Speed feedback sign – speed limit signs with radar that tells drivers their speed
  - ◇ Similar benefits and constraints to the enhanced signs, but these are even more expensive and costly to maintain
- ◆ Rumble strips – grooves in the pavement (paved portions only) along shoulder or centerline that create a loud sound when driven over
  - ◇ Keeps drivers in the lane and generally slows down drivers as they go around curves
  - ◇ There can be substantial noise impacts to adjacent homes



Speed bumps, humps, or dips were also frequently requested in adjacent property owner and general public feedback. These are not recommended with the site concept designs along Cottonwood Pass. A speed bump is a bump of asphalt placed laterally across the travel lane in parking lots to discourage cut-through traffic. A speed hump is an elongated mound in the roadway pavement surface intended for use on short-distance, neighborhood streets with limited through traffic, not on mainline county roads. When used, they are installed in a series and while they can be effective at reducing vehicular speeds between the speed humps, studies have shown that they are ineffective at reducing speeds for a notable distance beyond the approach and exit of consecutive humps. In addition, tests show that speed bumps are ineffective in controlling all types of vehicles. The driver of a softsprung sedan is encouraged to increase speed for a better ride over a speed bump, while other drivers may lose control at the same speed, which would degrade safety for drivers entering significant curves. They are also not recommended for roads with grades like those on Cottonwood Pass and speed bumps and dips introduce new issues with increased noise and impacts to drainage and plowing/maintenance.

## BICYCLISTS

The project identified that portions of Cottonwood Pass, particularly Catherine Store Road, and other area roads are frequently traveled by bicyclists. This project is not recommending specific bicycle infrastructure, such as bike lanes. However, the roadway safety improvement recommendations, such as increased lane and shoulder widths at curves and improved sight distance, will benefit bicyclist as well as driver safety.

## BLUE HILL - POTENTIAL PHASING

The full improvements developed at Eagle County Sites 5 (Blue Hill) and 6 are relatively high cost compared to the other study site improvements. However, based on public and stakeholder input gathered during the study, improvements at Blue Hill are the highest priority need. The following potential projects were developed to potentially secure funding to construct the improvements in separate phases (shown in **Figure 24**):

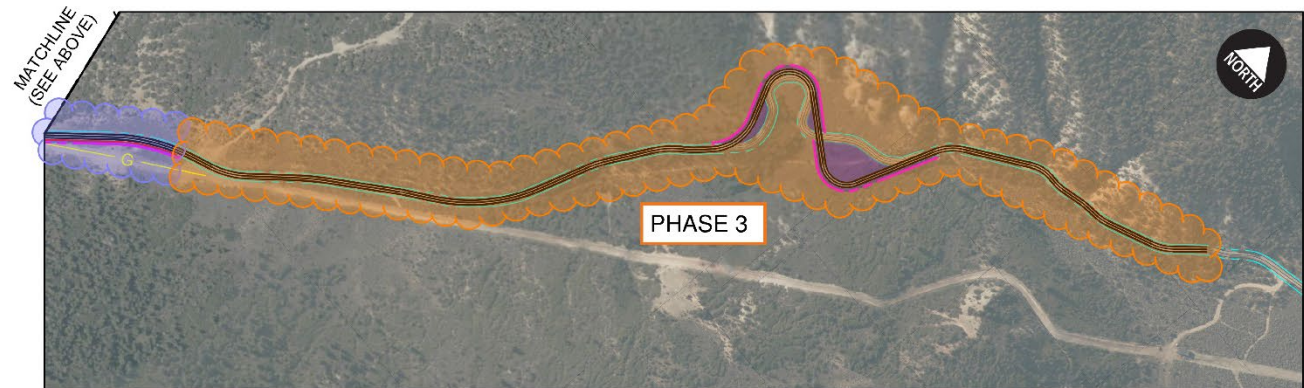
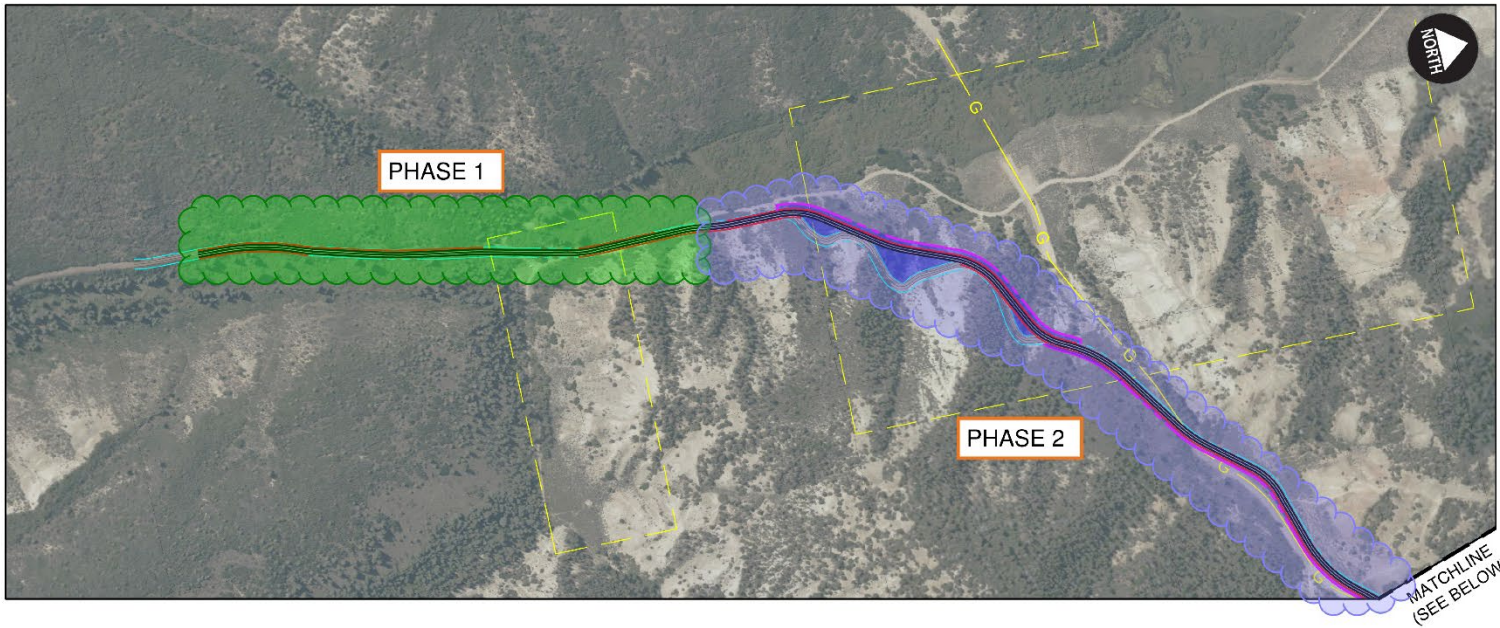
- ◆ Phase 1:
  - ◇ Improvements consist of widening the road and constructing the retaining walls or grading to accommodate the widening
  - ◇ The horizontal alignment and profile in this area is close to the existing road, making it easier to transition to the existing profile
  - ◇ Conceptual Construction Cost Estimate: approximately \$16M (2025 dollars with 3.5% escalation)
- ◆ Phase 2:
  - ◇ Project consists of mitigating the sharp curves and adjusting the grades to reduce the steep profile
  - ◇ The project includes the most substantial work with widening, retaining walls, full roadway reconstruction with realignment and profile adjustments
  - ◇ Conceptual Construction Cost Estimate: approximately \$30M (2025 dollars with 3.5% escalation)



- ◆ Phase 3:
  - ◇ Improvements consist of widening the road and minor adjustments to profile with realignment
  - ◇ The profile in this area transitions to the existing roadway and the widening does not require major retaining walls
  - ◇ Conceptual Construction Cost Estimate: approximately \$13M (2025 dollars with 3.5% escalation)



Figure 24. Eagle County Sites 5 and 6 (Blue Hill) - Project Phasing





## NEXT STEPS

The Concept Design Study is the first of many steps required before identified safety improvements would be constructed along Cottonwood Pass. Each county will independently determine if and when improvements within their jurisdiction will move forward. The site concepts, information, and evaluations are being provided to the counties by CDOT for them to determine priorities and funding. The timeline for construction of improvements is dependent on funding availability. Funding has not yet been secured for full design or construction at any of the 14 project sites. However, completing the Concept Design Study provides more information about the recommended improvements for Eagle and Garfield counties to consider in the pursuit of funding. It is possible portions of the improvements would be constructed in phases as funding becomes available.

Overall widening and broad scale paving of the corridor was not considered by this Concept Design Study due to mixed local support of a large-scale effort to improve the road and the need to financially prioritize short-term solutions so improvements can happen in a timely manner. Had paving been the initial approach, it is expected conversations on overall needs would have stalled and prevented consensus on any future work.

CDOT is committed to continue to work with and support the counties and impacted stakeholders for both short- and long-term improvements on Cottonwood Pass. Cottonwood Pass is a vital connection for local residents who rely on the county road to safely travel between Gypsum and CO 82 in the Roaring Fork Valley. CDOT recognizes it is often used as an undesignated alternate route when Glenwood Canyon is closed, which has escalated the urgency of continuing to define improvements that allow for more reliable use of this key roadway.

## POTENTIAL FUNDING

CDOT will continue to support the counties in applying for funding through grants and other sources which, if successful, would be distributed to the counties through an Inter-governmental Agreement for future design and construction. For example, CDOT plans to apply for a Federal PROTECT (Promoting Resilient Operations for Transformative, Efficient and Cost-Savings Transportation) Program grant in Summer 2023. This is a competitive grant program, so funds are not guaranteed (awards are expected in Winter 2023).

If the application is successful, \$20M PROTECT grant funds would be applied towards a Cottonwood Pass project which CDOT would match with an additional \$3M of resiliency funds, for a total of \$23M towards the prioritized Blue Hill improvements. This section of Cottonwood Pass was identified by Eagle County, Garfield County, and CDOT as a priority project that fits within the potential funding package. CDOT previously applied for a Federal RAISE (Rebuilding American Infrastructure with Sustainability and Equity) grant in Spring 2023 for \$6.5M of improvements for Eagle County Site 2 on Cottonwood Pass, but unfortunately was not successful. Congresswoman Boebert and Colorado's Senators have requested earmark support for the safety work on the Blue Hill project.

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# APPENDIX A

## GEOLOGICAL AND GEOTECHNICAL EVALUATION MEMORANDUM



November 7, 2022

Project No. 222-059

Ms. Kara Swanson, Project Manager, Transportation  
David Evans and Associates, Inc.  
1600 Broadway Street, Suite 800  
Denver, CO 80202

**Subject: Memorandum for Geotechnical Engineering Services  
Cottonwood Pass Concept Design  
Garfield and Eagle Counties, Colorado**

Dear Ms. Swanson:

Granite Engineering Group (GEG) has performed the Cottonwood Pass Feasibility Study from the geologic and geotechnical standpoints for this project. The results of the study are presented in the following sections.

## **INTRODUCTION AND BACKGROUND**

The proposed project is along the existing Cottonwood Pass in Eagle and Garfield Counties in CDOT Region 3. The Cottonwood Pass is an existing county road connecting from Town of Gypsum in Eagle County to State Highway 82 in Garfield County, Colorado. The total length of the study route is approximately 22.83 miles, with approximately 15.1 miles in Eagle County, and approximately 7.73 miles in Garfield County. A total of fourteen (14) areas were identified along the existing alignment for the study and used for the identifications of the extent of the project. Six (6) of these sites are located in Eagle County and identified as Eagle County Site 1 through Site 6. The remaining eight (8) sites are located in Garfield County and are identified as Garfield County Site 1 through 8. These are the sites that were identified as areas where improvements and features of interest are present within the project limits. The project's fourteen (14) sites are presented in Figure 1.



## PROJECT SITE KEY MAP

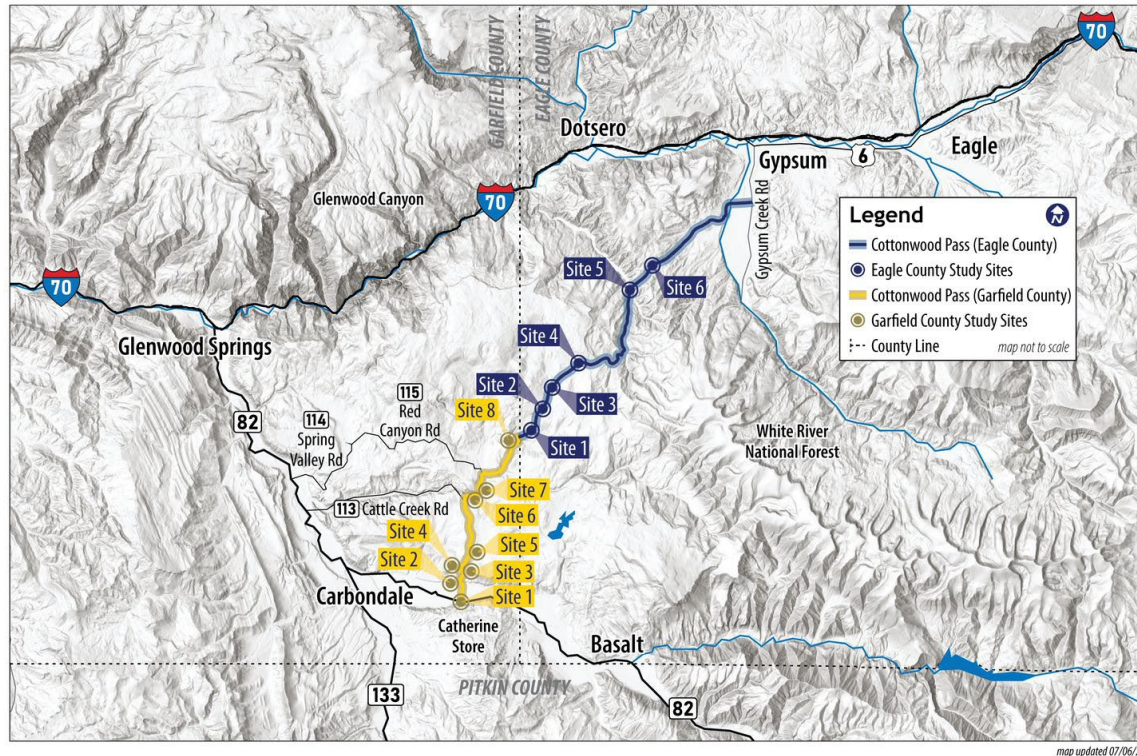


Figure 1. Project 14 Sites

As part of the Cottonwood Pass Concept Design project, this memo is prepared to evaluate the impacts of the existing geohazards and geotechnical features along the roadway for the potential road safety improvements.

### METHODOLOGY

Geologic and geotechnical conditions present along the project limits were identified through desktop study using the information from geologic maps, U.S. Geological Survey (USGS) reports and publications, Colorado Geological Survey (CGS) publications, Colorado School of Mines publications, CDOT publications, Light Detection and Ranging (LiDAR) data from Eagle County and Colorado Water Conservation Board. The information obtained from desktop study was field verified for the mapped features in accessible areas. Features observed during the field verification and mapping have also been included in the database.

### EXISTING CONDITIONS

This section summarizes the initial evaluation of the geologic and geotechnical features, geologic hazards and soil resources observed along Cottonwood Pass from the Town of Gypsum in Eagle County to SH 82 in Garfield County. The elevation varies between approximately 6,000 and 8,000 feet.



## General Geology

The most prominent geologic and geotechnical features along Cottonwood Pass are collapsible soils, evaporite soils and karst, and landslide features. The collapsible soils are due to the dry, low density silty and sandy soils with high void space or air gaps between the soil particles where the soil particle binding agents are highly sensitive to water. The evaporite soils consist primarily of gypsum and anhydrite that were deposited during the cyclic evaporation of shallow seas that existed in central Colorado millions of years ago. The evaporite soils can dissolve in the presence of fresh water and causing caverns, sink holes and subsidence. The landslides described along Cottonwood Pass occur either in the surficial deposits or deeper into bedrock. More detail discussions along with other geological hazards and geotechnical features are presented in the following sections of this memo.

## Bedrock Formations

Approximately northern two fifths of the roadway are within the Eagle Valley formation and Eagle Valley Evaporite of Middle Pennsylvanian age. The Eagle Valley Formation consists of interbedded reddish-brown, gray, reddish gray, and tan siltstone, shale, sandstone, gypsum, and carbonate rocks. The formation represents a stratigraphic interval in which the red beds of the Maroon Formation grade into and intertongues with the predominantly evaporitic rocks of the Eagle Valley Evaporite. It includes rock types of both formations. Strata in the lower part of the Eagle Valley Formation frequently are deformed by dissolution and flowage of underlying evaporite rocks. The Eagle Valley Formation is both conformable and intertonguing with the overlying Maroon Formation and underlying Eagle Valley Evaporite. Contact with the Maroon Formation is placed at the top of the uppermost evaporite bed or light-colored clastic bed. Thickness is variable, ranging from about 500 to 1,000 ft. The formation was deposited in the Eagle Basin in fluvial, eolian, and marine environments on the margin of an evaporite basin.

The Eagle Valley Evaporite is comprised of a sequence of evaporitic rocks consisting mainly of massive to laminated gypsum, anhydrite, and halite, interbedded with light colored mudstone and fine-grained sandstone, thin carbonate beds, and black shale. Strata in the formation commonly are intensely folded, faulted, and ductily deformed by diapirism, flowage, load metamorphism, dissolution, hydration of anhydrite, and regional tectonism. The contact with overlying Eagle Valley Formation is both conformable and intertonguing and is defined as the base of the lowest red bed within the Eagle Valley Formation. Thickness of the formation averages about 1,800 ft, but it varies due to flowage and diapirism.

Approximately southern three-fifths of the roadway are within Basalt flows of Miocene age, with small portion on the northern end within Sedimentary deposits of Miocene age. These Miocene aged formations were underlain by older age Eagle Valley formation and Eagle Valley Evaporite. Basalt flows consist of multiple light- to dark-gray basaltic flows and minor flow breccias. Lenses of slightly indurated tan to light brown sediments locally are intercalated with or underlie the volcanic flows and breccias of the unit. Flow rocks range from slightly to highly vesicular and locally contain amygdules of calcite and iron-rich clay. Petrographically most flows are olivine basalt, many of which are porphyritic. The phenocrysts are chiefly olivine and less commonly plagioclase. The groundmass is predominantly plagioclase and pyroxene, with lesser amounts of olivine, glass, pigeonite, augite, and magnetite. Accessory minerals include apatite, iddingsite and hematite. Some flows contain rare xenocrysts of quartz or xenoliths of quartzite. Individual basaltic flows range in thickness from about 5 to 50 ft. Thickness of the entire sequence of flows averages 20 to 80 ft.

Sedimentary deposits include widespread deposits that underlie basalt flows near and south of Cottonwood Pass, and a thin, localized deposit associated with the basalt on Spruce Ridge.

Deposits near and south of Cottonwood Pass are poorly exposed. Here the unit contains abundant round to subangular pebbles of red sandstone, quartz, and coarse-grained plutonic rocks, with minor amounts of metamorphic and hypabyssal lithologies. The hypabyssal clasts are similar to ones in late Pleistocene Colorado River deposits upstream of Dotsero. East of Cottonwood Pass the unit includes finer grained sandy and clayey silt that is exposed in roadcuts along the Cottonwood Pass Road. Pebbly strata in the unit also underlies a basaltic flow on Spruce Ridge. A channel filled with clast-supported sandy pebble and cobble gravel included in the unit partially cuts out the basaltic flow on Spruce Ridge (Kirkham, Kunk, and others, 2001). These channel deposits also are included in the unit. The clasts in the channel gravel are moderately to very weathered, well rounded to subrounded, and chiefly composed of various types of plutonic granitic rocks, red sandstone, quartzite, quartz, and conglomeratic sandstone. These lithologies are typical of a Colorado River provenance. Deposits of the unit near and south of Cottonwood Pass may attain thicknesses more than 200 ft.

### **Surficial Deposits (Soils)**

Alluvial deposits consist of sediments deposited in stream channels, flood plains, glacial outwash terraces and sheetwash areas. The alluvial deposits are mostly poorly sorted, clast-supported locally boulder, pebble and cobble gravel in a sand and silt matrix.

Mass-wasting deposits consist of sediments on valley sides, valley floors, and hillslopes transported and deposited primarily by gravity. Mass-wasting deposits include various types of landslide deposits, unsorted, unstratified gravel, sand, silt, clay, and rock debris.

Alluvial and mass-wasting deposits consist of sediments in debris fans, stream channels, flood plains, and hillslopes along tributary valleys. The deposits include poorly sorted to moderately well-sorted, matrix- and clast-supported deposits ranging from gravelly clayey silt to sandy, silty, cobbly, pebbly, and boulder gravel, or moderately well-sorted to well-sorted, stratified, interbedded sand, pebbly sand, and sandy gravel to poorly sorted, unstratified or poorly stratified, clayey, silty sand, boulder sand and sandy silt.

Alluvial, mass-wasting, lacustrine, and deltaic deposits consist of locally derived gravel, sand, silt, and clay deposited in the Missouri Heights-Cottonwood Pass region in alluvial, mass-wasting, and either lacustrine or deltaic environments.

Collapse deposits consist of slightly to highly deformed bedrock and overlying undeformed to moderately deformed surficial deposits. Locally includes large intact blocks of basalt that are lowered by collapse.

### **Faults and Seismicity**

The areas along Cottonwood Pass are not considered to be seismically active. There are faults identified around Garfield County Site 6 area. No other fault was identified within the project limits.

## **GEOLOGIC HAZARDS AND GEOTECHNICAL FEATURES**

Geologic hazards are natural phenomena, or a geologic process, capable of inflicting harm to people or property (USGS, 2017). Geotechnical features are modifications to the geologic setting and have similar effect as geologic hazards. The complex and problematic subsurface conditions along Cottonwood Pass have developed zones of marginally stable conditions, and potential of developing problematic conditions. These developments are the results of natural processes and land use activities, they can pose a risk to public either directly by an encounter

with the hazard or indirectly through structures including roadways and buildings. The geologic conditions, precipitation, wind, temperature, seismic, ground modifications and drainage features can directly or indirectly impact the geologic hazards. The severity and risk factors of these geologic hazards can be mitigated through identifications of the potential issues, evaluating the conditions and engineering design. The major geologic hazards and geotechnical features identified along Cottonwood Pass are discussed below.

### **Collapsible Soils**

Collapsible soils are generally found in dry, low density silty and sandy soils with high void ratio in the soil structures. The soil particles are held in place by physical or chemical binding agents. When the soils are exposed to moisture and water, the binding agents break, soften and dissolve in a way that the soil particles rearrange and form a denser and tighter structures. This process causes the volume decrease in soil mass and causes settlement of the ground surface, and sometimes creates subsidence and impacts the natural setting, improvements, and structures. Certain fine-grained soils can also collapse and settle by piping, which is the removal and suspension of soil particles in moving water, creating open soil pipes and voids that eventually cave in (CGS, 2002). The collapse of the soil mass can occur under the weight of the soil itself without any external loading, and it only needs sufficient moisture to occur. Depending on the precipitation, sources of water, the permeability of the settled/compacted surficial soils, and penetration of the moisture in soil mass, the collapsible soils can settle several feet and the process can take years to occur.

### **Evaporite Soils and Karst**

Evaporite soils consist of the common evaporite minerals of gypsum ( $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ ), anhydrite ( $\text{CaSO}_4$ ) and halite (rock salt –  $\text{NaCl}$ ). The formation also typically consists of thinly interbedded fine sandstone, mudstone, and black shale. The evaporite soils were deposited sediments that were created from evaporation of shallow seas millions of years ago. Evaporite soils and bedrock have two (2) distinctive characteristics. One is that they can flow under certain pressures and temperatures. The other one is that the evaporite minerals in the soils can dissolve in the presence of fresh water, at the proper temperature. The dissolved evaporite mineral will create voids. Karst is a technical term that refers to ground conditions where caverns and open fissures, subterranean drainage, closed depressions, sinkholes and subsidence exist that are underlain by soluble bedrock (CGS 2002). Most of the karst formed in this area occur on flat-lying river terraces or slopes on the valley sides, and rarely in the volcanic lava flows that have collapsed into voids within the underlying evaporite. Sometimes karst could not be observed from the surfaces until the roof of the caverns collapsed under load. This type of collapse can be sudden and catastrophic.

### **Landslide**

Landslide is the movement of mass of rock, debris, or soil down a slope. Landslides include many different kinds of mass movements, including falls, topples, slides, spreads, flows, or a combination of one or more of these movements. Slopes of any angle from gentle slope to steep mountains can fail in a sudden landslide, and the sizes can be very small or very large. Landslides can travel incredibly quickly and may recur multiple times in virtually the same location (CGS). Slope movement occurs when forces/weights of the mass acting downward exceed the strength of the materials. The causes of a landslide can be very complex and typically caused by multiple factors. Factors that increase the downward forces and/or factors that contribute to low or reduced materials strengths are the main causes of landslides. Landslides can be initiated by rainfall, snowmelt, changes in surface and groundwater levels, erosion, earthquake, human activities, or any combination of these factors. Some landslides are ancient landslides that occurred millions of years ago and are currently not active. However, any

changes to the ground conditions, or adverse weather events can reactivate these landslides. Landslides can adversely threaten life and infrastructure, therefore it is important to understand how landslides occur, if a landslide mass continues to move, and mitigation to minimize or eliminate the chances of landslide due to human activities such as development.

### **Rockfall**

Colorado experiences many rockfalls due to its mountainous terrain. A rockfall happens when rock loses support, falls, bounces, or rolls from a cliff or down a steep slope. Rockfalls generally start from high outcrops of hard, erosion-resistant rock that become unstable for a variety of reasons. The size of the falling rock depends on the outcrop and geology (bedding thickness, hardness, joint and fracture orientation) and weathering, and the severity of the rockfall is affected by the position of the rock, slope angle, shape and ground covering of the slope. Generally, an individual rockfall has one to only a few rocks, with sizes that vary from cobble to boulders (few inches to five feet or larger in relative diameter). Rockfalls can be very dangerous depending on where they occur, size of the rocks, and how the rocks roll or bounce along the slope face. Rockfalls can cause property loss, personal injury or even loss of life. Rockfalls typically are catastrophic and occurred without warning, so it is difficult to predict how often rockfalls occur. Rockfalls are a common erosional process in mountainous areas near cliffs or steep slopes of broken, faulted, or jointed bedrock, or on steep slopes of rocky materials. When the support is undercut by erosion or human activity, or when external driving force (e.g. heavy rainfalls) occurred, rockfalls can occur.

### **Steep Slopes**

Steep slopes can contribute to slope instability issues ranging from small slumps to large scale landslides. Several slopes along the northern portion of Cottonwood Pass in Eagle County were very steep at approximately 0.75H:1V slope. On-site observation indicates that the slopes were stable, and no obvious slope movement was observed. Further inspection indicated that these steep slopes comprised of evaporite soils where the binding agents strengthen the shear strength of the soils and allow the slopes to stand at steep slopes. These evaporite soils can lose strength and dissolve in the fresh water and under correct conditions, these slopes can become unstable and cause landslide or slope failures.

### **Bedrock in Cut Sections**

Bedrock consisting of sandstone, conglomerate, mudstone, siltstone and shale, thin beds of gray limestone is present along Cottonwood Pass. The bedrock will impact the cut slopes, the excavation methods (e.g. ripping and blasting), suitability and availability of materials for aggregate source, and material processing methods (e.g. crushing).

## **GEOLOGIC CONDITIONS AND GEOTECHNICAL FEATURES ALONG COTTONWOOD PASS**

The project consists of fourteen (14) sites for this feasibility study. The geologic and geotechnical conditions that occur at these sites are summarized in Table 2. The information presented in Table 2 was obtained from results of the desktop study and the field mapping and verification performed by GEG. Detailed maps related to the geologic hazards and geotechnical features are presented in Appendix A.

The risk factors for each identified geologic hazard and geotechnical features are also presented in Table 2.

**Table 2. Summary of Geologic Hazard and Geotechnical Features Along Cottonwood Pass**

Site I.D.	Collapsible Soils	Evaporite Soils and Karst	Landslide	Rockfall	Steep Slopes	Bedrock in Cut Sections	Descriptions
Garfield County							
Garfield Site 1 to Site 2	High risk factor	High risk factor	Not applicable	Not applicable	Not applicable	Medium risk factor	Site 1 and the alignment to Site 2 are mapped in collapsible soils and evaporite soils. Rock outcrops were observed along the alignment. Bedrock appears to be rippable based on the outcrops observed.
Garfield Site 2 to Site 3	High risk factor	High risk factor	Medium risk factor	Not applicable	Not applicable	Medium risk factor	Site 2 and the alignment to Site 3 are mapped in collapsible soils and evaporite soils. Majority of the site and the alignment are located in the Eagle Valley Evaporite formation. Sinkholes were documented in the area west of the alignment and Site 2.  The northern portion of the alignment is located in the landslide mapped based on HB 1401 maps. However, no evidence of slope failure or movement was observed during field investigation. Rock outcrops were observed at Site 2 and along the alignment. Bedrock appears to be rippable based on the outcrops observed.
Garfield Site 3 to Site 4	High risk factor	High risk factor	Medium risk factor	Not applicable	Not applicable	Medium risk factor	Site 3 and the alignment to Site 4 are mapped in collapsible soils and evaporite soils. Majority of the site and alignment are located in the Eagle Valley Evaporite formation.  Site 3 is located in the landslide mapped based on HB 1401 maps. However, no evidence of slope failure or movement was observed during field investigation. Rock outcrops were observed at Site 3 and along the alignment. Bedrock appears to be rippable based on the outcrops observed.
Garfield Site 4 to Site 5	High risk factor	High risk factor	Medium risk factor	Not applicable	Not applicable	Medium risk factor	Site 4 and the area to Site 5 are mapped in collapsible soils and evaporite soils. Majority of the site and the alignment are located in the Eagle Valley Evaporite formation.  Site 4 is located in the landslide mapped based on HB 1401 maps. However, no evidence of slope failure or movement was observed during field verification. Rock outcrops were observed at Site 4 and along the alignment. Bedrock appears to be rippable based on the outcrops observed.
Garfield Site 5 to Site 6	High risk factor	High risk factor	Medium risk factor	Medium risk factor	Not applicable	Medium risk factor	Site 5 and the alignment to Site 6 are mapped in collapsible soils and evaporite soils. Majority of the areas are located in the Collapse deposits that were formed in response to differential collapse resulting from dissolution of underlying evaporite bedrock. Sinkholes were documented near the mid-section of the alignment.  Site 5 is located near the edge of the landslide mapped based on HB 1401 maps. However, no evidence of slope failure or movement was observed during field investigation. Rock outcrops were observed at Site 5. Rockfall was not observed during field investigation. However, rockfall analysis and protection may be required if the alignment requires the excavation into the outcrops. Bedrock may require blasting for excavation.

Site I.D.	Collapsible Soils	Evaporite Soils and Karst	Landslide	Rockfall	Steep Slopes	Bedrock in Cut Sections	Descriptions
Garfield Site 6 to Site 7	High risk factor	High risk factor	Medium risk factor	Low risk factor	Not applicable	Medium risk factor	<p>The Site 6 and portion of the alignment are located in the Sediments of Missouri Heights, that occurred in the areas that are topographically lowered by collapse or subsidence related to dissolution or flow of salt deposits in the underlying Eagle Valley Evaporite. These areas are mapped as collapsible soils and evaporite soils areas.</p> <p>A portion of the alignment is mapped as landslide by CGS. No evidence of slope failure or movement was observed during field verification. Further study may be required during the design phase of the project. Rock outcrops were observed in the existing cut section, however, no evidence of rockfall was observed. Rockfall protection and slope stability mitigation may be required if the cut into the existing slope is planned. Bedrock appears to be rippable based on the outcrop observed.</p>
Garfield Site 7 to Site 8	High risk factor	High risk factor	Medium risk factor	Low risk factor	Not applicable	Medium risk factor	<p>The northern portion of the alignment near Site 8 is located in the Eagle Valley formation. Sinkholes were documented in the area east of the alignment. This area is subject to potential of collapsible soils and evaporite soils. An area at the mid-section of the alignment is mapped at the toe of the landslide based on the HB 1401 maps. However, no evidence of slope failure or movement was observed during field verification.</p> <p>Rock outcrops were observed along the existing hill side slopes, majority on the west side of the alignment. Rockfall was not observed during field verification. However, rockfall analysis and protection may be required during design phase due to the height of the slopes. Bedrock appears to be rippable but blasting may be required in selected areas.</p>
Garfield Site 8	High risk factor	High risk factor	Not applicable	Not applicable	Not applicable	Medium risk factor	<p>Site 8 is located in the Eagle Valley formation. Sinkholes were documented to the area south of Site 8. Site 8 is subject to potential of collapsible soils and evaporite soils. Rock outcrops were observed in the existing cut sections. The bedrock appears to be rippable based on the outcrops observed.</p>
<b>Eagle County</b>							
Eagle Site 1 to Site 2	Low risk factor	Not applicable	Not applicable	Not applicable	Not applicable	Low risk factor	<p>Site 1 and the area to the north are located in the Maroon Formation that consists of red beds of sandstone, conglomerate, siltstone, mudstone, and shale with minor thin beds of gray limestone. There is a small portion of the alignment that is mapped as collapsible soils and should be evaluated during the design phase.</p> <p>Rock outcrop was observed in the existing cut sections along the alignment. The bedrock appears to be rippable based on the outcrops observed.</p>
Eagle Site 2 to Site 3	Not applicable	Not applicable	Medium risk factor	Not applicable	Not applicable	Medium risk factor	<p>Site 2 is located within the Landslide Deposits, and it is also mapped near the toe of the landslide mapped by CGS. No evidence of slope failure or movement was observed during the field investigation. Further study may be required during the design phase of the project. Rock outcrop was observed in some of the areas. No evidence of rockfall was observed. Bedrock appears to be rippable based on the outcrops observed.</p>

Site I.D.	Collapsible Soils	Evaporite Soils and Karst	Landslide	Rockfall	Steep Slopes	Bedrock in Cut Sections	Descriptions
Eagle Site 3 to Site 4	Not applicable	Low risk factor	Medium risk factor	Not applicable	Not applicable	Medium risk factor	<p>Site 3 is not mapped as the evaporite soils area. However, sinkholes were documented at approximately 0.5 miles north of Site 3. The site and the area are located in the Sediments of Cottonwood Bowl and Basalt formation. There is a potential for the evaporite soils and karst formation at this area.</p> <p>Site 3 is located at the toe of the landslide mapped by CGS. No evidence of slope failure or movement was observed during field investigation. If the alignment is shifted and cuts into the hillside to the west, large scale slope stability should be evaluated. Rock outcrops were observed in some of the cut areas, however, no evidence of rockfall was observed. Rockfall protection and slope stability may be required if the cut is deeper than 10 feet. Bedrock appears to be rippable but blasting may be required in some of the areas.</p>
Eagle Site 4	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Site 4 appears to be in favorable location with no obvious evidence for geologic hazards or geotechnical features that would adversely impact the design and construction.
Eagle Site 4 to Site 5	High risk factor	Medium to high risk factor	High risk factor	Medium risk factor	Medium risk factor	Medium risk factor	<p>The northern portion of the area between Site 4 and Site 5 is located in the area mapped for collapsible soils and evaporite soils with karst. Majority of the northern portion of the alignment is located within the Eagle Valley Formation and Eagle Valley Evaporite, Undivided where contact between the formations is not mappable. A sinkhole was documented on the mountain to the east of the alignment. The southern portion of the alignment is located within the sedimentary deposits and Basalt formation that are not mapped as collapsible soils or evaporite soils.</p> <p>A large portion of the alignment at the mid-section is located within the landslide and landslide deposits. The landslide is a large-scale feature, and the alignment is located near the toe of the landslide mass. No evidence of the slope movement was observed in the accessible area and on the road during field investigation. However, further study and continuous monitoring will be required during the design phase of the project. Steep slopes were also observed along the northern portion of the alignment. It is believed that the weak cementation and binding provided the support for the steep slopes but could be impacted by water and moisture. Rock outcrops were observed in the northern portion of the alignment. No evidence of rock fall was observed, however, if the widening cuts into the hillside to the west, rockfall protection and slope stability design may be required. Bedrock appears to be rippable based on the outcrops observed.</p>
Eagle Site 5 to Site 6	Medium to high risk factor	Medium to high risk factor	Medium risk factor	Medium risk factor	Medium to high risk factor	Medium risk factor	<p>Site 5 and the alignment heading north to Site 6 are mapped for both collapsible soils and evaporite soils with karst. The alignment crosses Eagle Valley Evaporite formation, and Site 5 is located in the Young debris-flow deposits and alluvium and colluvium materials. The Young debris-flow deposits were deposited by debris flows and surface water. The alluvium and colluvium materials were deposited by alluvial and colluvial processes. Sinkholes were documented on the mountain southwest of the alignment between Site 5 and Site 6. Site 5 is also located in the unnamed faults.</p> <p>Site 5 and a portion of the alignment between Site 5 and Site 6 were identified as landslide areas by CGS. Steep slopes were common both on the uphill to the east, and downhill to the west of the alignment. No evidence of slope failure or movement was observed during field investigation. Field observation indicates that the soil slopes have weak cementation that is providing the supports for the slope stabilization. Rock outcrops were observed on the hill side and rock sizes smaller than 1 foot in diameter were observed on the side of the road. Rockfall protection and slope stability design will be required. Bedrock appears to be rippable based on the outcrop observed.</p>

Site I.D.	Collapsible Soils	Evaporite Soils and Karst	Landslide	Rockfall	Steep Slopes	Bedrock in Cut Sections	Descriptions
Eagle Site 6 and to the north	Medium to high risk factor	Medium to high risk factor	Medium to high risk factor	Low risk factor	Low risk factor	Medium risk factor	<p>Site 6 is located in the area mapped for collapsible soils and evaporite soils with karst. The Cottonwood Pass alignment crosses Eagle Valley Formation to the north of Site 6 and located in the Eagle Valley Evaporite formation between Site 6 and Site 5. The Eagle Valley Formation comprised of interbedded reddish brown, gray, reddish gray, and tan siltstone, shale, sandstone, gypsum, limestone, and carbonate rocks. The Eagle Valley Evaporite comprised of massive to laminated gypsum, anhydrite, and halite, interbedded with light colored mudstone and fine-grained sandstone, thin carbonate beds, and black shale. These formations are known for collapsible soils and evaporite soils. Sinkholes were identified on the mountains northwest and southeast of Site 6, however, no sinkholes were identified at Site 6.</p> <p>Site 6 was identified as landslide areas by CGS based on the HB1041 Maps. Steep slopes were observed along the alignment to the north and to the south of Site 6. However, no evidence of slope failure or movement was observed during field investigation. Rock outcrops were observed on the hill slope west of the alignment, north of Site 6. No evidence of rockfall was observed, however, if the widening cuts into the hillside to the west, rockfall protection and slope stability design may be required. Bedrock appears to be rippable based on the outcrops observed.</p>



## MITIGATION MEASURES AND BEST MANAGEMENT STRATEGIES

Based on the understanding of identified geologic hazards and geotechnical features, and the expected risk factors, the measures and management strategies to mitigate these risks are presented below.

- **Collapsible Soils**

- Sufficient geotechnical borings should be planned to cover the proposed improvement areas and extended into the areas where drainage features and embankment are planned.
- Borings should be extended at least twice the embankment height or 25 feet deep. Undisturbed samples should be obtained for laboratory testing.
- Laboratory testing including 1-Dimensional swell consolidation test should be performed to evaluate the collapse potential of the foundation soils.
- The extent of the collapsible soils should be established to allow development of the mitigation plans.
- Collapsible soils can be mitigated by over-excavate collapsible soils and recompact properly to remove the collapsible potential. The over-excavation and recompaction should be performed beyond the depth where surface water could penetrate.
- Drainage features including water quality pond should be planned far away from roadway and structures.

- **Evaporite Soils and Karst**

- Sufficient geotechnical borings should be planned to cover the proposed improvement areas and extended into the areas where drainage features and embankment are planned.
- Geophysical exploration should be considered to better explore the extents of evaporite soils, and the presence of karst.
- Borings should be extended into the bedrock. If gypsum bed is encountered in the borings, the borings should be extended at least 30 into the gypsum bed.
- The extent of the evaporite soils and karst should be established to allow development of the mitigation plans.
- Good drainage system should be provided for the surface drainage and water should be directed away from roadway and structures.
- Drainage features that can store water including water quality pond should be lined with geosynthetic liners to prevent penetration of water into the subsurface evaporite soils.
- If karst is encountered, roadway and structure should be shifted to miss the karst especially if the karst is large in size and has the potential for roof collapse.
- If alignment shifting is not possible, deep foundation should be planned for structures to allow the load to transfer to deeper foundation materials and minimize the risk of movement. Karst that is small in sizes can be mitigated by

providing large footings, such as mat foundation for a box culvert structure to bridge over the karst.

- Chemical stabilizations should be not utilized if the evaporite soils are used as subgrade and embankment.

- **Landslide**

- It is important to evaluate if the existing landslide is currently still active. LiDAR images, satellite images including DinSAR and SqueeSAR can be used to effectively measure the ground movement over a period of time. When these data paired with the weather, precipitation data, snow melt, and local construction activities, the causes of the ground movement and the stability of the existing slope could be understood on a larger scale.
- Monitoring equipment including inclinometer should be installed if the existing landslide is determined to be active.
- Subsurface exploration and laboratory testing should be planned to fully understand the soil shear strength and subsurface conditions including groundwater level so engineering analysis can be performed. In the areas where landslide failure modes and envelopes can be obtained, backcalculation should be performed to better model the subsurface materials engineering properties.
- The widening and grade changes of the proposed roadway should be carefully planned by not adding additional loads near the top of the landslide mass, or removing resistance forces near the toe of the landslide mass. The Cottonwood Pass route was constructed near the toe of the identified landslides and widening by adding embankment materials can provide additional resistance.
- Good drainage should be provided by minimizing the ponding or penetration of water into the subsurface materials. Water could increase the driving force that cause ground movement, and can significantly weaken the shear strength of the soils especially the evaporite soils that are very sensitive to the moisture.
- Localized landslide and slope failure can be mitigated with ground improvement and structures including but not limited to retaining walls, soil nails, anchors and buttress.

- **Rockfall**

- The rockfall evaluation should be evaluated with Colorado Rockfall Simulation Program or equivalent. The rockfall size, surface and rockfall protection should be selected based on the project design criteria.

- **Steep Slopes**

- The existing steep slopes appeared to be stable and supported by the weak cementation in the soil mass. The weak cementation can be adversely impacted and weakened by moisture and water. Good drainage should be provided if the slope design includes the weak cementation in the analysis.
- Since the existing steep slopes appear to be in stable conditions, widening of the roadway should consider widening into the downslope side instead of cutting into the existing slope. The widening into the downslope side can be achieved by constructing retaining wall structures. Retaining wall structures with flexible

facing such as welded wire retaining wall that has higher tolerance to ground movement when compared to more rigid wall structures.

- A wider shoulder should be considered for the catchment of the materials eroded from the existing steep slope if the roadway widening is planned into the downslope side.

- **Bedrock in Cut Sections**

- Borings paired with field mapping should be performed to understand the structures of the bedrock. The stability of the cut slopes should be planned based on structure analysis (Markland method) and global stability analysis.
- The rippability of the bedrock should be evaluated based on core samples and joints information. Geophysical exploration using seismic refraction test can provide better evaluation on the rippability of the bedrock.

Detailed maps with identified geologic hazards either from desktop study or field verification are presented on Figures A-1 through A-5 in Appendix A. Photography documentations from field verification are presented in Appendix B.

### **Limitations**

The comments and recommendations presented in this memorandum are based upon the limited site visits and information provided, and other information discussed in this letter.

The letter was prepared in substantial accordance with the generally accepted standards of practice for geotechnical engineering as exist in the site area. No warranties, express or implied, are intended or made.

Respectfully,  
**GRANITE ENGINEERING GROUP, INC.**

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Technical Specialist

Xuhui Chang  
Senior Engineer

Joel Shekoski  
Staff Geologist

Attachments: Appendix A: Figures A-1 to A-9  
Appendix B: Figures B-1 and B-2  
Photography Documentations

## Appendix A

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**FIGURE A-1: ALIGNMENT AND SITE NUMBER**

**FIGURE A-2: GARFIELD CO GEOLOGIC MAP**

**FIGURE A-3: EAGLE CO GEOLOGIC MAP**

**FIGURE A-4: GARFIELD CO COLLAPSIBLE SOILS**

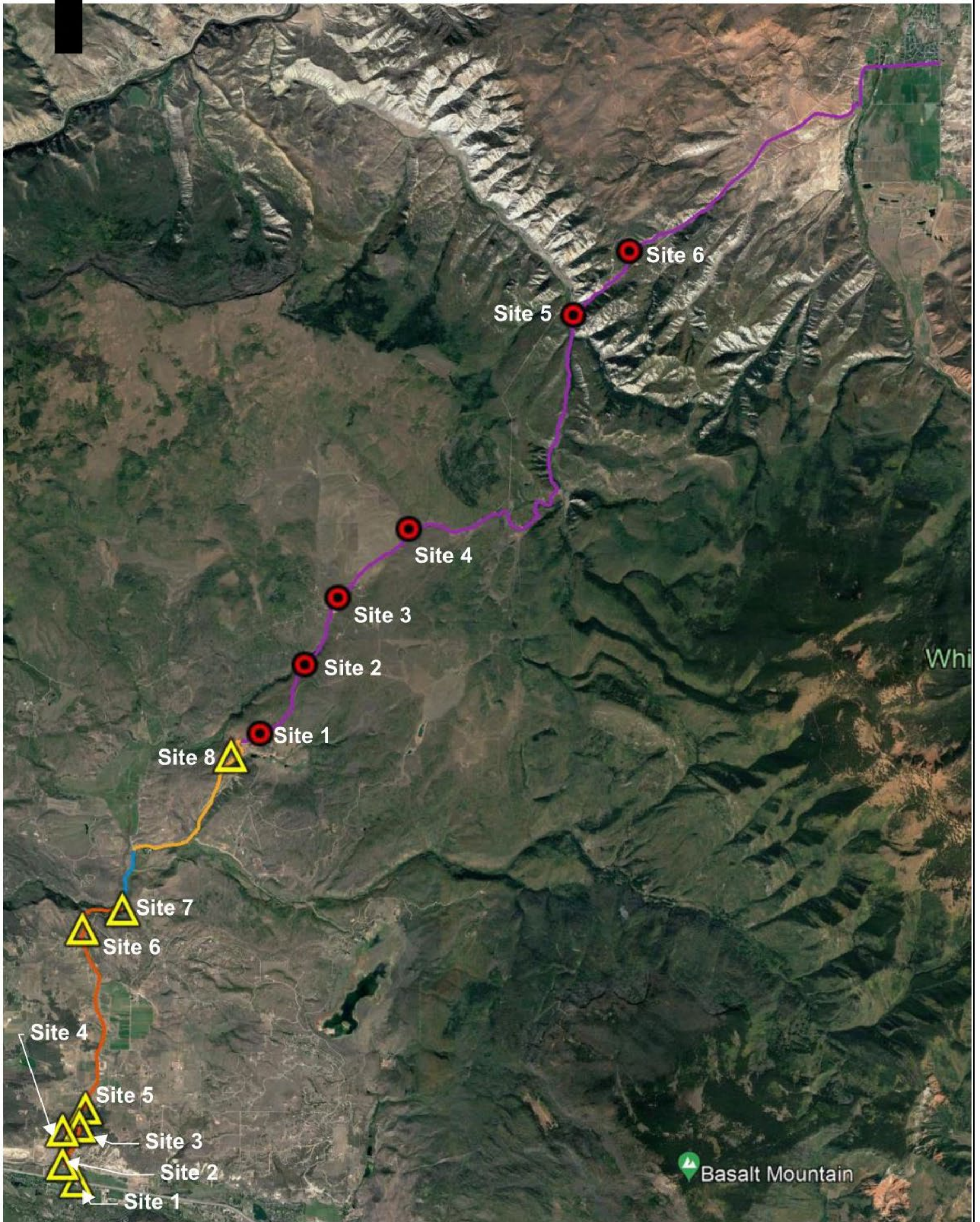
**FIGURE A-5: EAGLE CO COLLAPSIBLE SOILS**

**FIGURE A-6: GARFIELD CO EVAPORITE SOILS**

**FIGURE A-7: EAGLE CO EVAPORITE SOILS**

**FIGURE A-8: GARFIELD CO LANDSLIDE**

**FIGURE A-9: EAGLE COUNTY LANDSLIDE**



● Eagle County Site

▲ Garfield County Site



PROJECT NO. 222-059  
DRAWN:  
DRAWN BY: HML  
CHECKED BY: RDA  
FILE NAME:

Alignment and Site Number

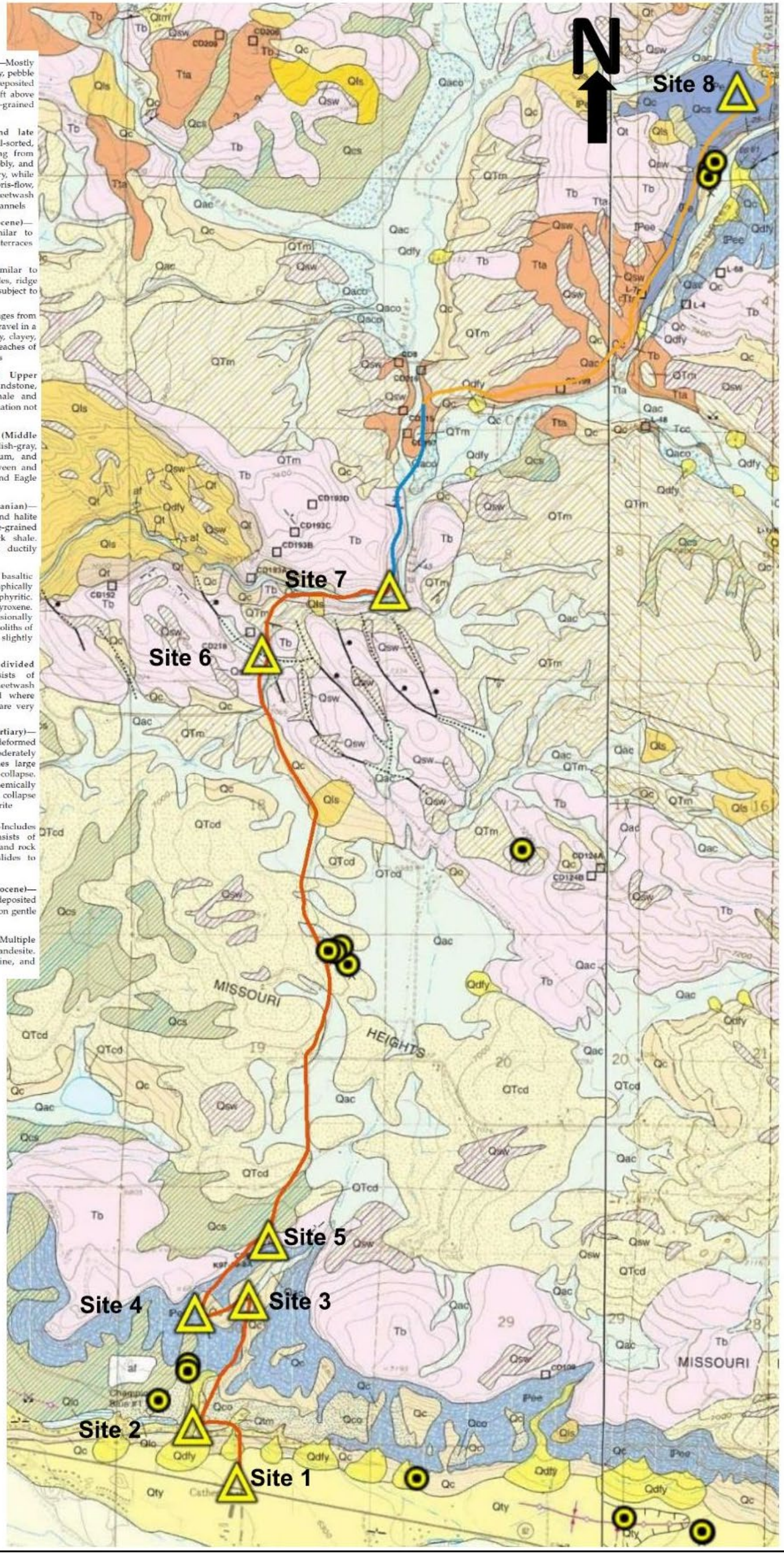
Cottonwood Pass  
Feasibility Study  
Eagle and Garfield Counties, CO

FIGURE

**A-1**

- Qty** Younger terrace alluvium (late Pleistocene)—Mostly poorly sorted, clast-supported, locally bouldery, pebble and cobble gravel in a sand and silt matrix. Deposited as glacial outwash. Underlies terraces 14–45 ft above modern stream level. May include fine-grained overbank deposits
- Qdly** Younger debris-flow deposits (Holocene and late Pleistocene)—Poorly sorted to moderately well-sorted, matrix- and clast-supported deposits ranging from gravelly clayey silt to sandy, silty, cobbly, pebbly, and bouldery gravel. Fan heads tend to be bouldery, while distal fan areas are finer grained. Includes debris-flow, hyperconcentrated-flow, fluvial, and sheetwash deposits on active fans and in some drainage channels
- Qtm** Intermediate terrace alluvium (late Pleistocene)—Deposits texturally and depositionally similar to younger terrace alluvium (Qty). Underlies terraces 55–110 ft above modern streams
- Qco** Older colluvium (Pleistocene)—Texturally similar to colluvium (Qc), but found on drainage divides, ridge lines, and dissected hillslopes. Generally not subject to future deposition.
- Qc** Colluvium (Holocene and late Pleistocene)—Ranges from unsorted, clast-supported, pebble to boulder gravel in a sandy silt matrix to matrix-supported gravelly, clayey, sandy silt. Usually coarser grained in upper reaches of colluvial slopes and finer grained in distal areas
- PPm** Maroon Formation (Lower Permian? and Upper Pennsylvanian)—Red beds of sandstone, conglomerate, mudstone, siltstone, and shale and minor, thin beds of gray limestone. Top of formation not exposed in quadrangle
- Pe** Eagle Valley Formation (Middle Pennsylvanian)—Reddish-brown, gray, reddish-gray, and tan siltstone, shale, sandstone, gypsum, and carbonate rocks which are gradational between and intertonguing with the Maroon Formation and Eagle Valley Evaporite
- Pee** Eagle Valley Evaporite (Middle Pennsylvanian)—Evaporitic sequence of gypsum, anhydrite, and halite interbedded with marine mudstone, fine-grained sandstone, thin carbonate beds, and black shale. Commonly intensely folded, faulted, and ductily deformed
- Tb** Basalt (Miocene)—Multiple flows of basalt, basaltic andesite, and basaltic trachyandesite. Petrographically most flows are olivine basalt; many are porphyritic. Groundmass predominantly plagioclase and pyroxene. Phenocrysts chiefly olivine and occasionally plagioclase. May contain rare xenocrysts or xenoliths of quartz and quartzite. Locally includes slightly indurated sediments
- Qcs** Colluvium and sheetwash deposits, undivided (Holocene and late Pleistocene)—Consists of colluvium (Qc) on steeper slopes and sheetwash deposits (Qsw) on flatter slopes. Mapped where contacts between the two types of deposits are very gradational and difficult to locate
- QTcd** Collapse deposits (Pleistocene and late Tertiary)—Heterogeneous deposits of slightly to highly deformed bedrock and overlying undeformed to moderately deformed surficial deposits. Locally includes large intact blocks of basalt (Tb) that are lowered by collapse. Several flows in these blocks were geochemically analyzed. Formed in response to differential collapse resulting from dissolution of underlying evaporite
- Qls** Landslide deposits (Holocene and Pleistocene)—Includes various types of landslide deposits. Consists of unsorted, unstratified gravel, sand, silt, clay, and rock debris. Ranges from recently active landslides to long-inactive Pleistocene landslides
- Qsw** Sheetwash deposits (Holocene and late Pleistocene)—Pebbly silty sand, sandy silt, and clayey silt deposited in ephemeral and intermittent stream valleys, on gentle hillslopes, and in basinal areas
- Tta** Trachyandesite undifferentiated (Pliocene)—Multiple flows of basaltic trachyandesite and trachyandesite. Contains varying amounts of quartz, sanidine, and plagioclase xenocrysts

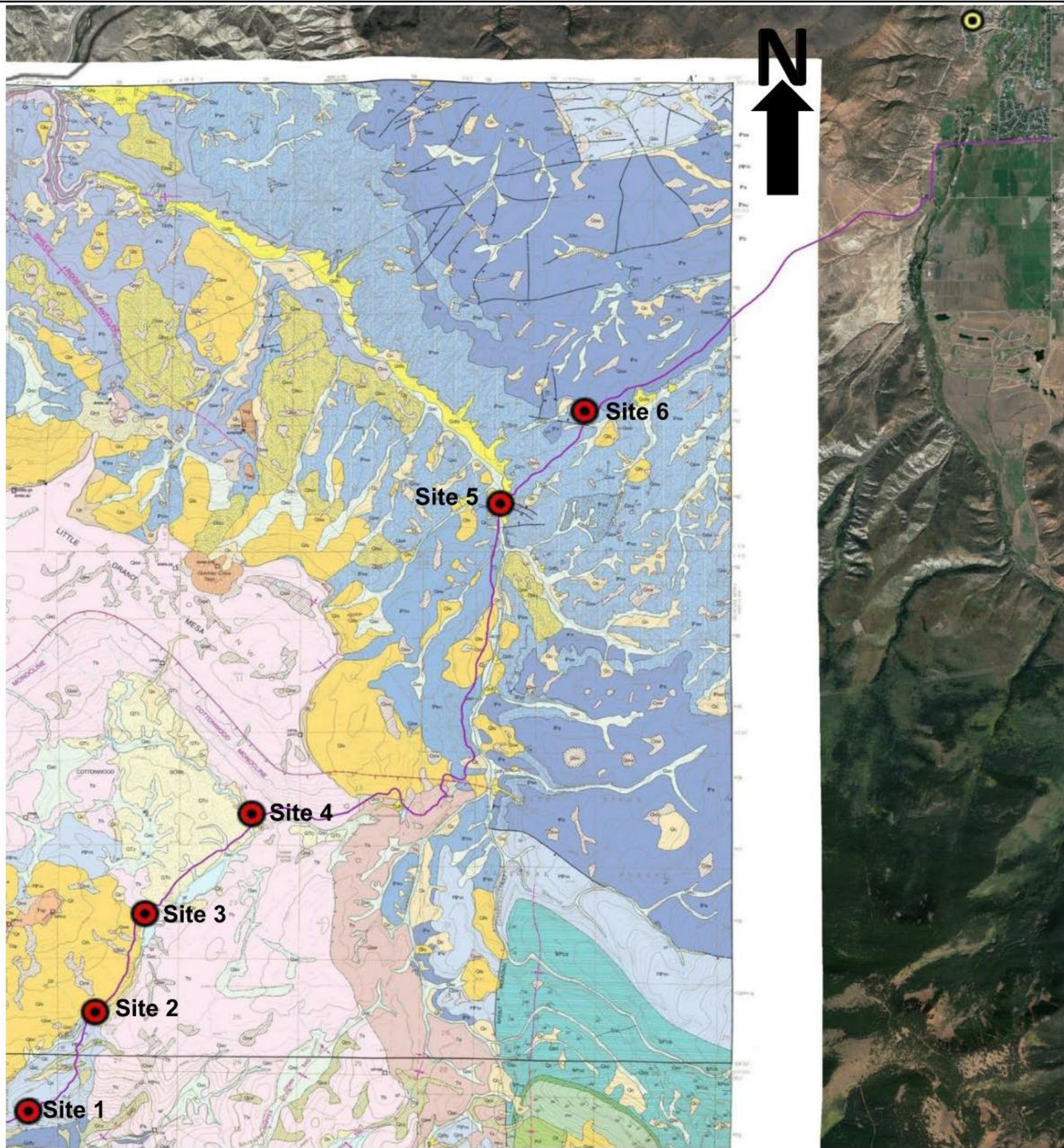
 Documented Sinkhole



PROJECT NO. 222-059  
 DRAWN:  
 DRAWN BY: HML  
 CHECKED BY: RDA  
 FILE NAME:

Garfield CO Geologic Map  
 Cottonwood Pass  
 Feasibility Study  
 Eagle and Garfield Counties, CO

FIGURE  
**A-2**



- Qty** Younger terrace alluvium (late Pleistocene)—Mostly poorly sorted, clast-supported, locally bouldery, pebble and cobble gravel in a sand and silt matrix. Deposited as glacial outwash. Underlies terraces 14–45 ft above modern stream level. May include fine-grained overbank deposits
- Qdly** Younger debris-flow deposits (Holocene and late Pleistocene)—Poorly sorted to moderately well-sorted, matrix- and clast-supported deposits ranging from gravelly clayey silt to sandy, silty, cobbly, pebbly, and bouldery gravel. Fan heads tend to be bouldery, while distal fan areas are finer grained. Includes debris-flow, hyperconcentrated-flow, fluvial, and sheetwash deposits on active fans and in some drainage channels
- Qtm** Intermediate terrace alluvium (late Pleistocene)—Deposits texturally and positionally similar to younger terrace alluvium (Qty). Underlies terraces 55–110 ft above modern streams
- Qsw** Sheetwash deposits (Holocene and late Pleistocene)—Pebbly silty sand, sandy silt, and clayey silt deposited in ephemeral and intermittent stream valleys, on gentle hillslopes, and in basinal areas
- Tta** Trachyandesite undifferentiated (Pliocene)—Multiple flows of basaltic trachyandesite and trachyandesite. Contains varying amounts of quartz, sanidine, and plagioclase xenocrysts
- Qls** Landslide deposits (Holocene and Pleistocene)—Includes various types of landslide deposits. Consists of unsorted, unstratified gravel, sand, silt, clay, and rock debris. Ranges from recently active landslides to long-inactive Pleistocene landslides

- Qco** Older colluvium (Pleistocene)—Texturally similar to colluvium (Qc), but found on drainage divides, ridge lines, and dissected hillslopes. Generally not subject to future deposition
- Qc** Colluvium (Holocene and late Pleistocene)—Ranges from unsorted, clast-supported, pebble to boulder gravel in a sandy silt matrix to matrix-supported gravelly, clayey, sandy silt. Usually coarser grained in upper reaches of colluvial slopes and finer grained in distal areas
- PPm** Maroon Formation (Lower Permian? and Upper Pennsylvanian)—Red beds of sandstone, conglomerate, mudstone, siltstone, and shale and minor, thin beds of gray limestone. Top of formation not exposed in quadrangle
- Pv** Eagle Valley Formation (Middle Pennsylvanian)—Reddish-brown, gray, reddish-gray, and tan siltstone, shale, sandstone, gypsum, and carbonate rocks which are gradational between and intertonguing with the Maroon Formation and Eagle Valley Evaporite
- Pe** Eagle Valley Evaporite (Middle Pennsylvanian)—Evaporitic sequence of gypsum, anhydrite, and halite interbedded with marine mudstone, fine-grained sandstone, thin carbonate beds, and black shale. Commonly intensely folded, faulted, and ductily deformed
- QTcd** Collapse deposits (Pleistocene and late Tertiary)—Heterogeneous deposits of slightly to highly deformed bedrock and overlying undeformed to moderately deformed surficial deposits. Locally includes large intact blocks of basalt (Tb) that are lowered by collapse. Several flows in these blocks were geochemically analyzed. Formed in response to differential collapse resulting from dissolution of underlying evaporite

- Tb** Basalt (Miocene)—Multiple flows of basalt, basaltic andesite, and basaltic trachyandesite. Petrographically most flows are olivine basalt; many are porphyritic. Groundmass predominantly plagioclase and pyroxene. Phenocrysts chiefly olivine and occasionally plagioclase. May contain rare xenocrysts or xenoliths of quartz and quartzite. Locally includes slightly indurated sediments
- Qcs** Colluvium and sheetwash deposits, undivided (Holocene and late Pleistocene)—Consists of colluvium (Qc) on steeper slopes and sheetwash deposits (Qsw) on flatter slopes. Mapped where contacts between the two types of deposits are very gradational and difficult to locate
- QTc** Sediments of Cottonwood Bowl (early Pleistocene and late Tertiary?)—Locally derived gravel, sand, silt, and clay deposited in and near the topographic bowl in headwaters of East Coulter Creek. Deposits range from sandy and silty pebble, granule, or cobble gravel to gravelly, sandy silt. Deposited in fluvial, sheetwash, and colluvial environments in a large collapse bowl that developed after emplacement of the basalts of Dock Flats
- Peu** Eagle Valley Formation and Eagle Valley Evaporite, undivided (Middle Pennsylvanian)—Includes Eagle Valley Formation and Eagle Valley Evaporite where contact between the formations is not mappable
- Qac** Alluvium and colluvium, undivided (Holocene and latest Pleistocene)—Alluvium is typically poorly to well-sorted, stratified, interbedded pebbly sand, sandy silt, and sandy gravel. Colluvium may range to unsorted, unstratified or poorly stratified, clayey, silty sand, bouldery sand, and sandy silt. Occurs in tributary valleys of small perennial, intermittent, and ephemeral streams. Deposited by alluvial and colluvial processes

Documented Sinkhole








PROJECT NO. 222-059  
 DRAWN:  
 DRAWN BY: HML  
 CHECKED BY: RDA  
 FILE NAME:

Eagle CO Geologic Map  
 Cottonwood Pass  
 Feasibility Study  
 Eagle and Garfield Counties, CO

FIGURE  
**A-3**





- EG-14 Dune and sheet sand deposits  

- EG-14 Cretaceous and Tertiary Formations  

- EG-14 Evaporite Formations  

- MS-34 Roaring Fork River Corridor collapsible soil  

-  Documented Sinkhole



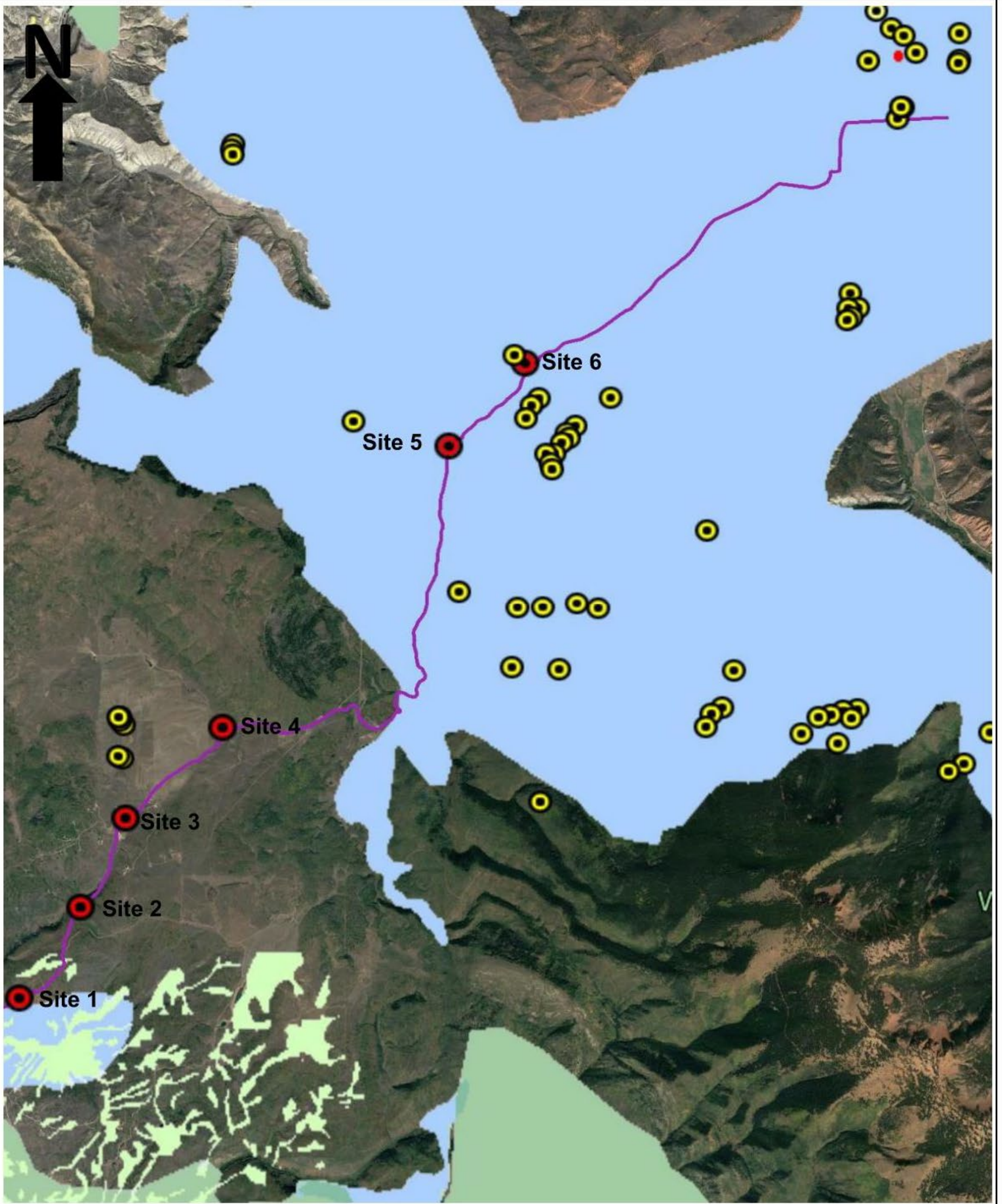
PROJECT NO. 222-059  
DRAWN:  
DRAWN BY: HML  
CHECKED BY: RDA  
FILE NAME:

Garfield CO Collapsible Soils

Cottonwood Pass  
Feasibility Study  
Eagle and Garfield Counties, CO

FIGURE

**A-4**



EG-14 Dune and sheet sand deposits



EG-14 Cretaceous and Tertiary Formations



EG-14 Evaporite Formations



MS-34 Roaring Fork River Corridor collapsible soil



**Documented Sinkhole**

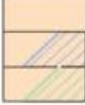








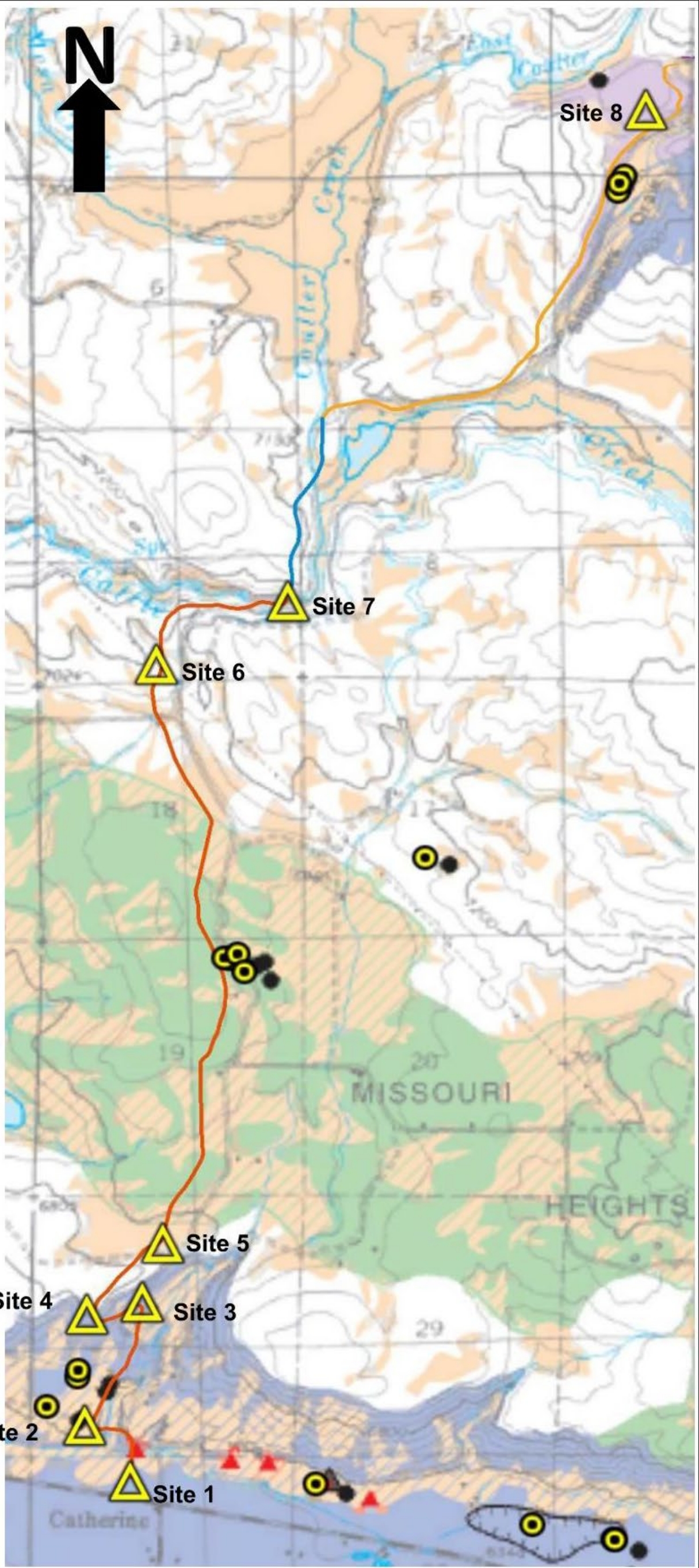
PROJECT NO. 222-059  
 DRAWN:  
 DRAWN BY: HML  
 CHECKED BY: RDA  
 FILE NAME:

**Eagle CO Collapsible Soils**  
 Cottonwood Pass  
 Feasibility Study  
 Eagle and Garfield Counties, CO

FIGURE

**A-5**

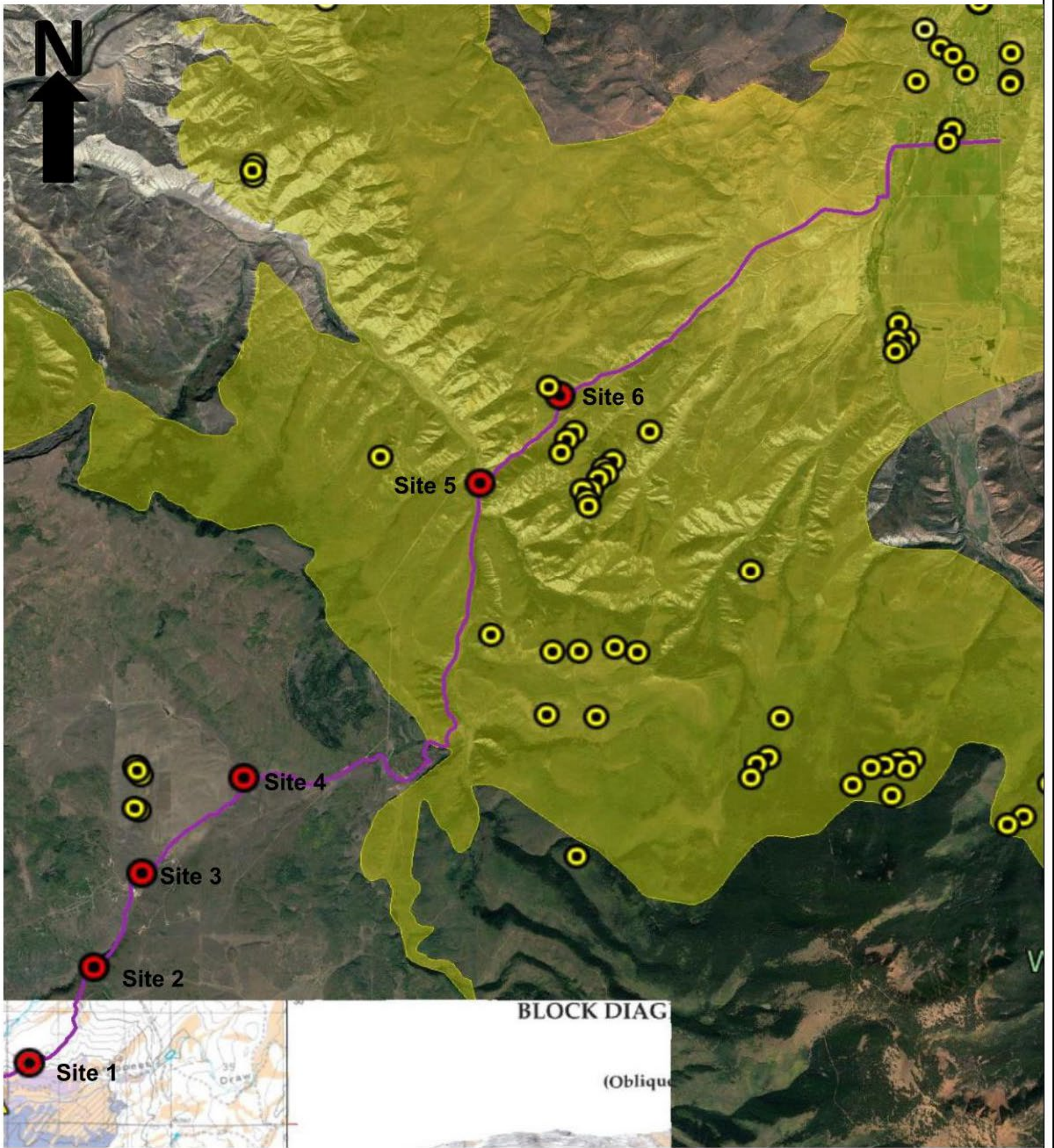
- 
**Surficial deposits. (Holocene to late Quaternary)—**  
 Unconsolidated deposits, generally exceeding five feet in thickness, which mantle the ground surface. These deposits include hillside colluvium, sheet wash deposits, debris-flow deposits, alluvium along tributary and ephemeral streams, and eolian loess. The deposits, generally considered soils in civil and geotechnical engineering terms, varying from uniform loess to coarse gravel in a clay, silt and sand matrix. These soils are geologically recent, are typically loosely packed, porous, dry, and have not been subject to geologically recent saturation by ground water. While some early Holocene to late Pleistocene sediments may have developed soil horizons and limited cementation of the sediment grains, the deposits are mostly younger in age and their pedogenic development is immature. Hazards associated with this unit include potential of soil collapse (hydrocompaction) when wetted and piping collapse of fine-grained deposits in the presence of running water. Risks to structures and infrastructure include distress from adverse ground settlements and openings of piping voids. Where hachured, the underlying bedrock is Eagle Valley Evaporite or collapse debris, depending on the hachure line color.
- 
**Collapse debris (Quaternary and late Tertiary)—**  
 Heterogeneous deposits of moderately to severely deformed bedrock overlain by undeformed to moderately deformed surficial deposits north of the Roaring Fork River. Unit formed in response to differential collapse or regional subsidence resulting from dissolution of underlying thick beds of evaporite, primarily halite (rock salt), and/or flow of the evaporitic rocks out from beneath the area. Hazards include surface strain regimens related to subsidence deformation and potential of sinkhole formation. The subsidence deformation hazard is currently poorly understood and it is not presently known whether there is any structural risk.
- 
**Eagle Valley Formation (Middle? Pennsylvanian)—**  
 Reddish-brown, gray, reddish-gray, and tan siltstone, shale, sandstone, gypsum, and carbonate rocks that are gradational between and inter-tongue with the underlying Eagle Valley Evaporite. Soils derived from the Eagle Valley Formation can have significant gypsum content and are also known to have an elevated potential for hydrocompactive soil hazards.
- 
**Eagle Valley Evaporite (Middle Pennsylvanian)—**  
 Evaporitic sequence of gypsum, anhydrite, and halite (rock salt) interbedded with mudstone, fine-grained sandstone, thin carbonate beds, and black shale. Commonly intensely folded, faulted, and ductily deformed. Includes areas overlain by various thin (approximately 50-ft or 15-m thick), surficial deposits. Boundaries are approximate where covered by surficial deposits. Evaporite minerals are soluble; as dissolution of the bedrock occurs, a karst morphology results. Hazards include spontaneous ground openings (sinkholes) and subsidence deformation and settlement near sinkholes and closed depressions. Soils derived from evaporite have high gypsum content and may have high potential for significant collapse upon wetting (hydrocompaction). Potential hazards from regional deformation of the evaporite and risks to structures and infrastructure are undefined. Ground water in this unit typically has a high percentage of total dissolved solids and high salinity.
- 
**Sinkholes and subsidence features—** Ground depression areas created either by (1) piping or collapse of surficial deposits into dissolution fissures, voids, or caverns within underlying Eagle Valley Evaporite, (2) downward movement of gravel chimneys into deep bedrock voids, (3) dissolution caverns in outcrops of Eagle Valley Evaporite, or (4) large-scale collapse or settlement of low-density surficial deposits. A black dot denotes small sinkholes or clusters of small sinkholes, and closed, hatched lines denote the larger subsidence areas. Many small sinkholes in addition to those shown are probably present where the Eagle Valley Evaporite is shown, but have not been detected or mapped.
- 
**Soil-collapse locations—**Historical occurrences of soil settlement, damage to structures, and/or collapsible soils verified by soil testing. These data were compiled by CGS as part of the Statewide Collapsible Soil Study (White and Greenman, in prep.). Red triangles show approximate locations of historical occurrences of collapsible soils or damage to a structure as a result of soil collapse and settlement. A Red triangle with black edging denotes approximate locations of historical occurrences of both collapsible soils and sinkholes.
- 
**Documented Sinkhole**



PROJECT NO. 222-059  
 DRAWN:  
 DRAWN BY: HML  
 CHECKED BY: RDA  
 FILE NAME:

Garfield CO Evaporite Soils  
 Cottonwood Pass  
 Feasibility Study  
 Eagle and Garfield Counties, CO

FIGURE  
**A-6**



 Documented Sinkhole

 Evaporite Bedrock

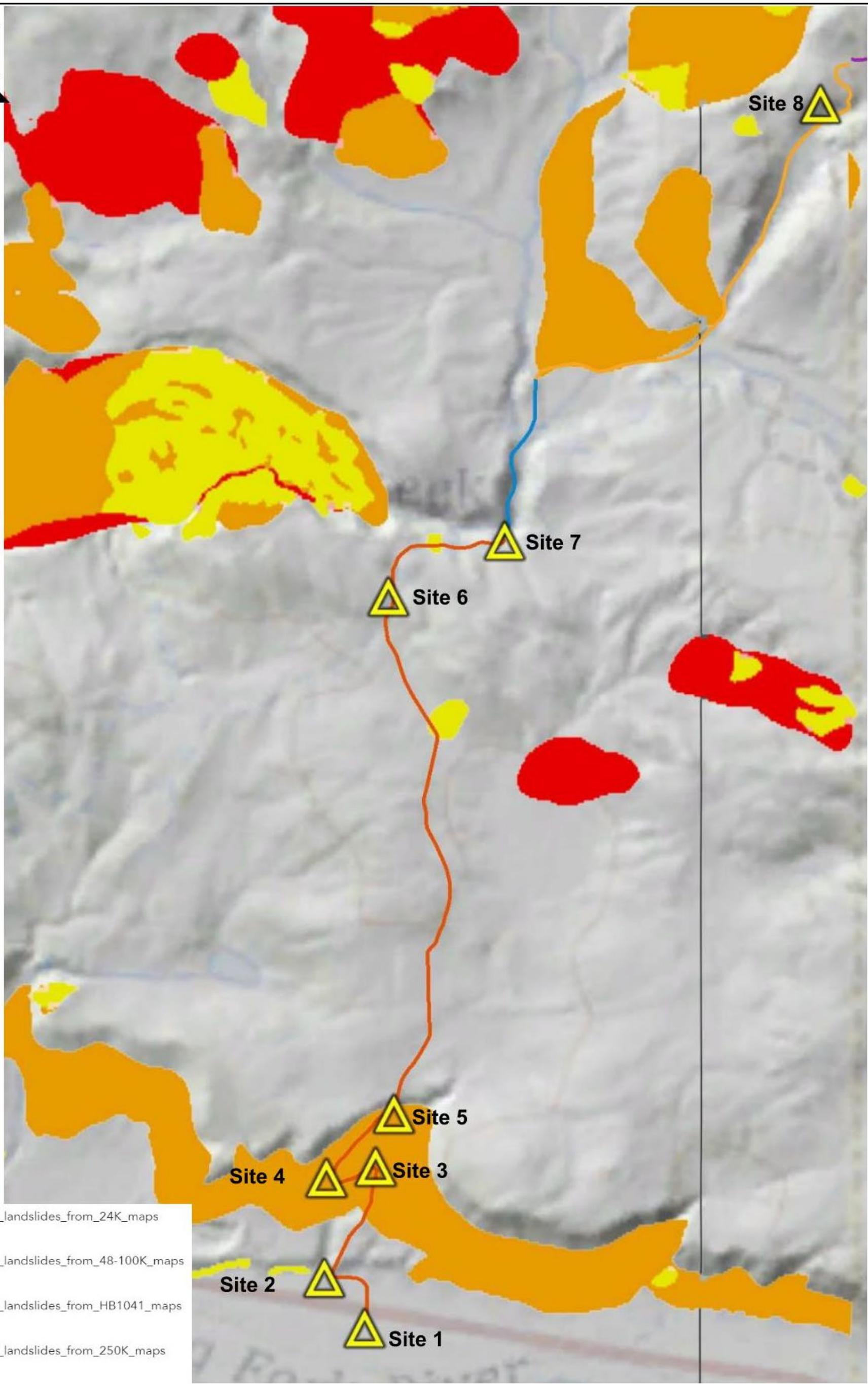


PROJECT NO.	222-059
DRAWN:	
DRAWN BY:	HML
CHECKED BY:	RDA
FILE NAME:	

Eagle CO Evaporite Soils  
 Cottonwood Pass  
 Feasibility Study  
 Eagle and Garfield Counties, CO

FIGURE

**A-7**



- compiled\_landslides\_from\_24K\_maps
- compiled\_landslides\_from\_48-100K\_maps
- compiled\_landslides\_from\_HB1041\_maps
- compiled\_landslides\_from\_250K\_maps

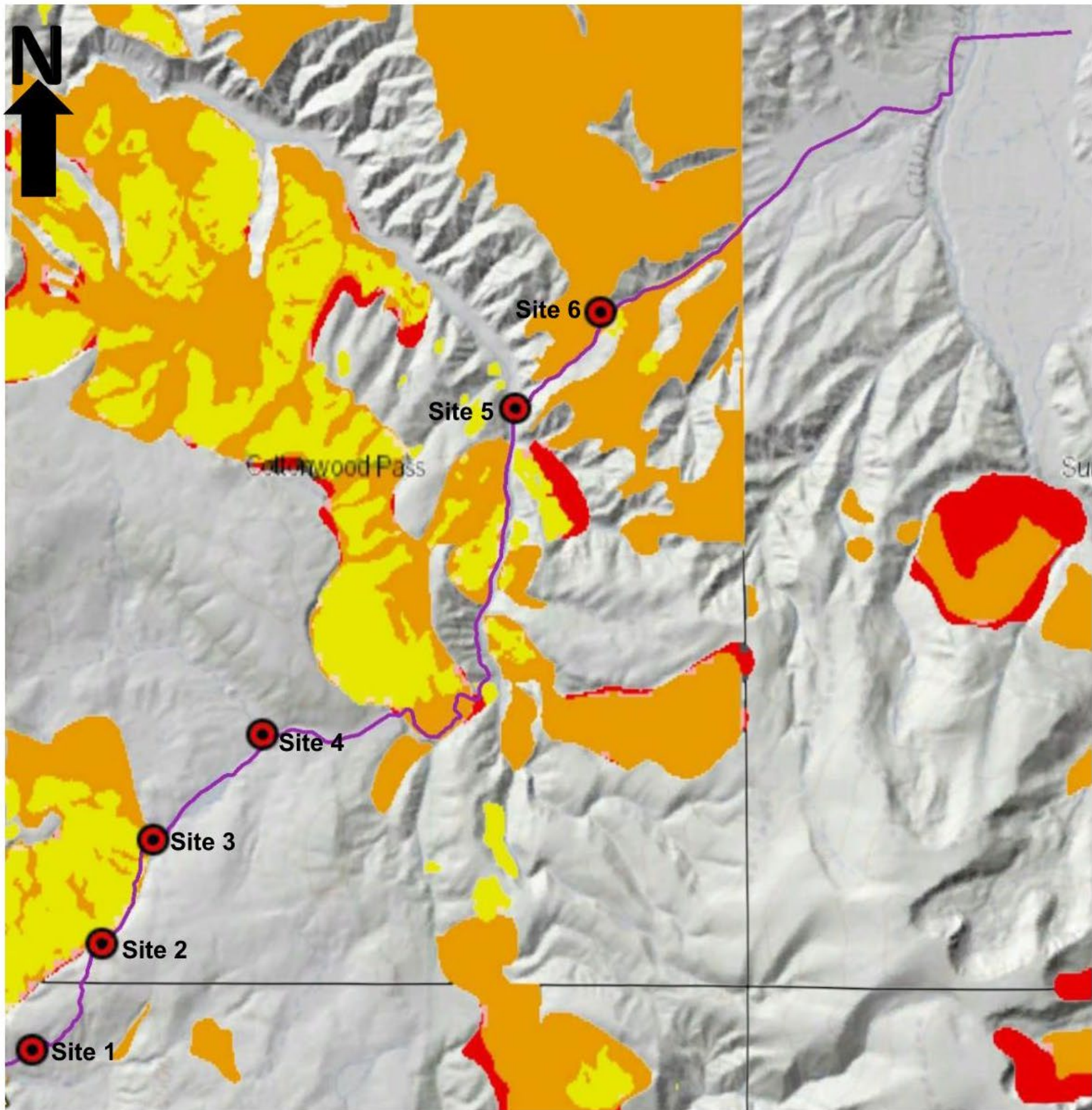


PROJECT NO. 222-059  
DRAWN:  
DRAWN BY: HML  
CHECKED BY: RDA  
FILE NAME:

Garfield CO Landslide  
Cottonwood Pass  
Feasibility Study  
Eagle and Garfield Counties, CO

FIGURE

**A-8**



- compiled\_landslides\_from\_24K\_maps
- compiled\_landslides\_from\_48-100K\_maps
- compiled\_landslides\_from\_HB1041\_maps
- compiled\_landslides\_from\_250K\_maps



PROJECT NO. 222-059  
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 DRAWN BY: HML  
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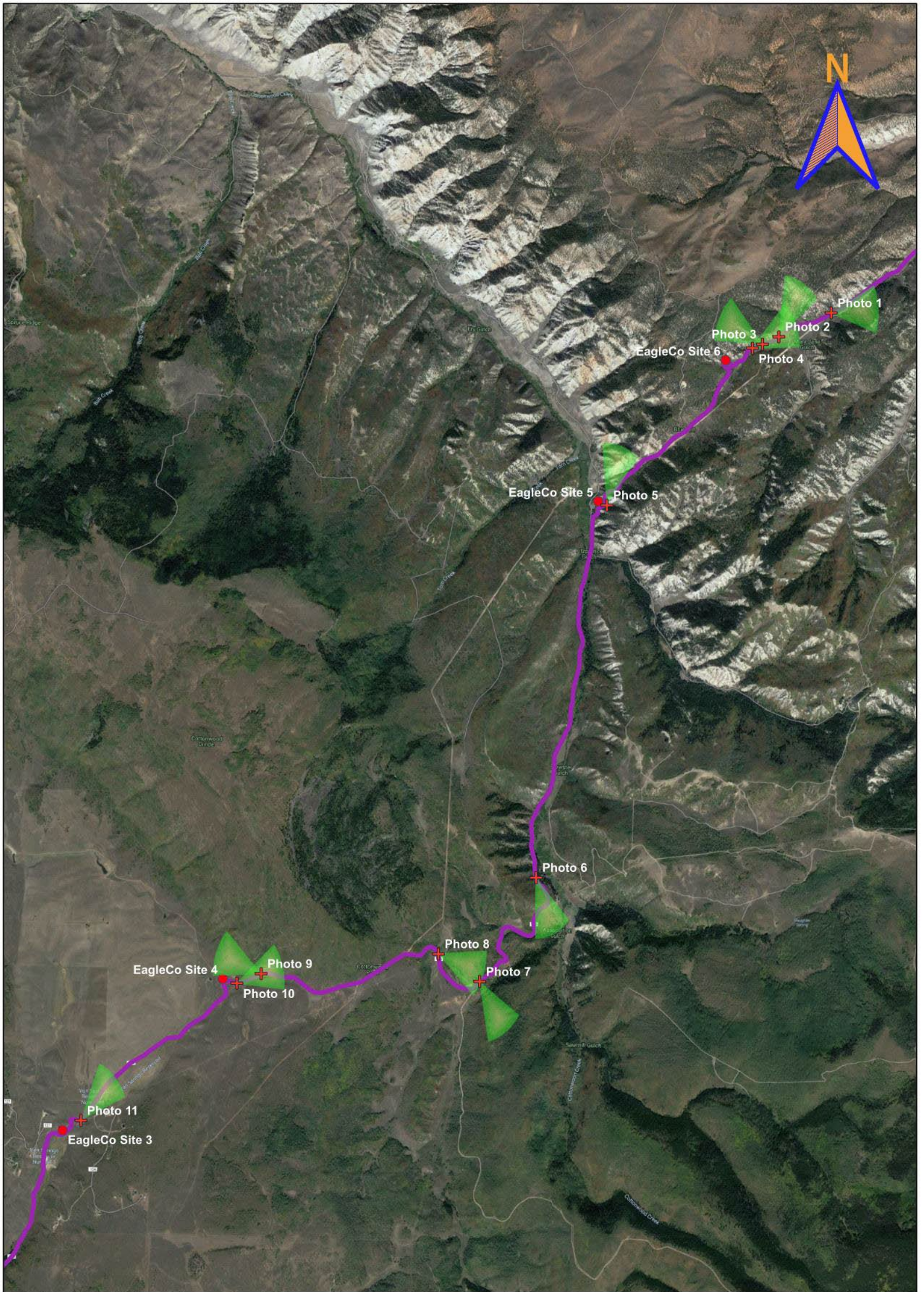
**Eagle CO Landslide**  
  
**Cottonwood Pass**  
**Feasibility Study**  
**Eagle and Garfield Counties, CO**


FIGURE  
**A-9**

## Appendix B

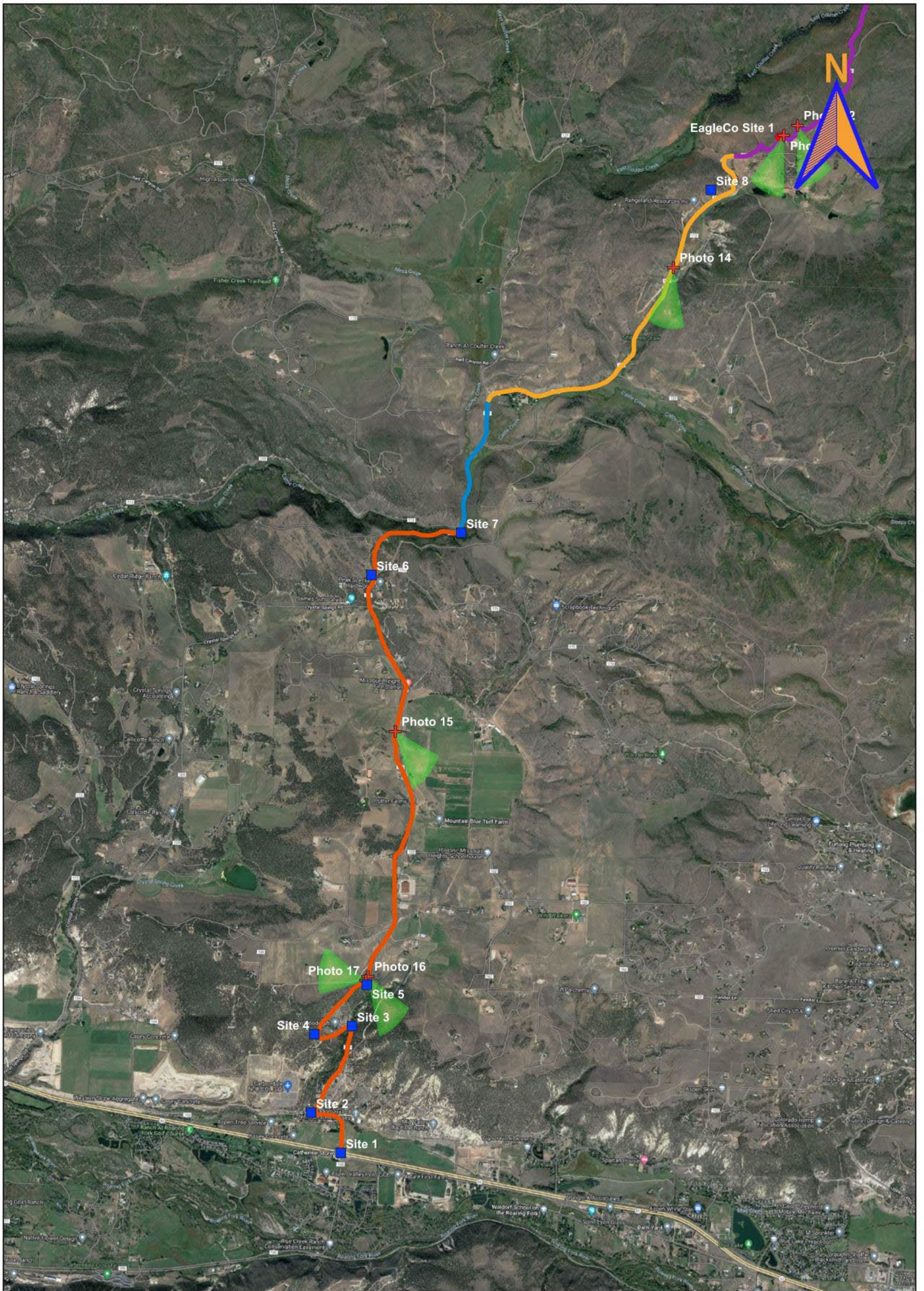
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### FIGURES B-1 & B-2" PHOTO LOCATION DIAGRAM PHOTOGRAPHY DOCUMENTATIONS



 <p><b>GEG</b> GRANITE ENGINEERING GROUP</p>	<p><b>PROJECT NO. 222-059</b></p>	<p><b>FIGURE</b></p>
	<p><b>DRAWN: 9-17-22</b></p> <p><b>DRAWN BY:HML</b></p> <p><b>CHECKED BY:RDA</b></p>	
<p>Cottonwood Pass Feasibility Study Garfield &amp; Eagle Counties, CO</p>		<p><b>B-1</b></p>






	<b>PROJECT NO. 222-059</b> <b>DRAWN: 9-17-22</b> <b>DRAWN BY:HML</b> <b>CHECKED BY:RDA</b>	<b>PHOTO LOCATION DIAGRAM</b>	<b>FIGURE</b>  <b>B-2</b>
	<b>Cottonwood Pass Feasibility Study</b> <b>Garfield &amp; Eagle Counties, CO</b>		



Photo 1. Existing hillside covered in vegetations



Photo 2. Steep slopes with weakly cemented surficial soils



Photo 3. Rock outcrop



Photo 4. Rock outcrop and weakly cemented surficial soils



Photo 5. Steep slope with weakly cemented surficial soils



Photo 6. Closer look at steep slope surficial conditions. Note the erosion from surface runoff.



Photo 7. Landslide deposit covered with vegetation



Photo 8. Toe of the landslide mass



Photo 9. Rock outcrop at the top of the slope



Photo 10. A very large scale landslide mass



Photo 11. Rock outcrop in the potential cut section



Photo 12. Structure or embankment to improve alignment



Photo 13. Side slope of the existing roadway



Photo 14. View of the valley



Photo 15. Potential karst in the evaporite soils



Photo 16. Volcanic rock used for embankment



Photo 17. Rock outcrop that will require mitigation



# APPENDIX B

## CULTURAL RESOURCES REPORT



Consultants in Natural Resources and the Environment

# Technical Memorandum

## File and Literature Review

### The Cottonwood Pass Feasibility Study Project

### Garfield and Eagle Counties, Colorado

*Prepared for:*

*David Evans and Associates, Inc.*

*Prepared by: Marie Matsuda*

*Under supervision of: Jonathan Hedlund, Principal Investigator*

*September 14, 2022*

David Evans and Associates, Inc. (DEA) retained ERO Resources Corporation (ERO) to perform a cultural resource file and literature review for proposed improvements along Cottonwood Pass (project) from the town of Gypsum to Highway 82 in Garfield and Eagle Counties, Colorado (project area; Figure 1, attached). ERO's results will be incorporated into a feasibility study prepared by DEA for the Colorado Department of Transportation (CDOT). While the project is still in the initial design phase, the purpose is to compile background information for anticipated archaeology and history for CDOT clearance requirements. The results of the file and literature review will provide project planners with information regarding known and potential cultural resources as well as a summary of potential regulatory requirements that could stipulate for additional cultural resource identification and documentation. ERO did not complete any field review of the project area for this file and literature review. Additional resources for which there is no archival information (e.g., Native American camps or historical archaeological resources) may be present. Field documentation of some of the resources identified in this document may result in changes to ERO's current recommendations.

## **Project Area**

The project area consists of 14 improvement locations (Figure 2 through Figure 6). Each improvement location includes a 0.5-mile length of road plus a 150-foot buffer of the road's center line except for Eagle County Sites 5 and 6, which have 400-foot buffers. The project area is on State Highway (SH) 82, County Road (CR)10A, Cattle Creek (CR113), and Catherine Store Road (CR100) south of the Interstate-70 Mountain Corridor, between the town of Gypsum and SH82 in Garfield County. Undeveloped forest lands surround most of the project area, with few residential developments and agricultural areas. Table 1 describes the project area's legal locations.



**Table 1. Legal locations.**

Principal Meridian	Township	Range	Section
6th	5S	86W	27
6th	5S	86W	33
6th	6S	87W	14
6th	6S	87W	22
6th	6S	87W	27
6th	6S	87W	33
6th	7S	87W	8
6th	7S	87W	7
6th	7S	87W	30
6th	7S	87W	31

## Methodology

The purpose of the cultural resource file and literature review is to determine if any previously documented cultural resources listed in or eligible for listing in the National Register of Historic Places (NRHP) or State Register of Historic Places (SRHP) could be impacted by the proposed project. A “cultural resource” is defined as an archaeological site, structure, or building constructed 50 or more years ago (Little et al. 2000). A cultural resource listed in or eligible for listing in the NRHP/SRHP is a “historic property.” To assist with project planning and potential consultation obligations under Section 106 of the National Historic Preservation Act (NHPA) (Code of Federal Regulations 800) and the State Register Act (Colorado Revised Statutes 34-80.1-104), ERO reviewed the previous cultural resource surveys and resource documentation completed in the project area by conducting a file review using the Office of Archaeology and Historic Preservation (OAHP) online Compass database on July 26, 2022. In addition to the OAHP file search, ERO conducted a review of existing literature, historical maps, General Land Office (GLO) records, and aerial images to assess the potential for unknown historical resources, such as roads, ditches, and buildings, in the project area. ERO reviewed maps dating from 1885 to 2011 (Colorado State Highway Department 1936a, 1936b; U.S. Geological Survey 1961a, 1961b, 1961c, 1983a, 1983b, 1983c, 2010, 2011; U.S. Surveyor General’s Office 1885, 1888, 1908) and aerial images from 1951 to 2022 (Google, Inc. 2022; Nationwide Environmental Title Research 2022).

## Results

The project area consists of 14 improvement sites on Cottonwood Pass (CR10A), Cattle Creek (CR113), Catherine Store Road (CR100), and SH82: Garfield County Sites 1 through 8 and Eagle County Sites 1 through 6. All four roads have been in existence since at least 1936, and some since 1888. Certain segments of the roads have changed course over time while others have changed names but followed the same route. In 1936 Highway Maps, segments of CR100, CR113, and CR10A were labeled as State Highway 107. The following are the file and literature search results for each site in the project area and details on the segment of the road that each site intersects.

## Garfield County Site 1

The file search identified one previous Class III cultural resource survey that intersects Garfield County Site 1 (Figure 2). Western Cultural Resource Management, Inc. conducted the survey, *A Class III Cultural Resources Survey of the Roaring Fork Railroad Authority Environmental Impact Statement Glenwood Springs to Brush Creek Transportation Corridor, Eagle, Garfield, and Pitkin Counties, Colorado* (MC.CH.R94), in 2000. The survey covered approximately 80 percent of Garfield County Site 1.

The OAHP records indicate one previously documented historic building in the site (Figure 2). The Catherine Building (5GF1254) is a late 19<sup>th</sup> century section house. A site form was completed for the building in 1975 but it was not assessed for NRHP eligibility. Archival records indicate that undocumented resources include SH82, CR100, the Patterson Ditch, and a house built in 1972.

The site is at the intersection of SH82 and CR100. GLO records show that in 1885 SH82 was mapped as a wagon road and became an unnamed road in 1888 (U.S. Surveyor General's Office 1885, 1888). SH82 was mapped as a state highway in 1936, while CR100 was mapped but remained unnamed (Colorado State Highway Department 1936a). Subsequent historic maps indicate SH82 as a secondary highway and CR100 as a light duty road by 1961 (U.S. Geological Survey 1983c). In 1982, SH82 is mapped as a primary highway and the southern portion of CR100 became a secondary highway (U.S. Geological Survey 1982). The Catherine Building is depicted as a commercial building in 1936 (Colorado State Highway Department 1936a). The building is in the town of Catherine (U.S. Geological Survey 1961c).

The 1960 aerial images show the intersection of SH82 and CR100 surrounded by agricultural and undeveloped lands. Both roads are one lane. The Patterson Ditch is also visible in the 1960 aerials. Historic water records reveal that the ditch was appropriated in 1893, adjudicated in 1907, and is presently active (State of Colorado 2022). A segment of the Patterson Ditch (5EA2753.1) outside of the project area was recorded in 2009 and was recommended as needs data for NRHP eligibility for the entire linear resource (Uphus 2009). The 1960 aerials also depict the Catherine Building and an annex at the southwest corner of the intersection (Nationwide Environmental Title Research 2022). In 1972, a residential building was built west of CR100 and north of T.O. Ranch Lane (Garfield County Assessor's Office 2022). In 1993, SH82 is expanded to two lanes and the southeast corner of the intersection, east of the Catherine Building, is cleared. In 2005, two additional buildings were built to the west of the Catherine Building and the southeast corner of the intersection was developed as a parking lot (Google, Inc. 2022). The building is currently known as the Catherine Store and has been an active business since 2003 (Catherine Store 2022).

**Management Recommendations:** Historical maps, aerials, and archival documents indicate that SH82, CR100, a residential building, Patterson Ditch, and the Catherine Store have been present in the site for at least 50 years. The segment of SH82 in the site has not been evaluated but the entire resource has been recommended eligible for listing in the NRHP under Criteria A and C (Mead & Hunt, Inc. and Dill Historians LLC. 2016). The segment in the site was expanded in 1993 to two lanes and, therefore, is likely nonsupporting of the entire resources' eligibility for listing in the NRHP. Although SH82 and CR100 are of historic age, because CR100 was unnamed and SH82 is likely not eligible, these resources should

not pose a constraint on design and impacts are unlikely to result in adverse effects. Similarly, CDOT may require documentation of the Catherine Store, but right-of-way or easement acquisitions are unlikely to result in adverse effects since the building has been heavily remodeled. ERO cannot evaluate the significance of the 1972 residential building without field documentation. Although GoogleEarth Streetview suggests the building is unlikely to be significant, but ERO recommends evaluating the building to determine if adverse effects are likely if right-of-way or easements are necessary for the parcel. The segment of the Patterson Ditch in the site has not been evaluated but 5EA2753.1 has been recorded and recommended as needs data for NRHP eligibility and impacts to the resource should be avoided.

## Garfield County Site 2

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Garfield County Site 2 (Figure 2).

The site is along CR100. CR100 first appears on 1936 highway maps as an unnamed road (Colorado State Highway Department 1936a). The 1960 aerial also shows an unimproved road that runs parallel to CR100 to the south (Nationwide Environmental Title Research 2022). The first buildings in the area are seen on 1960 aerial images depicting a small subdivision northeast of the site. One small residential building, built in 1960, is within the 150-foot site buffer (Garfield County Assessor's Office 2022).

**Management Recommendations:** Historical maps and aerial images indicate that CR100 and a residential building have been present in the site for at least 50 years. Although CR100 is of historic age, because it was an unnamed, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. ERO cannot evaluate the significance of the 1960 residential building without field documentation. Review of GoogleEarth Streetview suggests the building is unlikely to be significant. However, if right-of-way or easements are necessary for the building's parcel, ERO recommends evaluating the building to determine if adverse effects are likely.

## Garfield County Site 3

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Garfield County Site 3 (Figure 2).

The site is along CR100. CR100 first appears on 1936 highway maps as an unnamed road (Colorado State Highway Department 1936a). Two unimproved dirt roads are shown on 1960 aerials heading to the north. In 1983, these roads are widened and an additional dirt road heading to the east is visible in 1993 (Nationwide Environmental Title Research 2022).

**Management Recommendations:** Historical maps indicate that CR100 has been present since 1936. Although CR100 is of historic age, because it was originally an unnamed road, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. The 1960 roads are unnamed and unimproved and typically do not require documentation as cultural resources.

## Garfield County Site 4

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Garfield County Site 4 (Figure 2).

The site is along CR100. CR100 first appears on 1936 highway maps as an unnamed road (Colorado State Highway Department 1936a). Two unimproved dirt roads branching off CR100 to the northwest and the southeast are shown on 1960 aerials. By 1983, several more dirt roads and at least one residential building is shown in the northern half of the site (Nationwide Environmental Title Research 2022). Maps depict two residential buildings north and east of CR100 in 1983. These buildings do not currently meet the 50-year age criterion established by the NPS or the 45-year age criterion often applied by CDOT (Little et al. 2000; U.S. Geological Survey 1983c).

**Management Recommendations:** Historical maps indicate that CR100 has been present since 1936. Although CR100 is of historic age, because it was an unnamed road, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. The 1960 aerial roads are unnamed and unimproved and typically do not require documentation as cultural resources.

## Garfield County Site 5

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Garfield County Site 5 (Figure 2).

The site is along CR100. CR100 first appears on 1936 highway maps as an unnamed road (Colorado State Highway Department 1936a). An unimproved dirt road is mapped in 1961 branching off CR100, heading northeast from the site (U.S. Geological Survey 1961c). This road is also confirmed in the 1960 aerial imagery (Nationwide Environmental Title Research 2022).

**Management Recommendations:** Historical maps indicate that CR100 has been present since 1936. Although CR100 is of historic age, because it was originally an unnamed road, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. The 1960 aerial road is unnamed and unimproved and typically does not require documentation as cultural resources.

## Garfield County Site 6

The file search identified five previous cultural resource surveys that intersect Garfield County Site 6 (Figure 3; Table 2). Previous surveys cover about 20 percent of the site. The surveys consist of linear surveys of roads and vegetation management polygons that abut the site and were completed by the Bureau of Land Management (BLM), Flattops Archaeological Consultants, and JG Management Systems Inc (JGMS). All surveys were completed from 1983 to 2011.

**Table 2. Previous cultural inventories that intersect Garfield County Site 6.**

State Project No.	Report Title (Date)	Institution
GF.LM.R519	<i>Class III Cultural Resource Inventory of the Panorama Fuels Reduction Project Area, Garfield County, Colorado</i> (2011)	JGMS, Inc. for the BLM, Colorado River Valley Field Office (CRVFO)
MC.LM.R131	<i>Public Service Company of Colorado Hopkins-Basalt 115 kv Transmission Line, Nineteen Proposed Addition or Replacement Structure Locations, Garfield and Eagle Counties, Colorado: A Class III Cultural Resources Inventory</i> (1997)	Powers Elevation Co Inc. for BLM
GF.LM.NR272	<i>A Class III Cultural Resource Inventory of the 200 Feet Access Road Wilde's Property in Garfield County, Colorado</i> (1990)	BLM
GF.LM.NR507	<i>McNulty Access Road</i> (1983)	BLM
GF.LM.NR951	<i>McNulty Trespass Fence, a Class III Cultural Resource Inventory in Garfield County, Colorado</i> (2011)	Flattops Archaeological Consultants for BLM CRVFO

The OAH records indicate two previously documented linear cultural resources are in the site (Figure 3; Table 3). The linear resources include Hopkins-Basalt Section 15kv Transmission Line (5GF2456.1) and a segment of Needham Ditch (5GF4623.2). Both segments were recommended supporting of the overall eligibility of the linear resource.

**Table 3. Previously recorded cultural resources within or intersecting Garfield County Site 6.**

Smithsonian Site No.	Associated Report Nos.	Resource Name / Type	NRHP Eligibility Status (Date)
5GF.2456.1	MC.LM.R131, GF.LM.519	Hopkins-Basalt Section 15kv Transmission Line	Eligible, supporting (2012)
5GF.4623.2	GF.LM.R519	Needham Ditch – Segment	Eligible, supporting (2012)

The site is near the intersection of CR100 and Panorama Drive/CR170. CR100 first appears on the 1888 GLO map as a trail paralleling an unnamed ditch (U.S. Surveyor General's Office 1888). In 1936, CR100 is mapped as an unnamed road (Colorado State Highway Department 1936a). Topographic maps from 1960 depict CR170 as an unimproved road and CR100 as a light-duty road (U.S. Geological Survey 1961c). Aerial images from 1960 depict several dirt roads branching off CR100 heading northwest and CR170 to the northeast. In 1983, an additional dirt road is visible heading south to two residential buildings that are in the site; the road and buildings are also mapped in 1983 (Nationwide Environmental Title Research 2022; U.S. Geological Survey 1983c). A northeast/southwest aligned transmission line is mapped in 1961 south of the site (U.S. Geological Survey 1983c).

Sheetwash, alluvium, and colluvium deposits ranging from the Holocene to late Pleistocene in age are across the site (Kirkham and Widmann 2008). The presence of Holocene-aged deposits and proximity to Cattle Creek suggests the potential for undocumented Native American resources. However, disturbances to the site began as early as 1888 in association with CR100 and likely has affected the preservation of any buried resources.

**Management Recommendations:** Historical maps and aerial images indicate that CR100 has been present since 1888. However, because CR100 was originally an unnamed road, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. CR170 and the 1960

roads are unnamed and/or unimproved and typically do not require documentation as cultural resources. Two previously recorded linear resources, Hopkins-Basalt Section 15kv Transmission Line (5GF2456.1) and a segment of Needham Ditch (5GF4623.2) are both recommended as supporting of the overall eligibility of the linear resources. Impacts to intact portions of both resources should be avoided.

## Garfield County Site 7

The file search identified one previous cultural resource survey that intersects Garfield County Site 7 (Figure 3). The BLM conducted the survey, *Cultural Resources Report for Future Sub-Division Access Road* (GF.LM.R122), at a Class III level in 1979. The survey covered approximately 5 percent of the southern extent of the site. The file search results indicate no previously documented cultural resources intersect the site.

The site is near the intersection of CR100 and CR113. CR100 first appears on the 1888 GLO map as a trail paralleling an unnamed ditch (U.S. Surveyor General's Office 1888). In 1936, CR100 is mapped as an unnamed road and CR113 is mapped as State Highway 107, paralleling Cattle Creek (Colorado State Highway Department 1936a). Aerial images from 1960 depict CR100 abutting a dirt road (CR113) (Nationwide Environmental Title Research 2022). Subsequently, in 1983, it is mapped as a light-duty road and is labeled as CR113 in 2010 (U.S. Geological Survey 1983c, 2010). The 1888 ditch is visible on aerial imagery from 2021 but is not within the 150-foot site buffer (Google, Inc. 2022).

**Management Recommendations:** Historical maps indicate that CR100 has been present since 1888 and CR113 since 1963. CDOT may require documentation of CR100 because it is historical, but because it was originally unnamed and no longer carries State Highway 107, the road should not pose a constraint on design and impacts are unlikely to result in adverse effects.

## Garfield County Site 8

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Garfield County Site 8 (Figure 4).

The site is along CR113. CR113 is mapped as early as 1908 as "Old Road" and is depicted on the earliest aerial maps from 1960 (Nationwide Environmental Title Research 2022a; U.S. Surveyor General's Office 1908). In 1936, CR113 is mapped as State Highway 107 (Colorado State Highway Department 1936a). The road is mapped in 1961 as an unimproved road and in 1983 it is mapped as a unnamed light-duty road (U.S. Geological Survey 1961a, 1983a). Aerial images from 1960 depict a dirt road at the southern extent of the site, branching off CR113 heading northeast. In 2005, at least two residential buildings were constructed west of CR113 but do not meet the 50-year age criterion established by the NPS (Little et al. 2000; Nationwide Environmental Title Research 2022).

**Management Recommendations:** Historical maps indicate that CR113 has been present since 1908. CDOT may require documentation of CR113 because it is historical, but because it was originally an unnamed road and no longer carries State Highway 107, the resource should not pose a constraint on

design and impacts are unlikely to result in adverse effects. The 1960 aerial road is unnamed and unimproved and typically does not require documentation as cultural resources.

### **Eagle County Site 1**

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Eagle County Site 1 (Figure 4).

The site is along CR10A. CR10A first appears on the 1908 GLO map as “Old Road” and is depicted on the earliest aerial images from 1951 (Nationwide Environmental Title Research 2022a; U.S. Surveyor General’s Office 1908). The only building in the site is south of CR10A, was constructed in 2005, and does not meet the 50-year age criterion established by the National Park Service (NPS) (Little et al. 2000; Nationwide Environmental Title Research 2022).

**Management Recommendations:** Historical maps indicate that CR10A has been present since 1908. Although CR10A is of historic age, because it was originally an unnamed road, it may not require documentation by CDOT and should not pose a constraint on design. Impacts are unlikely to result in adverse effects.

### **Eagle County Site 2**

The file search identified one previous cultural resource survey that intersects Eagle County Site 2 (Figure 4 and Figure 5). Grand River Institute conducted the survey, *Cultural Resources Inventory Wolcott Eagle Basalt 230kv Transmission Line for Colorado-Ute Electric Association (EA.LM.R124)*, at a Class III level in 1981. The survey covered approximately less than 1 percent of the southern extent of the site. The file search results indicate no previously documented cultural resources intersect the site.

The site is along CR10A. CR10A is first mapped in the general location of a 1908 unnamed trail. This trail parallels and eventually joins “Wagon Road Cattle Creek to Gypsum” in T6S R87W S22 and follows the current route of CR10A (U.S. Surveyor General’s Office 1908). Aerial imagery from 1951 depicts a trail between East Coulter Creek and CR10A. This is likely the remnants of a segment of the 1908 trail that did not converge with the wagon road (Nationwide Environmental Title Research 2022). The trail is still visible on modern aerial images (Google, Inc. 2022).

**Management Recommendations:** Historical maps indicate that CR10A and a trail have been present since 1908. These resources are both of historic age and CDOT may require their documentation in the field. The resources should not pose a constraint on design because impacts are unlikely to result in adverse effects.

### **Eagle County Site 3**

The file search identified one previous cultural resource survey that intersects Eagle County Site 3 (Figure 5). HDR Environmental, Operations and Construction Inc. conducted the survey, *A Class III Cultural Resource Inventory of the Public Service Company of Colorado Transmission Line 5207 Hopkins*

to Hagerman Project, Garfield, Eagle, and Pitkin Counties, Colorado (MC.E.R107), at a Class III level in 2012. The survey covered approximately less than 1 percent of the southern extent of the site. The file search results indicate no previously documented cultural resources intersect the site.

The site is along CR10A. CR10A is first mapped in 1885 as “Road” and in 1908 as “Wagon Road Cattle Creek to Gypsum.” An unnamed trail is also mapped paralleling the wagon road (CR10A) (U.S. Surveyor General’s Office 1885, 1908). In 1936, CR10A is mapped and labeled as State Highway 107 and by 1961 is mapped as an unnamed light-duty road (Colorado State Highway Department 1936b; U.S. Geological Survey 1961b). Southwest of the site, aerial images from 1951 depict several dirt roads and trails branching off CR10A as well as a dam and reservoir associated with the lower Von Springs Reservoir (Nationwide Environmental Title Research 2022; U.S. Geological Survey 1961b). The 1983 topographic maps depict two perpendicular transmission lines in the site (U.S. Geological Survey 1983b).

**Management Recommendations:** Historical maps and aerial images indicate that CR10A has been present since 1885 and the lower Von Springs Reservoir was constructed by 1951. CDOT may require documentation of both resources, however, because CR10A was originally an unnamed road and no longer carries State Highway 107 and the reservoir does not intersect the road, these resources should not pose a constraint on design and impacts are unlikely to result in adverse effects.

#### **Eagle County Site 4**

The file search results indicate no previous cultural resource surveys or previously documented cultural resources intersect Eagle County Site 4 (Figure 5).

The site is along CR10A. CR10A is first mapped in 1885 as “Road” and in 1908 as “Wagon Road Cattle Creek to Gypsum” (U.S. Surveyor General’s Office 1885, 1908). In 1936, CR10A is mapped as State Highway 107 and by 1961 is mapped as an unnamed light-duty road (Colorado State Highway Department 1936b; U.S. Geological Survey 1961b). Aerial images from 1951 depict several dirt roads and trails branching off CR10A to the north (Nationwide Environmental Title Research 2022). One unnamed road heading northeast, paralleling East Coulter Creek, from CR10A is mapped as an unimproved road in 1961 (U.S. Geological Survey 1961b).

**Management Recommendations:** Historical maps indicate that CR10A has been present since 1885. CDOT may require documentation of the road but, because it was originally an unnamed road and no longer carries State Highway 107, the resource should not pose a constraint on design and impacts are unlikely to result in adverse effects. The 1951 roads/trails branching off CR10A are unnamed and unimproved and typically do not require documentation as cultural resources.

#### **Eagle County Site 5**

The file search identified one previous cultural resource survey that intersects Eagle County Site 5 (Figure 6). Grand River Institute conducted the survey, *Class III Cultural Resources Inventory of 1764 Acres and Site Grazing Evaluations for the Bureau of Land Management, Glenwood Springs, Resource Area* (MC.LM.R223), at a Class III level in 2001. The survey covered approximately 2 percent of the



southern extent of the site. The file search results indicate no previously documented cultural resources intersect the site.

The site is near the intersection of CR10A and Road 8350. These roads are first mapped in 1936; CR10A is mapped as State Highway 107 and Road 8350 is mapped as an unnamed road (Colorado State Highway Department 1936b; U.S. Geological Survey 1961b). In 1961, CR10 is mapped as a light-duty road and Road 8350 as a unimproved road (U.S. Geological Survey 1961b). Both roads are depicted on the earliest aerial map from 1951 (Nationwide Environmental Title Research 2022).

Alluvium and colluvium deposits ranging from the Holocene are across the site (Streufert et al. 1997). The presence of Holocene-aged deposits and proximity to Cottonwood Creek suggests the potential for undocumented Native American resources. However, disturbances to the site in association with the construction of CR10A and Road 8350 has likely affected the preservation of any resources and the potential for buried sites.

**Management Recommendations:** Historical maps indicate that CR10A and Road 8350 have been present since 1936. CDOT will likely require documentation of CR10A, but because the road is no longer a state highway, the road is unlikely to be significant. Impacts to CR10A should not pose a constraint on design and impacts are unlikely to result in adverse effects. Similarly, Road 8350, although historical, was originally unnamed and should not pose a constraint on design.

## Eagle County Site 6

The file search identified one previous cultural resource survey that intersects Eagle County Site 6 (Figure 6). The United States Forest Service, White River National Forest conducted the survey, *A Cultural Resource Inventory of the Old Man Gulch Prescribed Burn, Eagle County White River National Forest* (EA.FS.R38), at a Class III level in 2000. The survey covered approximately 40 percent of the central portion of the site. The file search results indicate no previously documented cultural resources intersect the site.

The site is along CR10A. CR10A is mapped as State Highway 107 in 1936 and by 1961 is mapped as a light-duty road and labeled CR10A (Colorado State Highway Department 1936b; U.S. Geological Survey 1961b). The road is depicted on the earliest aerial map from 1951. South of CR10A, a lightly used road/trail is visible in 1951 but was never mapped (Nationwide Environmental Title Research 2022).

**Management Recommendations:** Historical maps indicate that CR10A has been present since 1908. CDOT will likely require documentation of CR10A, but because the road is no longer a continuous state highway, the road is unlikely to be significant. Impacts to CR10A should not pose a constraint on design and impacts are unlikely to result in adverse effects. The 1951 road/trail is unnamed and unimproved and typically does not require documentation as a cultural resource.

## Summary

The project area intersects three previously documented cultural resources: Catherine Building (5GF1254), Hopkins-Basalt Section 15kv Transmission Line (5GF2456.1) and a segment of Needham Ditch (5GF4623.2) (5GF4631.1) (Table 4). Of these historic resources, two are determined eligible and one has not been assessed for listing in the NRHP. A review of historical maps and aerial images indicates five historical roads, one trail, one dam/reservoir, two residential buildings, and a ditch intersect the project area and may require resource documentation (**Error! Reference source not found.**). Several other unnamed roads are also present in the project area. Unnamed, unimproved roads typically do not require documentation as cultural resources.

**Table 4. Previously recorded cultural resources within or intersecting the project area.**

Smithsonian Site No.	Resource Name / Type	NRHP Eligibility Status (Date)
5GF1254	Catherine Building	No assessment (1975)
5GF.2456.1	Hopkins-Basalt Section 15kv Transmission Line	Eligible, supporting (2012)
5GF.4623.2	Needham Ditch – Segment	Eligible, supporting (2012)

Due to the lack of previous survey in the project area, the potential for undocumented Native American resources is unknown, but their presence is likely. The likelihood for buried archaeological resources is moderate to low because most of the sites are located in areas of Pleistocene alluvium and colluvium. Pleistocene deposits typically predate the generally accepted range for human occupation in North America.

**Table 5. Resources that intersect the project area and ERO recommendations.**

Site	Resource Name / Type that Intersect the Site	Recommendation
Garfield County Site 1	Patterson Ditch (5EA2753) 1972 residential building SH82-Segment and CR100 Catherine Building (5GF1254)	Evaluate or avoid 5EA2753. Evaluate significance of the 1972 residential building, but adverse effects are unlikely. Adverse effects are unlikely to SH82, CR100, and the Catherine Building.
Garfield County Site 2	CR100 1960 residential building	Evaluate significance of the 1960 residential building but adverse effects are unlikely
Garfield County Site 3	CR100	Adverse effects unlikely
Garfield County Site 4	CR100	Adverse effects unlikely
Garfield County Site 5	CR100	Adverse effects unlikely
Garfield County Site 6	Hopkins-Basalt Section 15kv Transmission Line (5GF2456.1) Needham Ditch (5GF.4623.2) CR100 CR170	Avoid 5GF2456.1. Evaluate or avoid 5GF4623.2. Impacts to CR100 and 170 are unlikely to cause adverse effects.
Garfield County Site 7	CR100 and CR113	Adverse effects unlikely
Garfield County Site 8	CR113	Adverse effects unlikely
Eagle County Site 1	County Road (CR)10A	Adverse effects unlikely
Eagle County Site 2	CR10A 1908 Trail	Adverse effects unlikely
Eagle County Site 3	Lower Von Springs Reservoir and Dam	Adverse effects unlikely
Eagle County Site 4	CR10A	Adverse effects unlikely

Site	Resource Name / Type that Intersect the Site	Recommendation
Eagle County Site 5	CR10A and Road 8350	Adverse effects unlikely
Eagle County Site 6	CR10A	Adverse effects unlikely

ERO recommends completing a pedestrian survey of the sites early in the design phase to identify potentially significant resources that are not present in the archival record and to evaluate the significance and integrity of the Needham Ditch (5GF.4623.2) and the Patterson Ditch (5EA2753).

ERO can assist in completing the pedestrian survey and any reports requested by DEA. Please feel free to contact ERO with any questions you may have in reference to the file and literature review results and additional work potentially needed for NHPA compliance.

### Attachments

- Figure 1. Project location (USGS 1:150,000 topographic quadrangle)
- Figure 2. Project location (USGS 1:24,000 topographic quadrangle)
- Figure 3. Project location (USGS 1:24,000 topographic quadrangle)
- Figure 4. Project location (USGS 1:24,000 topographic quadrangle)
- Figure 5. Project location (USGS 1:24,000 topographic quadrangle)
- Figure 6. Project location (USGS 1:24,000 topographic quadrangle)

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1961a Leon, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

1961b Cottonwood Pass, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

1961c Carbondale, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

1982 Carbondale, Colorado. Topographic Map. 1:1000000. U.S. Geological Survey, Denver, Colorado.

1983a Leon, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

1983b Cottonwood Pass, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

1983c Carbondale, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

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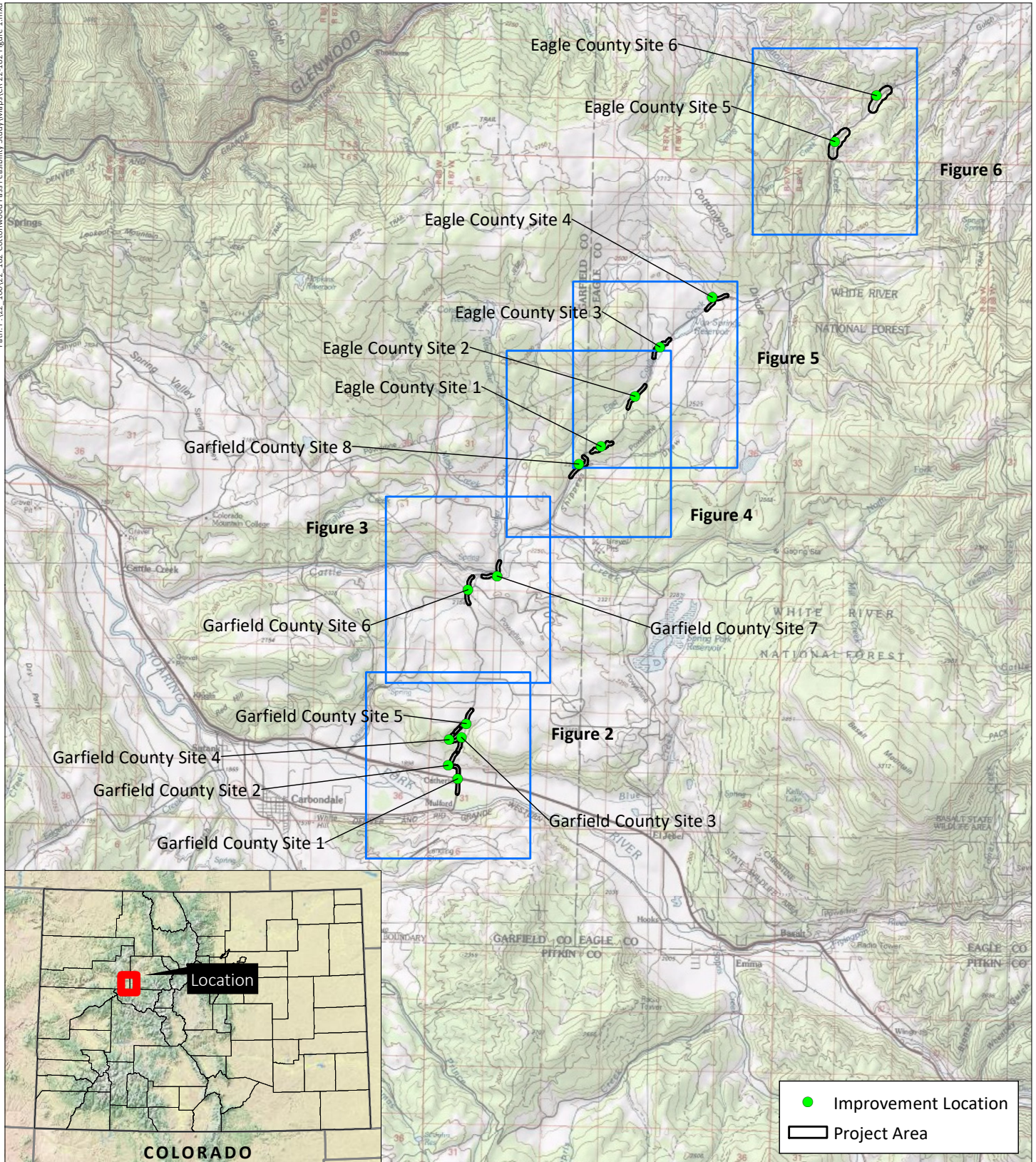
2011 Cottonwood Pass, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.

U.S. Surveyor General's Office

1885 Township 7 South, Range 87 West of the 6th Principal Meridian. 40 chains to an inch. General Land Office, Denver, Colorado.

1888 Township 7 South, Range 87 West of the 6th Principal Meridian. 40 chains to an inch. General Land Office, Denver, Colorado.

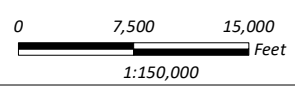
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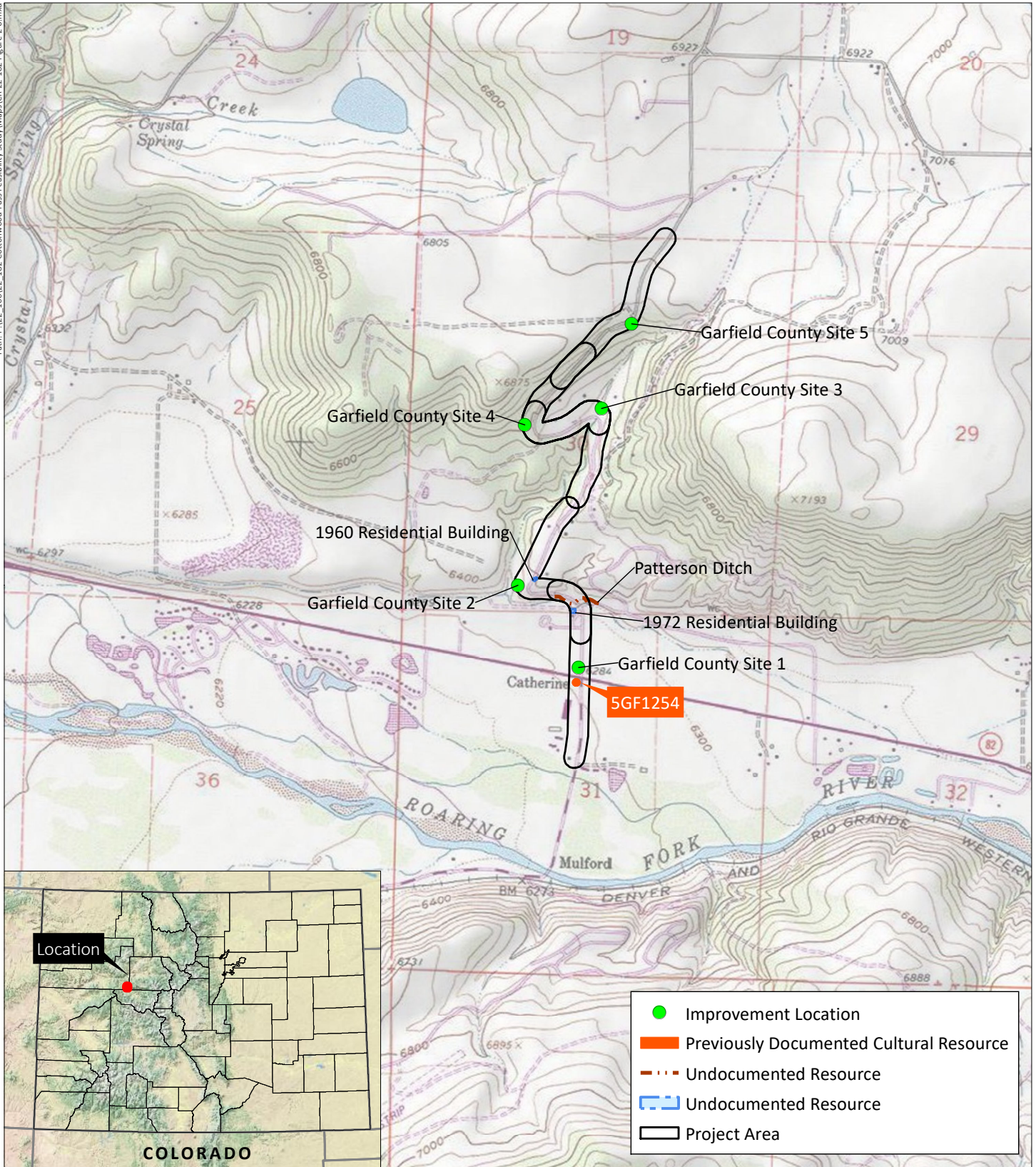


Figure 1  
 Project Location



Prepared for:  
 David Evans and Associates, Inc.  
 File: CR 22-182 Figure 1.mxd (ME)  
 September 12, 2022



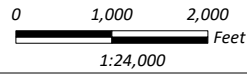


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Sections 30 and 31, T7S, R87W; 6th PM  
 USGS Carbondale, CO Quadrangle (1:24,000; 1985)  
 Garfield County, Colorado

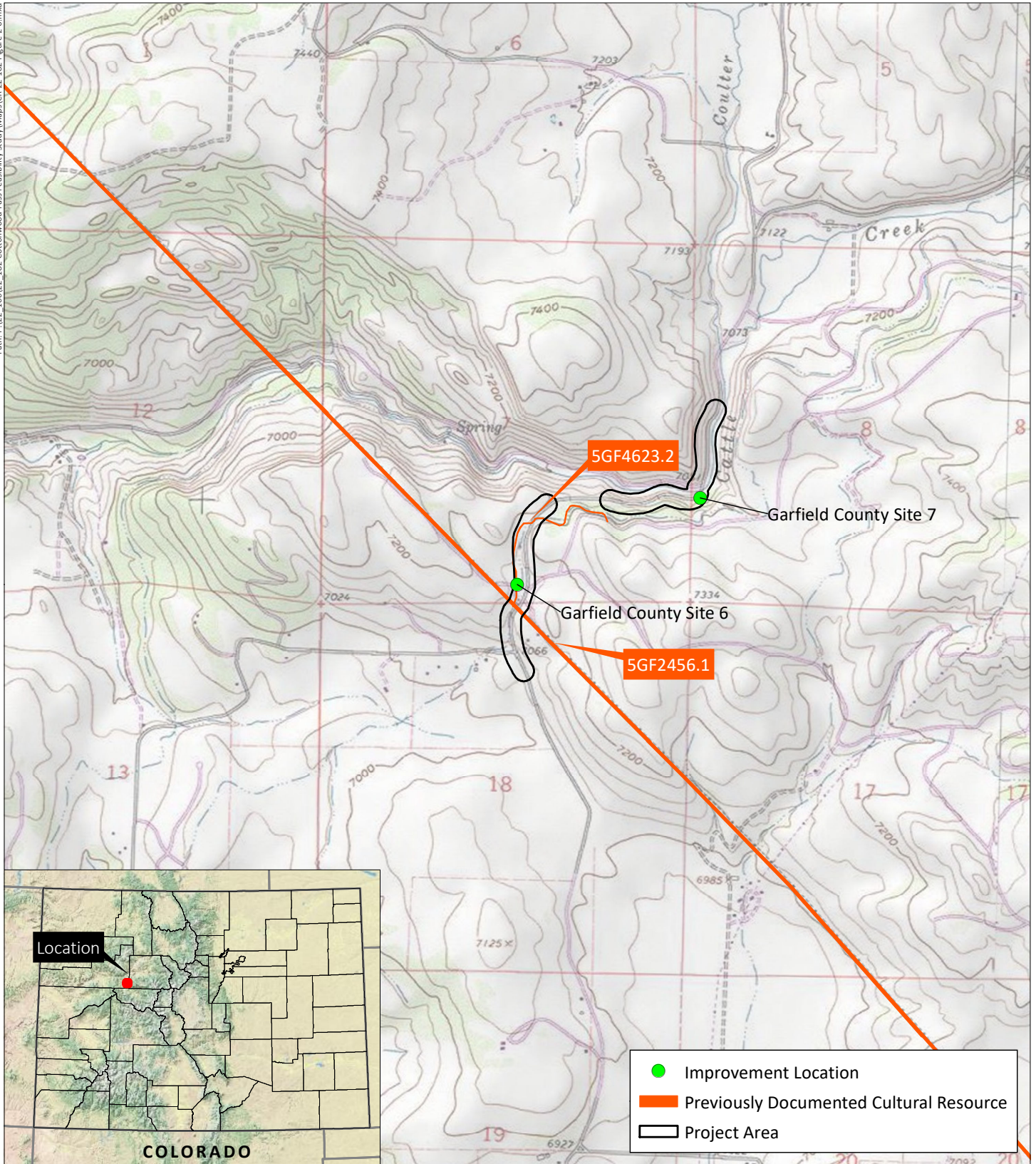


Figure 2  
 Project Location



Prepared for:  
 David Evans and Associates, Inc.  
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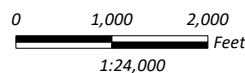


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 File and Literature Review  
 The Cottonwood Pass Feasibility Study Project  
 Garfield and Eagle Counties, Colorado

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 Garfield County, Colorado



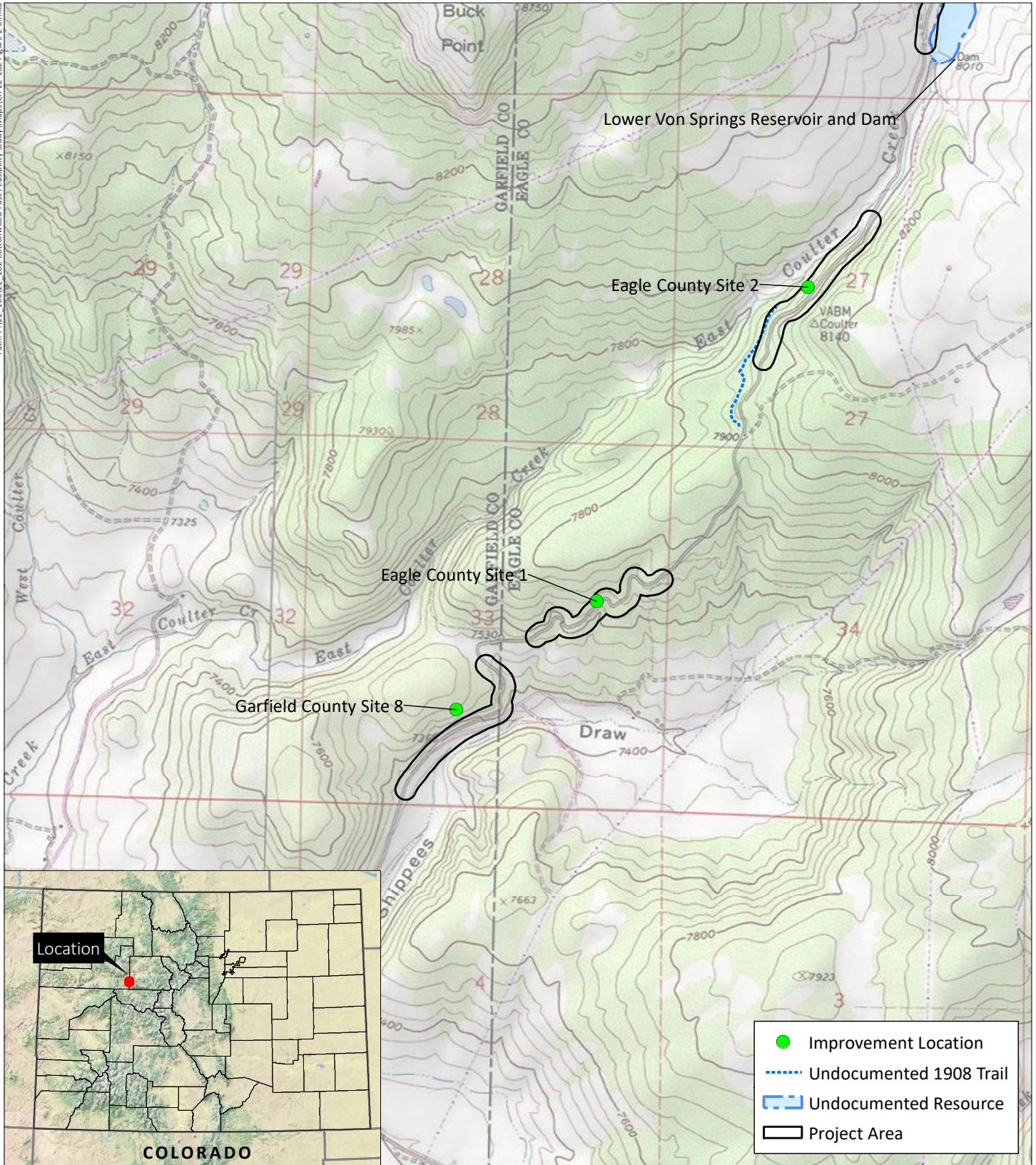
Figure 3  
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 David Evans and Associates, Inc.  
 File: CR 22-182 Figure 2-6.mxd (ME)  
 September 12, 2022





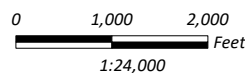


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Sections 27 and 33, T6S, R87W; 6th PM  
 USGS Leon, CO Quadrangle (1:24,000; 1985)  
 Garfield County, Colorado

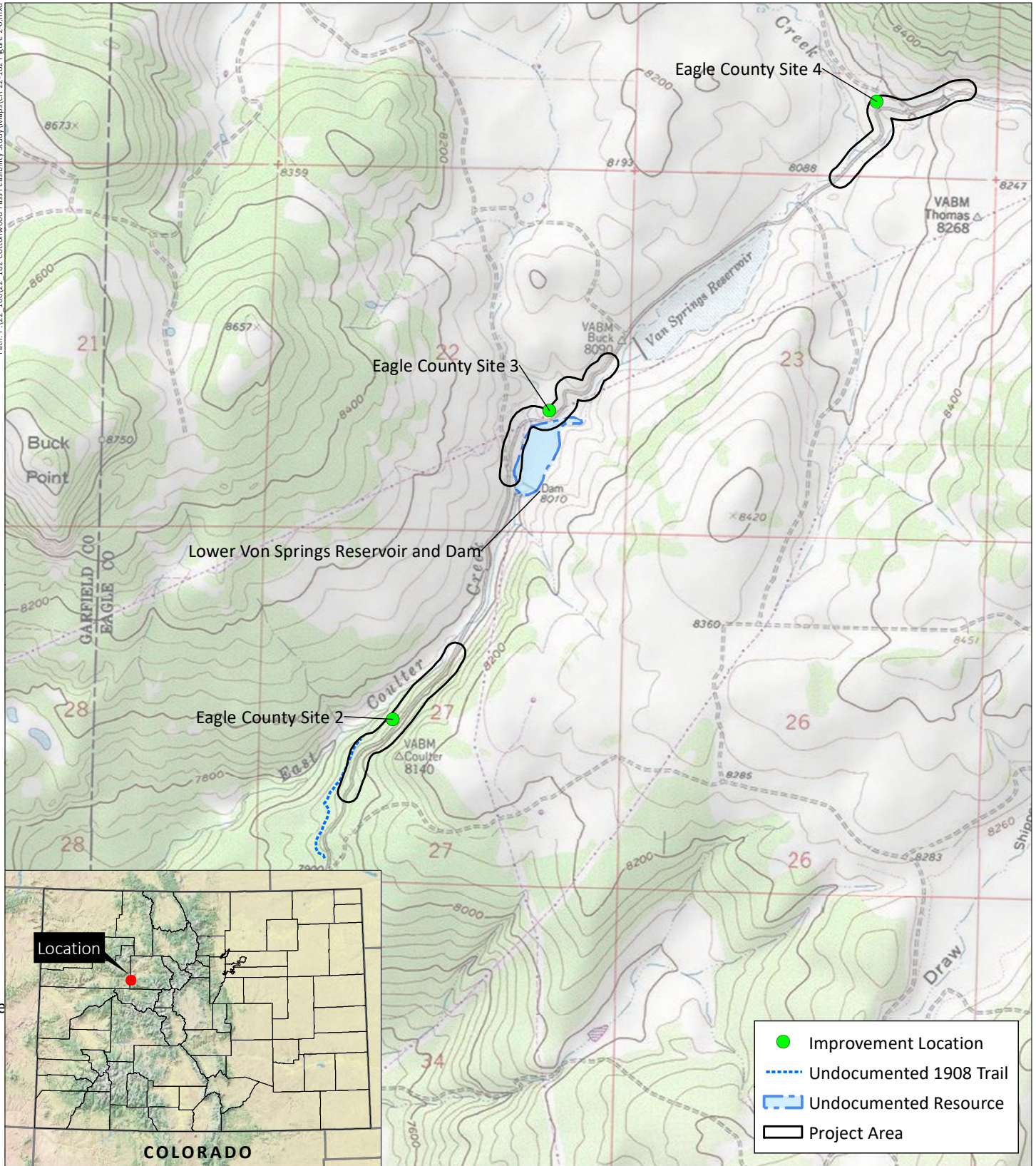


Figure 4  
 Project Location



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 David Evans and Associates, Inc.  
 File: CR 22-182 Figure 2-6.mxd (ME)  
 September 12, 2022





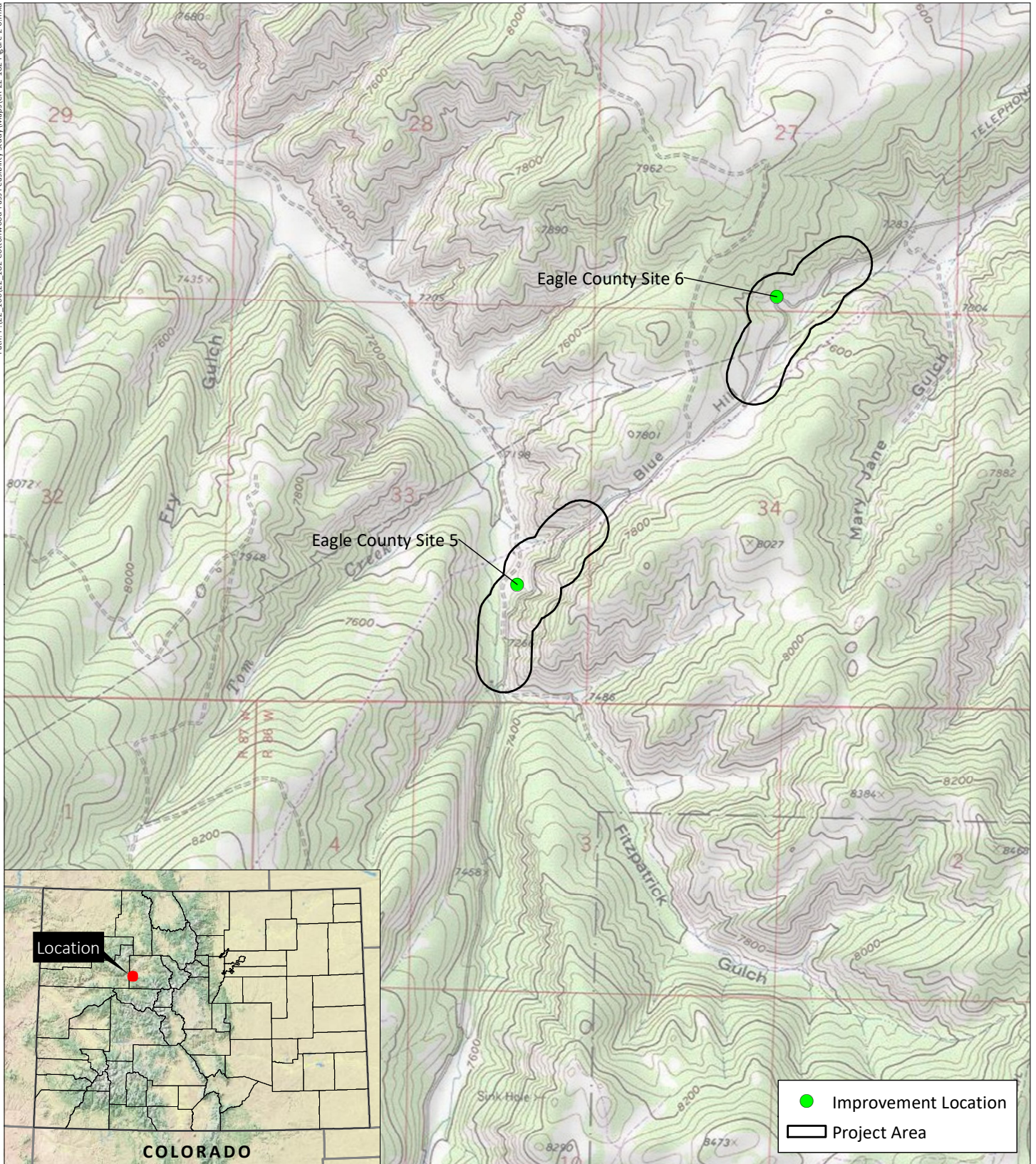
Technical Memorandum  
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 Garfield and Eagle Counties, Colorado

Sections 14, 22, and 27, T6S, R87W; 6th PM  
 USGS Cottonwood Pass, CO Quadrangle (1:24,000; 1985)  
 Garfield and Eagle Counties, Colorado

Figure 5  
 Project Location

Prepared for:  
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 File: CR 22-182 Figure 2-6.mxd (ME)  
 September 12, 2022





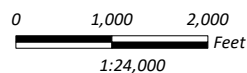
● Improvement Location  
 Project Area

Technical Memorandum  
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Sections 27 and 33, T5S, R86W; 6th PM  
 USGS Cottonwood Pass, CO Quadrangle (1:24,000; 1985)  
 Eagle County, Colorado



Figure 6  
 Project Location



Prepared for:  
 David Evans and Associates, Inc.  
 File: CR 22-182 Figure 2-6.mxd (ME)  
 September 12, 2022





# APPENDIX C

## PUBLIC ENGAGEMENT COMMENT SUMMARIES



# PUBLIC COMMENTS RECEIVED SURROUNDING ROUND 1 PUBLIC OPEN HOUSE MEETINGS

Open Houses held July 19 and 20, 2022

The first round of public engagement for the Cottonwood Pass Concept Design project consisted of two public open house meetings. The meetings were held on July 19, 2022 (in Glenwood Springs, from 5:30 – 7:30 p.m.) and July 20, 2022 (in Gypsum, from 5:00 – 7:00 p.m.) to introduce the project and gather feedback regarding the project Core Values and conditions at project sites.

A robust media campaign was used to spread the word to inform travelers in the surrounding area. Advertisements were placed in the print versions of the Glenwood Post Independent, Vail Daily, and Aspen Times that ran twice in the week prior to the public meetings. A digital campaign also ran in the online versions of those publications targeting Eagle and Garfield counties. This resulted in 60,900 total impressions and 50 new visits to the project web page.

To notify adjacent and nearby property owners and tenants, a postcard was mailed to 2,400 people. Other advertisements included a news release distributed to CDOT, Eagle County, and Garfield County’s contact lists, CDOT social media posts, and emails to the project contact list.



Approximately 60 members of the public attended the meeting in Glenwood Springs and 45 attended in Gypsum. Display boards focused on outlining the project background, concept design process, and Core Values. Maps and photos were used to illustrate the existing conditions and potential types of improvements at each of the 14 project sites.

Meeting display boards and handouts were posted to the project web page following the meetings and two additional weeks were allowed for public comment. Comments were submitted on comment forms and maps during the open houses, transcribed by project and county staff during conversations at the open houses, and submitted via email, letters, and voicemails. Following is a listing of comments submitted between July 13 – August 16, 2022.



## ROUND 1 PUBLIC MEETINGS COMMENT FORMS

The following comments were submitted via comment forms during the in-person public meetings. Comments are organized by the form questions and general subject.

### WHICH OF THE CORE VALUES ARE MOST IMPORTANT TO YOU, AND WHY? DO YOU SUGGEST ANY ADDITIONAL CORE VALUES BE CONSIDERED?

#### SAFETY

- ◆ Safety! Most Important. Straighten curves to improve sight lines.
- ◆ That being said Strive for safety on the improvements. Eliminate blind corners, improve sight lines. Widen as much as possible.
- ◆ Safety – I am a resident along Spring Valley. While I understand the preferred route to 82 to be Catherine Store, in closure events, traffic will filter onto Spring Valley and other relief valves. The intersection, independent of this, requires safety improvements during times of high traffic (rush hour). At a minimum, lines painted at intersection. Please study this challenging intersection, along with Cattle Creek for short-term safety improvements.
- ◆ Safety
- ◆ Safety is most important core value to me. Currently, this road is not easy to travel and when Glenwood Canyon is closed, it is not a good option at this time in its current condition.
- ◆ Safety – Due to those using it, and excess speeds creating a safety issue.
- ◆ Safety – For pedestrians, cyclists and animals (dogs, sheep, goats, cattle, and wildlife) as well as traffic. Wide shoulders, bike/pedestrian lanes.
- ◆ Safety of the route is most important to me. The route will be used heavily the most when Glenwood Canyon is unsafe/unusable. Accidents along the route will be difficult to manage and close off the only proximate detour route.
- ◆ Safety first
- ◆ Safety and continued accessibility of Cottonwood Pass (Year Round). Closures force those of us that live in one county and work in another to choose between working from home, not going in or possibly sleeping.
- ◆ #1 Safety – for travelers/motorist who are using this route and for first responders who may need to respond to a motor vehicles incident on the Cottonwood Pass. Additionally, Eagle County paramedics (ECPS) transports patients to Valley View Hospital in Glenwood Springs and Grand Junction hospitals. When there is a Glenwood Canyon closure ECPS cannot (currently) use Cottonwood Pass as a route, the risks to ambulances, crows, and patients is too high. We think.



- ◆ Safety – already so many drunks driving like maniacs. We picked up 153 beer cans in a 4 mile stretch. People are going way too fast and passing blind corners or going super slow and checking out the wildlife. Often times animals can't even get water. Don't pave the road – its already too fast for conditions.
- ◆ Speed control!! Curves force people to slow down.

## RESPECTING CORRIDOR CHARACTER

- ◆ Preserve the rural characters as much as possible.
- ◆ I live at CR 100 and Catherine Store Road. I moved to the area because it is quiet, rural, has ranch life and beautiful open spaces. I moved to escape urban sprawl and congested neighborhoods. I drive Cottonwood Pass regularly for the beauty, quiet and minimal traffic. I have been coming to the RFV since the early 1960's. It is critical that we preserve and protect the way of rural life that has thrived for generations in this area.
- ◆ Respecting Corridor Character
- ◆ Respecting Corridor Character – People who live along, this road deal with a great deal of unwanted traffic. Keeping it somewhat rural would be respecting their rural status.
- ◆ Respect Character of Corridor – (Rural).
- ◆ Respecting Corridor Character: We moved here because it is a rural location.
- ◆ Respect Corridor Character.

## NATURAL RESOURCE PRESERVATION

- ◆ My core value is natural resource preservation and taking measures that eliminate carbon emissions in rural areas. Convenience is NOT a core issue of mine. Don't go, boldly or any other way.
- ◆ Natural resource preservation
- ◆ Natural Resources – we are all on water wells.
- ◆ Environmental impact and keeping rural nature.

## COLLABORATIVE IMPROVEMENTS

- ◆ Collaborative improvements: As property owners it's nice to be informed of the planned changes.



### OTHERS TO BE CONSIDERED

- ◆ Minimize ROW encroachment
- ◆ Core Value = minimize negative impacts on existing property owners
- ◆ Police enforcement
- ◆ Traffic flow in our community

**WHAT IS MOST IMPORTANT TO YOU?**  
Place a sticker by the Core Value you think is most important to consider when determining improvements.

<p><b>Safety</b> Improve safety by making improvements at critical areas of geometric deficiencies</p> <p>Sticker counts: 10 blue, 10 green</p>	<p><b>Respecting Corridor Character</b> Maintain the rural feel of road, minimize impacts to private property, and mitigate visual impacts from improvements</p> <p>Sticker counts: 15 blue, 10 green</p>
<p><b>Natural Resource Preservation</b> Minimize impacts to nearby wildlife habitat and waterways</p> <p>Sticker counts: 10 blue, 5 green</p>	<p><b>Collaborative Improvements</b> Engage public and stakeholders to provide meaningful input into the feasibility study process</p> <p>Sticker counts: 5 blue, 5 green</p>
<p><b>Other:</b> Police enforcement! ● Traffic flow in our community ●</p>	





## PLEASE DESCRIBE YOUR EXPERIENCES ALONG COTTONWOOD PASS. HAVE YOU EXPERIENCED ANY ISSUES AT THE 14 SITES THIS PROJECT IS FOCUSED ON? PLEASE LIST SUGGESTIONS FOR SAFETY IMPROVEMENTS AT ANY OF THOSE LOCATIONS.

### GEOMETRIC ISSUES

- ◆ Most issues are blind corners, narrow road widths, etc. It looks like most if not all have been identified and working towards solutions.
- ◆ Catherine Store is too curvy, particularly when big trucks, cyclists on the road.

### SPEEDING / TRASH / NEED FOR ENFORCEMENT

- ◆ We live at winter closure, El Jebel side. Biggest problem is commuters driving home from Aspen to Eagle area, throwing beer cans out the window and driving like the pass is their personal racetrack. They know there is no police patrolling as Eagle County is not responsible for County roads, it is highway patrol, who I have not seen but once in the 25 years I have lived on Cottonwood. The road has to be patrolled at rush hour!!! And it will have to be Eagle County who takes responsibility.
- ◆ I drive and bike it frequently and have for years. My concern is that if you make it nice to drive (wider and straighter) people will just drive faster. They already drive too fast. The counties would need to patrol more.
- ◆ Mainly people driving way to fast. Disrespectful interstate drivers. Not respecting private properties and throwing trash.
- ◆ People drive way too fast on existing road.
- ◆ I'd like some enforcement of speed limits, Possibly radar with traffic camera issued warnings or tickets mailed.
- ◆ Have traveled many times in personal vehicles. It was a big help to have staffed locations to control and assist travelers in 2021.

### PRIORITIZE SPECIFIC LOCATIONS

- ◆ I drive Catherine store road from CR 102 to 82 quite often. Please fix GarCo #1 & #2 steps to improve safety.
- ◆ Sites 5 and 6 in Eagle County should be prioritized. They are the most dangerous sections.
- ◆ Blue Hill is the most dangerous part of the route due to the single lane, drop offs and tight curves. It will be difficult to widen.
- ◆ I can agree with all the widening/straightening projects, but I'm not sure of the feasibility of Blue Hill improvements.



## IN FAVOR OF IMPROVEMENTS

- ◆ Yes – many points have been near collisions due to narrow roads or bad visibility. This road would be a much better way to travel, if improved, during shutdowns of I-70 through Glenwood Canyon.
- ◆ Even though improvements may be controversial, I think they are necessary.
- ◆ I live in Eagle County and work in Garfield. I drive Cottonwood to avoid I-70 closures and to break up the monotony of my commute. I feel Cottonwood is a beautiful drive and a great bike ride, but many places is barely suitable for a bike, let alone a car or two cars for that matter. I would love to be able to live where I work but for so many reasons that isn't a reality right now. I drove Cottonwood before during and after the slides. The pass is not suitable for traffic (heavy). I hope it is taken under consideration the reality that a not insignificant number of people depend on that road to make a living and to travel home. The flagging by Eagle County really helped, but that isn't sustainable. Cottonwood is the only reality of travel for locals. Turn away the tourists, deliveries and make way for the locals they respect the road.

## CONCERNS ABOUT ADDITIONAL TRAFFIC

- ◆ It cannot be under emphasized how improvements will increase traffic. I take Cottonwood Pass occasionally and only when reports of good conditions. Often I've encountered work trucks flying through.
- ◆ I drive the Pass in both directions regularly for many years. The increased volume of traffic is a growing problem. Trucks, cars, and vans drive too fast and create safety problems for those who drive safely. It is a mountain road not highway. No changes should be made to accommodate increased traffic. I-70 through Glenwood Canyon is a highway. Large amounts of time and money were spent to accommodate large transport vehicles and large volumes of traffic. Going forward any funds and planning should be spent on improving the safety of I-70 for Glenwood Canyon – Cottonwood Pass should be left as is.

## PLEASE PROVIDE GENERAL SUGGESTIONS AND COMMENTS REGARDING THIS PROJECT.

### SUGGESTED SAFETY IMPROVEMENTS

- ◆ I'd like more info on signage and mechanisms to direct traffic to these planned routes. Signage needs clarification.
- ◆ With increased use of this route. I think improved cell network coverage is necessary. Both for travelers to request help, report incidents and to aid responders' communication.



- ◆ GarCo #1 — Need a turn lane on Southbound Catherine Store Road at Hwy 82. GarCo #2 — Straighten the hair pin corner at the “Junk Yard”. DO GarCo steps 1 & 2 first! Thank you for this presentation.
- ◆ Make a turn lane at the HWY 82/Catherine store intersection.
- ◆ Lower speed limit on Hwy 82 and Cottonwood Pass. Maybe add stop lights so people can’t build up speed. Reducing speeds is a conservation measure. It worked in the 70s. There is a sign on Cottonwood Pass that points to Aspen and Carbondale. Don’t add wayfinding signs to help non-locals. Pointers encourage overcapacity.
- ◆ Speed control is vital on not only this chosen route of Garfield CR 100 but on CR 113 because people know the shortest distance to I-70.
- ◆ The portions of the road in Eagle and Garfield County which have only one option are priority.
- ◆ We need more police presence on a daily basis. Daily commuter are drinking and driving and speeding. Write tickets – take these idiots to jail.
- ◆ Speed bumps at mile marker 13 (from Gypsum). We have residents on both sides of the road (Cottonwood Pass) and we move livestock across Cottonwood Pass Road. We also have a 12 year child and dog that like to cross residences to pond.

## RESPECT CORRIDOR CHARACTER

- ◆ I seldom use it though I live on Catherine Store. I do not want to take shortcuts that degrade my neighbor’s lives. I cancel. Covid taught me how to do more with less. When I have driven it, I do so slowly, anytime. More traffic will make it more dangerous. Do not invite traffic with improvements they will never be sufficient. Look at Hwy 82, as an example.
- ◆ I’ve lived up there for 25 years. Opening the pass for all these people will do nothing to get semis over it, only allows people to pass through. Make it a toll road and force people to pay to use it then you can maintain its natural beauty and keep the dirt road maintained. Paving the road will make it more of a death trap than it is now. Widen blue hill and a few other pinch points and leave the rest alone. Widening and straightening out curves will only make the traffic go faster. Its super dangerous and I have a 16 year old driving daily.
- ◆ We live around the corner from Cottonwood Pass, and we know how greatly this will affect ours (& many many others) rural aspect of our homes. The amount of workers & trucks traveling back & forth will increase so much please don’t underestimate this. The road as it is managed to get people back & forth during times of crisis. Missouri Heights is a rural community w/ranches, animals, lots of wildlife. This will not just be made more safe in times of crisis – it will become a highly trafficked commuting route. Please not ruin our rural lives.



- ◆ My biggest concern is the increase traffic demand on Valley Road and over Cottonwood Pass. Based on past experience when I-70 is closed the 18 wheelers took to Cottonwood Pass Road as a suitable detour.
- ◆ Leave the integrity of the road as is. There are a lot of people who have lived on the pass for years who don't want this forced down our throats.
- ◆ Making significant changes to this road will inevitably increase traffic.
- ◆ It is disingenuous to characterize the driving force behind the improvements to be directed at "local residents who rely on it to safely travel between Gypsum and Colorado Highway 82 ..." The I-70 Detour Act was drafted to address "alternatives, necessary to offset extended closures associated with Interstate Route 70..."

## **IN FAVOR OF SAFETY IMPROVEMENTS TO COTTONWOOD PASS**

- ◆ Please do not allow the need of the many to be drowned out by the loud objections of the few. In times of emergencies treat Cottonwood as such. Turn away tourists and short cutters and allow travel for the absolute necessary. Do not ignore this problem away. Think as though your family and job depend on this road being open.
- ◆ I have had good experiences and with a long-term outlook, support seeing improvements for the challenges of safety, inconvenience, and piece of mind than canyon closures raise. Long-term commitment means open year-round. I'd like to see a long-term safety plan in place to keep us from being cut off.
- ◆ Need a safe option to Glenwood Canyon.

## **CR 113 (CATTLE CREEK)**

- ◆ Leave lower Cattle Creek alone! Don't change a thing! Find a way to get traffic to obey posted speed limit signs!
- ◆ Traffic headed back to Glenwood community uses Cattle Creek Road. How will use of Cattle Creek be limited?
- ◆ Improvements to the Cattle Creek/Highway 82 intersection should be part of this project. It is considered the most hazardous intersection in Garfield County.

## **OTHER COMMENTS**

- ◆ Improvements and protections need to be provided for the significant bicycle traffic on Cattle Creek and County Road 100. This project is a perfect opportunity to secure some level of funding for intersection improvements.



- ◆ County Road 100 and Cattle Creek have become a major bicycle route. Are there any counts for current numbers of bicycle riders using that loop? This should be an integral component of this project.
- ◆ Traffic heading down valley (to Glenwood) County Road 100 & Highway 82 will be required to travel 7.61 miles farther than accessing the intersection at Cattle Creek & Highway 82.
- ◆ Traffic counts are needed for background traffic and traffic during closures. These counts should include directional distribution at the Cattle Creek, Crystal Springs, Catherine Store and El Jebel intersections.
- ◆ A comprehensive traffic study is needed to assess background traffic, anticipated future traffic, I-70 bypass traffic and bicycle traffic using County Road 100, Cattle Creek, Crystal Springs Road and the access to Highway 82/El Jebel intersection. The traffic study should include AM/PM peaks, average daily traffic, bicycle traffic, and direction of traffic at each of the intersections at Highway 82. Absent this information, one is only guessing about the potential impacts.
- ◆ Has CPW's input been solicited? Cottonwood Pass goes through significant wildlife areas important to deer, elk, moose, and other large and small animals.

## HOW DID YOU HEAR ABOUT THIS MEETING?

- ◆ Postcard mailer: 4
- ◆ Email from project team: 1
- ◆ Social media: 2
- ◆ Agency's email blast/newsletter: 1
- ◆ News story/notice: 2
- ◆ Word of mouth/forwarded email: 3

## ROUND 1 PUBLIC MEETINGS COMMENT MAP

An aerial map of the project area for Eagle County and Garfield County was available on tables at the public meetings for attendees to write comments onto. Images of the comment maps are shown in **Appendix A**.

## ROUND 1 PUBLIC MEETINGS STAFF CLIPBOARD COMMENTS

### IN FAVOR OF SAFETY IMPROVEMENTS TO COTTONWOOD PASS

- ◆ Generally in favor of improvements. Wanted to know what we were going to do at Blue Hill since it would impact his land.



- ◆ Blue Hill Site 5 needs complete realignment to the east. Follow existing dirt roads to Powerline Mesa.
- ◆ They see a lot of accidents at the bottom of the hill with the sharp corners. They felt this should be considered as a place to fix as well.
- ◆ She uses Cottonwood to commute sometimes and often uses it to get to church. Want it to be more safe and reliable.
- ◆ EMS Ambulance responds to issues on Cottonwood Pass when they are called in (usually a handful a year). It is nice to have that access to Glenwood when the canyon is closed. When the canyon is open they often do transfers or take patients to the Glenwood hospital, however when the canyon is closed they can't since Cottonwood Pass isn't reliable for ambulance use. They don't do transfers in that direction during closures.
- ◆ Prefer a more rural road but see the need for improvements.
- ◆ I spoke with someone who commutes between Gypsum and Glenwood. He wants a reliable road.
- ◆ The first major curve as you head down CR 100 is very dangerous...tractor trailer just overturned there as they were coming down at too high of a speed and could not negotiate the curve.
- ◆ Lots of bicycle traffic to contend with on CR 100. Lots of wildlife (turkeys and fox) on lower CR 100. How about putting in rumble strips along the roadside?

## CELL SERVICE

- ◆ There is no cell service or toilets on Cottonwood.
- ◆ There was varied reports on where there was cell service. It sounds like MM 6-11 there is no service, but good radio coverage for emergency service providers.
- ◆ He understands the safety challenges and need for improvements. He is a commuter who lives in Gypsum and works in Carbondale. He said there is cell service at the top of Blue Hill then not again until the tight switchbacks on Garfield County side but it's not great until Catherine Store Road.
- ◆ There was a group discussion about consideration of adding a 'no cell service ahead' sign which may make some people not use the road.

## SPEEDING & ENFORCEMENT

- ◆ Enforce the speed limit.
- ◆ Need to enforce the speed limits.
- ◆ The road is not unsafe. People are just driving too fast for conditions.



- ◆ There is a need for more speed limit signs. People really speed on that road.
- ◆ Resident near Eagle County Site 3 concerned with people going way too fast. Look at speed signs and ticketing.
- ◆ There is a lot of speeding on Cottonwood Pass road and these county roads. Add speed bumps to the road to help slow people down.
- ◆ People drive really fast on the road. It makes it unsafe with all the ranches, dog walking, elk, etc. Improvements are making it easier to go faster.
- ◆ There needs to be more police enforcement on Cottonwood for speeds.
- ◆ There is also a lot of trash up there from people littering. The public access in this area is really beating up the land since people aren't staying on the signed roads.
- ◆ People are allowed to drive side by sides from town to Cottonwood Pass. This can be really annoying and loud since everyone seems to want to speed out of town. People drive the roadway too fast between the side by sides and vehicles going up to the pass.
- ◆ There is not only vehicle traffic but ATV traffic on Cottonwood.
- ◆ How about restricting the height of certain vehicles and not just the length to prevent tipping over through the curves.
- ◆ Need more signage about speed and curves.
- ◆ The curves are 25 mph already and that they don't need additional work. People just need to slow down.

## CONCERNS ABOUT ADDITIONAL TRAFFIC

- ◆ Concerned about the Lauren Boebert Bill and that this CDOT exercise is really the “feasibility exercise” that the Congresswoman will point to make major improvements to Cottonwood Pass as proposed in her bill - as a real year-round / improved alternative to I-70.
- ◆ New growth is further exacerbating the traffic challenges.
- ◆ Locals (Garfield, Eagle and Pitkin County residents) know how to navigate the area, so this is really just for I-70 traffic only.
- ◆ Doesn't agree with Catherine Store route.
- ◆ She is very concerned about the traffic noise she hears when increased traffic uses Cottonwood.



- ◆ Catherine Store is a pretty big biking corridor. People often bike up one road and down another. There isn't much of a shoulder and it can be hard with traffic driving quickly. (This was echoed by several of the neighbors)
- ◆ Concerned about fire danger from cigarette butts or just people being up there. It increases the fire risk to homes.
- ◆ He lives in Missouri Heights. Moved from Chicago to get away from people. Generally against any improvements to Cottonwood Pass.
- ◆ There was a concern that once we start improving Cottonwood, we're going to want to continue improving Cottonwood leading to more traffic and change of character.
- ◆ They felt there was too much traffic during closures in the canyon. It is also really loud when the canyon is closed. Wanted to pass along a kudos to CDOT for doing a really good job in the winter and with the canyon closures.
- ◆ She does not want a mini-I-70. She wants to keep I-70 traffic off Cottonwood.
- ◆ Concerned about seeing Valley Road and Cottonwood Pass Road turn into I-70. Most concerned about trucks. Bad traffic already on Valley Road near schools.
- ◆ She wants to maintain a rural road and does not want more traffic. She wants lower speeds. An Amazon truck tipped over in her driveway such that her driveway was blocked and she couldn't leave her house. She thinks some safety improvements are needed but doesn't want more trucks or more cars.

## CO 82 & INTERSECTIONS

- ◆ Concerned with other intersection at 82.
- ◆ Need to improve the intersection of SH 82 and CR 113...its very unsafe. CR 110 adds significant confusion to the intersection of CR 113 and SH 82. Tired of seeing remnants of human waste on the side of the road...need a bathroom facility. That intersection needs better painting on the road to tell drivers where to go.
- ◆ Concern with Cattle Creek and 82. Why are we not looking at other intersections? Want improvements and Sheriff control.
- ◆ The intersection with Highway 82 is unsafe and she has seen a lot of accidents there. She mentioned a lot of T-bone type accidents.
- ◆ If our goal is to use Catherine Store as the main route to Cottonwood, we need to move the sign on SH 82 directing traffic to Cottonwood Pass using Cattle Creek.





- ◆ Any improvements on Cottonwood Pass will increase traffic on the Pass. This will make traffic on SH 82 worse. The intersections on SH 82 are already unsafe. This will get worse by the large development planned along SH 82. Most concerned about traffic driving down Fender instead of going to 82.
- ◆ CDOT's focus should be on SH 82 and not Cottonwood. There is severe congestion on SH 82.

## CR 113 (CATTLE CREEK)

- ◆ Don't allow I-70 alternative traffic to use CR 113. (Cattle Creek)
- ◆ Lots of conflicts with bicycles in CR 113. CR 113 needs double yellow line painting. CR 113 intersection with SH is horrible and dangerous.
- ◆ Heard from a group of people that we need to control the speed on Cattle Creek. In the narrow section we should consider a centerline. There was a request for more speed enforcement, potentially with a video camera enforcement with mailed warnings.
- ◆ There are a lot of bikers between El Jebel and Lower Cattle Creek to Fender.
- ◆ There is an apparent stop sign missing on 113 where it meets 100.

## OTHER AREA ROADWAYS

- ◆ Worried about traffic onto Valley Road.
- ◆ There is already severe congestion on Valley Road, especially during school drop off times. There needs to be more police enforcement.

## OTHER COMMENTS

- ◆ They sent a letter to Eagle County BoCC and Garfield Commissioner John Martin the week prior to the Open Houses. We discussed much of what was in their letters.
  - ◇ Ranch access - They have a few accesses to the ranch around Eagle County 1 and Garfield County 8 that they wanted to make sure we were aware of. They explained that they need those accesses for their ranch operations.
  - ◇ Their ranch is fed by East Coulter Creek, which flows by Eagle County 2. They are concerned about any impacts to the creek from work at Eagle County 2.
  - ◇ They were also concerned about the culvert for E. Coulter Creek that crosses under Cottonwood Pass road. They felt this should be included as an area for concern since the culvert is very close to the road and not very deep. Impacts to the creek could impact their ranch operations.



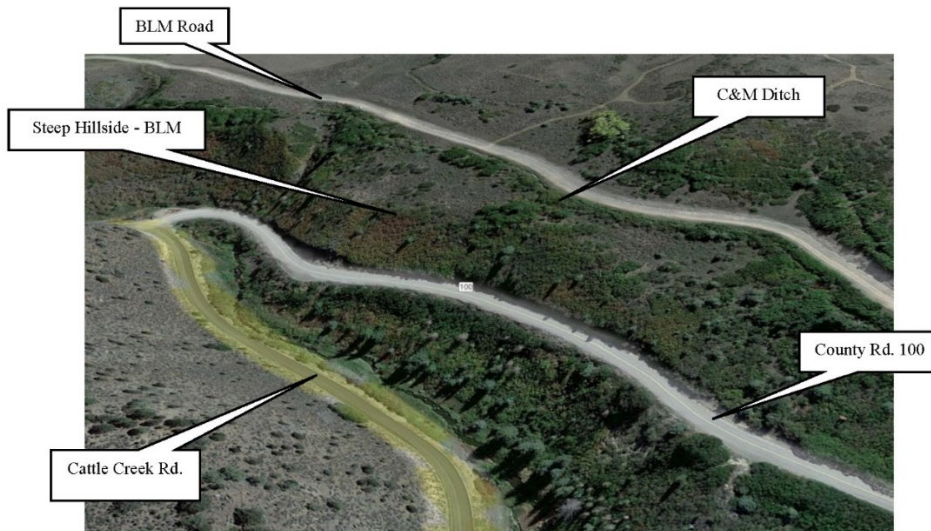
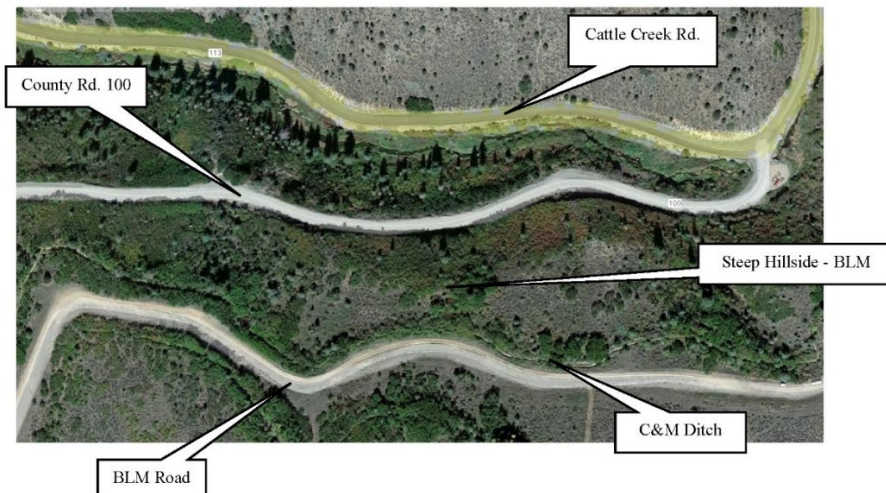
- ❖ They gave me a paper with their Core Values and Critical Success factors:
  - » Any road improvements should protect the East Coulter Creek headwaters and riparian ecosystem.
  - » Avoid negatively impacting adjacent private land.
  - » Keep access to gate and entrances on ranch from Cottonwood pass road.
  - » Protect the wildlife corridor on Cottonwood Pass.
  - » Maintain the rural character and protect and preserve ranchland on the Pass.
  - » Mitigate traffic speeds, limit truck size, control erosion, and keep winter closure of road.
- ◆ Site 3/4 is an old homestead (called it Green's Homestead). Water to house and the nearby neighbors comes from a spring box further up the road. Worried about any impacts to this since it would impact their water.
- ◆ Questions about why Catherine Store route selected - one reason from Commissioner Jankowski was that to expand Cattle Creek Road where it was narrow would require full takes of two properties. Also, more significant intersection improvements would be needed at Cattle Creek Road and SH 82 requiring even more right-of-way impacts.
- ◆ Bike and pedestrian access is a problem. The town may have a plan to add a shared use path out towards the pass.

## COMMENTS RECEIVED BEFORE AND AFTER THE PUBLIC MEETINGS VIA EMAIL, LETTERS, AND VOICEMAIL

- ❖ I'm a 35 year Garfield County resident. My first comment on the Cottonwood Pass project would be wherever it connects with Hwy 82 it should be an interstate access type situation with overpass. The traffic, especially during rush hour on Hwy 82, would cause just another big, long jam of people trying to get wherever they are going from over Cottonwood Pass. If need be, if Glenwood Canyon closed today, they should have some kind of traffic control where one lane at a time.
- ❖ My family and I have been a ranching in the Missouri Heights area for over 40 years and the family has ranched the area since the late 1800s. I am very familiar with the Cottonwood Pass Road and County Road 100 because our ranch property borders the Cottonwood Pass Road on both sides for a considerable distance and I live on County Road 100. Our ranch ditches have experienced major failures over the years as have other ditches in the area because of their age. Most of these failures started with seepage.



The C&M Ditch contours on the top of the hill along the portion of County Road 100 where the road climbs the hill and heads south from Cattle Creek (County Road 113). (See included aerial imagery) The C&M ditch is an open ditch and like most irrigation ditches, loses water through seepage. Historically, there has been significant leakage from the ditch that periodically surfaces on the hillside above this section of County Road 100. The seepage results in saturation of the subsurface soils on the steep hillside and has caused intermittent slope failure evidenced by dirt rock and debris sloughing on to County Road 100. My late husband who was an expert on the geology of the area often expressed concern that saturation of this hillside from the ditch could result in a catastrophic failure of the entire slope. A landslide of moderate or larger magnitude in this location could result in destruction of County Road 100 with the materials ending up in the bottom of the Cattle Creek drainage. Not only would such an event cause loss of the hillside soils, vegetation and the road, it would also dam Cattle Creek. In this scenario, the creek would quit flowing until enough water is backed up causing the dam to breach resulting in a significant flood event in the Cattle Creek drainage.





This issue should be considered carefully and evaluated by geologists as consideration is being given to using County Road 100 as an alternate route to/from the Eagle Valley for locals or with I-70 interstate closures.

✧ Letter to Eagle County Commissioners (cc: project team):

My family partnership owns 500 acres of ranch land in Eagle County. Our land is traversed by spring-fed East Coulter Creek for over a mile and flanked on each side of the creek by a rich riparian area with diverse natural habitats for a variety of wildlife. The creek travels another 2 ½ miles through our ranch in Garfield County along riparian areas. Cottonwood Pass Road 10 A borders our ranch about a mile and a half and three of the road curves in Area 1 of Eagle County's focus plan designated to receive changes are located along our ranch border with the road.

I am writing you because our family partnership is concerned about a lack of information available regarding how potential upgrades to Cottonwood Pass Road may affect our land and the environmental health of East Coulter Creek which provides vital irrigation water to ranch land downstream in the Coulter Creek Valley and helps supplement the flow of Cattle Creek. We are also very concerned about any potential impacts of widening the road as it passes through the riparian area in Eagle County's Area 2.

Another major concern we have is that it hasn't been easy to find information about the scope of these possible changes that could have environmental impacts on our land and our water if East Coulter Creek is not adequately protected in the location where it crosses under the Cottonwood Pass Road in a culvert pipe as well as along the road edge next to the creek near the Cottonwood Pass Road. It has not even been identified as an area of focus to protect and preserve if the road is upgraded. We are very concerned that East Coulter Creek needs to be preserved and protected.

It would be helpful to include our family partnership as a stakeholder to participate in any future discussions that Eagle County has with CDOT that addresses the above areas and issues. We believe it would be helpful for us to participate in a constructive way to find solutions to help protect those areas that could affect our ranch land and East Coulter Creek.

We hope to find win-win solutions to address any environmental concerns for our ranch that may arise from the proposed changes to the roadway. We would like to be part of the stakeholder meetings that CDOT plans. We see that the CDOT website Cottonwood Pass Concept Design (Eagle & Garfield County) is now operating.

We have two essential ranch entrances on Cottonwood Pass in Eagle County that are necessary for our ranching operation and the hillside terrain that we use for access and have done for many decades.

Thank you for your understanding and we look forward to hearing from you regarding our concerns and working with Eagle County and CDOT to find solutions as issues on the Cottonwood Pass roadway become known.



- ✧ Unless CDOT plans and is able to move mountains, I cannot imagine making the Cottonwood Pass Rd. a detour suitable for the amount and type of traffic that would occur when Glenwood Canyon is closed. The terrain and rural area covered by the Garfield County roads involved on Missouri Heights would also make this route unsuitable for the amount and type of traffic typically traveling on I-70.
- ✧ I moved to the Cottonwood Pass area in 1980, probably before some of you here were born. I would like to offer some insight into its recent history.

First, Cottonwood Pass has always been considered a dangerous road, mainly because of a steep hill where the road cuts into an unstable hillside. The road is narrow with cliffs on one side where an accident could be fatal. No amount of construction has improved this situation so far. The whole area is too unstable. Semi trucks have occasionally tried to drive the Pass causing traffic jams and accidents. To make the Pass suitable for alternative Glenwood Canyon traffic would be prohibitively expensive.

There are also winding turns on the Pass that can't be navigated at higher speeds. This part of the Pass is [more] problematic than the right hand turns on the Gypsum Creek Valley part of the road.

These issues are only part of the problem.

The lower part of the Cottonwood Pass, just out of the Gypsum Creek Valley, has become a popular de facto playground for ATVs and other off road vehicles and gun enthusiasts who can practice with their bump stock guns and other illegal automatic weapons. The noise created by these activities is more than a little disturbing for nearby residents like me. To add insult to injury these areas are also under the flight path of Eagle County Airport traffic. These planes fly over or near to the lower Eagle Valley schools. The planes drop tons of pollution, creating major health issues for a thousand plus students that attend these Gypsum located schools (subject of a separate paper enclosed with quotes from an AARP magazine).

Years ago the Town of Gypsum manager launched a major effort to convince local residents that the airport was a good idea. I was not one of his supporters in this regard. Given the air pollution and noise problems today it is clear that Gypsum has become an unhealthy place to live.

It seems to me that some of the millionaire or billionaire jet jockeys could fly commercial airlines where there is some connection between the fuel costs and benefits to jet passengers, and local citizens living under the airport traffic. But who can argue with big money?

Again, back to Cottonwood Pass Road. It makes no sense to me to reroute the Cottonwood Pass Road through the Gypsum Creek Valley only to run up against the much more severe problems that need attention further up the road.



I have heard of a suggestion for one solution; to run the Pass Road up through the Cottonwood canyon that connects to the Pass Road on the Bair Ranch west of the cliffs. This would avoid the worst parts of both the Cottonwood Pass Road and the intermittent Glenwood Canyon problems, but here again we are looking at costs that are substantial and probably would not please the Bair Ranch owners.

In sum I think the big problem has to be addressed before the details. That is the cliff area at what some call Blue Hill. So far efforts in that regard have failed. It's still very dangerous.

## COMMENTS RECEIVED VIA THE PROJECT WEB PAGE

### IN FAVOR OF SAFETY IMPROVEMENTS TO COTTONWOOD PASS / IMPROVEMENT SUGGESTIONS

- ◆ I'm happy to see CDOT moving forward on this project. The western slope needs alternative routes – I-70 is overloaded and in terrible shape. I support the need to upgrade Cottonwood Pass. I have not looked at your design effort in any depth at this time though.
- ◆ Cottonwood Pass needs to be upgraded to make it safer for travel as many need it to travel to their jobs.
- ◆ I like it.
- ◆ Bicycling is very popular in Missouri Heights. Please add marked bike lanes on roads that will be the preferred Cottonwood Pass route (CR 100 & 113). Please plan bike lanes on both sides of the route you choose to make over Cottonwood Pass through this area. Specifically Catherine Store Road (GarCo #100) and Cattle Creek Road (GarCo #113) will need to be widened for bike lanes.
- ◆ Traffic control/road signs.
- ◆ Need this to be an auxiliary route for the many I-70 Glenwood Canyon closures...would also like to see this paved, widened & open year round.
- ◆ This is a vital link between the two valleys since the I-70 corridor through Glenwood Canyon may well be unpredictable for years. Thank you for expediting the concept design.
- ◆ This is a very much needed project and very long overdue! The western slope is very dependent on the I-70 corridor which directly impacts the prices and availability of many goods and services. A viable and timely alternative route during I-70 closures is essential to supporting the Colorado western slope. This project should have the highest priority and be fully funded. The statistics documenting I-70 closures is unacceptable. Please proceed with the greatest urgency.



- ◆ First off thank you for taking the community comments. As a business owner in Eagle County and a resident of Garfield County it is imperative for us and our employees to be able to travel back and forth. So I am happy to see that this route is being looked at for local detour. One suggestion I have is, when we register our vehicles in our counties, Garfield, Eagle or Pitkin, we should receive a sticker that we place in the window to indicate that we a local traveler. To help identify us when the canyon is closed and Cottonwood Pass is the route for us to utilize. Last year when we were having to travel over the pass several times a day or even twice a day we noticed how many out of state plates there where that clogged up the tiny road. Not to mention semi traffic. It's stressful enough trying to get to the respective county without all of the extra traffic added. We're just trying to get to work or home after a long day. I realize at times family from out of state are visiting so maybe each address can be given a mirror plaque to use for out of town guests if so needed. At least until the road is ready for heavier traffic. We appreciate your time and efforts.
  
- ◆ I've been driving Cottonwood since 2000 nearly every two weeks when it is open. Our home is in Garfield County on CR115 about 4 mi from where the Cottonwood Pass road branches from Upper Cattle Creek. So it is our shortest route when traveling to the Front Range. I'm familiar with nearly every turn and circumstance that can occur. Recommendations: 1) At MM12.5 there is a blind curve that is not appreciated as single track -- but it is! I got side swiped a few years ago. The curve needs to be widened on the west (west bound) side to improve space and visibility. 2) The mile long segment MM13 to MM14 has had some posts inserted during the long period when the pass use was heavy. The reflectors have fallen off and some of the posts are down. Obviously widening this stretch would be great, but short of that, maintaining the post markers at the beginning of each year would be helpful. 3) The surface is currently better than it has ever been, thanks to ripping up, grinding, and packing some of the potholed chip seal. Lesson: if the chip seal is not filled often it is worse than gravel. If you are not planning on a proper highway level of paving that is maintained, then I'd prefer compact gravel and road base. The alligator ripples are better than the potholes! 4) The "elephant in the room" is what we call the "harry part" -- the 1/2 to 3/4 mi section after the mini-pass from Gypsum into the Cottonwood Creek Valley. The obvious preference is to widen this scary section where I've met a truck pulling a long stock trailer uphill toward me while I'm on the outside going downhill. I backed uphill nearly a 1/16 mi to a wider spot to allow them by. If it cannot be widened then the sensible and "right" thing to do is install one way traffic signals at each end. I've seen this used in the California Santa Cruze mountain roads, where part of the road has fallen. It works quite well and can be effective for a few years while more long term solutions are worked out. 5) If you want to upgrade to something like Hwy 82 over Independence Pass -- great. Then please install a round about curve at each end that can allow an 18-wheeler to curve around (left) but NOT allow the vehicle of greater length to turn right and continue on to the Cottonwood Pass road! 6) OR shell out and upgrade the road to the Hwy 6 standard over Loveland Pass -- all vehicles, and nearly all weather.
  
- ◆ Cottonwood Pass is a vital connection between the Eagle and Roaring Fork Valleys. I have traversed this route when the canyon has been closed and also when traveling between Carbondale and Gypsum / Eagle / Denver. Each of the 14 locations identifies in this study are in need of improvement. As part of the safety improvements, it should be noted this route is often used by cyclist - both road bikers and gravel riders accessing the network of roads in Missouri Heights and



beyond to Cottonwood Pass. If Catherine's Store Road is to be utilized as the preferred access point, the entire road between Sites 1, 2 & 3 should be improved to include a widened shoulder to allow for bikers to climb the road safely with traffic. I am not speaking as a road biker, but rather a driver, who has encounter numerous bikers who take up the whole lane on the road. I think it's a great activity and support the usage, but it is significant and needs to be accounted for in the improvements. If the County / State are going to make improvements to the HWY 82 & Catherine's Store Road Intersection, they should look at improving both sides of Catherine's Store Road. The Southside of the intersection (Catherine's Store Side) is in desperate need of turning lanes. It would also be helpful to consider a paved bike path that connects from the Rio Grande Trail to the signalized intersection to give drivers and road bikers accessing Missouri Heights a safer option than the existing road with no shoulder. It should be noted that an improvements to this corridor will result in more use, both by cars and bikes. Ultimately, the road over Cottonwood Pass should be designed to State Highway Standards. While the route may still be dirt as envisioned in this preliminary scope of work, it will eventually need to be paved. The design should account for future paving with wide shoulders to accommodate bikers, similar in fashion to the design of HWY 133 near Bowie. It's a pipe dream to look at this route as a rural route being improved for local use. The reality is, it's a critical bypass attempting to be utilized by national traffic when Glenwood Canyon is closed. It should really be considered for Federal Funds as a re-route of US HWY 6, or as CO HWY 182. In closing I have the following questions: 1) Has road biker use been considered / studied in the scope of this project? This is a critical part of safety Improvements. 2) Can the County consider extending the scope of this project to make improvements to Catherine's Store Road between Site 1 and the Roaring Fork River, including a dedicated bike path for road bikers accessing the HWY 82 Frontage Road and Catherine's Store Road to Missouri Heights? 3) Has federal funding been considered to develop and improve the entire route as a bypass of I-70? If not in this phase, perhaps as a future phase? 4) Do any of the improvements to the dirt sections include consideration for paving? Sort of like Keebler Pass, where there are sections that are dirt interchanged with sections that are paved.

## CONCERNS ABOUT ADDITIONAL TRAFFIC

- ◆ The last few years have created the perfect storm of disturbance during months that Cottonwood Pass is open. Our quiet home that we purchased in 2009 has become not quiet at all.
- ◆ I am very concerned about the fact that more traffic will be using 103 road than 100 road. Simply put, people are already racing up and down this road when the canyon is closed. There are no switchbacks on this road and nothing to regulate the traffic. It has become a very dangerous, and overlooked means of accessing cotton wood pass. Plus no mention of road maintenance due to the increased traffic.
- ◆ Born and lived in the roaring fork valley for over 30 years. I DO NOT support the cottonwood pass concept. This is going to open a window to a world full of new problems. Rather, I think the opposite should be done and limitations need to be set in place to only allow local and resident traffic. the counties would spend a lot less money on 2 employees at each end of the pass to mitigate traffic; instead of spending more on resources, time, and money on road closers and engaging in vehicle





recovery . We don't need naive tourists and commuters using cottonwood pass as a shortcut to and from 70. This is just asking for more problems rather than providing a cure. Increasing cottonwood pass is signing each county up to spend more resources, time, and money on road closers and engaging in vehicle recovery. This would allow the opportunity for more inexperienced travelers to put themselves and their families at risk and in harm's way. This will cause major disruption and impact the animals that migrate through the area. Do not continue.

- ◆ I think this whole process has been triggered by the I-70 closure of Glenwood Canyon. Before the closures nobody bothered and rightly so about the state of Cottonwood Pass. It was OK for what it was meant for. The occasional adventurous traveler that wanted to experience a Colorado back road. Now with the occasional deluge of diverted cars all of a sudden it is deemed unsafe in various curves. It is not unsafe for what it is mean. At slow speeds and with low frequency of cars it has held up well over the last few decades and had it not been for the I-70 situation we would not be where we are. I am opposed to any improvements as it is precursor to upgrade Cottonwood Pass to a I-70 detour. The action proposed is directly linked to the I-70 situation so it is already catering to that cause. Rural Colorado backroads should stay what they are and not gradually made to what they are not made for. Detours to major highways. Safe driving to cater for higher speeds. And not catering to a deluge of out of area passing through vehicles. STOP THE IMPROVEMENT PROJECT !!
- ◆ I strongly oppose any change to cottonwood pass. It is a small curvy route over the pass and should never be an alternative to the 70 with huge trucks ruining our peaceful area. Enough growth and damage to our environment. The noise alone from the traffic and building will be devastating. We live here for a reason. Peace, wildlife, serenity. This expansion will be devastating. NO!!!
- ◆ While we need alternate routes for locals when Glenwood must be shut down for hours, I am opposed to having semi trucks and HEAVY vehicles drive over Cottonwood Pass; the weight of those vehicles do more damage to the roadways and regular passenger cars and they present more risk of danger. Also, my family would prefer to see Cottonwood Pass used for LOCAL traffic only and re-route others via the North.
- ◆ We have direct impact from the traffic, both industrial and commercial which would be involved in the construction of increased access, and widening efforts, and the subsequent traffic of general use as a result of the changes. Our driveway is immediately on the downhill side of Catherine Store Rd. as drivers come off the Cattle Creek intersection, and speed up to access Highway 82. They speed up as they hit the straight run after the slower conditions of Cottonwood Pass. During the fires, mudslides, rockslides, and closures on I-70, we have seen the increased usage of frustrated drivers having taken the detour, and the immense impact of heavy duty dump trucks and those carrying rocks and materials speeding along the rural roads. Having the usage of Cottonwood Pass during those emergencies is important, but not as a regular, everyday point of access to I-70. There's increased danger in the volume of traffic and the careless way people drive in the rural setting.

Our home and driveway is very affected by the traffic on Catherine Store Rd./County Rd. 100, being at the peak of the hill just after Panorama Ranch Rd. intersection. Drivers over the past couple of years that are taking the detour over Cottonwood Pass Rd. are driving as though they are on a freeway, instead of passing through a rural neighborhood, on the downhill run to Hwy 82. They



gather speed and drive 50 mph +, killing wildlife and risking crashes. The heavy duty trucks carrying materials are also starting to go faster and more reckless speeds to get to their destinations. Please help us reduce these traffic issues and unnecessary dangers instead of aggravating them.

- ◆ Safety is important, but please do not make C.R. 100 a highway! The north route is the best alternative when the canyon is closed. The rural feeling of C.R. 100 is very important to me, the people who live there and the wildlife.

## CR 113 (CATTLE CREEK)

- ◆ I have lived on Cattle Creek Rd for 33 years. It is mainly rural homeowners that use this road, recreational bikers, walkers, some with baby strollers, dog walkers and occasionally loose horses or cattle running down or up the road. I have witnessed bumper to bumper traffic, Amazon Prime semi's, FAST drivers, drivers that honk and yell at bikers (running them off the road) and general high speed driving during the closure of the canyon. Cattle creek is NOT the place to connect to Cottonwood Pass and traffic should be routed safely in other directions. Those directions should be dealt with appropriately.
- ◆ We live on CR 113 (Cattle Creek) and are extremely concerned about additional traffic. During the closures in 2021, I nearly got run over 3 times while standing at my mailbox, I was passed by speeding cars and given the finger, and was very saddened to see our quiet neighborhood become a part of I-70. Missouri Heights is a haven for road cyclists, with quiet roads and spectacular views, and on any given summer day there are dozens who ride up and down Cattle Creek, my family included. The cycling here is world-class and could be developed into an additional tourism draw and bring associated dollars to the valley, but increased traffic will destroy that and lead to accidents and possibly worse. While I-70 was shut, I was afraid to check my mail, let alone ride my bike on roads that have been quiet for the 16 years I've lived on Cattle Creek. My family and I do not want to see Cottonwood become easier to travel on. Increasing traffic will continue to degrade our quiet rural road and devalue our property. We're in favor of more closures and gates, not road improvements and the associated traffic.
- ◆ The study sites would indicate the preferred route using Catherine Store Road to Hwy 82. However, a lot of local traffic will use Cattle Creek and the CMC road. Both of those two need the intersections with 82 improved with a light at Cattle Creek and a larger left turn lane from 82 to CMC road to accommodate the greater volume.
- ◆ Living on Cattle Creek, when the I-70 canyon closes, even though the recommended route is Catherine Store Rd, we get impacted with lots of traffic!
- ◆ What are you going to do to keep people OFF CR 113/Cattle Creek Road. Apparently Apple is still routing people onto CR 113/Cattle Creek road as we had unbelievable traffic 7/15 & 7/16. Speed bumps would be a great help. Will the DOT stop closing I-70 when it's barely raining, as they are doing now..... doesn't it seem like they are not realizing last year was a 500 year monsoon? Just seems overly cautious. Will there be new and larger signage to get people to take other routes, as well?



- ◆ I live on CR 113 (Cattle Creek Road) in Garfield County. I am very concerned with the proposed Cottonwood Pass route through Garfield County as presented at the July, 2022 open house in Glenwood Springs. According to the maps, officials would like to see improvements made on the Catherine Store Road that leads to Missouri Heights. I noticed that nothing was going to be done on CR 113. First, I do not believe motorists coming from Glenwood Springs/I-70 will take the time to drive another 13 miles to reach the intersection of Catherine Store Road and Highway 82 in order to access Cottonwood Pass. I believe they will continue to drive up CR 113, which cannot withstand that much traffic, including cars, light trucks, and often semi trucks. I asked a consultant at the meeting as well as a Garfield County Commissioner who was present about this, and all they said was "Well, people will be people." That's really not a very good answer, especially since many people live/walk/bike along CR 113, wildlife is abundant in the area, and the road narrows to one lane before it reaches CR 112. My idea is this: Can you include strategically-placed speed humps, such as the ones on Midland Avenue in Glenwood Springs, on the stretch of CR 113 between 1375 and where the road narrows to one lane? They can be designed with gaps to allow cyclists to go through but not in such a way as to allow vehicles to avoid the humps. I think well-placed speed humps, the kind that are wide and low, would be a good traffic-calming and safety device on this portion of the road. This is where drivers speed up and pass other motorists who are going the speed limit. I witnessed one accident this summer right in front of my house, involving 2 light trucks and a cyclist. One truck attempted to pass the cyclist while the other truck was oncoming. He should have waited until the oncoming truck passed by before he passed the cyclist. But, he did not and his truck bounced off the oncoming truck's fender and flipped completely upside down! Miraculously, no one was injured. Wildlife also gets hit on this stretch of road and when traffic is high during I70 closures, it's impossible to walk or cycle on the road. It's like living on Grand Avenue or Highway 82, replete with air pollution from all the vehicles, and endless noise. This is a country road; it's not made for constant traffic or heavy trucks. In fact, it doesn't even have a yellow/white line separating lanes - it's not wide enough for that! I realize this road will continue to be used for Cottonwood Pass access so I don't know that I am a NIMBY; it's just that the speeding and passing and horn-honking and imminent danger is too much. If Cottonwood Pass improvements are really being considered, then please consider speed humps and signage on CR 113 between 1375 and the intersection of CR 112. I have talked to a few neighbors about this idea and so far, all are in agreement. Perhaps I will draw up a petition. Thank you for your consideration.

## OTHER COMMENTS / MULTIPLE TOPICS

- ◆ Be aware that Lions Ridge Estates has our well on the North side of Hwy 82 and CR 100 in the Southeast corner of that intersection in the County Right Of Way. Contact us if you need more information. Thank You.
- ◆ I am certain that many improvements to Cottonwood Pass will deteriorate all roads coming off of it. Both sides of the pass will be impacted, but since I live on the Missouri Heights side, that is the route that I am concerned with. This will significantly impact our property value and the value of our peace and quiet, which we chose when we moved here in 1985. (Any reduction in property taxes for having a highway now through our property.) In the past couple of years, the traffic past our home has increased, but substantially since repeated closures of Glenwood Canyon. The people



who choose to drive on our road, do so with little concern as to residents. I witness so many people speeding along our road, to the point that I see a couple of cars in the ditch every couple of months (just on our section). Maybe speed bumps throughout the roads impacted?? I agree that there should be more law enforcement to slow down and ticket these people, but who will pay for that?? When traversing the steep part of the pass (Gypsum side) just last Sunday, I met an oncoming car. Since there was a place to pull over, I did, but the jack wagon behind me took that action as an invitation to pass me - WITH another car in the way - again, how do you educate these jerks???

- ◆ Would like to share with you on what we are doing for roads dealing with the road foundations You can check out our web site at <https://lithtec.com/> We have a webinar every 2 weeks and the next one is July 19 6am HI / 8am AK / 9am PT /10am MT /11am CT /12pm ET Lithified Technologies presents on Zoom: • How Accelerated Lithification in road bases create structurally stronger longer lasting roads. • How adding customized materials tested for each road results in optimized road performance. • How reclaiming existing paid for materials lowers road construction costs.

Next webinar is August 2nd 10 am mtn High-Performance Road Bases % Lithified Technologies - LithTec™ <https://youtu.be/td35jXE4kf0> this is about 10 minutes long Dr. Bussod reports how Los Alamos National Laboratories in association with the MNSBA program have investigated, researched and documented scientific efficacy testing LithTec™ in 4 unprecedented 1-year study programs. 1. In 2019 - Roads - by testing and validating novel environmentally safe and cost effective construction materials for a sustainable future. "The combination of these four attributes for the LithTec™ samples suggest that they are potentially ideal materials for the construction of flexible surface and base layer pavements that can be optimized for local conditions." (Gilles Y. Bussod (PI), LANL) 2. In 2020 - LithTec™ U-Cap System, a novel multi-layer system to cap AUM's (Abandoned Uranium Mines) tailings. This study addresses the legacy of problems with Uranium waste that have no federal laws that require clean-up of live radio active waste even though they will remain active for hundreds of thousands of years. 3. In 2021 - LithTec™ Bio-Earth Liners, a novel earth liner system to replace the current plastic pond liner system. LithTec™ Bio-Earth Liners are stronger, more durable and cheaper will support the production of Bio-Fuel at a cost effective amount, and can be used in the production of spirulina and agricultural applications. The potential requirements amount to 121,000 sq mi., the size of New Mexico. 4. In 2022 - LithTec™ was awarded this unprecedented 4th consecutive year of the MNSBA leverage project based on the 2021 bio-earth line project testings from the lab environment represented a stage 1, to "in the field open air environment" continuation in stage 2 for 2022. The construction of a dedicated outdoor racing program has been initiated at the SF Community College in Santa Fe, NM. White Papers on the 2019 Road testing is available at [LithTec.com/downloads](http://LithTec.com/downloads) Other white papers are available upon request.

- ◆ Can you add a helipad to a pullout for safety reasons and access? I hope this is going to be paved from end to end. And, don't use too much tar. I am tired of getting dings and tar all over my vehicles even though they are all black. Can you add cameras up here and email me directions to get the data feeds? Never mind I'll just hack in when I need it and place my own cameras. They're probably more reliable and I can place them where I want them.
- ◆ As a 40 year resident of the Town of Gypsum and conservationist I think this plan is nuts. This study is redundant as it has already been previously done.



- ◆ Please help me to understand why, when the Cottonwood Pass is the issue for those traveling West on a closed I-70, the decision was made to improve and encourage travel on CR 100 rather than Cattle Creek or Crystal Springs Roads - both direct traffic onward in a more direct and westerly direction to 82 with less steepness and fewer blind curves. In addition, both turns onto 82 westbound are great as there are loading lanes upon turning right onto 82. It appears to me that if I were a driver being redirected when westbound I-70 during canyon closures I would naturally take the more direct route to get to Glenwood and thereafter continue my journey on westbound I-70 - these are either Cattle Creek or Crystal Springs. Cath. Store (CR 100) goes out of the way when all I would want to do is get back to I70 most expeditiously. Catherine Store Road (CR100) makes maximal sense only if the traffic, upon closure of the canyon, were bound for Aspen or Basalt. Even for Carbondale, the most direct route is via Crystal Springs then to 82 and onward onto 133.
- ◆ When can impacted land owners expect to be connected or see a plan on how the road improvements will effect there private property?
- ◆ Without knowing the lay of the land or the process involved, intuitively, it seems that the shortest route from Catherine Store, north to I-70, is to follow the Garfield/Eagle County line.
- ◆ I am opposed to this or any future projects that will increase the flow of traffic over Cottonwood Pass. Our ranch residence is located on Cottonwood Pass Road. Daily, there is a flow of ATV's, side-by-side and dirt bikes, a majority of which appear to be operated by minors who are unlicensed riding on unlicensed equipment. They typically use the mile long stretch of Cottonwood Pass road beginning at Valley Road as a section to race each other or see how fast they can go. They slow down at the corner just before the 1 mile marker just enough to make it around the corner. The noise from their machines is very loud and disruptive to the peace. Some, however, end up losing control and crashing. Then, they race to the next intersection with Daggett Lane only to negotiate the next corners of Cottonwood Pass in the same manner as before. With improvements to Cottonwood Pass, my thought is that it will only serve to increase the speed, noise, recklessness and volume. Any improvements, regardless of the location, to Cottonwood Pass Road invites more traffic (ATV and motor vehicles) and will ruin the peace and tranquility of the entire corridor area as well as my home. My money would be better spent on fixing Glenwood Canyon, a more logical and direct route. Keep Cottonwood Pass Road more primitive instead of catering to an easy of driving in a wild area.
- ◆ I attended the July 19 Public Meeting #1 in Glenwood Springs. I appreciated the willingness of staff to listen and pay attention to public comments and to encourage future participation in this process. To that end, here are my comments.

The project overview states that safety improvements are needed on the roads that traverse Cottonwood Pass and associated county roads. This overview did not include information about the current number of vehicle trips using the pass (daily or at certain times) and what the increase was during last summer's extensive closures. It would seem that knowing the project cost/vehicle might be a useful piece of information. Additionally, I would like to know if a critical threshold of vehicle trips/day or hour has been identified above which the project becomes necessary. If you are trying to make this a safer vital travel connection I would assume that you already know how many



vehicles use this connection. This is, to me, critical information. Is that information available? What is the current carrying capacity for these roads? Do we just think this is an issue or do we actually know, with hard data, that use exceeds carrying capacity for these roads.

Cottonwood Pass and the identified Garfield County access road (County Road 100) are, quite simply geography and geology-constrained. The narrow, winding nature of the pass is due to the both the geology and geography through which it travels. 100 Road, with its steep grades and curves conforms to the geography of the landscape. While it is easy to say that curves could be smoothed or eased, the reality is much different. Geographical conundrums are compounded by ownership issues. I live in between identified sites 3 and 4. The thought of easing those curves to create a 'safer' road is fallacious thinking—the grade will still be there and traffic will just go faster. It won't necessarily be any safer.

I will certainly agree that the Highway 82/100 Road intersection is currently unsafe. It has always been unsafe, in the 30 years I have lived here and seen its evolution from a 2 lane highway with no traffic lights to its current configuration with traffic lights, merge lanes, and an unbelievable number of cars speeding down the straightaway.

We who live on 100 Road have lived with these steep and winding curves and accept them as part of living in what once was a rural environment. I agree that some improvements should be made to accommodate the current volume of traffic.

Low tech and cheaper solutions that could be done now might include signage (Steep grades, sharp curves, 15 mph) at the top of the grades (Sites 5, 3, 1). The guardrail at Site 1 seems to work. How about additional guardrails at the other curves. Finally, if the roads are patrolled more frequently locals and visitors alike might learn to respect and follow the posted speed limits.

Another concern is wildfires. With an increase in vehicle traffic comes the increased potential for a spark from trailer chains or tire rims as well as smokers tossing their lit cigarettes. There is one fire station on the Garfield County side of this route.

The intersection at Highway 82 is currently unsafe. Why wait until more cars are using this route? How about installing blinking signs before the intersection (like the ones at Hwy 133 or the Buffalo Valley light) to at least warn speeding drivers that the light is going to change?

Finally, my biggest concern is simply that, if you build it, they will drive it. Are we creating a problem by improving this corridor instead of solving one? When this route was considered in the 1970s it was deemed unsuitable for many reasons. Many of those reasons are still true—wildlife concerns are still an issue and the geology has certainly not changed.

- ◆ When the Canyon is closed there is a steady stream of traffic going by our property. The traffic goes SO FAST and there is no traffic control. This is a residential area with many residents and pets along the road. My wife occasionally rides her bike along the loop from Cottonwood Pass and Dagget Lane. The sharp turn at our corner is very dangerous.



- ◆ 1. What is the grade for the Catherine Store road (CR 100) access to highway 82 compared to the other roads which access highway 82 from Cottonwood Pass? (I've estimated an 8% grade over 1.4 miles and 600' elevation change plus 3 switchback curves) Is this the safest West entrance/exit to Cottonwood Pass from 82? Please answer this with I70 traffic (semis) in mind.
- 2. What would happen to the residences on that steep part of CR 100- both the residences directly adjacent to CR 100 and those accessed by CR100 especially those on the old dump road from CR 100?
- 3. Are the access points from 82 to CR 113 and CR 103 through commercial property vs residential property?
- 4. Referring to the area on CR 100 about 0.9 miles from Catherine's store in the short stretch between the two switchback curves when was the last time the culvert was enlarged on CR 100 and why? What is the flood potential on CR 100 vs other access/entry points on highway 82?
- 5. Since there is at least one large Willow and numerous cattails at the portion of CR 100 referred to in question #4 (0.9 miles from Catherine's Store) it is a "wetland" and a wildlife area. Has a wildlife study been done?
- 6. How much would it cost to put stop lights at CR 103 and CR 113?
- 7. There is no public transport on Missouri Heights. There is foot traffic from Missouri Heights to the bus stops on 82. Are there any plans to provide public transport with the Cottonwood Pass enhancements?
- 8. What is the cost comparison for all the potential entrance/exit possibilities from Cottonwood Pass to highway 82?
- ◆ We are property owners with land adjacent to Cottonwood Pass Rd. Our core values for the project include: 1) Any road improvements should protect the East Coulter Creek headwaters and riparian ecosystem. 2) Avoid negatively impacting adjacent private land. 3) Keep access to gates and entrances on ranch from Cottonwood Pass Road. 4) Protect the wildlife corridor on Cottonwood Pass. 5) Maintain the rural character and protect and preserve ranchland on the Pass. 6) Mitigate traffic and speeds, limit truck size, control erosion, and keep winter closure of road.
- ◆ Overall Project Concerns:
  - ✧ Avoid negatively impacting adjacent lands.
  - ✧ Protect the wildlife corridor on Cottonwood Pass. This includes permanently impacting/removing habitat and indirectly affecting wildlife in the area by increasing traffic volume of the road.
  - ✧ Maintain the rural character and protect and preserve ranchland on the pass.



- ❖ Mitigate traffic and speeds, limit truck size, control erosion, and keep winter closure of Cottonwood Pass.
- ❖ Our ranch Eagle County land has two important entrance gates providing access from 10A.
- ❖ It is important to protect the flow of East Coulter Creek as it provides important irrigation water to several ranches in the Coulter Creek valley.

Specific Areas of Concern:

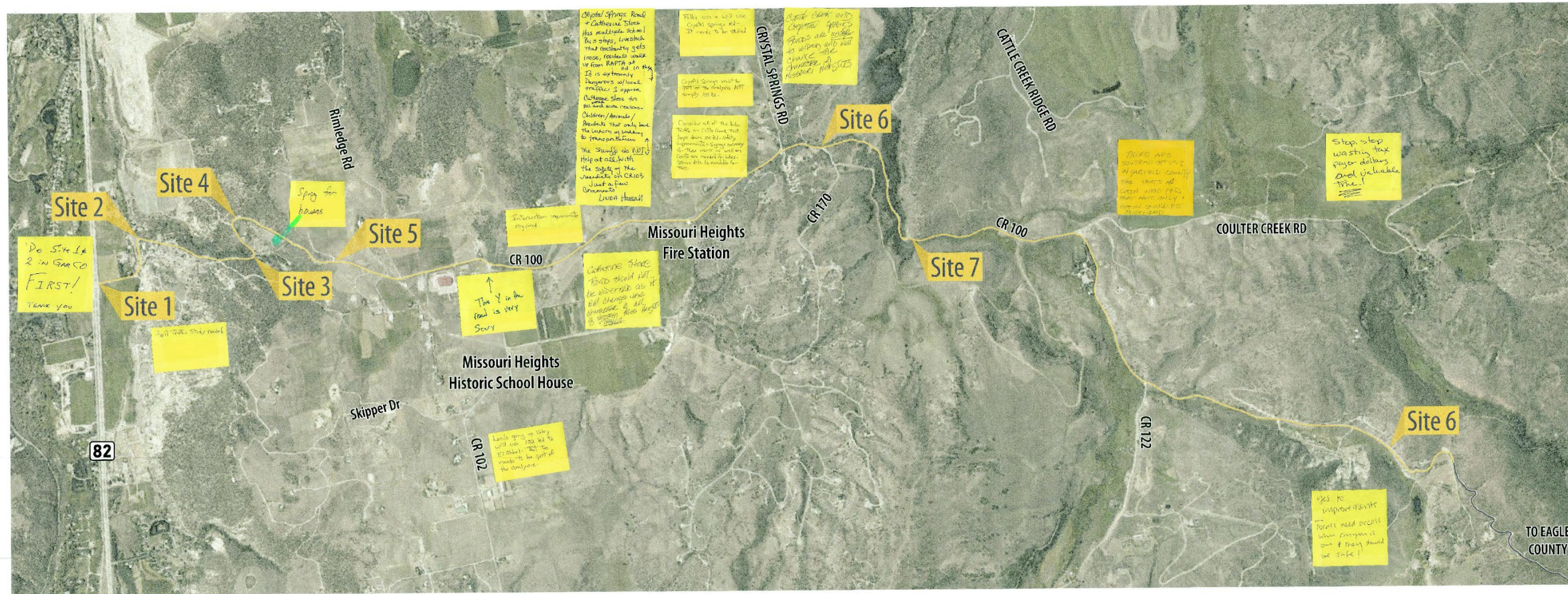
- ❖ Area 8 (Garfield County) - Continued access to the ranch property through access gate located off of Cottonwood Pass Rd. Avoiding acquisition of property adjacent to the road. Protect and preserve ranchland.
  - ❖ Area 1 (Eagle County) - Continued access to the property through access gate located off of Cottonwood Pass Rd. Protect and preserve ranchland.
  - ❖ Area 2 (Eagle County) - Protection of the aspen vegetation community on the northwest slope of the road. Protection of East Coulter Creek, East Coulter Creek Headwaters, and the riparian ecosystem surrounding the creek. Protect and preserve ranchland.
  - ❖ East Coulter Creek - Protection of this creek and its headwaters are a paramount issue for the project. Concerns include direct impacts to wetlands and riparian zones, erosion and subsequent sedimentation of water resources, and impacts to the water source itself.
- ◆ It is most important to maintain the corridor character which goes hand-in-hand with preservation of natural resources. If proposed improvements are truly for locals, then the locals who regularly use this corridor should be the best source of information to determine if, in fact, improvements need to be made. Was there a ground swell by locals to improve the corridor at any point in time prior to the Grizzly Creek fire or was this prompted by the counties because county resources were being strained with increased traffic caused by the closure of I-70? I occasionally use Cottonwood Pass and it is only marginally more hazardous than Independence Pass when the road surface is dry. When the surface is wet, it is like driving on glass. That is the real safety hazard and nothing, other than paving the entire pass, is going to fix the real hazard. The average detoured I-70 driver is not going to expect to be driving on such a surface or rural mountain road conditions with the occasional cow, and more than occasional wildlife, and there is nothing that can be done to prepare them other than bar them from this route, which cannot be done. There is no practical way to "improve functionality during I-70 closures" without destroying the corridor character. Put up a traffic signal light at the Blue Hill section (like what has been done on Independence Pass) and call it a day.

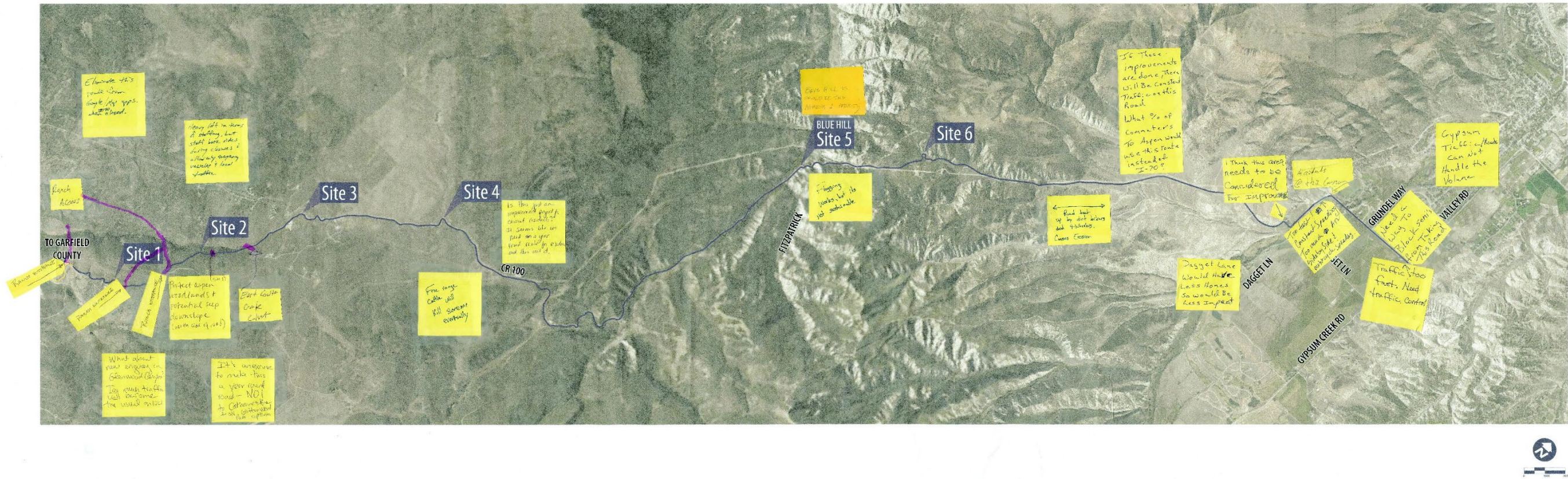




# Appendix A

## Round 1 Public Open House Comment Maps







# PUBLIC COMMENTS RECEIVED SURROUNDING ROUND 2 PUBLIC OPEN HOUSE MEETINGS

Open Houses held March 22 and 23, 2023

The second round of public engagement for the Cottonwood Pass Concept Design project consisted of two public open house meetings. The meetings were held on March 22, 2023 (in Glenwood Springs, from 5:30 – 7:30 p.m.) and March 23, 2023 (in Gypsum, from 5:00 – 7:00 p.m.) to present design concept options and evaluation of those options.

A robust media campaign was used to spread the word to inform travelers in the surrounding area. Advertisements were placed in the print versions of the Glenwood Post Independent, Vail Daily, and Aspen Times that ran twice in the week prior to the public meetings. A digital campaign also ran in the online versions of those publications targeting Eagle and Garfield counties. This resulted in approximately 60,000 total impressions and more than 30 visits to the project web page.

To notify adjacent and nearby property owners and tenants, a postcard was mailed to 2,400 people. Other advertisements included a news release distributed to CDOT, Eagle County, and Garfield County’s contact lists, articles by Vail Daily, Denver Gazette, and 9 News, CDOT social media posts, emails to the project contact list, and notice on Town of Gypsum’s welcome board on US 6.



Approximately 45 members of the public attended the meeting in Glenwood Springs and 55 attended in Gypsum. Display boards focused on providing a project overview, presenting site design options and the draft evaluation, and outlining next steps.

Meeting display boards and handouts were posted to the project web page the day following the meetings and an additional week was provided for public comment. Comments were submitted on comment forms during the open houses, transcribed by project and county staff during conversations at the open houses and prior to the meeting, and submitted via email and letters. Following is a listing of comments submitted in March 2023.



## SITE-SPECIFIC COMMENTS

### EAGLE COUNTY

#### SITE 1

- ◆ Option 2 does not seem realistic. Option 1 is more realistic. These are tough turns. I like the proposed guardrail but the \$1M estimate for three areas of improvement seems low to me. If these can get done, great but I am guessing that we will need more modest improvements due to budget.

#### SITE 2

- ◆ Coulter Creek Crossing - look at ways to decrease sediment from cows.
- ◆ This stretch has reasonable improvements but I would look to lanes without shoulders to reduce cost and impacts. Same caution about increased speeds reducing safety improvements.

#### SITE 3

- ◆ Maybe I am misremembering but I thought there was a hill where the curve is being smoothed. If costs are an issue some widening at the existing curve and a guardrail could be a lower cost option. It is helpful to slow down vehicles going into the subdivision area. The refined option seems more viable but not sure if it would require a retention wall \$\$\$\$. I would consider a guardrail regardless.

#### SITE 4

- ◆ Looks good.

#### SITE 5 - BLUE HILL

- ◆ Blue Hill – curviest section is worst and should be highest priority – are there short-term improvements the County could do? Add guardrail?
- ◆ Blue Hill is #1 priority.
- ◆ Why don't they have traffic lights on Blue Hill to control one way direction?
- ◆ Is an on demand, intermittent stop light to control alternating traffic at Eagle County Blue Hill location a technical infeasibility (where County R&B / National Guard Flaggers have manned the switch back during I-70 Canyon Closures)? What are the obstacles to an alternating traffic stop light, i.e. power source? How does lighted control device compare to man labor costs and / or future two way improvement / or proposed road diversion around Blue Hill?



- ◆ I have spent many hours driving up and down the Cottonwood Road. My grandparents took up residence on this side of the pass in 1920. Since then, my family has owned and maintained our ranch on the pass. I have always considered the worst part of the road being the part going down Blue Hill, although the resurfacing a few years ago was a great help, there is still the matter of widening the road that needs to occur. The many narrow spots and blind curves are extremely dangerous. There have been several times when a vehicle has gone over the edge trying to avoid being hit by oncoming traffic. One of these accidents occurred in the forties when my great grandmother, aunt and uncle were coming down the road and met an oncoming vehicle, forcing my aunt, uncle, and grandmother over the edge and down the mountain to the valley below. They were all injured and taken to the hospital, but survived. That was 80 years ago, and the problem still exists! Blue Hill Road is dangerous because of no way to avoid oncoming traffic. With the increase in traffic, the problem has worsened.

In the past, county workers that have maintained the road have been frustrated because they feel the remedy to fix the problem spots could be easily solved. It doesn't take engineers, countless studies, public meetings, grants, loans, and unnecessary spending to remedy the problem. All it would take is practical wisdom, equipment, and men with experience to get the job done.

At one point, many years ago, the man who was in charge of maintaining the road decided to widen a spot so vehicles could pass. It took him, his maintainer, and a few days to widen an area that is still used today. He wanted to do more, but was told not to.

Since that time, it has appeared to take an act of congress to widen that treacherous road. I don't believe we need more studies, engineer planning, etc. to simply buy the necessary equipment and widen the road! As a footnote, the county once had the equipment they needed, but they sold it... another example of poor management. Stop wasteful spending and widen the road before someone is killed!

- ◆ Eagle County Site 5, I would choose the Option 2, maybe with a little less improvement where walls are required. We will need all the money for Blue Hill.
- ◆ I attended the public meeting in Gypsum yesterday. I've lived in Vail since 1974, driven Cottonwood Pass countless times, and often marveled that there has not, to my knowledge, yet been a fatal accident on Blue Hill. The \$55-59 million conceptual cost of Option 2 for that area makes me think it is highly unlikely to ever be built, and if it is built, it's many years from completion.

If a fatal accident occurs in the meantime, especially because of the attention the road is getting, I think there will be a huge public uproar about why nothing has been done for so many years. Therefore, I wonder if there isn't a much cheaper option, such as minimal widening of the current road and the addition of guardrails. Let's not make the perfect the enemy of the good. Thanks for considering this.



## SITE 6

- ◆ Should eliminate curve. Connect straight through.
- ◆ Eagle County Site 6, Blue Hill is what it is. Once we start cutting back into the slope, we will find out how far we have to cut and how much money it will eat up. Ongoing maintenance will be an issue. For me, I would see whether I could get another 4 feet into the slope without starting the cascading grade chase, maybe with retention on the inside and guardrail on the outside to see if I could get an 18' platform and then declare victory.

## GARFIELD COUNTY

### SITE 1

- ◆ I think the best choice in my opinion is Garfield County Site 1. It's also cost effective too.
- ◆ Left turn phases should be added to the signal at CO 82 and Catherine Store Rd for the side street movements.
- ◆ The right turn lane at the intersection of Catherine Store and SH 82 is an important improvement. When value engineering takes place, I would encourage you to maintain this improvement in all cases.

### SITE 2

- ◆ The proposed guardrail will build up sand debris and eventually cause problems with runoff when it can no longer sheet flow off the road. With this design there will need to be regular maintenance of the traction sand. At the southbound approach to Site 2, there is no shoulder and the road drops steeply away. There looks to be an attempt to shore it up with shotcrete or similar. The inside of the curve is bordered by a steep, cobbly uphill bank. This will make widening difficult without reinforcement on the bank. An advanced curve sign with additional speed guidance is a good idea.

### SITE 3

- ◆ The driveways and culverts need more delineation. Many were missing or damaged.
- ◆ The realignment of the curve (Dryson) at Garfield County Site 3 does not meet a cost-benefit test. I would recommend some widening as per the previous curve. On the ground, one sees the topographic and drainage challenges of the proposal and I would hope that would rule this proposal out. There is an active wildlife crossing at the curve and slowing down traffic should be a priority for both curves.



## SITE 4

- ◆ The addition of guardrail will not improve the crash problem at this curve and steps should be taken to reduce speeds. Property owner is not in favor of the guardrail downhill of his property. It will interfere with snow storage for both his driveway and Catherine Store Rd, and could change the runoff flow to negatively affect his driveway. The guardrail uphill from the driveway will border an uphill berm, and it does not need protecting. The snow will build up in the shaded areas of the guardrail creating a drainage and icing problem, unless the county does a more thorough removal job. The county had installed chevrons on the curve that made some improvement, but were later removed. They should be reinstalled. An advanced curve sign with additional speed guidance is a good idea.
- ◆ The guardrails at the curve on Garfield County Site 4 should only be proposed at the bottom of the curve where the semi flipped. The adjustments to the curve and widening would be helpful. The upper guardrails do not seem needed and may create a false sense of security that leads to speed increases. A portion of the road shoulder below the curve has experienced degradation, money could be spent here on safety and perhaps guardrail.

## SITE 6

I do not believe that the changes on Garfield County Site 6 are needed and will only result in increased speeds, which will reduce rather than increase safety.

## SITE 7

- ◆ The design is horrible for bicyclists. The existing layout is better. Think it will increase traffic overall and then more traffic will be on Cattle Creek Road.
- ◆ I would compromise a bit on the ideal to straighten it out some while minimizing cuts, retention, and fill. May not be a perfect T intersection but maybe somewhat better sightlines

## SUPPORT FOR SAFETY IMPROVEMENTS TO COTTONWOOD PASS

- ◆ Like the intersection changes and signage that will send people to Catherine Store Road.
- ◆ Need an alternate route, totally agree.
- ◆ Will need huge improvements.
- ◆ I think this is a necessary road for everyone in the long run, especially for safety.
- ◆ Improving the pass to allow two lanes would be a big deal towards the safety of the pass. A minimal approach towards these improvements seems fair to lessen the concerns potential speeders, the owners who live there, and the wildlife.





- ◆ This is a fantastic and much needed project for our community. It will bring Eagle County together and provide employees relief, as Glenwood Canyon continues to close almost weekly.
- ◆ I appreciate your time and work on this project as I am a supporter of improving that road for summer use. As a resident I do use it and continue to appreciate any work to make it more drivable and safer.
- ◆ I support safety improvements, particularly Blue Hill, Site 5 Eagle County. I think this is the most dangerous portion of Cottonwood Pass. While other sections in Eagle and Garfield Counties may have had more fatalities, they were likely caused by driving too fast. While I think Blue Hill should be the first section fixed, all of the improvements would be welcome. If there is a chance of Cottonwood Pass becoming a year round option the more expensive option for Blue Hill should be selected. I understand the negative reaction of adjacent landowners. However, several of them work in Real Estate and development and they seldom care when their proposals impact others.
- ◆ Improvements to Cottonwood Pass are really needed. It would be nice if the entire length could be widened and paved.
- ◆ I am a Gypsum resident, and I like the proposed changes to Cottonwood Pass Road. I also think it could be a toll road for everyone except residents of that area in order to keep traffic to a minimum and help offset costs, unless that in itself would be too costly. We appreciate your working on this in a sensitive way. Thank you.
- ◆ I am a resident of Eagle County and commute through Glenwood Canyon to Glenwood Springs daily during the work week. Improvements in both counties along Cottonwood Pass are necessary. Extended closures of I-70 have huge impacts on the local economies and citizens. There is a strong link between the two valleys (roaring fork and eagle valley) and enhancing the only available secondary transportation link is critical to the wellbeing and safety of road users. The proposed options for safety enhancements are a good first step.
- ◆ I would very much appreciate improvements to the Cottonwood Pass connector between Eagle and Garfield counties.
- ◆ I think this is a great project and should move forward as soon as possible!!
- ◆ I live in the Eagle County portion of Missouri Heights in Red Table Acres (Upper Cattle Creek and Elk Range). I frequent Cottonwood Pass for professional (meetings in Eagle), volunteer (Eagle County Open Space Committee) and recreation uses (bike, hike, camp). Thanks for working on this. I never really supported improvements on Cottonwood but the repeated disruptions on Glenwood Canyon have convinced me that some level of improvements is needed. Not happy about that but it is reality.
- ◆ I support all the improvements as proposed. I also encourage CODOT to look at improving both sides of the intersection at Hwy 82 and Catherine Store Road on the Garfield County side. The road in front of Catherine Store needs drastic improvement, with many potholes and pour sight lines due to



grade, as well as including a left turn and right turn lane for traffic coming from Carbondale. I believe the state should consider improving the Cottonwood Pass route to State Highway Standards in the future to provide a more formalized detour route around Glenwood Canyon, as well as improve connectivity between the Vail and Roaring Fork Valleys. I understand the improvements at this time are for improving the route for local traffic, as well as to decrease the amount of vehicles who get stuck on Cottonwood Pass, requiring rescue or blocking the route for local traffic. I also understand that locals who live along the route are against improvements because they fear it will bring more traffic, but the route is already established on mapping software and the improvements are needed to keep the route open and safe. Furthermore a shorter detour is needed to bypass Glenwood Canyon. Perhaps the Federal Government could provide funding by rerouting US Hwy 6 over Cottonwood Pass, or designating it State Highway 182. I would recommend that until the state decides to improve this route to state highway standards, that they place signage at both ends of Cottonwood Pass warning of the dangers of the route, prohibiting semi trucks and advising local traffic only. Steep fines should be used for semi trucks over 35' in length that get stuck on the route or are not servicing local addresses, as seen on Independence Pass.

## CONCERNS ABOUT ADDITIONAL TRAFFIC & SPEEDS

- ◆ Concerns with trucks being allowed in the corridor.
- ◆ Don't want more traffic.
- ◆ The improvements will lead to faster speeds, which may lead to more injuries from crashes if faster speeds.
- ◆ How do you control the speeds when you widen?
- ◆ Remove road from Google – make sure only passenger cars and pickups are allowed to use the road. Restrict!! Assist CDOT in I-70 improvements to make canyon safer and open.
- ◆ Remove road from Google. Eagle/Garfield/CDOT should all be working together to make this safer. Assist CDOT in I-70 safety improvements. Why isn't R&B county/sheriff's/state patrol here for input?
- ◆ Google maps is making this impossible.
- ◆ Restrict access! Use law enforcement at high need time – Passenger car and pickup only.
- ◆ Better signage at Glenwood to detour use of Cottonwood Pass – Restrict access travelers should not make it thru Glenwood headed to detour. Use law enforcement.
- ◆ Better signage! Stop traffic prior to Pass! Restrict use.
- ◆ Need to stop traffic to large and medium trucks either at Cottonwood Pass or improve I-70 with this money and not have that problem at all.



- ◆ Last time the canyon closed for several days we collected over 10 garbage bags of trash that had been thrown out of vehicles along Cattle Creek Road. It seems that just the traffic alone would affect Cattle Creek (the actual water, cattle creek) and along with this actual trash, this is another reason we must defer traffic. Please help keep non-resident traffic OFF Cattle Creek Road. Thanks for your help.
- ◆ Please do not encourage more traffic through this rural area.
- ◆ I don't support adding more traffic to Cottonwood Pass. It will always be too dangerous. Funds would be better spent in Glenwood Canyon mitigating problems there.
- ◆ When I-70 is closed, it simply moves to Cattle Creek. Cars speed at 50-60mph both directions. I've been nearly hit while standing at my mailbox, have had cars pass me on blind corners, have been honked at as I put garbage in my can, and run off the road while on my bicycle. Drivers have become more rude, self-centered, and un-caring. I know my neighbors feel the same we're all very frustrated that our quiet, rural neighborhood becomes an interstate. The signs directing people over Catherine Store to 82 are ineffective, because map apps send them down 113. I'm not a NIMBY, but I'm definitely not in favor of seeing more traffic, from commuters to tourists, and tractor-trailers on quiet rural roads. Missouri Heights is a quiet area, with safe roads, except when traffic is searching for a bypass, then it's a dangerous major thoroughfare, where pedestrians, cyclists, pets, and wildlife are at risk.

## SPEEDING & ENFORCEMENT

- ◆ Speed limit signs need to be placed so they are more visible.
- ◆ Add ticket cameras.
- ◆ The proposed changes at these sites will not have an effect on speeding vehicles, which is the biggest problem. More enforcement is needed. There is no justification to spend the money on the changes identified on lower Catherine Store Rd.
- ◆ These improvements will increase the use and speed of users, I think that a max speed limit of 30mph and slower sections is needed. Enforcement with portable non manned speed guns with cameras in multiple changing locations might be effective. Even without improvements individuals dangerously speed now. This will only get worse if there are no consequences.
- ◆ Construction traffic has really picked up on the Eagle County section of this road and travel speeds have gone up with it. Safety and capacity improvements could lead to additional speed and need for expensive enforcement. It will need to be a balancing act.

## CR 113 (CATTLE CREEK)

- ◆ Left turn from Hwy 82 on to Cattle Creek gets congested.



- ◆ Understand that any improvements would be more impactful with all the driveways and how narrow it is. Understand that signs won't slow people down.
- ◆ Must make improvements to CR 113 if this proceeds. It will be used more than CR 100. Intersection of CR 113 and Hwy 82 is too dangerous. Garfield would be more productive help CDOT with improvements to I-70.
- ◆ Improve 113 and 82 intersection because you will not stop the traffic to that dangerous intersection. Improve I-70 with this money to avoid this issue all together.
- ◆ CR 113 must be evaluated if this proceeds! CDOT must do safety improvement at CR 113 and Hwy 82!
- ◆ Intersection at 113 and Hwy 82 is horrible and dangerous and you won't stop people from using it with these plans.
- ◆ The work to date seems to funnel all of the traffic to Catherine Store Rd. Focusing the improvements on one road makes financial sense and can simplify improvements. At the same time, the additional traffic is concentrated on one route and that does not seem fair. For instance, paving the Eagle County portion of Upper Cattle Creek and widening where necessary would allow signage to direct travelers to Basalt and Aspen to that route. That would reduce the impacts on Catherine Store/Cattle Creek. I personally would not benefit from this as I bike the dirt section often and all of the roads in Missouri Heights, however I think it is only fair to distribute the traffic in logical ways to signalized intersections with SH 82.
- ◆ Regardless of the suggested Catherine Store route for those traveling west across Cottonwood Pass, many folks will decide to travel down Cattle Creek Road since it is the shortest route to Glenwood Springs and the lower valley. I suggest re-painting the right/left turn lane road lines at the intersection of Cattle Creek Road (113) and Hwy 82. This will make turning onto Hwy 82 there safer and more efficient. Many people turning left onto Hwy 82 use the right lane and those turning right often use the left lane slowing the flow of traffic. Another idea would be to install the solar powered beaded flashing red light ribbons around all the stop signs at that intersection since those driving down Cattle Creek and/or 110 Road often run the stop signs located above the actual Hwy 82/113 intersection creating a significant safety issue with anyone turning from Hwy 82. These are simple and relatively inexpensive solutions that should help improve safety and traffic flow at all times, but especially when the I-70 is closed. Thanks for your consideration.
- ◆ Thanks for the presentation last night. I want to know how you are going to keep traffic off Cattle Creek/CR 113 and can we please have speed bumps every mile between mile 2 and mile 6? We are a small, quiet community who uses the road like our park. The traffic we had during the closing from the mudslides triggered PTSD with many of us who live close to the road and whose driveways connect directly to the road. Closing our road would be great as would signs reading: Residence traffic only. Can you keep Cattle Creek off Google maps, etc.? You did not seem to be addressing our issues with the presentation.



- ◆ Cattle Creek is safer, little improvements needed, a good idea for the intersection is to include for a future alternate route for the other side of River fire escape route. Easier and faster access for fire and ambulance.

## GLENWOOD CANYON

- ◆ We know there have been problems with how to pay for improvements. My wife and I suggest there would be a temporary adoption of something that can happen soon – having a follow-me car through Glenwood Canyon. Would stop people from thinking this is the Autobahn. More state troopers in Glenwood Canyon would help. It could be more user-friendly to the public than a pace car. The canyon is difficult for law enforcement due to lack of space. They shouldn't have made all of Glenwood Canyon asphalt. It should have been concrete originally. There wouldn't have been so many problems every spring.
- ◆ Adjust speeds through canyon.
- ◆ For Glenwood Canyon, use pilot cars more enforcement.
- ◆ The issue is needed speed enforcement in the Canyon – use photo-cameras.

## WINTER ACCESS

- ◆ Concerns with road being open year-round.
- ◆ Would like Cottonwood Pass open year round (x 3).
- ◆ Live up Buck Point in Eagle County. Needs to be open in winter for residents to access Eagle County.
- ◆ To make all these improvements and not continue winter maintenance (not making this an alternate route year-round) doesn't justify the cost needed to improve the pass in the first place. There is needed discussion on this ruling. Having a 3-hour detour is not fair who those commute through the canyon.
- ◆ No winter use! (x2)
- ◆ As the representative of Vail Mountain Rescue Group (the agency that Eagle County Sheriff's office uses for search and rescue) in this matter I would request that an improved winter road closure gate be installed at the Gypsum side of the Cottonwood Pass road. Vail Mountain Rescue Group has responded to numerous winter rescues over the years on Cottonwood Pass when Glenwood Canyon closes and people ignore the current closure gate arrangement. The current gate has proven inadequate as it is easily avoided by motorists. Making this closure more difficult to avoid would greatly enhance safety by avoiding the need for rescues in the first place. The sooner this improvement could be implemented the better as rescues are a current safety issue. Thank you in advance for your attention in this matter.



## OTHER COMMENTS

- ◆ We need a shorter I-70 detour.
- ◆ Suggestion to place porta potties to stop people from using driveways.
- ◆ Concern with wildlife and retaining walls. Will animals go up & over/under? Want to be sure the NEPA process happens.
- ◆ Wildlife concern from landowner.
- ◆ There should be more wildlife warning signs.
- ◆ Plows are not pushing the traction sand completely off the road in some areas, creating a 1'-2' buffer where understeering cars could lose traction. Drainage ditches and culverts are not being maintained enough.
- ◆ The area needs the delineation to be standardized and needs more of it. Several delineators exist on the approach to Site 2. Some are green metal posts with buttons and others were yellow plastic bollards with reflective tape.
- ◆ There are signs that do not meet standard for placement and height.
- ◆ By the way, the signs to Cottonwood Pass are still on lower Cattle Creek and at the 113/112 intersection. Can you try again to get them removed as soon as possible?
- ◆ There are many cyclists riding Catherine Store Rd. There should be more signage to share the road.
- ◆ Littering is a big issue and will only get worse with more traffic.
- ◆ I am not opposed to some minimal improvements on the road, but I am opposed to extensive paving and widening of the Cottonwood Pass Road. It would be very detrimental to residents and wildlife if this road became a major thoroughfare for people traveling between I70 and the Roaring Fork Valley. Please keep in mind the tremendous harm this would cause.
- ◆ I realize Cottonwood Pass is a county road shared by two counties. However, leaving the phased improvements of this road to two counties without coordinated construction phasing is folly. Neither county can be trusted to ever get anything done.
- ◆ I believe that this Cottonwood Pass project is a horrible idea. First, nature would suffer, and then developers would seek to further destroy our small towns along the route. A 300 million dollar investment into Glenwood Canyon would be best, no consultant studies needed. Contact Elon Musk. This is the perfect opportunity for his Boring Company to design a toll route through the canyon underground.



- ◆ Keep all I-70 out of Gypsum for the same reason you keep want to keep traffic out of Cattle Creek! If you can't enforce trucks from speeding on a four lane highway how are you going to accomplish it on Cottonwood? Install a height and length box at the beginning of each end keeping box trucks and over length campers out of it? How are you going to ensure safety on kids crossing valley road in the summer, and school times? How are you going to ensure there is adequate emergency responses?
- ◆ Viewing the 14 sites at the March 23 Gypsum open house, am more favorably supportive of seeing more lower cost safety improvements in multiple locations over a few high cost improvement sites.
- ◆ After going to presentation, reading articles, talking with neighbors, living here for 32 years, etc., we have come to the conclusion that the money for this project would be better spent on preventing accidents on I-70.

Keep Cottonwood Pass closed in the winter; don't make improvements which will just encourage traffic in the summer, save a ton of money, keep cattle creek (the actual creek) from being polluted by all the traffic that would come that way. If there is a long closure on I-70, only allow 10 vehicles at a time to go either way on Cottonwood.....possibly with a lead car since there's no room for pullover.

Use money for speed control on I-70, Cottonwood, and Cattle Creek and Catherine's Store Road, and for the 3-way intersection at Cattle Creek road and County Road 100 and the highway 82/100/113/ frontage road intersection.

These are the only improvements that make sense as spending millions to improve Cottonwood Pass is a real waste. It's a dangerous pass with no cell service and winds like a river. Work on keeping I-70 open and save Garfield County millions of dollars and diminishes the number of disgruntled neighbors and allows us to keep our active outdoor neighborhood.

## COMMENTS MENTIONING MULTIPLE TOPICS

- ◆ What is the main objective? Traffic going west past Glenwood or traffic going to Basalt and Aspen?

Catherine Store at Highway 82 (100 Road) to Cattle Creek intersection heading over Cottonwood Pass. Time – 12 minutes. 3.6 miles. The hazards that you've addressed within the concept plan for 100 Road supports the decision of making Cattle Creek a far better alternative. 7 additional miles on highway 82 to intersect with Cattle Creek, for a total of 10.6 miles to the same point and additional time from 100 Road to Cattle Creek of approximately 10-15 minutes. Total time 22 to 27 minutes.

Cattle Creek intersection at base of Cottonwood Pass to Highway 82. Time – 13 minutes. 6.8 miles. Substantially less improvements needed - follows the bottom of the valley so there is no substantial hills or sharp corners. The road surface is well maintained and in good shape, bar ditches in place, visibility is more than adequate. At address 3335 on Cattle Creek road would be the only area of a major adjustment. Total time 13 minutes. This intersection could and should be designed for a future fire evacuation and alternative route for residents across the river.



Red Mountain and Crystal Springs Roads. Both of these roads have the same and or more of the same hazards as 100 Road.

1) Traffic road count and speed surveys - I initiated in 2017 showed 9000 plus vehicle trips over a 5 day period of which 95% were speeding, the top speed at 56mph and again in 2019. Additional traffic being added (which we believe this alternate road will become the preferred road for vehicles avoiding the canyon and rush hour in Glenwood Springs) will exasperate the current driving patterns assuming the same attention to maintenance and patrol will remain in place.

2) Channelization (the act of managing the road). County Road 100 was built and designed to handle traffic doing 25 mph and you state the speed limit won't change but the lack of maintenance and patrol has made 100 road a dangerous road. Alcohol is prevalent everywhere. The poor maintenance or complete lack of I addressed with Dwight, Joe, Wyatt, and Harry. The road needs to be brought up to standards. All aspects of maintenance is seriously lacking. I am not only bringing attention to the problems but I believe I am bringing solutions.

3) How did County Road 100 become the only "concept" road with a full scale concept plan? Cattle Creek Road is a more viable alternative because the road is already established with softer curves, defined bar ditches, site visibility (i.e.: vegetation), guard rail placement, no steep hills or sharp curves and access to highway 82 with acceleration and deceleration lanes.

4) My perspectives on sites of concept plan, Garfield County side. 1) Cost of turn lane with moving ditches and traffic lights but no change for the south side by Catherine Store. 2) Hughes corner - there is currently 6-8 feet of pavement under the sand and not striped correctly. The existing road surface to the existing guardrail is adequate for traffic traveling 25mph. Between sites 2 & 3 you have an area of No shoulder, a 25' drop off with inadequate signage and delineation. 3) Ochko corner - speed is the only adverse condition on this corner and softening the corner will only enhance the speed. 4) Again enhancing this corner (our driveway) will only increase speeds and every accident on this corner has been from excessive speed, without exception! Plus it will have a slingshot effect. The guardrail going down from and out of our driveway, there's some curb appeal for us. Do you know what we get from someone's insurance? Nothing, it's considered wilderness and the burden lies on us to clean up and repair our property. How long until a guardrail is beat up and tangled and looks like crap much less sand and snow building up in front of it, putting the run off onto the road creating a hazard in and of itself. The guardrail above and going into our driveway, there's a mountain and a bar ditch, this makes no sense. On the south side of this corner which is our property as well is an active wetland and natural spring which has not been addressed. An area between 4 & 5 north bound with a 50-60' drop off has no shoulder and is delineated with a bicycle reflector. 5) The worst possible development of this concept is to remove the hillside corner because this is a physical barrier that makes drivers slow down before heading down a steep graded mountain. The amount of material to be removed would be tremendous.

5) In closing I feel the need to state that regardless if it's county, state or federal funds, it's all tax payer money and doing the bypass down 100 Road is not the most viable route for the money and





should not be applied to redevelopment on the Garfield County side rather it should go to maintenance and patrol of the current road regardless if it is 100 Road or Cattle Creek Road.

- ◆ We are writing to comment on the proposed Cottonwood Pass Design Concept that was presented at the public meeting #2 on March 22, 2023. Our concerns with this project have not changed since it was first presented. In fact, as the project has proceeded, I find myself focusing on the cost/benefit of this entire project. This project was initially presented as a means for creating a safe alternative for travel when the I-70 corridor through Glenwood Canyon is **closed in the summer**. Now it is “to improve safety at 14 specific locations along Cottonwood Pass to make the county roads safer and more functional as a vital travel connection between the local communities.” On the FAQ sheet that was handed out March 22 it is stated that “Maintaining the road during the winter isn’t planned at this time, although this is a potential long-term goal if funding can be secured”. **WHAT?** It seems that what started as a study to address impacts and costs associated with maintaining a safe corridor during canyon closures has morphed into the potential beginnings of a much larger project.

We live in between Garfield County Sites 3 and 4. Proposed grade, lane, and shoulder ‘improvements’ will lead to increased speeds. Neither of the Design Options identified mentioned installing adequate signage. We are concerned that the improvements proposed will create more unsafe conditions due to the speeds at which users will travel. The average speed on County Road 100 is already well over the posted speed limit. How much faster will people drive? While locals know the curves exist, the targeted canyon closure detourees will not—what is the plan for identifying the sharp curves and steep grades? It seems that it would be significantly less expensive to work on signage before realigning curves. It might be more cost-effective to increase sheriff patrols to address the speeding issue than to make the area more conducive to speeding. One of the more interesting pieces of the study was the number of vehicle trips in 2019—well before the Pandemic and its influx of new homeowners, canyon fire, and closures due to flooding. What are the current numbers and what is the projected increase in traffic without or with canyon closures? We question whether the cost and scope of all identified improvements is supported by data and forecasts of future canyon closures.

If we were to select one piece of this plan that identifies a location that needs improvement to handle the current volume of daily traffic, it would be improvements to Blue Hill in Eagle County (Site 5). This steep, narrow, and slippery-when-wet piece of road creates bottlenecks and unsafe driving conditions—even more when the canyon is closed due to flash flooding and the dirt road is also probably rain-soaked (we avoid using cottonwood pass when the road is wet).

As an overall comment, we still question whether County Road 100 is the most appropriate road for this projected route. The Highway 82 intersection is unsafe—cars and trucks speeding along the straight highway often fly through long after the light has turned red. While sight distance is certainly a criteria for safety, the intersection at CR 114 has been designed to accommodate traffic from CMC. It is difficult to understand how this has been identified as a less safe intersection than CR 100. The intersection would bring travelers to Highway 82 at a point that would take them easily into and through Glenwood Springs. There is a functional traffic light already there as well as turn



lanes in all 4 directions. How much of the disrupted traffic using this route is estimated to be driving up valley and how much traffic will be forced to drive the extra 18 miles to rejoin I-70 in Glenwood Springs?

We have stated our concerns to you in person, via phone, and in letters. Those concerns have not changed. Widening the road/easing the curves is only one, very expensive, solution to creating safer travel corridors. Appropriate signage installed NOW would be a wise and low cost step to take while CDOT and the counties are searching for the enormous sums of money that it would take to complete each part of the proposed improvements. Is there a document that identifies sites in order of priority?

- ◆ I am a 44-year resident of Garfield County and reside in Missouri Heights. My family and I drive Catherine Store Rd., Crystal Springs Rd., and Cattle Creek as the primary access routes to our home. We also use Cottonwood Pass on a somewhat regular basis to access the Eagle Valley. We have used Cottonwood Pass during the 44 years we have lived in Garfield County. We have seen the incremental changes on the Cottonwood Pass Road made by Eagle and Garfield Counties over the years. In general, those changes have been to the road surface as opposed to any significant roadway alignment modifications. The improvements to the road surface certainly have helped drivability when the road is wet. Historically, the clay content in the road driving surface made it extremely slippery and sometimes impassable when it was wet.

I first became aware of the current effort to investigate improvements to Cottonwood Pass through a newspaper article about the I-70 Detour Act proposed by Third Congressional District Representative Lauren Boebert dated March 30, 2022. That Act specifically referenced costly impacts associated with closures of I-70 through Glenwood Canyon and identified “at least 1 alternative that includes the possibility of improving Catherine Store Road, as proposed by Garfield County, Colorado” as well as “improving an existing road down Cottonwood Creek, as proposed by Eagle County stakeholders and the Colorado Department of Transportation;”. This Bill never gained support but had the effect of initiating this current effort at a state and local level. I am aware of the prior investigation of Cottonwood Pass as a potential route for I-70 years ago when alignments for the highway were being investigated. I have been involved as a stakeholder with this Cottonwood Pass Concept Design Project from the beginning and have participated in the various Zoom meetings and open houses.

As an observer and participant, I saw this project reduced in scope from a detour for I-70 traffic during closures in Glenwood Canyon to road improvements targeted at Roaring Fork Valley locals commuting to the Eagle Valley. This is an important point because there is a drastic difference between local traffic on Cottonwood Pass and huge I-70 traffic volumes from Glenwood Canyon closures.

Cottonwood Pass is a rural roadway intended for very low traffic volumes and is wholly inadequate for handling very high traffic volumes associated with I-70 closures. I support limited improvements to make the roadway safer for low-volume local traffic during non-winter months only. Any consideration of improving Cottonwood Pass to handle I 70 traffic volumes during Glenwood Canyon



closures should be rejected outright. Cottonwood Pass Road and connections to roads in Garfield County traverse rural low density agricultural/residential properties. The pastoral character of these areas would be completely altered and irreparably destroyed by improvements to Cottonwood Pass and connecting roadways to accommodate interstate traffic volumes. I believe my opinion is shared by the vast majority of property owners in the rural portions of Garfield and Eagle County that would be impacted significant changes to the rural roadways necessary to handle huge traffic volumes. I believe there would be strong opposition to any such proposal.

The Cottonwood Pass Concept Design is simply a “concept”. This process included general public scoping and a low-level input process to get input on basic roadway modifications. There was no substantial engineering completed on the roadway modifications proposed. No traffic studies were completed to address current/future traffic volumes on existing roadways or intersections. No funding has been secured to complete roadway improvements. Potential costs range from moderate to very large costs. Garfield County has indicated that they have other higher priorities for roadway improvements. Eagle County may have some limited funding for improvements, but the costly work associated with addressing “Blue Hill” is unlikely to be available well into the future if ever.

Garfield County identified County Road 100 a.k.a. Catherine Store Road as their preferred route for traffic and for roadway improvements. It is my understanding that this decision was based upon anecdotal input and staff/elected official’s observations. No comprehensive analysis of roadway limitations, design capacities, or other engineering/scoping analysis was completed to make these determinations.

Local drivers using county roadways and Cottonwood Pass are familiar with the routes and their intended destinations. For example, an individual coming from the Eagle Valley to Glenwood Springs over Cottonwood Pass will not choose to use Catherine Store Road because it does not make practical sense and it is a longer distance. That driver will take Cottonwood Pass to Cattle Creek and turn north on Highway 82.

Improvements to Cattle Creek were not considered as part of this project. Similarly, Crystal Springs Road in Garfield County was not evaluated for improvements. Individuals going to Carbondale over Cottonwood Pass are going to follow that route as the shortest distance. These issues were not studied in any depth nor supported by any traffic analysis. There are other significant deficiencies in the overall project methodology. These inadequacies result in incomplete or deficient project conclusions. For example, in the Q & A section the following was included. *“Q: How will drivers know which route they should take to travel Cottonwood Pass? What will be done to keep traffic off Cattle Creek Road? A: This project is considering modifications to the geometry of the intersection of Catherine Store Road and Cattle Creek Road (Garfield Co Site 7) to a T intersection with free-flow through movements between Cottonwood Pass and Catherine Store Road, rather than the current configuration that naturally directs southbound traffic onto Cattle Creek Road. Other improvements such as signage will be considered to direct traffic and distinguish the routes.”* I know first-hand that reconfiguring the intersection at Cattle Creek and Catherine Store Road will do little or nothing to steer traffic away from Cattle Creek if that is the most direct route to the driver’s destination. It does



not make sense to force traffic out of their way when there is a more direct route. Navigation software such as Google Maps will show a driver the most direct route to a destination.

It is understood that the scope of work for the project was limited by funding. It is also understood that political pressures came to bear on initiating this work because of the substantial impacts resulting from closures of I-70 through Glenwood Canyon. Perhaps, the most valuable information that comes out of this concept design are identification of common sense/practical improvements to county roads to better serve local traffic.

It is important to recognize that use of this “Concept Design” for addressing future traffic beyond local volumes is completely inappropriate. It would be far more effective to utilize future public monies to improve Glenwood Canyon by tackling debris flow, traffic safety and other hazards that close I-70 instead of pursuing expedient solutions on country roads through very rural portions of Garfield and Eagle Counties. Poorly considered solutions to the I-70 closures utilizing Cottonwood Pass are prohibitively expensive and will destroy the pastoral character and qualities of the lands that will be impacted. The Cottonwood Pass Concept Design ideas should **only** be used to improve roads for local traffic during nonwinter months. This project objective should be clearly stated at the beginning of the document and in all conclusions to ensure that the information is not used inappropriately in the future to create an I-70 detour for Glenwood Canyon closures. Thank you for considering my input.

(The above comment was noted as endorsed and adopted by the Keep Missouri Heights Rural organization.)

- ◆ As long-time residents of Missouri Heights, we have many concerns regarding the proposed improvements to the Cottonwood Pass Road in Garfield and Eagle Counties. Those concerns go beyond those of safety and access that are the focus of the Design Concept presented in recent public meetings. Although the available design documents touch on some of these issues, those documents are not satisfactory in their discussion of the following points:

What signage and other directional instructions would be incorporated into any improvements? This is discussed briefly in the presentation material but needs much more investigation. As you know, Missouri Heights has myriad public and private roads, long driveways and dead-end forest access points. Due to the rural nature of the area, road signs are regularly vandalized, knocked over or otherwise obscured. It is inevitable that increased traffic over Cottonwood Pass will spill over into residential areas, backcountry dirt roads and dangerous routes like the Red Canyon Road even if signage is abundant and explicit.

The environmental impacts of the proposed improvements and the subsequent increased traffic are glossed over in the presentation material. Cottonwood Pass and Missouri Heights have historically been highly rural and undeveloped areas that provide important wildlife habitat as well as clean air, dark skies, good quality water, and relatively little noise pollution. All of these and more are at risk from increased traffic over Cottonwood Pass. The environmental impacts of road improvements and increased traffic and their mitigation must be incorporated into any further investigation.



What would improvements require in terms of added public safety, highway patrol and emergency response resources? With the traffic increases that can be anticipated due to road improvements, it is inevitable that accidents and emergency incidents will increase. In addition, an improved road will require more ongoing maintenance and monitoring. Repair and replacement costs will increase as will the cost of adjacent improvements like wildlife crossings, emergency telephones (or extensions of cellphone service areas) and fencing.

The design concept notes that there are no plans at this time to open Cottonwood Pass to year-round traffic or to large commercial vehicles. However, if the improvements mean that travelers can access the Roaring Fork Valley more quickly than travelling by way of Glenwood Springs and Highway 82, traffic will inevitably increase beyond the levels currently projected. If the road improvements lead to Cottonwood Pass becoming a highly-traveled and popular alternative to Glenwood Canyon, there will be enormous pressure to make it more usable both in terms of capacity and availability. What guarantees can be put in place to assure that the current seasonality and vehicle capacity of Cottonwood Pass remain in place?

How will local residents be compensated for the loss of value to their property resulting from increased traffic? Many residents of Missouri Heights, including those whose property is adjacent to the proposed route, are long-time residents whose financial future is bound up in their property value. These property values will certainly be adversely impacted if what is now a lightly-traveled rural road becomes a seasonal thoroughfare.

We recognize that the many hazards and stoppages that have plagued Glenwood Canyon in recent years have caused hardship and even danger to many local residents and that improvements to the Cottonwood Pass Road are needed. We also recognize that we are early in this process and that there will be many opportunities to discuss and debate these and other topics in the future. In the meantime, we urge you to consider the above points so that we can be assured that the full range of impacts and costs are taken into account as planning proceeds.

- ◆ Improving the Cottonwood Pass road will lead to more vehicles using the pass along with higher speeds. The comment in the CDOT Q&A handout stating, “There are no expected changes in average traffic volume ... from what is experienced today, ...” is blatantly false and unimaginative. Given the current growth patterns in the Eagle Valley, Roaring Fork Valley and the State of Colorado how can it possibly be thought that improving a road, that is in high demand, will not result in increased volume, speed, hours of use and of course increased associated problems. The naive idea that this road, along with its impending improvements, is to be used primarily for local commuter traffic is also a miscalculation. CDOT’s and the county’s own traffic figures show that when the canyon is closed there is a 10x increase in traffic volumes. Any traffic restriction in Glenwood Canyon will result in increased volumes on Cottonwood Pass. With road improvements on Cottonwood Pass the increased use will only result in more of the same problems that I-70 Glenwood Canyon now suffers from i.e., numerous traffic accidents resulting in delays and road closures, speeding & aggressive driving leading to increased traffic accidents, reckless or careless driving by oversize vehicles, unsafe road conditions caused by weather, rocks, flooding & snowslides. Many of these issues deal with



lack of enforcement that is caused by staffing &/or the inability to actually conduct traffic enforcement in a confined travel corridor. Instead of primarily dealing with these issues in Glenwood Canyon the state & county governments will now be taxed with dealing with them on a narrow 2 lane dirt road - thus doubling the issues that are currently in play today.

Will there be a NEPA process prior to work commencing on Cottonwood Pass? If the counties take it upon themselves to start improvement work will they go through any kind of increased analysis & public scrutiny?

Will there be any kind of agreement between the counties to coordinate the improvement work? In other words what happens if one county elects to proceed with improvements while the other county doesn't want to?

How will traffic be diverted to Hwy 82 by the Catherine Store? I know if I want to travel to Glenwood Springs, or further west on I70, I'm going to use either Cattle Cr or the CMC access roads. What's to keep others from doing the same?

I would like to see more specific comments regarding wildlife impacts and the mitigation proposed. From what I saw at the public meeting only generalized comments are used when discussing wildlife and environmental issues. What specifically has the CPW said in their comments? Have they stated the increased traffic volumes and speed will only lead to increased wildlife/vehicle accidents along with death & injury to both humans and wildlife? If so what is proposed for actual mitigation?

Has CPW indicated that wildlife movement & migration will be disrupted and negatively impacted? It has been my experience (50+ yrs) when dealing with the above two issues they are only discussed & inadequately addressed after the impacts have occurred. In some cases it has taken decades or not addressed at all, see I70 & Hwy 82 as they run through the Eagle & Roaring Fork Valleys for prime examples.

Other negative wildlife impacts that are going to occur on an improved Cottonwood Pass road include disruptions to solitude, feeding, breeding, & birthing. How will these impacts be dealt with?

The massive retaining walls proposed for sections of the improved road will create significant barriers to wildlife. Proper mitigation needs to be addressed.

- ◆ Stop the madness. You are single handedly destroying our homes and our property value by cramming this down our throats. One of those pictures you practically have cars in the homeowners living room. Whoever is making these decisions needs to step back and take another look. Widen a few spots, make a few spots safer, get this route off of google and keep it off. Put the majority of the money into I-70 where it belongs. Keep thousands of cars off of this rural road, it is a county road that is 25 MPH and you are allowing cars to drive 50 to 60 MPH on it this road is not intended to be an interstate. There are children out in the rural roads and animals it is no longer safe and nobody seems to care.



- ◆ Thank you for considering these comments. I am not in favor of any improvements on Cottonwood Pass please consider the following:

1. Manage the existing conditions: Although there are some safety considerations and concerns, all of these could be addressed by drivers simply slowing down for the conditions of the road. One of the best solutions to slowing down traffic might in fact be to let the road deteriorate some. Potholes slow people down. Posted signs at each end that the road is NOT maintained and there is not cell service throughout.

2. Widening and straightening Cottonwood will create other safety concerns: Speeds will increase causing similar safety issues which are present now. Policing speeds will still be a problem. Why not address those concerns now instead of investing the money to “improve” a road that will still need to be policed. Changing a road in order to facilitate faster driving seems like a backward solution when the area is clearly one where slower driving is necessary.

3. Keep Cottonwood winding and mountainous: There already exists a wide interstate built for the purpose of moving large amounts of traffic. Please do not start the process of widening and straightening Cottonwood pass but instead use the money to continue to improve and manage I70.

4. This is a mountain community...not a city. Keep it that way. Keep the traffic on I70. The population that has chosen to live in Eagle and commute to Aspen needs to slow down their speeds if they choose Cottonwood, or stay on 70.

5. This is a mountain community....there will be rock slides and closed roads due to weather.

6. This is a mountain community...Sometimes emergency care cannot reach folks as fast as in a city.

7. This is a mountain community with unimproved roads. Stay off remote roads if the risks of driving them are not acceptable. If the reason for beginning these improvements is to “pave the way” for routing I70 traffic through Cottonwood. Consider instead that I70 needs improvements through Glenwood Canyon. Instead of investing in an entirely new route, improve the one that already exists. Thank you for considering these thoughts.

- ◆ I like the rural character and less traveled path of Cottonwood Pass. I've traveled the road May-October for both pleasure and work commute for over 20 years. I don't encourage nor expect Cottonwood Pass to become a paved 2 lane high traffic roadway, and don't expect it to absorb the traffic load and brunt of future I-70 / Glenwood Canyon closures. I'm sensitive to rural experience for private landowners in that area. With the more recent traffic impacts from I-70 road closures since 2021, my prevailing observation and concern is with human driver behavior habits during detours. Have routinely seen incidents of inappropriate passing, exceeding speed appropriate for road surface and road width conditions, and a gross unwillingness to slow or moderate forward speed to observed oncoming traffic conditions. While improving road width and overall safety to keep vehicles on the road and in their lane is good -- improved road may result in higher speed and no improvement in driver judgment. I don't favor speed bumps or anything like that. I would be



interested to see if any segment of Cottonwood Pass would introduce signage to designate who has right of way and who shall yield to oncoming traffic. Ultimately, I remain skeptical in regards to human driver behavior, and therefore, where CDOT Garfield County / Eagle County funds are allocated, favor road designs that are of lower price tag.

- ◆ I live on lower Cattle Creek and witness semis (Amazon Prime to be specific) going past my house to access Cottonwood Pass. This is over the legal limit for length and how are you going to enforce that? The speed limit is 35-40 and people go past my driveway going 60mph at the least. How are you going to enforce that? Can speedbumps or dips be put in so we can safely exit our driveways without getting hit by a speeding vehicle? I have also seen 10 to 15 cars backed up at the bottom of Cattle Creek where there are 5 intersecting roads trying to access Hwy 82 and it is probably the most dangerous intersection in the valley. How is that going to be addressed? Even though the route shows improvements from Catherine Store, that is only for up valley travelers. All people down from there will use Cattle Creek so they don't have to drive to Catherine Store to access an improved road. I move to promote CMC road for people to use instead of Cattle Creek, as there is a stoplight there already in place. County road 113 is a rural road with joggers, walkers, baby strollers, bikers and dogs, not a route for semis and very fast drivers!
- ◆ My husband and I attended the meeting in Glenwood Springs. Thank you for hosting. As you can tell we live on CR 113 and are highly impacted each time the Interstate is closed. I would like to see warnings on the interstate as one approaches the canyon stating, please obey speed limit through this menacing canyon. Use cameras to photograph license plates and fines \$1,200. -\$1,400. will be issued to those executing caution. Hopefully this would assist in limiting some accidents that are caused by speeding. Widening the pass and making it safer will only cause drivers to go faster. During Interstate closure it should be patrolled and possibly pilot cars hired to lead. I would hope an environment study to assess the impact on wildlife would be incorporated into the monies spent. There's no stopping traffic from following their GPS and using CR 113 instead of Catherine Store Road. Therefore a traffic light must be installed at intersection of Hwy 82 and CR 113 and 110. That is total mayhem, not only when the Pass is heavily used but constantly. CR 113 was never built to be a major throughway. Like Cottonwood Pass it is a rural road and very few people foreign to this area of the country know how to navigate these roads. I've been known to be a flagger when pulling our RV out of the driveway onto CR 113 as the traffic moves too fast for our hidden driveway. Personally I think the money coming to this project should be concentrated to fixing the issues on I-70. Lastly, I want to acknowledge Garfield County Road and Bridge for taking great care of CR 113 and the surrounding roads. I'm very pleased with the maintenance they provide in keeping us moving. Best of wishes with this humongous task.
- ◆ Thank you all for your efforts on this project. We live off of lower Cattle Creek Road and use it frequently to get from our home to Glenwood and back. We use Cottonwood Pass to get to Gypsum and points east when traffic volumes, canyon closures, or weather affect Glenwood Canyon. Additionally, I am a firefighter with Carbondale & RFPD and respond to and from Station 85 on CR 100 as needed.





Cottonwood Pass needs to be improved: it is a lifeline for locals. During the Cottonwood Pass closures during the Grizzly Creek fire and the next year's mudslides, it would have been quicker for us to go to Costco in Salt Lake City than to take the Steamboat detour to get to Gypsum. My wife gets her prescriptions there and had to jump through some hoops to make alternate arrangements. More than once, having Cottonwood open has saved us from taking the detour when returning home from points East. Our regular life includes friends and events in Eagle county East of Glenwood Canyon. Like most people, we have to go to Denver sometimes, or have people from the Front Range come visit us. In recent years, we have begun attempting to schedule these visits in the shoulder seasons between snow closures of Glenwood Canyon and rockfall closures of Glenwood Canyon. It is a noticeable impact to our lives. Some of our visitors from the Front Range are city people who I wouldn't send over Cottonwood pass in its current condition.

Improving Cottonwood Pass is only helpful if measures can be taken to prevent it being used more by interstate traffic. I like the current effort to maintain the rural character of the route. Nobody who lives around here wants to induce more traffic onto Cottonwood Pass - it would be better to leave it as-is. Many of the problems with Glenwood Canyon are caused by drivers with no common sense. When there isn't a closure, we don't see many of these folks on Cottonwood Pass. When there is, the prevalence of bad drivers goes up, not just the traffic counts. The widening and softening curves will help with this. I frequently encounter people up there who don't seem to understand how wide their little sedan is. We have to try to keep this to a minimum as well as improve the road conditions to accommodate the unavoidable folks with challenges. Cattle Creek: It is imperative to try to keep non-local traffic off of Cattle Creek. Even those of us who live here drive too fast on it. I have personally responded to 3 rollovers including 2 fatalities on that road in the last 2 years. All locals. During the I-70 closures, I personally turned around several interstate semis who were headed up Cattle Creek. In each case the drivers were blindly following their GPS, which wanted to take them over Cottonwood. I think the realignment of the intersection at CR113/CR100 will help. I think the project will also need some fairly intense signage throughout regarding: no semis, no through traffic, local traffic only, etc. I do appreciate CDOT and the 2 counties working on this.

- ◆ Thank you for the open house in Glenwood last week, we appreciate it. From what I can tell the decision has been made to increase traffic over Cottonwood Pass. I would like to request that you consider putting in multiple electronic speed monitors that automatically send a ticket to offenders. My suggestion is for the ticket to be substantial, I would vote for \$500 plus. This high ticket will get the message out that we will not tolerate drivers going over the speed limit. The amount of road kill including people's pets, livestock and possible children will be greatly reduced if we monitor drivers speed. I would estimate many drivers will hit 60 MPH easy once they get to the top of the hill near the turn to the Strang ranch coming from Catherine's Store. I am very serious about this, the deer, elk, coyotes, bobcats, mountain lions etc... do not need more humans in a hurry using this road because we have now made it easier to drive. I feel very sad about the direction the planners are going. The ultimate goal appears to find an alternative to I-70 when it is shut down which I understand is more often these past few years. I moved to Carbondale in 1989. Do we know what percentage of the canyon shut downs are due to human error? Accidents - it seems like truck accidents are the biggest problem, drivers driving too fast, swerving in and out of traffic to get to



their destination 5 - 7 minutes earlier, not paying attention, dragging chains that cause fires. Increasing traffic control on I-70 would be a terrific way to minimize road closures. One way is to have two patrol cars drive side by side through the canyon at or 5 miles below the speed limit to control speed. A silly thing to have to do but it seems to be the only way to slow them down. This would be much less costly than the millions or will it hit billions to give the speed racers yet another road to shut down due to reckless driving. Thank-you for your consideration and response.



# PROPERTY OWNER/RESIDENTIAL ISSUE TASK FORCE MEETING #1 SUMMARY

August 15, 2022

The first meeting of the Property Owner/Residential Issue Task Force (ITF) was held via Zoom videoconference on August 15, 2022, from 2:30 – 4:30 p.m. This meeting was interactive and combined a presentation by the project team with comment opportunities. The information presented was largely the same as was displayed at the July public open house meetings, with discussion focused on issues important to property owners and residents along Cottonwood Pass. Participants were asked to provide thoughts about the Core Values and issues and opportunities for improvement at each of the project sites through an interactive survey with real-time results shown on screen. The final portion of the meeting was reserved for answering audience questions and gathering comments.

All ITF members (including those unable to attend) received a link to the presentation following the meeting and the survey was open through August 16<sup>th</sup>. The presentation and survey results are attached to this summary in Appendix A. Questions and comments from the meeting chat and the open discussion are listed below, along with those sent during or following the meeting via email. Written comments are listed as typed by the participant with some minor spelling and capitalization errors corrected. The comments/responses and questions/answers in the group discussion section were summarized without compromising the speaker's intent.

## CHAT AND EMAILED COMMENTS

### Core Values

- ◆ Interruption of our rural quiet and traffic jams.
- ◆ Core Value: County Road 113 will end up being the preferred route, as is.
- ◆ 2 [Respecting Corridor Character] & 3 [Natural Resource Preservation] are really the same or very closely connected, 4 [Collaborative Improvements] is process not outcome, so 1 [Safety] and 2/3 are both very important.
- ◆ All of the above. Natural resources are part of the corridor character and without safety we get more wildfires like the one on 100 road last week and if we don't respect each other's needs we lose our community.
  - ◇ Yes, I agree.
- ◆ I want to reiterate that the Safety Core Value should be defined and should include not only road safety, but safety from fire, emergencies, for school busses, bicyclists and more. Safety for animals, both cattle crossings and wildlife should also be considered. There is no cell service for much of the route, making calling for emergency services impossible.



## Cattle Creek Road/CR 113

- ◆ Cattle Creek will be the route taken by everyone coming off of I-70. You can't push people to go 10 miles out of their way when their GPS says its quicker to go up or down CR 113.
- ◆ The Cattle Creek intersection is dangerous on a daily basis. Four roads converge at the intersection with 82.
- ◆ Speed humps on a particular section of CR 113 - between 1375 and CR 112 intersection?
  - ✧ Please remember that it is the locals who will be the ones who have to deal with these "improvements" on a road that we already like, on a daily basis. It just doesn't seem fair to the homeowners who picked to buy in this area to now have speed bumps and construction "improvements".
  - ✧ I understand what you're saying. I live along the area that I've suggested for speed humps. People along Midland in Glenwood Springs have speed humps on a certain section. I'm talking about wide and low humps, not bumps, that are designed to allow cyclists through.
- ◆ People will continue to use CR 113.
- ◆ Couldn't we use infrastructure road money to put stoplights on 82? 113 and Cattle Creek?
  - ✧ 113 and 103 both need stoplights. Has anyone investigated Federal infrastructure \$\$ for this?
  - ✧ I have to second that cattle creek to 110 intersection... there are a couple people who must live up there and in their sports car often exit off highway 82 at speeds in excess of 55 mph driving like madmen. It sure would be nice if Garco would not look the other way about this entire intersection. But... that's not part of the scope of this. Sure would be nice if it WAS included.
  - ✧ Sounds like a letter writing campaign to both State and Federal level to get a stoplight on 113 and 103 if the \$\$ is too silo'd to touch.
  - ✧ Just really concerned about CR 113 and that our concerns will not be taken seriously.
- ◆ How are you going to keep people OFF CR 113 (Cattle Creek Road)? Will there be new signage at the 3 way of 100/113/UPC roads AND at the 82 entrance? Our road is much more narrow than CR 100 and we live much closer to the road than people who live on CR 100.
- ◆ Ignoring alternate routes from the pass to Highway 82 in terms of identifying some potential issues, dangerous curves, intersection at Cattle Creek and 82, may prove to be a mistake down the road. Despite well intended efforts, drivers will find these alternate routes. Better to be safe than sorry.

## Support for Glenwood Canyon Improvements

- ◆ In my opinion, the Glenwood Canyon requires much more extensive fencing, webbing, etc. to keep the rocks/mud, etc. from sliding into the road or river. It's not very well protected. CDOT and the Feds could spend more \$\$\$ on strengthening the protections and perhaps close the Canyon less.
- ◆ It should be suggested that dollars are invested further to do what is needed to improve I-70 to mitigate issues that cause closures in order to minimize the need for any extra traffic over Cottonwood Pass.



## General Comments

- ◆ It is very difficult to make it to meetings in person please make sure they all can be attended by zoom.
- ◆ The re-routed traffic is already in a rush because they are delayed. How to keep it below 45 mph?? Preferably keeping it 35 mph.
- ◆ You'd have to take away people's ability to drive the 4 by 4s seeing this is in incorporated Carbondale on the Garfield side.
- ◆ There was a wreck last month in front of my house involving a cyclist and 2 trucks. One driver just couldn't wait until the other truck passed before he tried to pass the cyclist. Truck flipped but no one was hurt.
- ◆ People get lost up here all the time. Really lost.
- ◆ The driveways with changing the yield going to Coulter Creek areas has made it difficult to get through that intersection of CR 121. Again this is changing our, the locals, for the highway traffic needs.
- ◆ Mapping and Google can still show the route. People can still see the options!
- ◆ Lots of four wheeler traffic in this area.
- ◆ Make it a toll road for all but locals, locals can get a pass at their County, everyone else pays!
  - ◇ Agreed
  - ◇ I like the toll road idea.
- ◆ Please invite Roaring Fork Conservancy [to the Natural Resources Issue Task Force] who has studied the actual Cattle Creek.
- ◆ Wilderness Workshop works on public lands issues. Not sure if this is in their wheelhouse.
- ◆ Super dangerous I think even more dangerous than it was before. Who is making these decisions?
- ◆ The lights in Independence Pass are timed for 3 cars only- which adds about 45 minutes to the trip if there are a lot of cars at the same time.
- ◆ Nextdoor and Facebook is how we get our wildfire news - and the Roaring Fork Road and Weather on FB gets road condition information faster than any other social service- County, City or State.
- ◆ National Guard and State Troopers didn't work- trucks blew right past them.
- ◆ Catherine's Store 100 road grade is too steep for safety in this scenario.
- ◆ Three schools connect to Valley Road-- lots of safety/congestion issues during pick-up/drop-off.
- ◆ Is no one concerned about Crystal Springs Rd.?
- ◆ Crystal Springs road has some significant wildlife- talk to Audubon.
- ◆ The more drivers you have over this route, the more potential risks you will have. The more transient drivers you have, the less likely they are familiar with the road which no matter how much



it gets improved, will still be curvy and steep in places, and the less likely they will be familiar with fire restrictions, the more you have risks of disasters and problems difficult to resolve quickly. The perfect solution would be to strive for very little additional traffic over what currently exists for local usage (when the Canyon is open) and making minimal safety improvements to serve that usage. Just enough to prevent local accidents, and to ensure protection of property owners and wildlife along the route, and to preserve the character of the area.

- ◆ Road surface when wet. Serious safety issue. After the ITF meeting we drove the pass to confirm the issues we saw. It was raining and we were in a 4WD F150. The surface quickly turned to slick mud and water was running in torrents, creating instant ruts. Our tires were sinking down a couple of inches and not really making contact with a hard surface. I can't imagine driving the pass in the rain in the dark. Especially if not familiar. This is something that needs to be experienced first hand by the team. Thank you.
- ◆ I don't envy you all for trying to please as many as possible. But thank you for your efforts!
- ◆ Thank you all.
- ◆ Thank you for doing this.

## CHAT QUESTIONS

*(Answers added subsequent to the meeting for those questions that weren't answered within the meeting chat.)*

- ◆ Is there a study as to who drivers are that are involved in accidents? Are they "locals" or those detouring off of the interstate?
  - ◇ Answer: That is part of the data the project team is currently gathering/assessing from the counties. More defined details will be presented at the next ITF meeting. It may be hard to discern where the drivers live and/or to where they were traveling.
- ◆ Will CDOT share initial design alternatives in the next Property Owner Residential Task Force meeting?
  - ◇ Answer: Yes.

Chat questions not responded to during the meeting (responses added following the meeting):

- ◆ Is there a study on volume when canyon is closed vs when it is open? Expected volume if improvements are made?
  - ◇ Answer: Traffic counts were collected on Cottonwood Pass Road during Summer 2021 (mid-July through August). The average daily traffic volume on Cottonwood Pass Road when Glenwood Canyon was open was about 400 vehicles/day. When Glenwood Canyon was closed, the average daily traffic volume on Cottonwood Pass Road was about 3,700 vehicles/day. The largest increases in traffic volumes occurred on weekdays (Monday-Thursday). The improvements being considered by this project would not allow year-round use of Cottonwood Pass or access



by vehicles over 45 feet. While the site improvements will improve safety at specific locations with smoothed curves and increased road width to accommodate two-way traffic, the overall corridor will remain mountainous with steep grades and low speeds. There are no expected changes in average traffic volume along the Cottonwood Pass corridor from what is experienced today, with the canyon open and closed, due to the site improvements.

- ◆ Are residents allowed to participate in Nat. Resources group? How does one sign up for the Natural Resources Task Force?
  - ◇ Answer: The Natural Resources ITF group membership was limited to regulatory agencies at this stage. Input from other groups may be helpful as counties move into design and implementation. These Property Owner/Residential ITF meetings are intended to facilitate coordination between the project team and residents between the general public open house meetings.
- ◆ Are you evaluating how the road is when wet?
  - ◇ Answer: Modifying the road surface (i.e., paving) is not currently being considered with the site improvement options. Mountainous rural road standards, which were developed considering varying road surface conditions, are being consulted in the concept design of the site improvements.
- ◆ Can you provide any information on the results of the environmental surveys and evaluations?
  - ◇ Answer: This concept design project includes a high-level review of environmental conditions in order to document issues to be considered by the counties in the future. Available data was compiled about conditions of streams, water quality, wetlands, wildlife/threatened and endangered species (T&E), and cultural resources. This information was presented at the first Natural Resources ITF meeting held in September 2022. The presentation is available in the agency coordination section of the project web page.
- ◆ Can you extend the comment period?
  - ◇ Answer: The public comment deadline of August 16, 2022 refers to the date by which comments must be received to be included in the summary of public comments received surrounding the first round of public open house meetings. Comments are welcome at any time via the project web page (<https://www.codot.gov/projects/cottonwood-pass-concept-design>) and will be included in the next summary document if received after August 16, 2022.

## Open Discussion

- ◆ Question: Is the project on schedule?
  - ◇ Answer: Yes, the project is on schedule as of right now.
- ◆ Question: Will Wilderness Workshop be invited to the Natural Resources ITF meeting?
  - ◇ Answer: Those agencies with expertise or that have done studies regarding wildlife and natural resources in the area will be considered. Please send suggestions for group members to [dot\\_cottonwoodpassconceptdesign@state.co.us](mailto:dot_cottonwoodpassconceptdesign@state.co.us).



- ◆ Question: There were white painted dots on Catherine Store Road last week. Was that related to the aerial survey? If so, is there a way to give the residents notice of visible work? Next Door is used by a lot of people in Missouri Heights. Eagle County uses that platform, so even if CDOT doesn't use it possibly Eagle County could convey the information.
  - ✧ Answer: Survey was being conducted at that time. The project team will look into how the surveyors mark the pavement and mention this to the counties. This may be the end of the survey work at this time.
- ◆ Question: I read on the website that making Cottonwood Pass a full year open road is stated as a long-term goal. I don't think anybody here would like to see that. Who's long-term goal is that?
  - ✧ Answer: This was mentioned by the counties at one point as a potential. If all of these work areas were improved, the counties may choose to pursue that in the future. Right now, it isn't on the horizon.
- ◆ Question: Why is this plan ignoring the intersection of Cattle Creek and Hwy 82? It would make sense to put a stop light here as the first priority. Everyone coming off I-70 getting directed to Cottonwood Pass is going to take Cattle Creek since it is first. They aren't going to travel further to go to Catherine Store.
  - ✧ Answer: Garfield County selected the Catherine Store route as preferred. The Cattle Creek intersection with Hwy 82 is challenging and at a strange skew, which is part of the reason Cattle Creek wasn't chosen as the alignment. CDOT isn't considering it as part of this effort. CDOT discussed this with Garfield County. They don't intend to operate or flag it differently. They are trying to change Google Maps to send people in safe directions.
    - » Another resident noted she asked this question of Commissioner Jankovsky at the public meeting and he thought it would be a fifty million dollar expenditure and is out of the question.
- ◆ Comment: I live on Cattle Creek as well. I asked the same question about what will be done for Cattle Creek at the public meeting. Commissioner Jankovsky and a project team representative told me "people will be people". I don't think that is okay. I think we may need speed humps to allow cyclists to come through or some type of traffic calming/reduction on CR 113. Living here is like living on Grand Avenue in Glenwood Springs and the road isn't meant for it.
  - ✧ Response: Karen Berdoulay mentioned that she also talked with Commissioner Jankowsky at the public meeting and he noted the amount of widening that would have been needed along Cattle Creek Road would have required multiple full property acquisitions, which was one of the major considerations in choosing the Catherine Store route.
- ◆ Comment: The situation at the bottom of Cattle Creek is ridiculous and dangerous. The more people who come off I-70 onto Cattle Creek will get somebody killed. Four roads converge here. People come on Hwy 82 towards Glenwood and hit CR 110 to go to CR 114 and they don't stop at the turn. People come down Cattle Creek to get to I-70 rather than going to Catherine Store Road. People are turning off Hwy 82 and there are two frontage roads. It is ridiculous that they don't think a traffic signal is worth it but they will straighten Catherine Store Road. It doesn't make any sense.





- ✧ Response: These comments will be compiled and given to the counties.
- ◆ Question: What was the impetus to start this study?
  - ✧ Answer: Eagle County has been considering Cottonwood Pass improvements for a long time, especially for the Blue Hill section. The ability to move local traffic, commuters, and those such as hospital workers and emergency responders along this route is beneficial to the counties. The road system on the Garfield County side is mostly paved, but they also noticed issues impacting local traffic once additional traffic was using the pass. This became more apparent and impactful during the closures of I-70 through Glenwood Canyon during the flooding in 2021, when local traffic was using Cottonwood Pass as a local detour. Eagle and Garfield counties were spending a significant amount of money flagging and respond to incidents, and at one point the National Guard was involved. The 14 areas in this study were identified as problem areas during this time.
- ◆ Comment: I-70 through the Glenwood Canyon needs to be better improved/protected from rockslides, etc. so that the Canyon does not close as often.
  - ✧ Response: CDOT is focusing on making I-70 more reliable and has been doing that for the last year. However, CDOT realizes that there are safety issues on Cottonwood Pass now, so CDOT is partnering with the counties to find solutions to those issues. CDOT will step away from Cottonwood Pass once this concept design effort is complete and hand the progress to the counties to decide next steps. CDOT would help them apply for grants for the safety issues. This is a county road and CDOT wants it to stay a county road.
- ◆ Question: Could a definition of safety be added to the Core Values? For instance, additional traffic may increase fire danger with cigarettes or sparks and there is no cell service along the route. There are other things that are safety-related that aren't only going off the road.
  - ✧ Answer: This is a very good point and other safety aspects like this were also mentioned at the public meetings.
- ◆ Comment: At CR 113 and Full Throttle Ranch, Garfield County moved the yield sign to the road that goes to CMC. Now there is a non-yield coming up the pass that could cause a T-bone situation.
- ◆ Question: Surveyors left paper plates along the Eagle County portion of the road and they are blowing around. Should we start picking up their trash for them?
  - ✧ Comment: I stopped and asked a worker about the white circles. He confirmed it was for drones.
  - ✧ Answer: The project team will follow up on this with the survey crew. *[Subsequent to the meeting, it was confirmed these were drone markers for survey work. The material is biodegradable but surveyors are to collect as many of them as possible before leaving the work area. Surveyors were reminded to leave no trace as much as possible.]*
- ◆ Question: If the recommended improvements are too expensive for the counties to handle, will this become a state or federal project using infrastructure bill money?

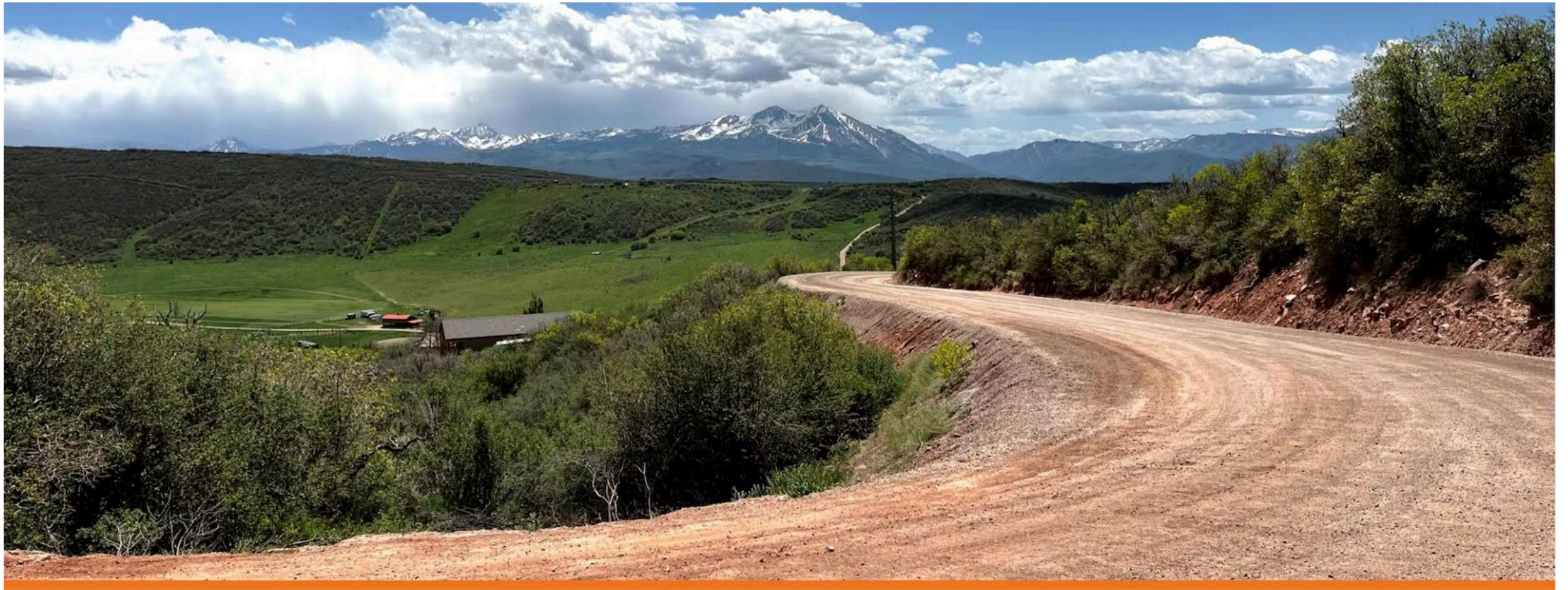


- ❖ Answer: The door is open for any type of funding the counties would like to pursue. Local agencies submit a very set scope and detailed cost estimates when they apply for grants. The Federal Highway Administration or CDOT wouldn't change the scope.
- ◆ Question: This meeting was in the middle of the workday. What will be shared with the public?
  - ❖ Answer: The meeting is being recorded and the recording will be shared on the web page as quickly as possible. The Mentimeter link will be active for an additional day. An email will be sent to the group members who missed this meeting with the presentation so they are aware of the opportunity to respond to the Mentimeter questions. In addition, this meeting presented very similar information to that presented at the public meeting and the exhibits have been available on the project web page for comment for nearly two weeks.
- ◆ Question: Do you feel comfortable that the people who will be most impacted have had an opportunity to participate? Have you matched up the people who have commented with addresses along the corridor?
  - ❖ Answer: Not everyone commenting or participating has shared their contact information. CDOT has followed a more robust outreach process than would typically be done for safety improvement projects such as this. This cross-referencing isn't planned since this would be a fairly substantial effort and the residents and property owners have been informed through multiple communication channels.
- ◆ Question: Do you still intend to shut off public comment tomorrow? Is that only for this part of the process?
  - ❖ Answer: The comment deadline of August 16 is only for comments to be included in the round 1 public meeting summary. Comments are accepted at any time but comments received after August 16<sup>th</sup> will be incorporated into the next engagement point summary.
- ◆ Question: Has anyone considered the impact on Crystal Springs Road? Once traffic is fed onto Catherine Store that will come into play.
  - ❖ Answer: This has been discussed with the counties.



# Appendix A

## Property Owner/Residential Issue Task Force Meeting #1 Presentation and Interactive Survey Results



**COLORADO**

Department of Transportation

Cottonwood Pass Concept Design  
Property Owner/Residential  
Issue Task Force (ITF) Meeting #1  
August 15, 2022



# Welcome!

## AGENDA

- Project introduction
- Existing issues and opportunities by site
- Next steps
- Group discussion/Q&A

## WHAT TO EXPECT

- Information presented similar to public meetings
- Focus on topics of interest to residents and property owners
- A mix of presentation and interactive polling
- Respectful communication
- ITF input used to develop concept designs at each site



# Project team presenters



**Karen Berdoulay**  
CDOT Region 3  
East Program  
Engineer



**Jacob Rivera**  
CDOT Region 3  
Project Manager



**Kara Swanson**  
David Evans and  
Associates, Inc.  
Planner

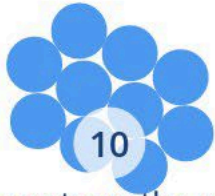


**Sarah Rachal-  
Dormand**  
David Evans and  
Associates, Inc.  
Engineer



**Leah Langerman**  
David Evans and  
Associates, Inc.  
Public Engagement

# Have you been involved with this project before today?



Submitted comments on the project web page



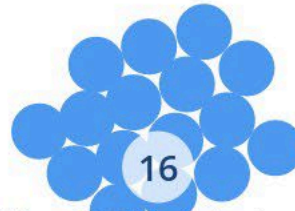
Attended July 19th open house in Glenwood Springs



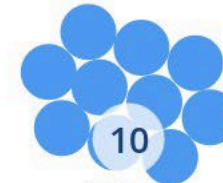
Attended July 20th open house in Gypsum



Called or emailed with a project representative



Visited the CDOT project web page



Other



# Project Introduction







# Project purpose

## FOCUS

- Cottonwood Pass between Gypsum in Eagle County and CO 82 in Garfield County

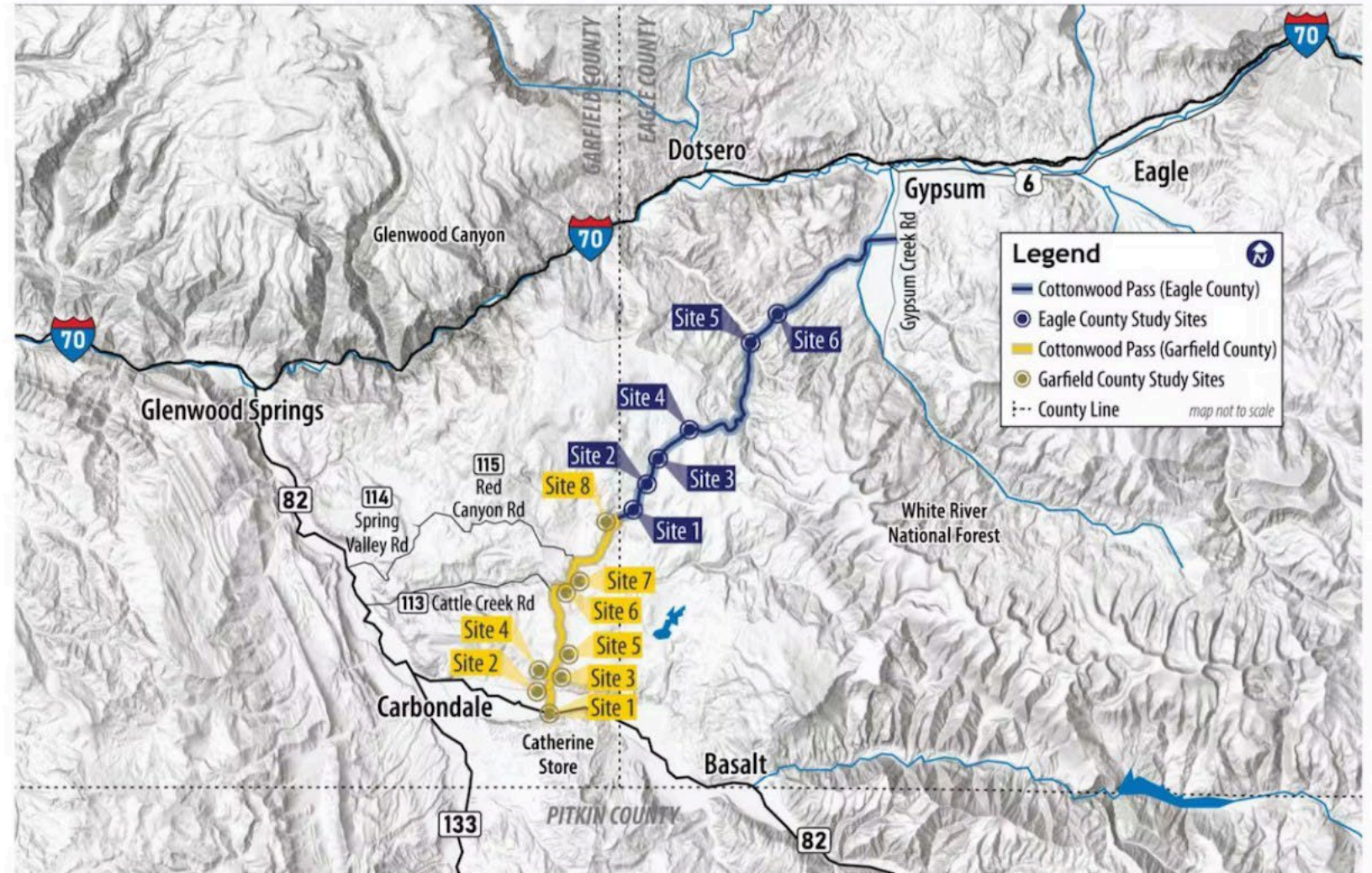
## PURPOSE

- Safety improvements to make the county roads safer and more functional as a vital travel connection between the local communities



# Project site key map

- Focus on 14 specific sites:
  - 6 in Eagle County
  - 8 in Garfield County
- Project sites account for 14% of total length of Cottonwood Pass
  - Corridor-wide improvements are not being considered with this project





# Context Sensitive Solutions process

- Context Sensitive Solution is a process that involves all stakeholders to implement transportation improvements that keep in mind the context in which the project is located.
  - Context Statement
  - Core Values
  - Project teams
    - PLT/TT
    - ITFs

**I-70 Mountain Corridor CSS**  
Partnerships Powered by Context

**The I-70 Mountain Corridor Core Values Decision Making**

*Methods for decision making must be fair, open, equitable, and inclusive. Collaboration moves decision making beyond individual and agency interests. New ideas will always be considered with respect and an open mind.*

The I-70 Mountain Corridor Decision-Making Process is consistent with the Colorado Department of Transportation (CDOT) National Environmental Policy Act (NEPA) Manual, CDOT's Planning and Environmental Linkages (PEL) Program, and the Life

**I-70 Mountain Corridor CSS**  
Partnerships Powered by Context

**Project Leadership Team Checklist**

The Project Leadership Team (PLT) is a multidisciplinary team that includes community representatives and experts in planning, design, landscape architecture, operations, environment, and safety. The PLT will facilitate the team through the project and will lead the project, champion the project, and facilitate decision making. Each member of the team shares responsibility for the project.

The PLT does not make the final recommendation(s).

The following checklist should be used to ensure that all responsibilities are met.

- All members will commit to the project throughout the project.
- Identify and review all responsibilities.

*limited to:*

**I-70 Mountain Corridor CSS**  
Partnerships Powered by Context

**The I-70 Mountain Corridor Context Statement**

The I-70 Mountain Corridor is a magnificent, scenic place. Human elements are woven through breathtaking natural features. The integration of these diverse elements has occurred over the course of time.

This corridor is a recreational destination for the world, a route for interstate and local commerce, and a unique place to live.

It is our commitment to seek balance and provide for twenty-first-century uses.

We will continue to foster and nurture new ideas to address the challenges we face.

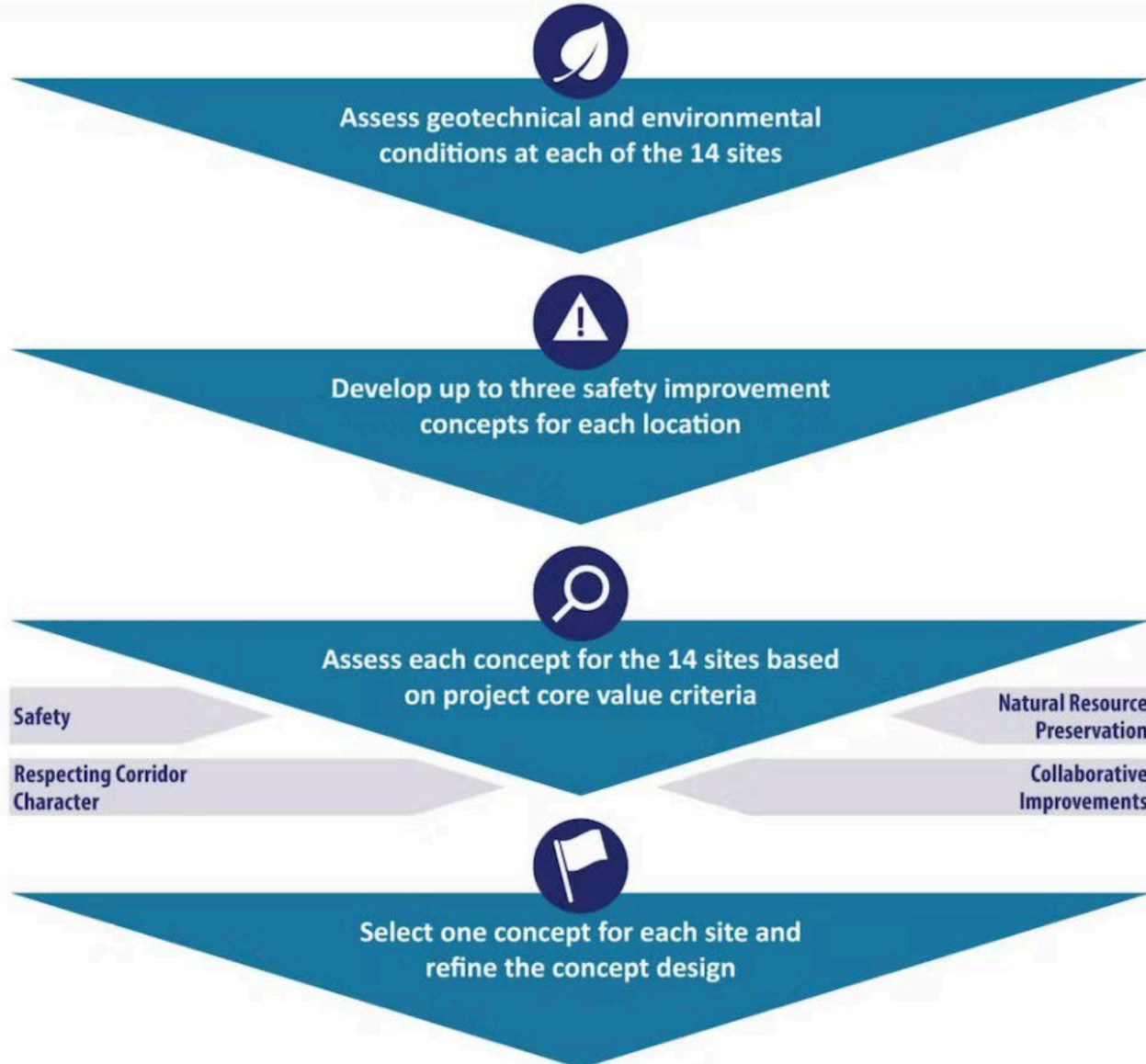
We respect the importance of individual communities, the natural environment, and the need for safe and efficient travel.

Well-thought-out choices create a sustainable legacy.

**The I-70 Mountain Corridor Core Values**



# Project process



- Two general public engagement points:
  - In-person public meetings in Glenwood Springs and Gypsum
- Property Owner/Residential Issue Task Force:
  - 3 meetings
- Natural Resources Issue Task Force:
  - 2 meetings



# July public open house meetings

- Attendees
  - 59 - Glenwood Springs
  - 44 - Gypsum
- Comment themes
  - Safety and respecting corridor character are most important
  - Speeding/trash/need for enforcement
  - Concern improvements will draw traffic, increase speeds, and ruin the rural way of life
  - Support for improvements to improve safety and/or provide a safe route when canyon is closed

**Reminder!**  
*Submit comments on open house materials by end of day Aug. 16 to be included in the round 1 public engagement comment summary*





## Core Values

The core values identified below are intended to be used to evaluate safety improvements at 14 locations as part of this concept design project.

### WHAT IS IMPORTANT?

#### SAFETY

Improve safety by making improvements at critical areas of geometric deficiencies

#### RESPECTING CORRIDOR CHARACTER

Maintain the rural feel of road

Minimize impacts to private property

Mitigate visual impacts from improvements

#### NATURAL RESOURCE PRESERVATION

Minimize impacts to nearby wildlife habitat and waterways

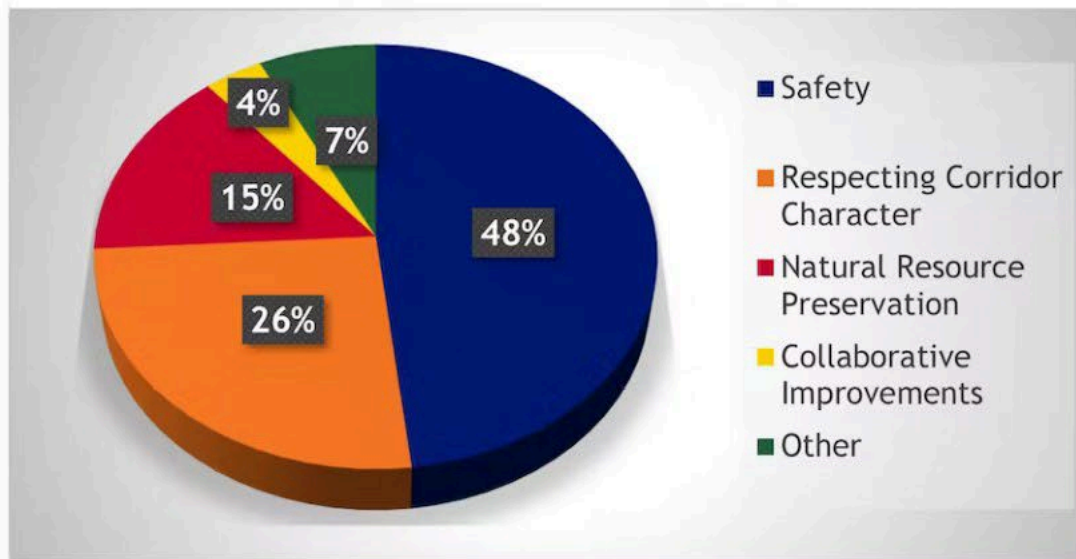
#### COLLABORATIVE IMPROVEMENTS

Engage public and stakeholders to provide meaningful input into the concept design process

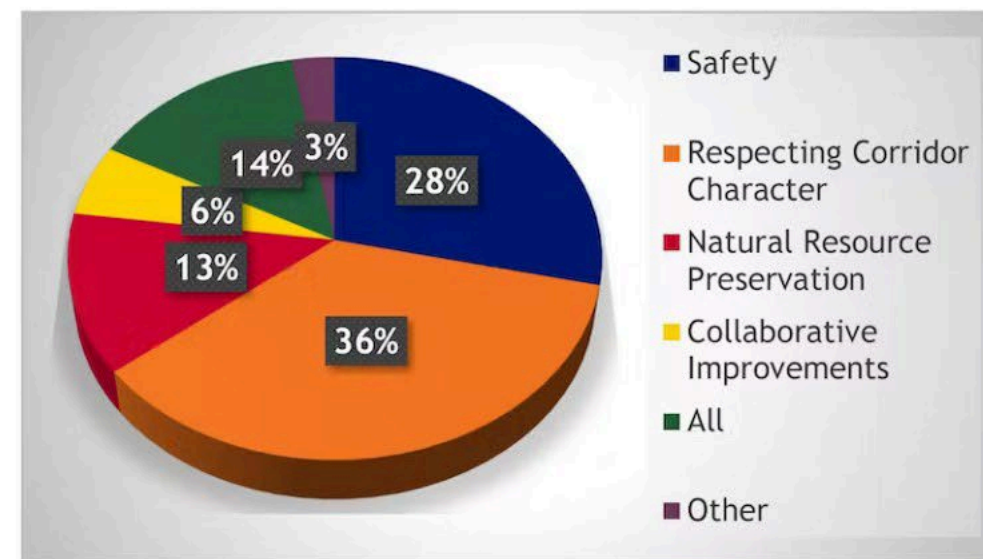


- Core Values will be used to help evaluate design options
- Opinions shared during round 1 open house meetings:

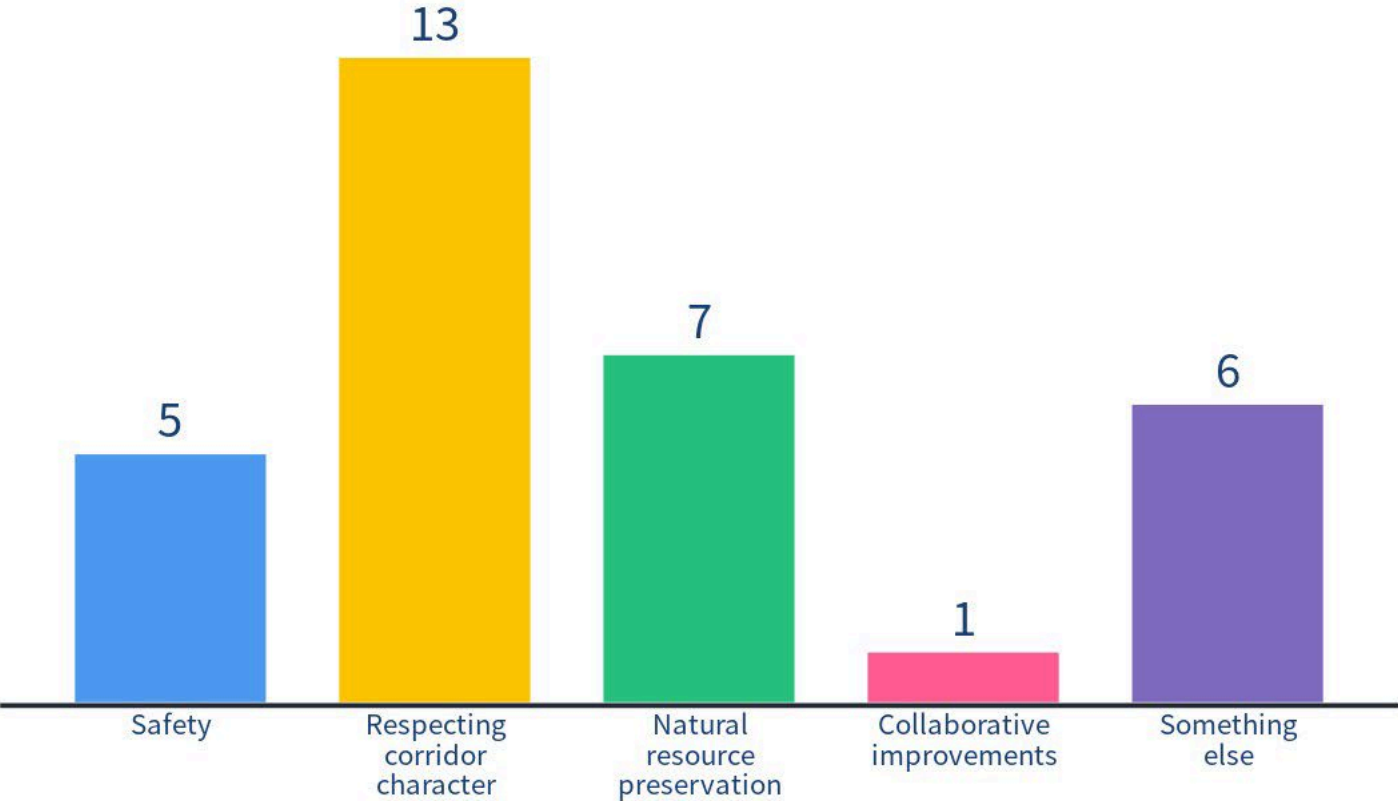
## COMMENT FORMS



## STICKERS ON DISPLAY BOARD



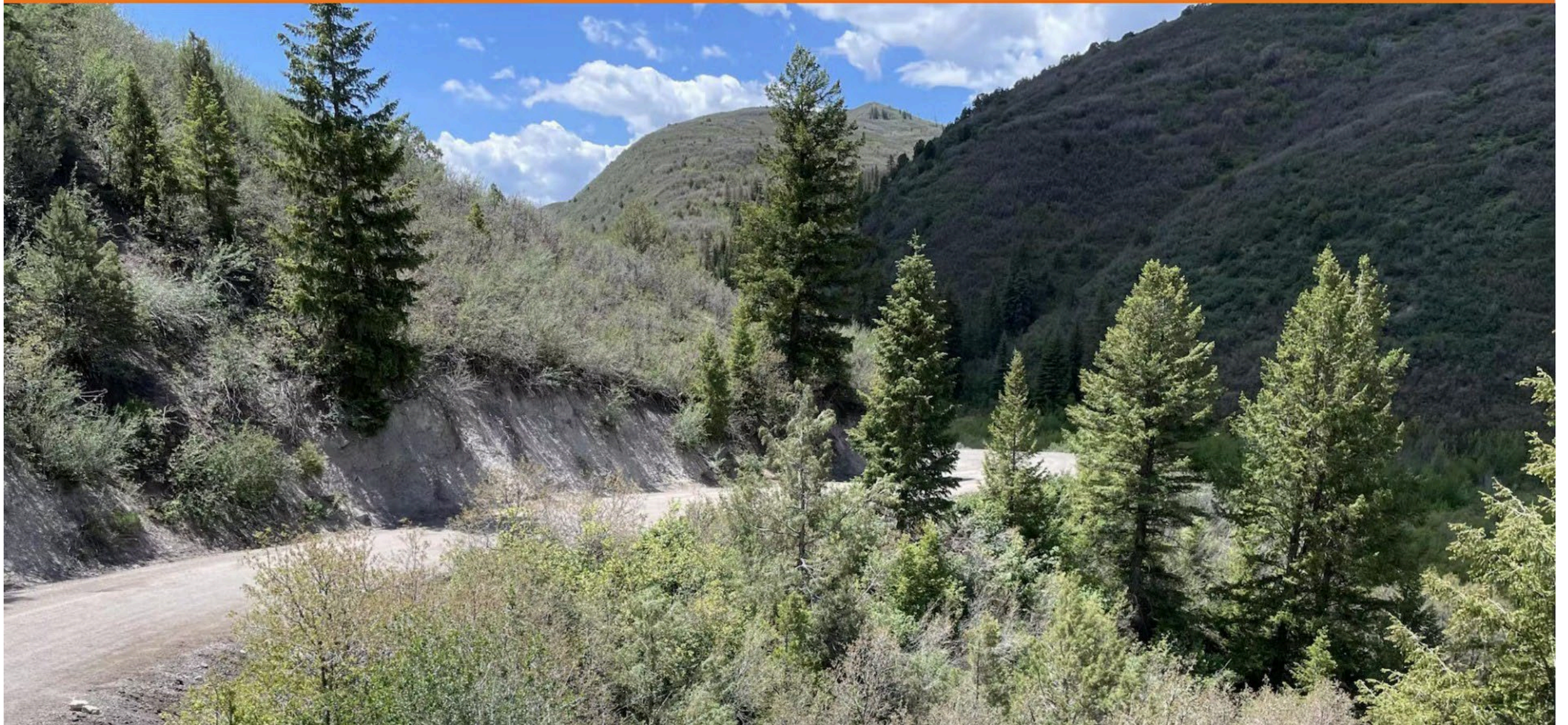
# Which Core Value is most important to consider when determining improvements?





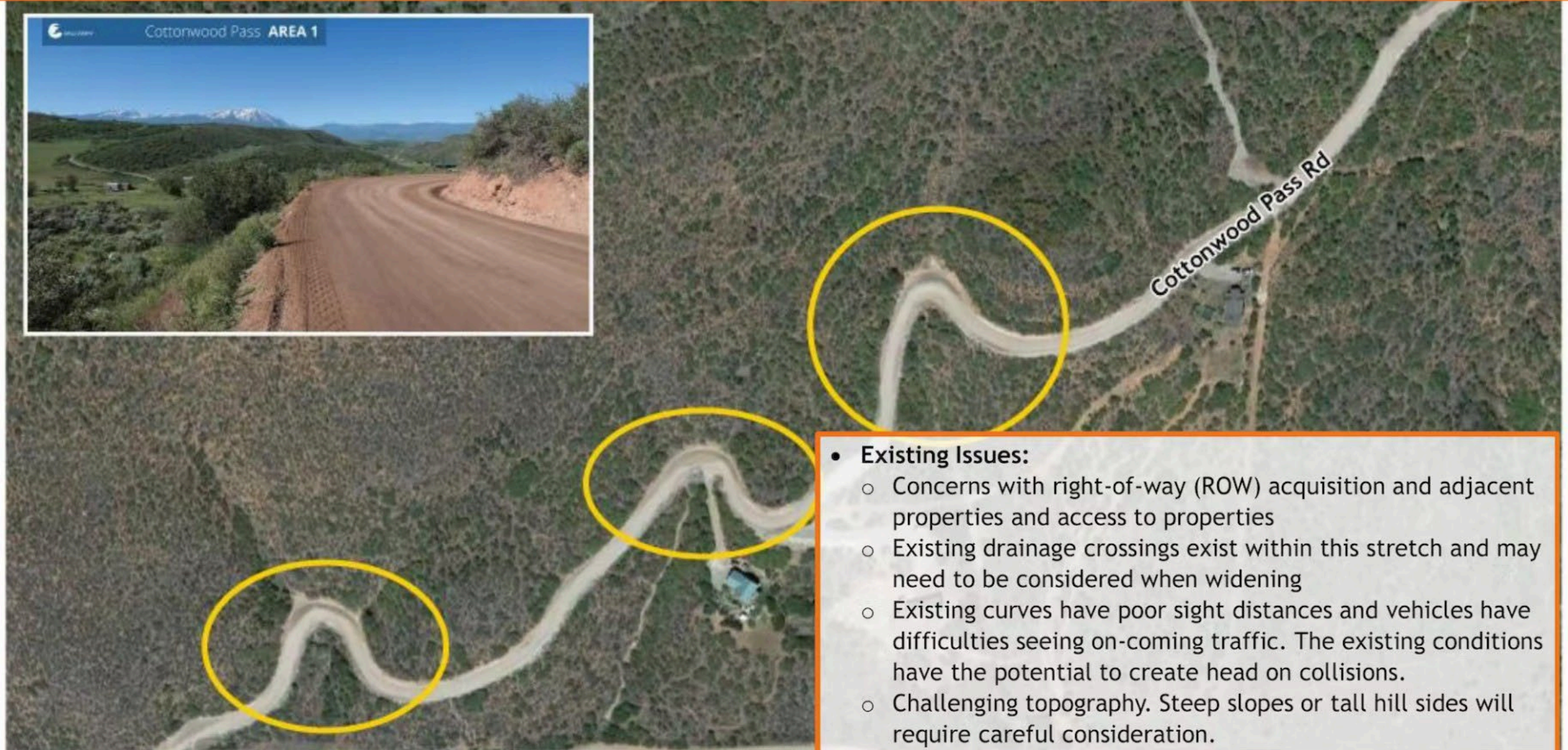


# Issues and Opportunities by Site





# Eagle County - Site 1

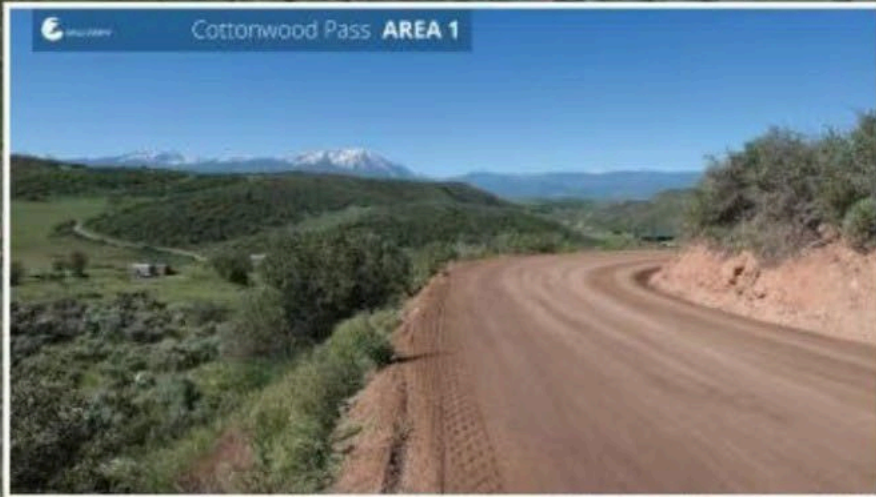


- **Existing Issues:**

- Concerns with right-of-way (ROW) acquisition and adjacent properties and access to properties
- Existing drainage crossings exist within this stretch and may need to be considered when widening
- Existing curves have poor sight distances and vehicles have difficulties seeing on-coming traffic. The existing conditions have the potential to create head on collisions.
- Challenging topography. Steep slopes or tall hill sides will require careful consideration.



# Eagle County - Site 1



- **Opportunities:**

- Realign curves to enhance sight distance and visibility of on-coming traffic
- Smooth curves to improve overall user experience



# How would the potential improvements being considered for Eagle County Site 1 benefit or impact nearby private properties?

Some people go too fast around the switchbacks but at least with the curves the majority of the cars go slower I'm concerned with the straightening out of the curves.

continued access to the property through access gate located off of Cottonwood Pass Road Protect and preserve ranchland.

No services-- cell, gas, restroom. Potential conflict with trespassing

Construction reclamation, protection of natural resources, ranch land health.

Potential acquisition of property adjacent to these areas would affect private landowners.

I just don't know how you can keep semis and trailers away. Independence wasn't a problem when it was gravel.

big curves might benefit from guardrails

The improvements are going to hurt the value of our properties when hundreds of cars are running through them every day.

Transport of materials to build up and augment the road is problematic. Driver speed is very problematic. Lack of concern for wildlife has been noted,

# How would the potential improvements being considered for Eagle County Site 1 benefit or impact nearby private properties?

no issues

Isn't this the major elk migration area? When does the wildlife study happen?

Traffic Volume.

This area has alot of four wheeler traffic. I think the improvements will harm this recreational area.

None of this addresses the impact of increased traffic going thru two school zones in Gypsum, I think your missing a huge part of the community impact this project would have.

This area is a ATV/UTV/dirt bike and camping area. Increasing traffic on this area will have a huge impact to this way of life and enjoyment of the area

No

Improvements are needed, widening the road for the increased traffic will increase speed impacting home owners.

I am not informed enough to answer this question



# How would the potential improvements being considered for Eagle County Site 1 benefit or impact nearby private properties?

I am not informed enough to answer. I am just getting this information for the first time

Not informed enough to answer

These curves often have washboarding that can cause some vehicles to lose traction.

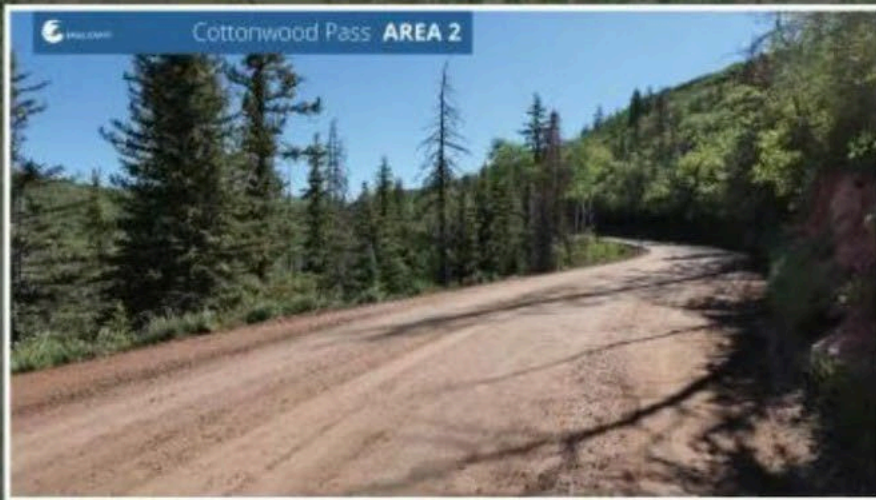
I live in El Jebel and absolutely support this access being paved or improved. Obviously traffic will increase with the canyon shuts down and that's ok for the benefit of the greater good.

When the curves are straightened my sense is that people will just drive even faster. My observation during a bike ride today is that vehicles are already speeding through there. Perhaps people just need to slow down.

Drainage is an issue on those curves. crowning would improve the durability of those areas.



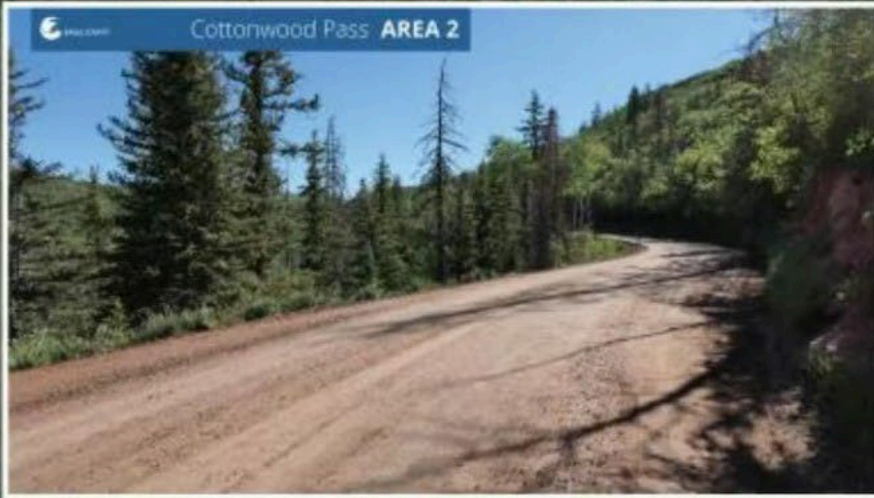
# Eagle County - Site 2



- **Existing Issues:**
  - Vehicles tend to speed at this location because it is straighter
  - The roadway width is substandard, and thus driver comfortability is low
  - Drivers gain a false sense of security along this stretch of the corridor due to the roadway becoming straighter. This sense of security introduces a safety concern as drivers no longer expect any sharp curves, which is in fact not the case.
  - Nearby creek is a constraint; need to minimize impacts



# Eagle County - Site 2



- **Opportunities:**

- Introducing guardrail will protect errant vehicles from going off the road. Additionally, guardrails promote safer driving speeds.
- Placing signs or other visual cues could result in drivers being more aware of the upcoming road conditions (curves).





# How would the potential improvements being considered for Eagle County Site 2 benefit or impact nearby private properties?

Guard rails needed. Speed limit signs. Speed bumps?

Make sure the road is graded throughout the summer/fall so motorists have a level road.

Guardrails, signage, are both good remedies that don't have significant negative impacts. Speed is the most concerning. Speed bumps or dips might be worth considering at this and other sites.

Protection of East Coulter Creek, East Coulter Creek Headwaters, and the riparian ecosystem surrounding the creek

Concerns about the conditions when wet is also something to consider

Protect,, East Coulter Creek Headwaters, and the riparian ecosystem surrounding the creek. Protect and preserve ranch land.

Speed humps are a great idea in more than one section of the route!

Site 2 is wide enough for two cars however it could use a guardrail especially on the end that is narrow. That is where a majority of the cars go off the road. I've even seen an Eagle county police car go off there.

Rails

# How would the potential improvements being considered for Eagle County Site 2 benefit or impact nearby private properties?

Again it's just going to hurt our values

Protection of the aspen vegetation community on the northwest slope of the road.

Protect and preserve ranchland

Isn't this the elk migration corridor? Close it during migration?

na

Keep speeds low and accident prevention

Guardrails are not the answer in my opinion and will make clearing snow off the road very difficult for the road and bridge crew. I think they will just increase speed as the guardrail will give drivers a false sense of security. ENFORCEMENT.

When people drive fast they raise more dust.

If traffic flows smoothly people get less impatient and less likely to make stupid passing decisions

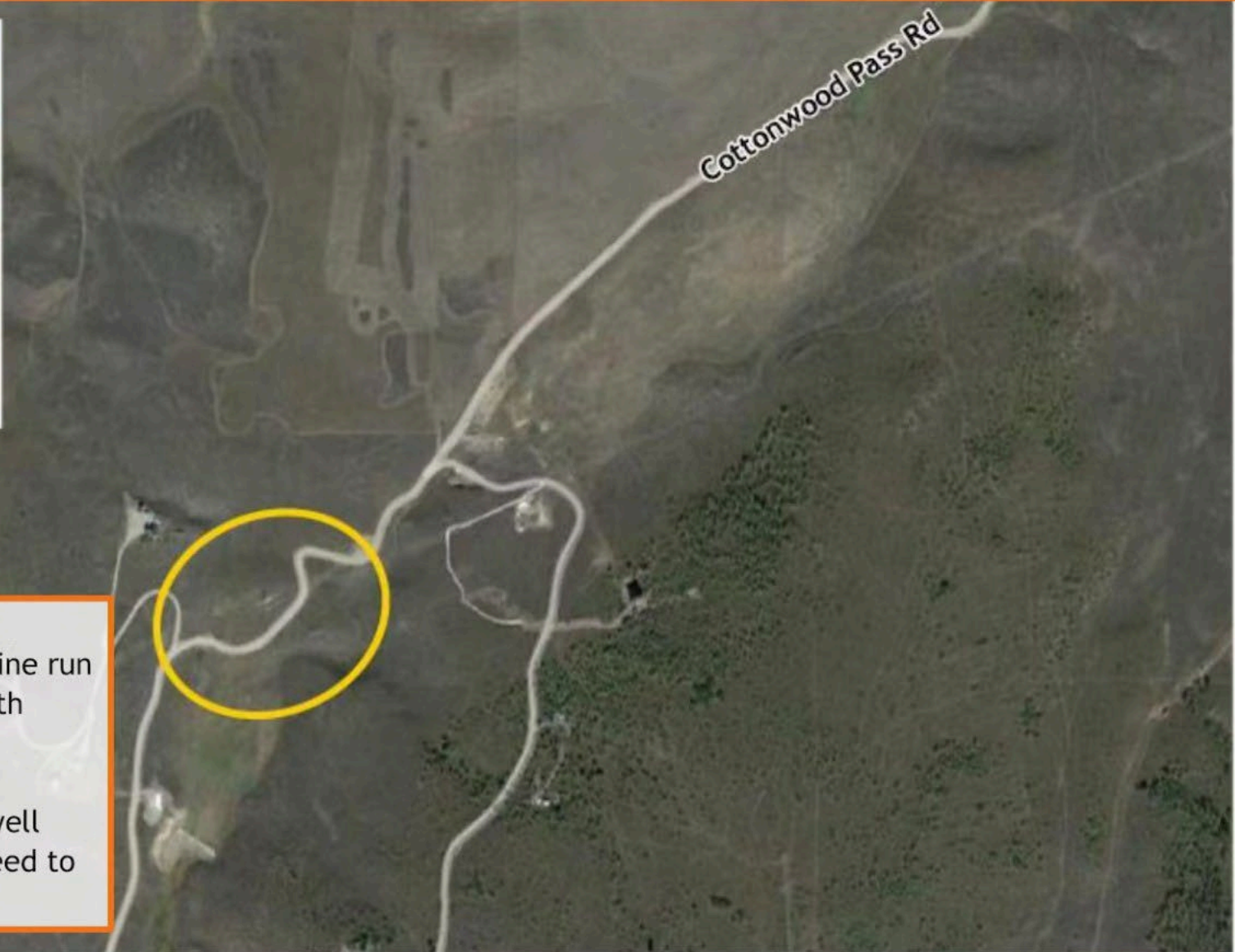
# How would the potential improvements being considered for Eagle County Site 2 benefit or impact nearby private properties?

This question has been asked a few times :) I'm in support of improving the access and safety. I do live in El Jebel and it's needed for the greater good when the canyon is closed even if it is uncomfortable a few times a year.

Somehow you need to figure out how to get drivers to slow down!



# Eagle County - Site 3



- **Existing Issues:**
  - Existing utilities such as an overhead power line run adjacent to the roadway and may conflict with potential widening or re-alignment
  - East curve has low visibility and is narrow
  - Adjacent property owner is concerned with well permits and potential easements that may need to be established



# Eagle County - Site 3



- **Opportunities:**
  - Smooth curves and/or re-align roadway to enhance visibility and safety



Cottonwood Pass Rd

# How would the potential improvements being considered for Eagle County Site 3 benefit or impact nearby private properties?

maintain and enhance existing culverts

no issue just to advance to the next question

These do not discuss the impact of the traffic on property values from all the way up Valley road as well as Cottonwood Pass.

The first curve is too narrow and needs widened even the second could be widened but again keep the curves

How will realignment slow traffic down?

No

Pullouts for slow/disabled vehicles

I feel just limiting access to cotton wood pass to locals only will eliminate most of the safety issues.

Speed is already a concern as traffic from the South is already exceeding the posted 25mph as the road is a downhill grade and straight. Any further straightening would have a negative impact on my property as I believe it would increase accidents.



# How would the potential improvements being considered for Eagle County Site 3 benefit or impact nearby private properties?

Widening the road but keeping the curves and enforcement would have the least impact on my family and property. The approach from the North is already a 3/4 mile straight away, if the curves go away the speeds will stay fast past BuckPointDrive

Just learning about this I can't answer.

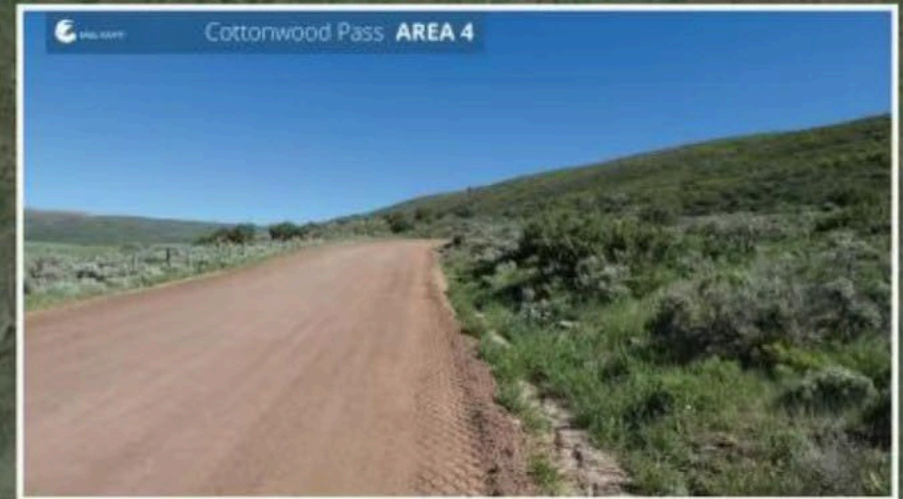
The previous road section is straight and, according to the slides, encourages speeding. If you ease these curves you will create more opportunities for speeding. I doubt the adjacent landowners will appreciate speeding cars.



# Eagle County - Site 4

- **Existing Issues:**

- Several crashes have occurred in the downhill direction
- Road tends to get wash boarded and eroded as vehicles are frequently braking in the downhill direction
- If a re-alignment is proposed, right-of-way will be a primary concern



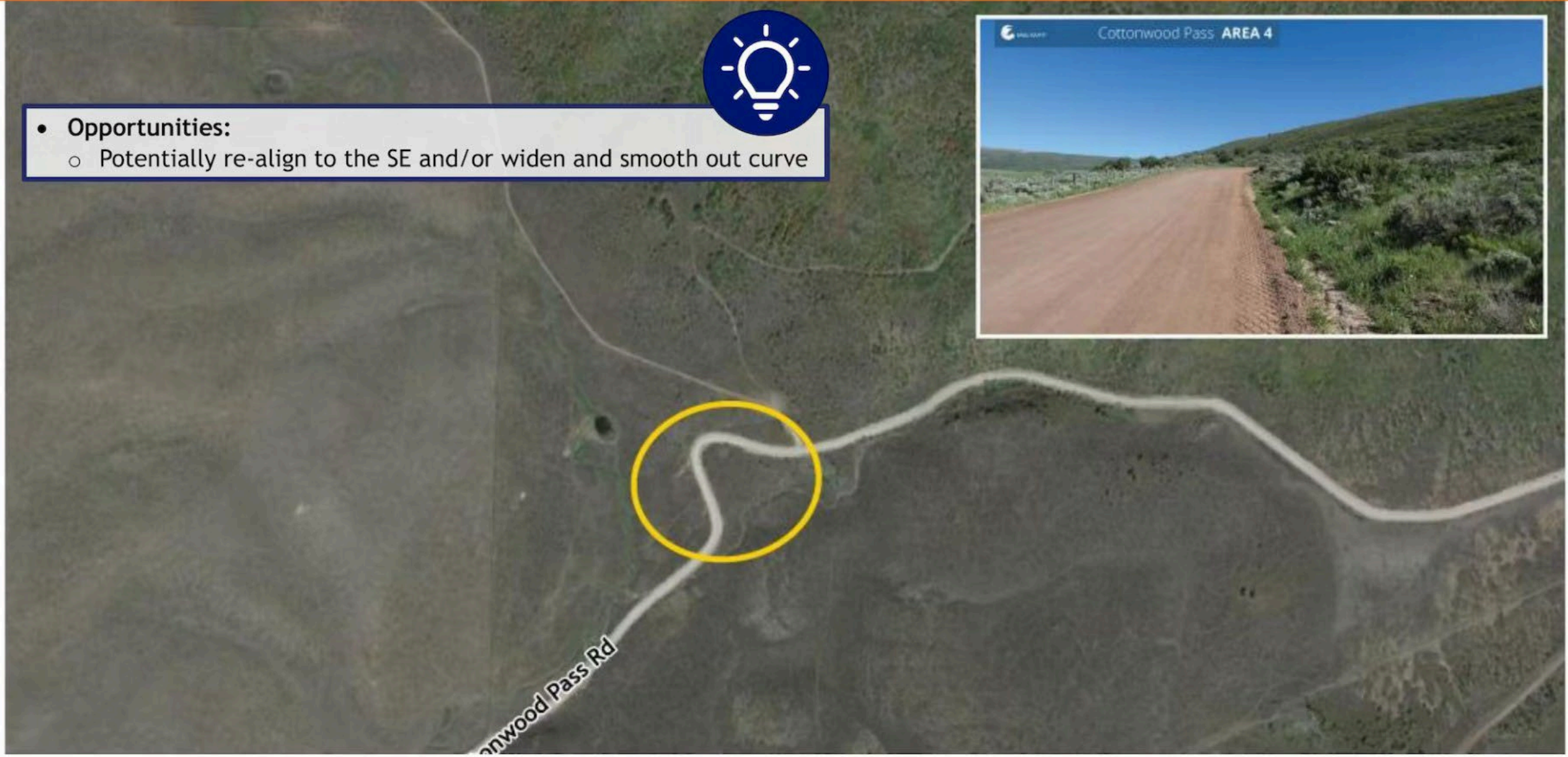




# Eagle County - Site 4



- **Opportunities:**
  - Potentially re-align to the SE and/or widen and smooth out curve



# How would the potential improvements being considered for Eagle County Site 4 benefit or impact nearby private properties?

maintain and enhance culverts

Site 4 It will cause cars to continue speeding and there is a private drive in the area that is had to see out of

How will realignment slow traffic down?

n/a

Na

curves slow down traffic

If they impact property owners, I would not agree unless the owner consented

I don't know

As noted, the wash boarding is a concern.



# How would the potential improvements being considered for Eagle County Site 4 benefit or impact nearby private properties?

Once again, I have to point out that road improvements encourage drivers to go faster. Impacts on nearby properties from speeding drivers include noise, dust, dangerous intersections.



# Eagle County - Site 5



- **Existing Issues:**
  - Incredibly challenging slopes. One side of the existing road is very steep and the other is a very large hill side.
  - Existing materials are insufficient to construct a roadway on; constructing this section of roadway would require a substantial earthwork/hauling effort
  - Existing roadway is both narrow and steep, which presents with passing vehicle nearly having head on collisions as a result of insufficient sight distances and width
  - Obstructions and the substandard roadway don't allow for continuous traffic flows resulting in the need for flaggers and traffic control
  - A high-pressure gas line is near the roadway and will need to be considered during the evaluation of the earthwork



# Eagle County - Site 5



- **Opportunities:**
  - Realignment of roadway to enhance visibility
  - Widen roadway and improve/smooth curves to promote free flowing traffic
  - Raising or lowering the roadway to mitigate steep grades



# How would the potential improvements being considered for Eagle County Site 5 benefit or impact nearby private properties?

n/a

Hard to comment on "widening roadway" when we don't really know how that is done, when there are geological issues and steep slopes on both sides.

This area is probably one of the only areas that needs a lot of work. It is the most dangerous area on the road. It does need widened and needs guardrails.

the lights they have put on Independence pass are working well for limiting 1 lane of cars, but may not be feasible here. And might be a negative idea for local homeowners.

Over-fixing this particular area really opens the option for this to be a mini-I70. Keep adjustments minimum.

I think the best improvement would be to make this a permanent traffic light site. One way traffic and slowing things down.

agree keep improvements minimal so as to balance need for safety but not draw extra traffic

n/a

Is it possible to bring material from Gypsum side as it is more "industrial" and open?

# How would the potential improvements being considered for Eagle County Site 5 benefit or impact nearby private properties?

Na

I don't know

There is a valley between Dotsero and blue hill. Would it be better to build a road through that area. There would be less impact to the town of gypsum traffic.

This is extremely challenging when there is traffic. Minimally sight lines need to be improved.

Guardrails.

Good luck with this site. The road was not designed to be a highway. It is what it is, a rural county road. The cost of construction/realignment/improvement far outweighs the benefits of a seasonal bypass.



# Eagle County - Site 6







# Eagle County - Site 6



- Opportunities:
  - Realign and widen roadway to improve overall sight distance and steep grades

# How would the potential improvements being considered for Eagle County Site 6 benefit or impact nearby private properties?

Site 6 I thought the idea was to keep semi's off of this road.

No semis

Slowing things down with bumps and dips.  
Speed measurement signs etc etc....

Keep the curve-- no semis

The ditches do help keep the water off the road

Need a right turn lane or fix the existing one (which is State authority) regardless of whether this project ever materializes.

Keep semis off road

Keep the character, just make it a little safer. If people go slow, it's not unsafe.

Signage about no semis

# How would the potential improvements being considered for Eagle County Site 6 benefit or impact nearby private properties?

The only good thing I can see out of improvements to Cottonwood pass road is so that Fire fighters can make it up there easier.

so much construction would be needed that would hugely impact nearby properties and wildlife

Forbid semi traffic and ENFORCE IT!

People tend to enter this curve pretty fast and go over centerline, so maybe a center visual cue.

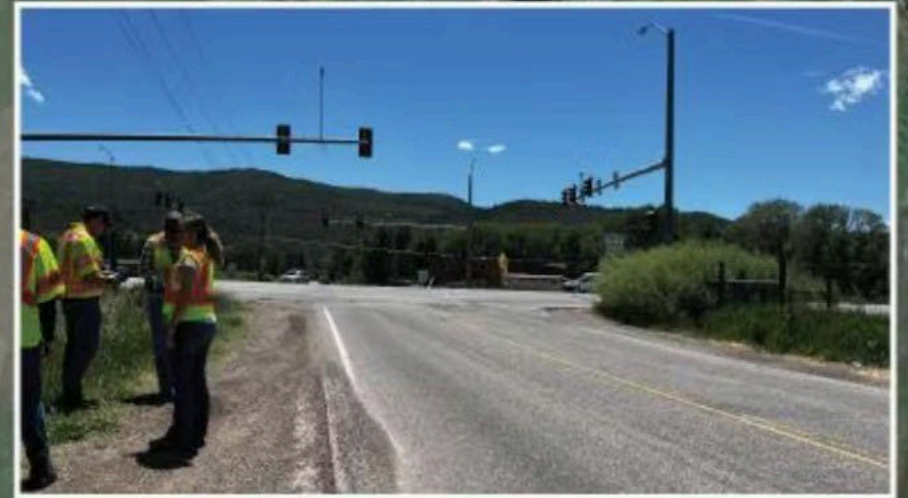
The road is not open to semi-trucks. So why design for them?



# Garfield County - Site 1

- **Existing Issues:**

- Irrigation ditch on west side of roadway will need to be re-routed or piped
- Inadequate storage and lane assignments for anticipated traffic volumes
- Existing utilities on east side of roadway could require relocations or adjustments





# Garfield County - Site 1



- **Opportunities:**

- Install dedicated right turn lane to accommodate volumes



# How would the potential improvements being considered for Garfield County Site 1 benefit or impact nearby private properties?

How do you force the traffic to go to this location. Everyone still is turning on cattle creek this year even after the signage was put up

It's going to throw a huge volume of cars in this area which is already dangerous. Cattle creek could use a light at 82 which would alleviate some traffic at Catherine store.

Anything you do that will increase traffic will effect properties along the corridor negatively. The only improvement that you can do that would be positive for neighbouring properties if you can slow things down rather than improve roads.

I think this intersection is already maxed out at "rush hour"

Increased traffic making it harder for locals to get places. I don't see a benifit to those who live and use this road regularly.

There is no benefit to property owners from an improvement to intersection, only benefit to drivers headed south on Catherine Store turning west onto HWY 82.

Signage clearing up NOT to utilize Cattle Creek that exist at highway 82 and County road 113. We can't undo the history of folks who know about this route but removal of the current signs and coordinate with google maps, cotrip & mapping vendors

Would take away property and re route water ditches. Increasing traffic and noise pollution.

Wildlife impacts have been really high the last couple of years

# How would the potential improvements being considered for Garfield County Site 1 benefit or impact nearby private properties?

The only people who will use this access are coming from CR 100 up valley to Aspen, the bulk of the traffic being re-routed will be coming from I-70 and will take Cattle Creek

Google blindness hasn't worked for hagerman or independence

Cyclists also use this. VERY dangerous. You'd likely have to re-route, taking ROW of private property.

It would be a WIN-WIN. The pass becomes safer but less attractive to use. Less traffic = safer in itself, plus slower is safer all well.

The right turn lane needs to be fixed regardless of this project. It's a State issue so the county wont do it.

I don't know

First, an irrigation ditch can't always. Simply be realigned or relocated. Secondly, how many people will drive an extra 13 miles to go up Catherine Store Road? Maybe upvalley folks will use it but those coming from GWS will continue to use CR 113.

People don't read

Stacking at this light is an issue at times with it backing up into the travel lanes.

# How would the potential improvements being considered for Garfield County Site 1 benefit or impact nearby private properties?

This is one of the most dangerous intersections on highway 82. Needs blinking signs to help drivers anticipate light changes/red lights as they speed down the straight section.

Putting more cars onto 82 is not in anyone's best interests. The highway corridor is already over-travelled.





# Garfield County - Site 2



- **Existing Issues:**
  - Vehicles, specifically in the downhill direction, are entering the curve at high speeds and there have been instances where vehicles have lost control
  - Poor sight distance around curve; visibility of on-coming traffic is limited
  - Steep grades to the west may require a retaining wall or substantial grading to tie in widened roadway



# Garfield County - Site 2



- **Opportunities:**
  - Introduce curvature on the downhill approach to reduce speeds, similar to a roundabout design
  - Widen curve and shoulder to improve safety of curve as well as provide emergency vehicle access

# How would the potential improvements being considered for Garfield County Site 2 benefit or impact nearby private properties?

If people are going the speed limit it isn't challenging.

Even at 5mph, going up, it's hard to stay in lane if you haven't driven this before.

I don't care if people run off the road if they are driving too fast. The curve keeps cars moving slower.

Cars flip on this curve and the drives are hidden and there is a lot of foot traffic between the store and here

Re-designing Catherine Store road is a waste of taxpayer money. Spend the money to fix the canyon.

Seems to be slopes on both sides, hard to make better. they just did this road. wouldnt they have tried those ideas?

A roundabout?! How would that be constructed there?

Again you are talking about taking local property owners property away to benefit i-70 traffic. that's horrible.

No benefit at all

# How would the potential improvements being considered for Garfield County Site 2 benefit or impact nearby private properties?

Looks like there would be significant impact to private property to widen road. Locals know this road and know that they need to slow down. Only those who don't live in the area don't have requisite knowledge.

Electronic signs showing the speed does slow people down. Again its about getting people to drive slower rather than adjusting the road to the speed people like to drive.

Site 3 has a big drop off inside the curve and a house on the other side. Seems like it would be very hard to widen. Site 4 has private property on both sides that might not enable improvements so easily.

There is not much room for change there without huge impacts on the house above the corner.

I don't know

I don't think people coming downhill are prepared for that curve, maybe guardrail?

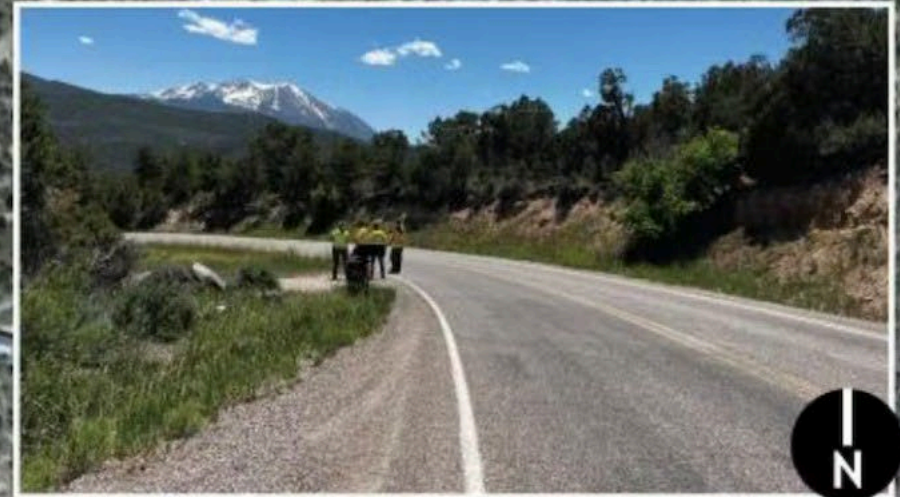
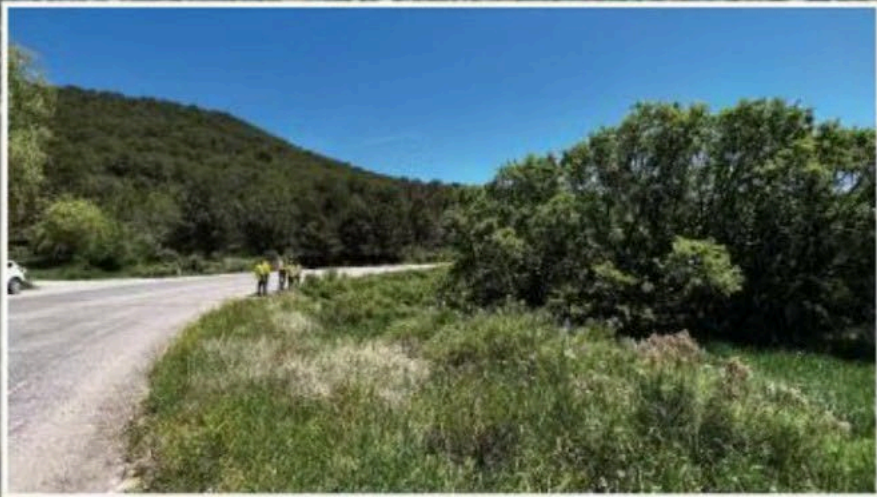
If the curve is eased or changed landowners will lose land. Cars will still speed down the hill. Better signage indicating sharp curve and steep grade. The guardrail seems to work. Geography makes it difficult to widen the road.



# Garfield County - Site 3 & 4

- **Existing Issues:**

- Residents are concerned with speeding within the area
- Large culvert and drainage crossing may conflict with proposed widening
- ROW will be a concern at these sites as there are several adjacent driveways and homes along each site

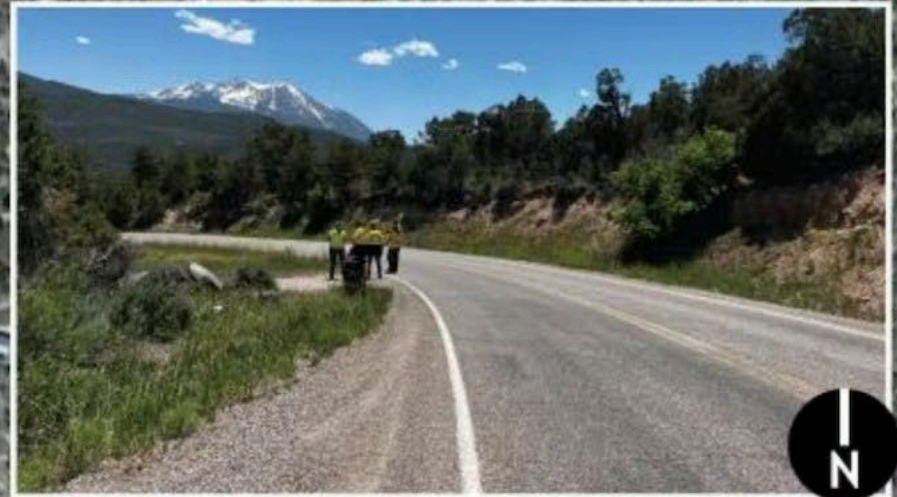
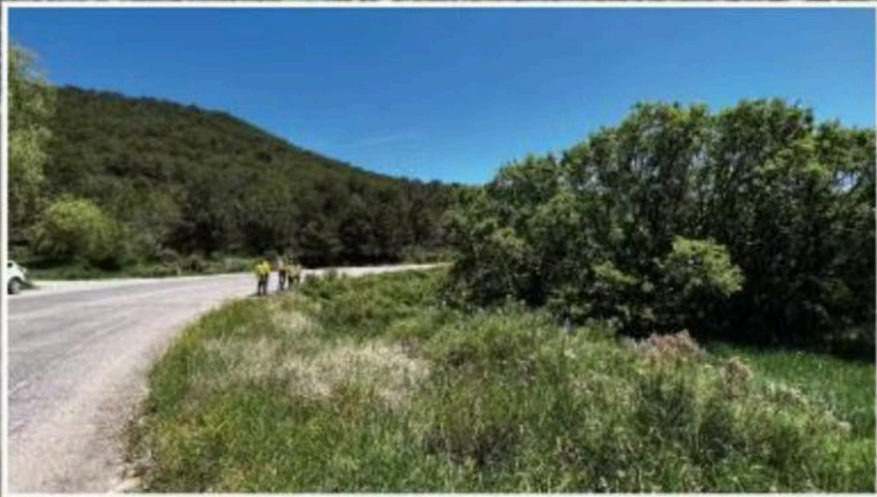




# Garfield County - Site 3 & 4



- **Opportunities:**
  - Realignment and/or widening to improve geometry and sight distance



# How would the potential improvements being considered for Garfield County Sites 3 & 4 benefit or impact nearby private properties?

Reflectors and or widening much like everywhere along the way. Not sure additional guard rail would help for the home owners or some abatement technique for light and noise?

There was an actual flood down the more eastern curve within a couple of years

This area has a high impact on property owners. Could be a deal breaker.

You keep using the term 'improvements' but to home owners that isn't an improvement to increase traffic for others benefit.

Huge impact bringing more traffic to a rural area

Property owners must be in on the plans and able to participate in the design. Also wildlife use this area...

N/A

Again you are talking about taking away peoples properties to improve for others who don't live there or pay taxes there.

Large impact to private homeowners with any improvements and locals know these roads.

# How would the potential improvements being considered for Garfield County Sites 3 & 4 benefit or impact nearby private properties?

My answers for this went to Site 2.

Even if I repeat myself. Making improvements that will allow higher speeds will have negative noise impacts, higher traffic impacts and will overall not increase absolute safety with the higher traffic load. SLOW TRAFFIC DOWN not improve roads ;-)

Last week there was a fire (I believe) here. How can we prevent human caused hazards outside of basic road use? Increase in traffic increases fire danger.

Would this be an eminent domain issue?

Very large impact and who is benefiting?

those curves slow people down. There is significant wildlife in that area due to orchard.

Big slope/ hole inside curve at site 3 and home on other side

Is the only reason this is preferred because of the stoplight on 82?

Keeping the centerline marked with the short sight distance may help.



# How would the potential improvements being considered for Garfield County Sites 3 & 4 benefit or impact nearby private properties?

It will negatively impact my property. Construction will create noise and dust in the short term. Easing those curves would allow drivers to drive faster. It is already hazardous to pull out without looking up and down multiple times.



# Garfield County - Site 5



- **Existing Issues:**
  - This site will require balancing geometry improvements and ROW acquisitions
  - The curve at this sight is not as severe as other curves along the corridor but many vehicles are unable to negotiate it because they have increased their speeds on the straighter roadway sections approaching it



# Garfield County - Site 5



- Opportunities:
  - Introduce guardrail
  - Realign curve and/or widen to improve geometry



# How would the potential improvements being considered for Garfield County Site 5 benefit or impact nearby private properties?

The curve where we had a fire last week? That curve?

Speed bumps.

Aka "dead horse curve."

'The large trees there should not be touched

Guardrail is a good idea here. Often think that when on this stretch. Speed is the only issue. Widening not really needed. Need to enforce or better sign for speed.

You have to find a way to slow down the traffic then there is no need for the so called improvements. It would help if we ever saw a police vehicle in the area but we don't.

This is rural country and not speeding country. Why does the character of these roads need to change? Its the users that need to made change. Moneys should be spent on these efforts. El Jebebel road is now 30 mph.

Yes, fire wa s close to this spot last week. Fire is a big issue we havent addressed re: safety

A local group shut down an application for a n autistic youth camp recently mostly b/c of traffic concerns. Not sure the locals will stand behind the traffic influx of these changes...



# How would the potential improvements being considered for Garfield County Site 5 benefit or impact nearby private properties?

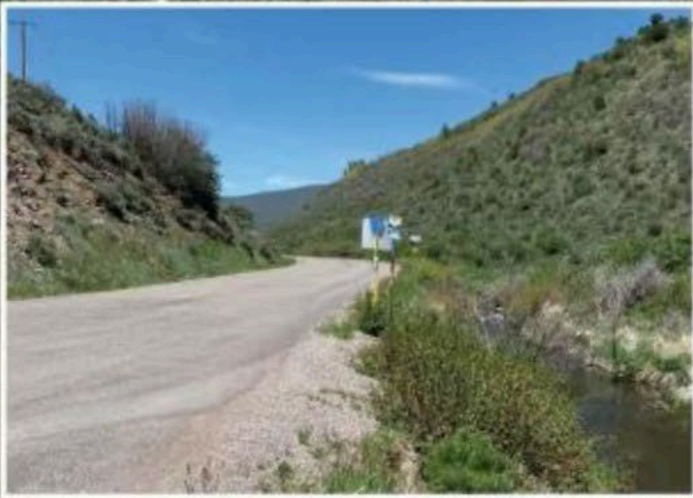
These are working ranches around here. Increased traffic and ranch life do not mix

I agree with what was stated.

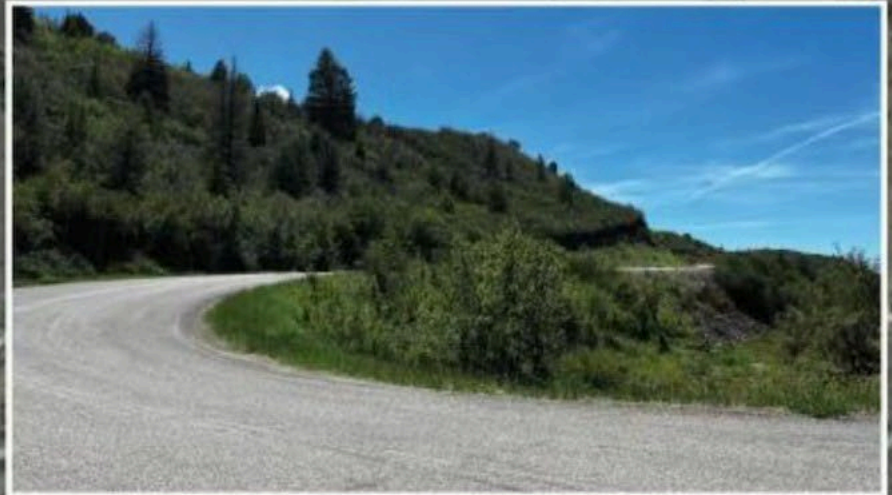
I can only repeat myself. Improvements will make it more hazardous for residents to pull out onto the road.



# Garfield County - Site 6 & 7



- Existing Issues:
  - Poor sight distance at Panorama
  - Cliff on west side between Panorama and Lower Cattle Creek, causes vehicles to reduce speeds and limits capacity
  - Narrow in some portions of the corridor between Panorama and Lower Cattle Creek
  - Existing stream near Lower Cattle Creek will need to be considered during concept development
  - Existing stream could present environmental concerns at this intersection

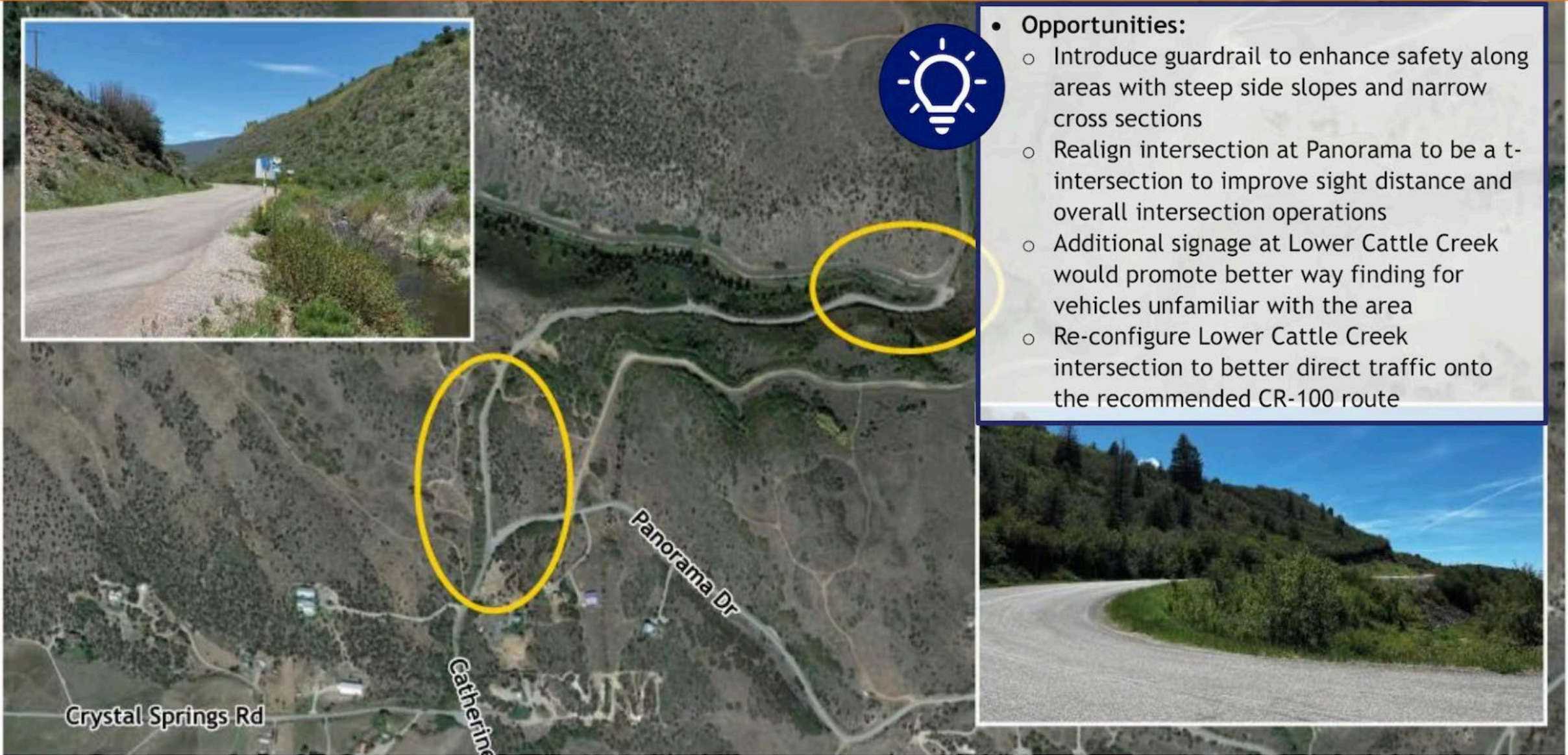




# Garfield County - Site 6 & 7



- **Opportunities:**
  - Introduce guardrail to enhance safety along areas with steep side slopes and narrow cross sections
  - Realign intersection at Panorama to be a t-intersection to improve sight distance and overall intersection operations
  - Additional signage at Lower Cattle Creek would promote better way finding for vehicles unfamiliar with the area
  - Re-configure Lower Cattle Creek intersection to better direct traffic onto the recommended CR-100 route



# How would the potential improvements being considered for Garfield County Sites 6 & 7 benefit or impact nearby private properties?

100 road and 113 road, realign the intersection and stop only traffic from 113? Creating a direct flow of traffic on the intended route with out the stop sign? Open a sight line for safety to allow 113 traffic to merge more safely? To little space?

This area often has bear crossing. Same with the rest of the road there are a lot of elk and Deer crossing between fender and crystal springs road

Nothing needs to happen in this area 6-7.

Bad horse trailer event back in the day.

Use of traffic flow (avoid stop signs on intended path) to mitigate reasons to turn down cattle creek?

Ridiculous speed as they come off the curvy road and hit the more open access at Panorama and gain speed to Hwy 82

Tons of bicycle traffic on a very narrow blind curve

If you are going the speed limit there are no issues here.... I've driven it every day for 6 years it makes no since to change it and waste money and ruining the esthetic of the area.

There is no sign pointing toward Glenwood



# How would the potential improvements being considered for Garfield County Sites 6 & 7 benefit or impact nearby private properties?

Better signs

Cattle Creek does not need anymore stress on it as result of road construction. Also , maybe put a gate like ones used on I70 that closed off lower Cattle Creek Rd when the GW Canyon is closed so people coming from the East will not use CR 113.

I meant the actual creek that doesn't need stress. Roaring Fork Conservancy has done studies on it.

I am hearing MORE TRAFFIC. I thought the aim was to make safer and not to make the road to accommodate more vehicles. I am confused by your motives. No resident wants more traffic. And you are ONLY creating negatives for property owners.

Slow things down and you help everybody. Safety is improves, noise levels are lower. Traffic will not increase and property owners will be happy.

I agree with the stated suggestions.

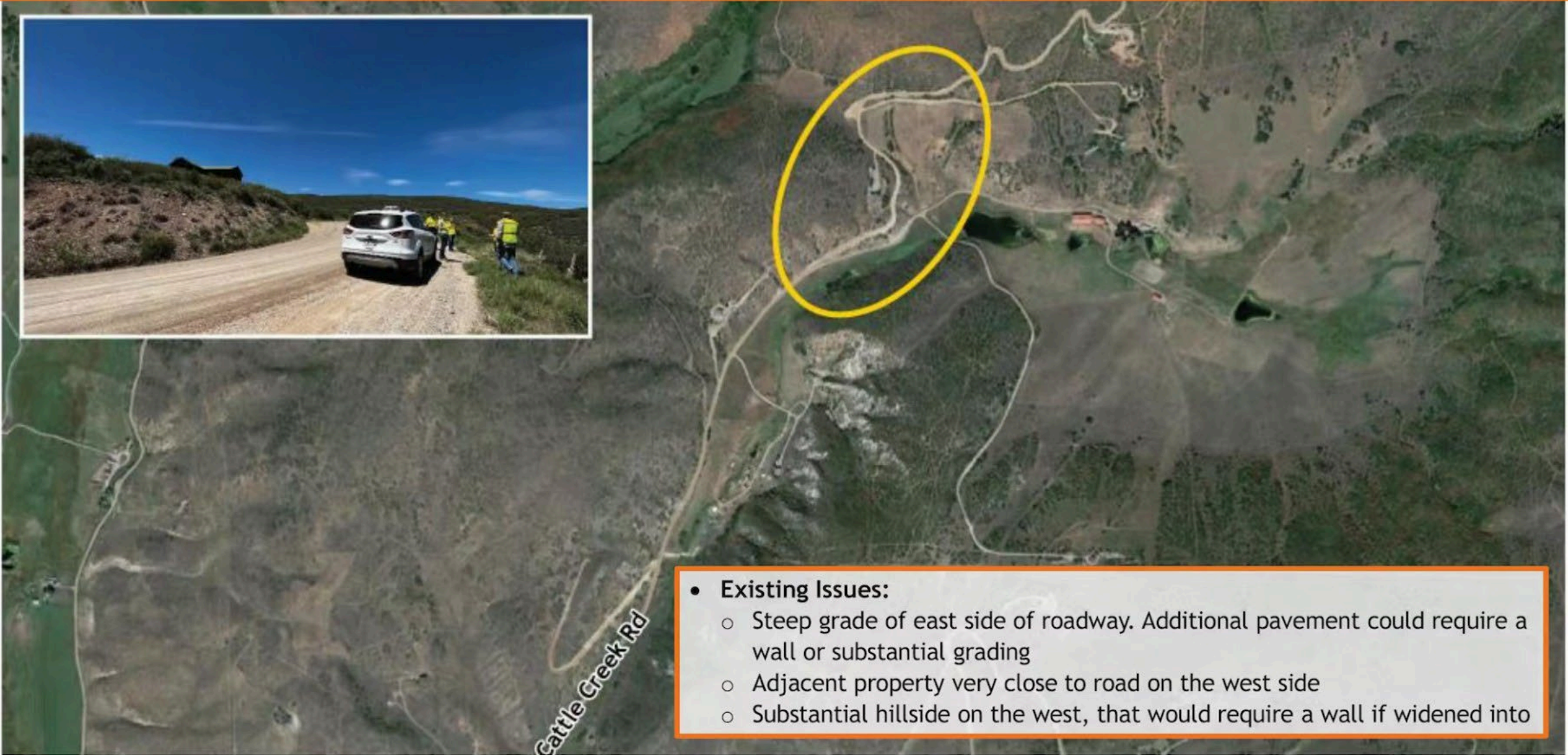
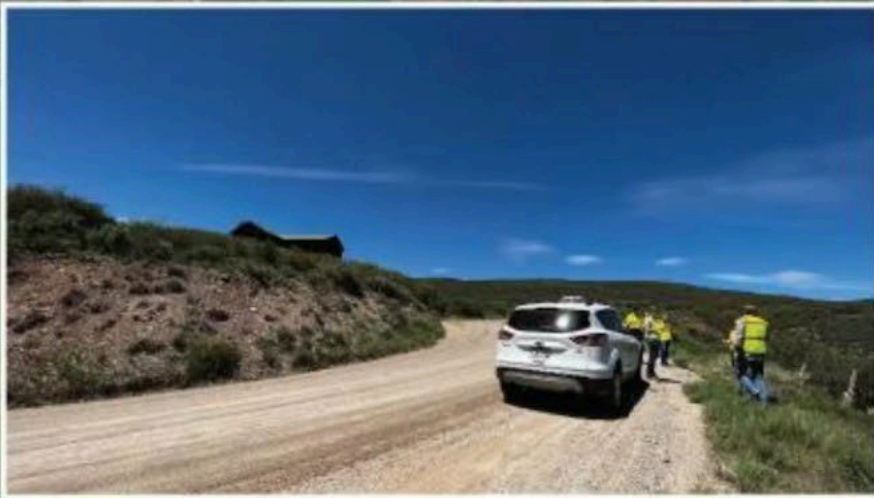
The "stream" is our water source and need to stay uncontaminated and clean. Many bikers on this route that needs to be addressed as well

Has the river conservancy been brought into this seeing it is water shed?

If the existing grade caues vehicles to slow down, perhaps that is the answer! Other nearby 'properties' should include the aquatic environment and its inhabitants. The stream should not be disturbed. Riparian habitat is too important.



# Garfield County - Site 8



- **Existing Issues:**
  - Steep grade of east side of roadway. Additional pavement could require a wall or substantial grading
  - Adjacent property very close to road on the west side
  - Substantial hillside on the west, that would require a wall if widened into



# Garfield County - Site 8



- **Opportunities:**
  - Vertical profile adjustment would help steep grades in area
  - Re-align roadway and smoothing curves could improve sight distance and overall drivability

# How would the potential improvements being considered for Garfield County Site 8 benefit or impact nearby private properties?

Coming from Gypsum they're going to get lost and go toward the gravel pit.

Additional pavement isn't an improvement to those of us who own here... again benefiting others...

Avoiding acquisition of property adjacent to the road.

Bicycle traffic up here is ... in an opinion nightmarish. Mixing -i-70 over flow with 2 bikers taking up a full lane. We are inevitably going to have injuries and deaths with that. It is a very popular route, can it be removed from bike use?

Continued access to private property through access gate located off of Cottonwood Pass Rd.

Cattle is an issue too up here - need to keep those crossings safe for animals and owners/ workers

No pavement it only makes it more dangerous for the residents

All property owners should be given equal consideration regardless.

Not to mention the speed on pavement is much higher. This is a nightmare for residents.

# How would the potential improvements being considered for Garfield County Site 8 benefit or impact nearby private properties?

Protect and preserve ranchland

Very damaging. It feels like we have no say at all on what is happening to our properties.

Cows, horses, dogs, they all get out on the road.

All this realignment will be a nightmare for residents and those traveling during construction.

No cell service up here too

it would make life miserable for those who live there.

Continued access to the ranch property through access gate located off Cottonwood Pass Road. Avoid acquisition of property adjacent to the road. Protect and preserve ranchland.

I agree that residents/property owners must have a role on design!

I agree with what was stated.



# Next Steps

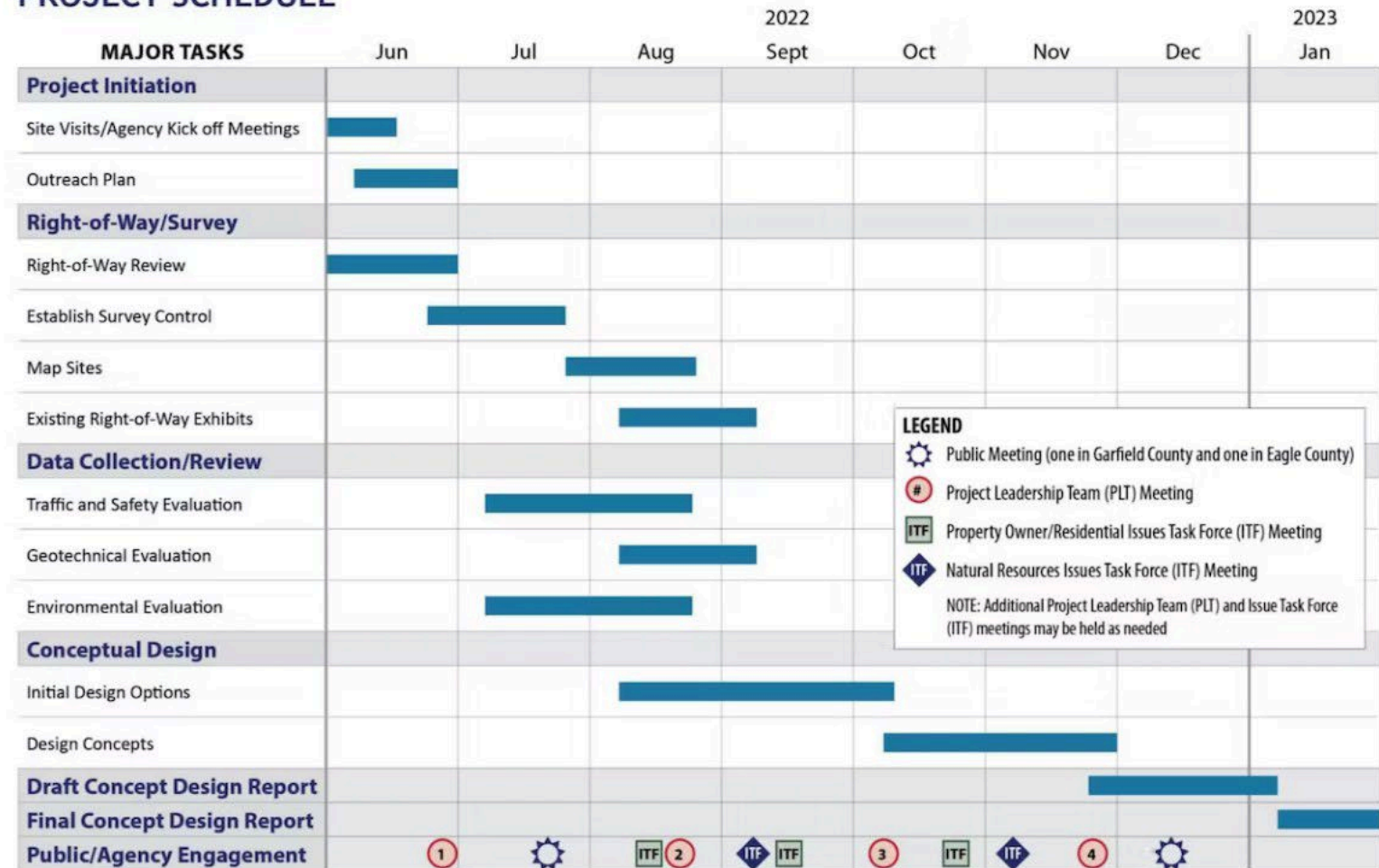




# Next steps

- Site mapping by drone
- Geotechnical and environmental evaluation
- Use public input to develop initial design options
- Next meeting of this group in mid-Sept. to discuss initial design options

## PROJECT SCHEDULE





# Group Discussion/Q & A







Thank you!

[www.codot.gov/projects/cottonwood-pass-concept-design](http://www.codot.gov/projects/cottonwood-pass-concept-design)



# PROPERTY OWNER/RESIDENTIAL ISSUE TASK FORCE MEETING #2 SUMMARY

November 15, 2022

The second meeting of the Property Owner/Residential Issue Task Force (ITF) was held via Zoom videoconference on November 15, 2022, from 3:00 – 5:00 p.m. This meeting was interactive and combined a presentation by the project team with comment opportunities. The draft concepts for each site were shared, along with a summary of existing conditions being considered. Participants were asked how improvements at each site would benefit or impact private properties, and suggestions for design tweaks were solicited. Real-time survey results were shown on screen. The final portion of the meeting was reserved for answering audience questions and gathering comments. Nearly 20 members of the public attended the meeting.

All ITF members (including those unable to attend) received a link to the presentation following the meeting and the same in-meeting survey was open for two additional days. Comments were accepted via email or the web page comment form through November 30<sup>th</sup>. The presentation and survey results are attached to this summary in Appendix A. Questions and comments from the meeting chat are listed below in the chat and emailed comments section, or listed in the open discussion portion if they were addressed at that time. Written comments are listed as typed by the participant with some minor spelling and capitalization errors corrected. The comments/responses and questions/answers in the group discussion section were summarized without compromising the speaker's intent.

## CHAT AND EMAILED COMMENTS

- ◆ CR 100-Hwy 82: fix ongoing pothole too.
- ◆ If the group hasn't done this yet, I would invite them to observe when I-70 is closed. The group could see people speeding, potential accidents, travelers stopping wherever to relieve themselves and throw their garbage out. I am not sure there is enough enforcement capabilities to address the increased traffic. The team mentioned specifically that they can't promise increased enforcement.
- ◆ Thank you for the opportunity to hear directly about the sites.
- ◆ Thank you all.

## OPEN DISCUSSION

- ◆ Question: What happened to Lauren Boebert's I-70 Bypass Act?
  - ◇ Answer: In April of this year, information came out about Boebert's bill. CDOT members of this project team haven't heard more details so we've reached out to some folks. *[Subsequent to the meeting, the CDOT legislative team confirmed the bill was introduced in April 2022 but has not had any movement. They don't anticipate it will move forward prior to the end of the year.]*



- ◆ Question: At Garfield County Site 5, there is a spring that comes under the road that feeds 5 homes, which is definitely a concern for all of those homeowners. Who will make sure that isn't impacted?
  - ◇ Answer: As funding is identified and improvements at sites move forward into design, there will be a requirement to conduct a field investigation for wetlands, springs, streams, etc. If the resource is deemed "jurisdictional" with the Army Corps of Engineers, it will go through a detailed site investigation. The goal no matter what is to avoid impact as much as we can, and minimize any impacts that aren't avoidable. Knowing the spring is present is good information that will be documented and considered during future design and environmental permitting. This is true for all the sites. For this concept design project, an environmental scan was conducted, which involved a high-level site visit and review of available mapping. During design, adjustments to the design could be made to avoid or minimize impacts to the spring, such as adjusting the alignment of the roadway or adding walls.
- ◆ Question: Is the project skipping the 102 junction near Garfield County Site 6?
  - ◇ Answer: This was not identified by the counties as one of the 14 sites that this concept design project needed to look at. That doesn't mean the site can never be considered, so we will pass that comment about the traffic on 102 for the sod farm and the schoolhouse events to Garfield County to make sure that they are aware of that concern.
- ◆ Question: Are cyclists are being considered?
  - ◇ Answer: We have heard many comments explaining a lot of these roads are heavily traveled by bicyclists, including Catherine Store Road. This project isn't recommending specific improvements for bicyclists, such as bike lanes. This project is not looking at corridor-wide linear improvements along the entire the corridor, which would be required for something like bike lanes or paths. However, at each site, the types of improvements being considered should improve safety for cyclists and vehicles because people will be able to see better around curves. Widening shoulders and increasing lane width in the areas will provide more room through the curves for cyclists.
- ◆ Question: Will these improvements allow Cottonwood Pass to stay open all year round?
  - ◇ Answer: This is a high-altitude road with heavy snow, drifting, and very steep grades. Maintaining the road during winter isn't planned right now.
  - ◇ Comment: If winter-time access ever happens, communications would be needed for emergency service because people would not have communications if they get stuck.
  - ◇ Chat Comment: I am not supportive of this happening and although supportive of increasing safety for local traffic, I am very worried about the traffic and speed that this will bring to my neighborhood and the impact to our rural way of life, increased traffic, noise, potential for impacts to property values, wildlife, cows, increased litter, etc.. Awareness and use of Cottonwood Pass already has had a huge impact on our neighborhood. I live on CR 103.
  - ◇ Chat Comment: I sure hope not.
- ◆ Questions: I've been driving the pass for 22 years every couple weeks when it's open. The blind curves with narrow roadway is the most dangerous part of this road. Anything to help mitigate that would be greatly appreciated and help. To me that is the biggest issue of all. The question is, in



California in the Sana Cruz Mountains, there are a number of places with past slides. The roads almost look like what I call the hairy part of Blue Hill. They have one-way traffic signals at each end, similar to what was done during the closure of the canyon with flaggers at each end. I'm not saying the whole section would have to have this, but if the part that's really one-way, very dangerous up-and-down-hill, that takes about a minute to drive, could be signalized, I think that would be one solution temporarily until that other section is rebuilt down-hill. My question is actually a recommendation.

✧ Answer: Thank you very much for that.

- ◆ Question: I understand that Garfield County has stated they don't have the financial resources to contribute to the project with their other priorities. How will this play into the process if they are not able to substantially contribute?

✧ Answer: CDOT can't speak for the counties and their finances. At the end of this project the deliverable will be information provided to the counties so they can make decisions regarding projects moving forward. This is intended to give them a high-level look at environmental and design issues and possibilities for the sites. In addition, this project will be providing high-level cost estimates at each of the locations. So, in the end, each county will have information to consider whether they want to move forward with a project or not, how they would fund it, and the order and schedule in how they would move forward.



## Appendix A

# Property Owner/Residential Issue Task Force Meeting #1 Presentation and Interactive Survey Results



**COLORADO**

Department of Transportation

Cottonwood Pass Concept Design  
Property Owner/Residential  
Issue Task Force (ITF) Meeting #2  
November 15, 2022



Welcome!

## AGENDA

- Project overview
- Design options and existing conditions considerations
- Next steps
- Group discussion/Q&A

## WHAT TO EXPECT

- A mix of presentation and interactive polling
- Respectful communication
- ITF input used to inform evaluation and refinement of concept designs at each site



## Project team presenters



**Karen Berdoulay**  
CDOT Region 3  
East Program  
Engineer



**Jacob Rivera**  
CDOT Region 3  
Project Manager



**Stacy Tschuor**  
David Evans and  
Associates, Inc.  
Project Manager



**Sarah Rachal-  
Dormand**  
David Evans and  
Associates, Inc.  
Engineer



**Leah Langerman**  
David Evans and  
Associates, Inc.  
Public Engagement



# What is your main interest in the Cottonwood Pass Corridor?



I own property adjacent to one of the site design options



I own property/live somewhere else along Cottonwood Pass



I own property/live along CR 113, 114, or 115

0

I commute along Cottonwood Pass

0

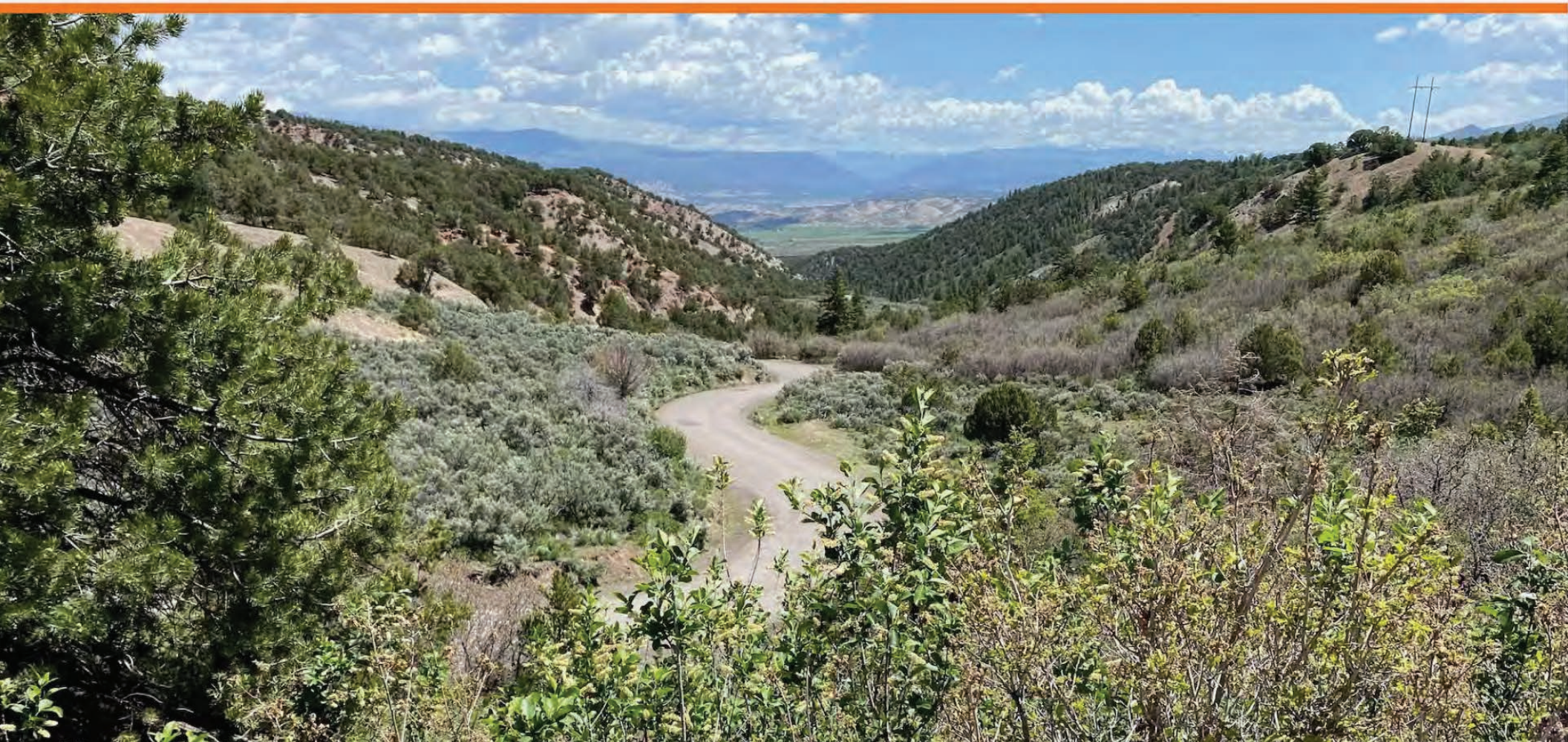
I bike along Cottonwood Pass



Other



# Project Overview





## Project purpose

### FOCUS

- Cottonwood Pass between Gypsum in Eagle County and CO 82 in Garfield County

### PURPOSE

- Road safety improvements to make the county roads safer and more functional as a vital travel connection between the local communities

### IMPETUS

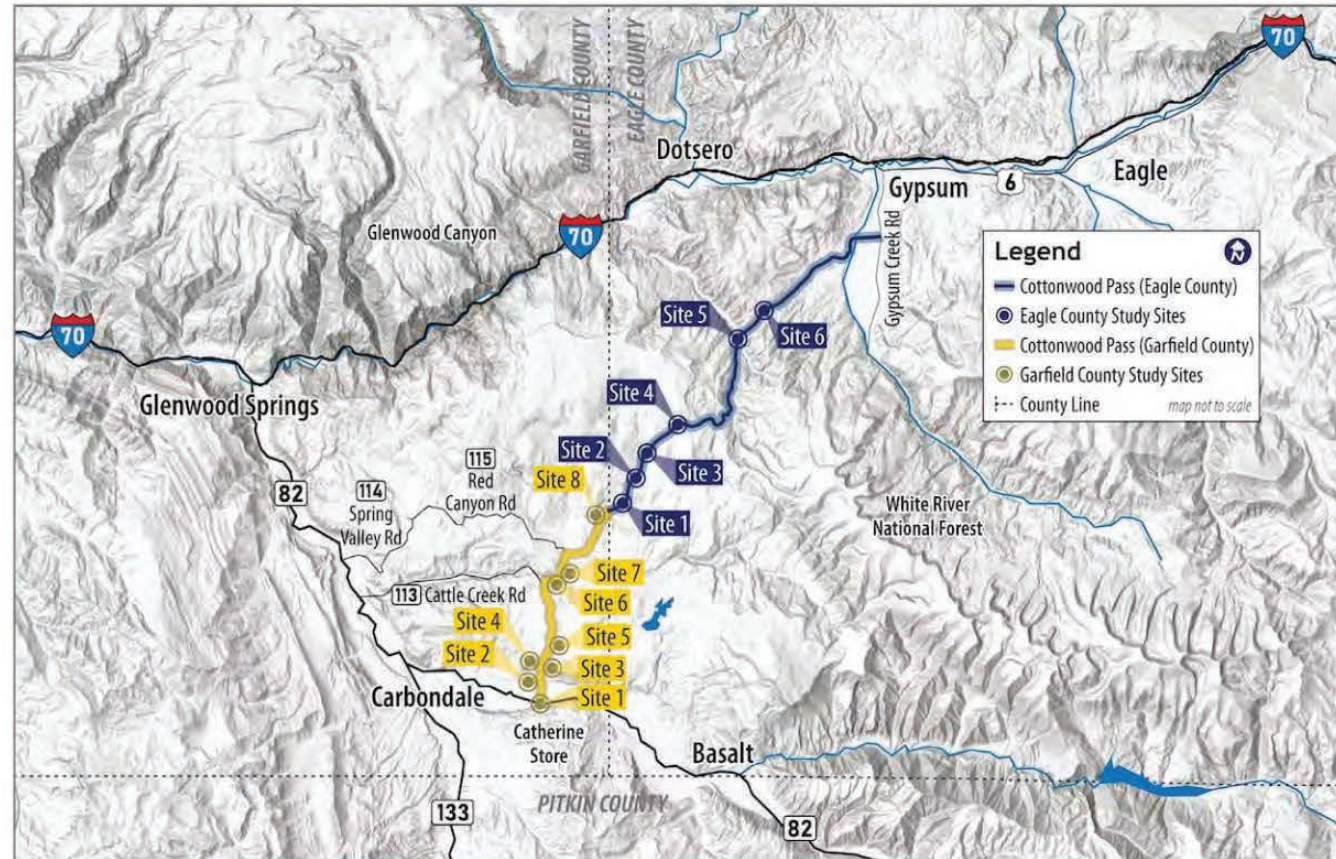
- Eagle and Garfield counties recognized the need for safety improvements
- This need became more apparent during Glenwood Canyon closures

*This project IS NOT preparing Cottonwood Pass to be a detour route for I-70 traffic! The detour will remain north of I-70. Cottonwood Pass improvements are needed for the safety of local travelers.*



## Project site key map

- Focus on 14 specific sites:
  - 6 in Eagle County
  - 8 in Garfield County
- Potential improvement areas account for 14% of total length of Cottonwood Pass
  - Corridor-wide improvements are not being considered with this project

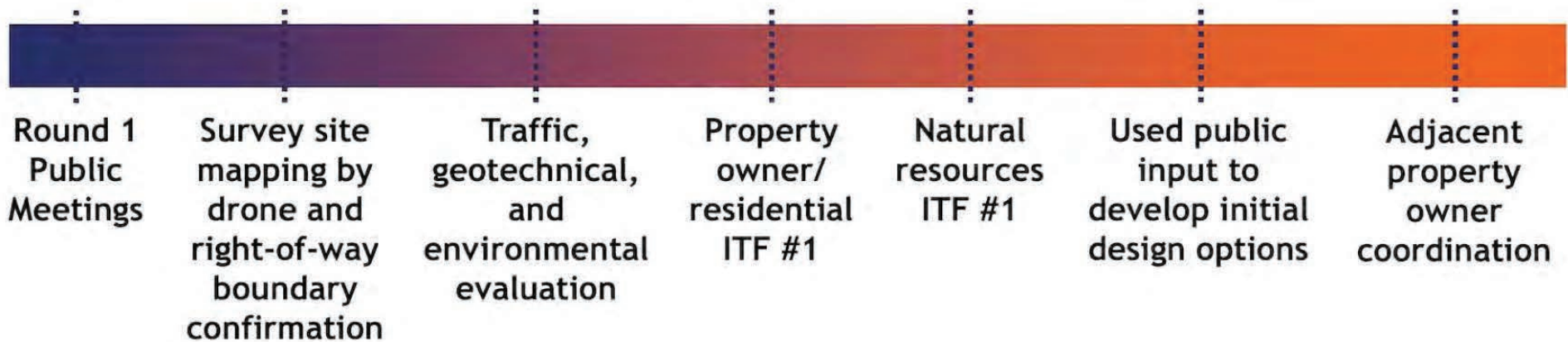


# Where do you live?





# Progress to date





## Adjacent owner comments

- Concerns about additional traffic using Catherine Store Road
- Agreement some improvements are needed (stepped implementation)
- Concerns improving curves could worsen speeding issues and negate the safety benefits
  - Desire for other ways to slow traffic
  - Need for enforcement for speeding
- Many errant vehicles go off the road causing private property damage and road erosion when they are pulled back up
- Need more road maintenance (washboard surface)
- Daily commuters cause more problems than detour traffic



## Improvement concepts

- Concepts focus on balance of improved driver safety without increasing traffic volume or speeds
- Safety - curves and narrow areas with known concerns
  - Curve paths
  - Lane and shoulder widths
  - Sight distance
- Traffic - hot spot improvements only
  - Overall corridor mountainous with curves, steep grades, and narrow areas
  - Current vehicle length and size restrictions remain





# Addressing speed concerns

Project team considering other ways to address speeding concerns that could be implemented with projects as they move forward at individual sites



## Increased Signage

- Pros:
- Reduced speeds, especially unfamiliar drivers
- Cons:
- Maintenance



## Enhanced Signs

- Pros:
- Interactive
  - Reduced speeds
- Cons:
- Cost
  - Maintenance
  - Visual impacts



## Speed Feedback Signs

- Pros:
- Interactive
  - Reduced speeds
- Cons:
- Cost
  - Maintenance
  - Visual impacts



## Rumble Strips

- Pros:
- Promotes drivers to stay in lane/slow down
- Cons:
- Cost
  - Noise impacts



## Context Sensitive Solutions (CSS) process

- ✓ Establishing project goals
- ✓ Establishing participant roles and responsibilities
- ✓ Establishing criteria for evaluating alternatives
- ✓ Developing options for improvements
- Evaluating design options based on established criteria
- Documenting the process and final recommendations



# Evaluation criteria - Core Values

## Core Values

The core values identified below are intended to be used to evaluate safety improvements at 14 locations as part of this concept design project.

### WHAT IS IMPORTANT?

#### SAFETY

Improve driver safety by making improvements at critical areas of geometric deficiencies

#### RESPECTING CORRIDOR CHARACTER

Maintain the rural feel of road

Minimize impacts to private property

Mitigate visual impacts from improvements

#### NATURAL RESOURCE PRESERVATION

Minimize impacts to nearby wildlife habitat and waterways

#### COLLABORATIVE IMPROVEMENTS

Engage public and stakeholders to provide meaningful input into the concept design process



# Evaluation criteria

Core Value	Criteria/Measure
Safety	Assessment of changes to vehicular safety concerns at site (speed, off-road vehicles, two-way traffic conflicts)
Respecting Corridor Character	Ability to maintain rural feel of road
	Potential right-of-way impacts to private property
	Potential visual impacts
Natural Resource Preservation	Potential impacts to wildlife habitat and waterways
Collaborative Improvements	Concerns and support from adjacent property owners
	Concerns and support from corridor travelers and general public



# Design Options and Existing Conditions Considerations by Site





## Existing conditions - all sites

### TRAFFIC

- Catherine Store Road - April 2019 count
  - Average 1,240 vehicles/day (weekday = 1,390; weekend = 930)
  - Mean speed = 34.6 mph; 85th-percentile speed = 39.6 mph
- Cattle Creek Rd - June/July 2019 count
  - Average 330 vehicles/day (weekday = 345; weekend = 310)
- Cottonwood Pass Road - Summer 2021 counts
  - With Canyon open: Average 400 vehicles/day (weekday = 370; weekend = 470)
  - With Canyon closed: Average 3,700 vehicles/day (weekday = 3,790; weekend = 3,650)



## Existing conditions - all sites

### ENVIRONMENTAL

- High-level overview with available information, windshield survey, and input from regulatory agencies and area stakeholders
  - Field survey verification needed with future design
- Federal, State, and BLM listed species with potential to occur require further evaluation to determine potential impacts with future design
- Roadways (CR 100/Catherine Store Rd and Cottonwood Pass Rd) are cultural resources, but a site project option is unlikely to result in adverse effects to the resource



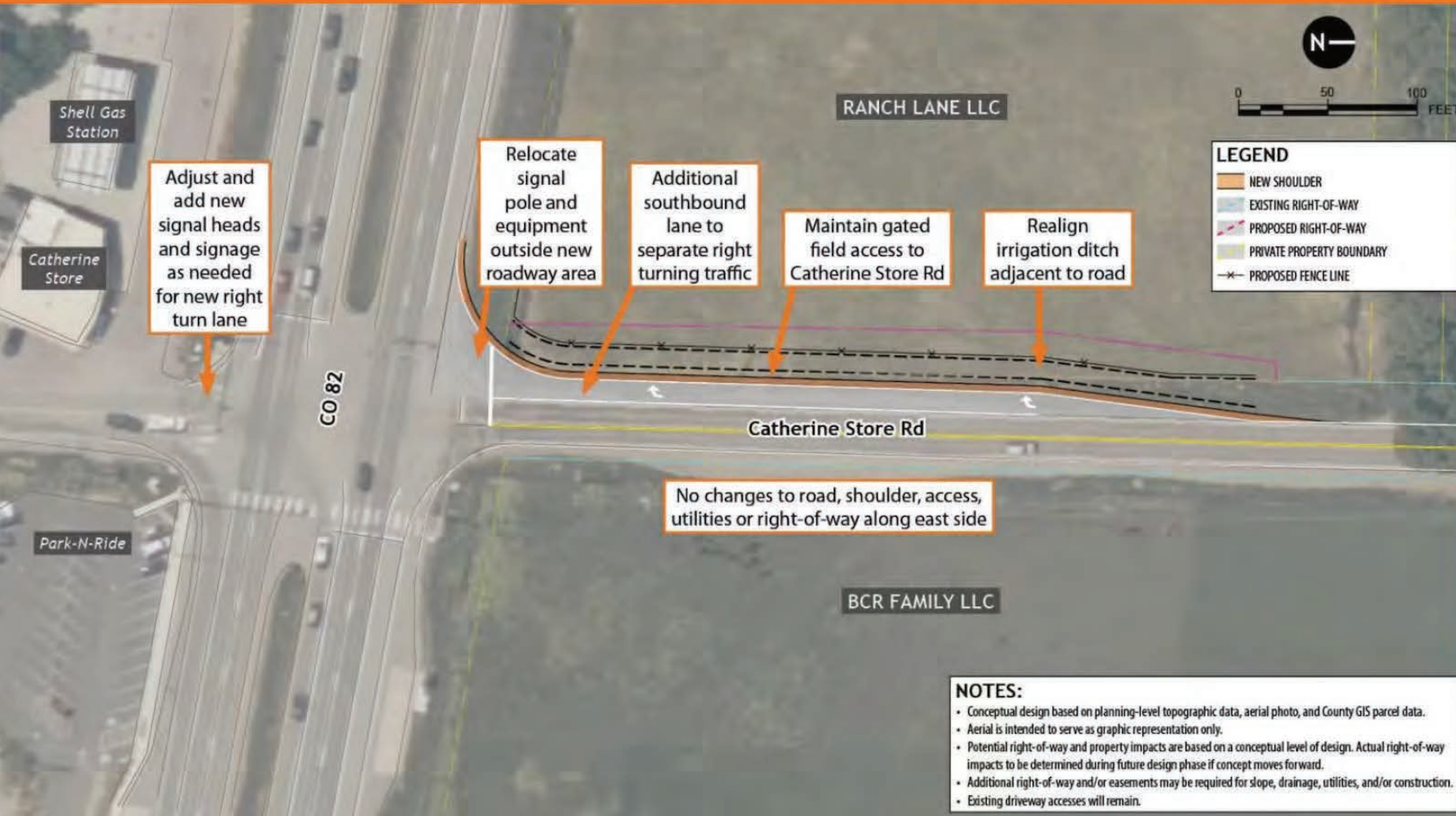
### CONCEPTS

- Conceptual design based on planning-level survey data, aerial photo, and County GIS parcel data
- Potential right-of-way and property impacts are based on conceptual design
  - Actual right-of-way impacts to be determined during future design
- Driveways and access will remain





# Garfield County Site 1



## CONSIDERATIONS

- **Environmental**
  - Irrigation ditch presumed to be a non-jurisdictional water
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resources - Patterson Ditch, CO 82, Catherine Building, 1972 residential building
- **Geotechnical**
  - Collapsible and evaporite soils

### NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

# Share Your Thoughts Garfield County Site

1

Accommodate parking on the east side of CS road. It happens.

Agree right lane needs to be able to go thru straight as well as right turn.

Designated turn lane for south to Aspen and west bound from opposite side of road. A 3 lane needed on either side of light.

The right hand turn lane should also allow to go straight across

The left turn signal needs to have longer green based on traffic. Lots of folks blow through the red light at 100-82, so a longer delay on the yellow should be considered.

Other than routine maintenance; chip and seal and shoulder repair after winter plowing, leave Cattle Creek (CR 113) alone.

CR100-Hwy82: fix ongoing pot hole too. Otherwise good. Lots of buried utilities on up valley side of CR100, so your choice to widen down valley side is good.

Good point about parking on Cath Store Rd- it happens on both east and west sides. The dedicated right lane would impede those parking on the west side.

I drive this area multiple times a day. Gas station side, the left turn impacts traffic not the right turn. On other side, typically only one car turns right when the light is red. biggest problem is people not using turn singles & constant potholes



# Share Your Thoughts Garfield County Site

1

Getting rid of the constant potholes on both sides. Consider N side left signal and S side left signal would be much more beneficial to traffic flow over proposed. Based on 6 years experience driving this area multiple times daily.

Signage is very important. Roaring Fork Valley, and especially CDOT highways are notorious for no signage, inadequately small signage, etc. Realize that motorists are traveling at a high rate of speed and need proper advance notification.

Widen and straighten the road. Longer sight lines make for greater safety.

Shorter right turn lane along fence line, proposed is HUGE for at most 2 cars a light trying to turn right. Both sides are held up by people turning left not right.

The most dangerous turn on CR100 is about 1 mile from Rt 82 intersection. I don't think additional standard signage will convince speeders to slow down. Speed bumps or maybe flashing warning signs with the speed indicated might work.

There is foot traffic across 82 to access the bus stops- I don't see anything to make that crossing safer for pedestrians. There is a lot of bicycle traffic crossing 82 here- will there be a dedicated bike lane? How many accidents here since 2020?

Great idea adding a northbound turn lane!

Add bike lanes to Catherine Store and Cattle Creek Roads.

good as is

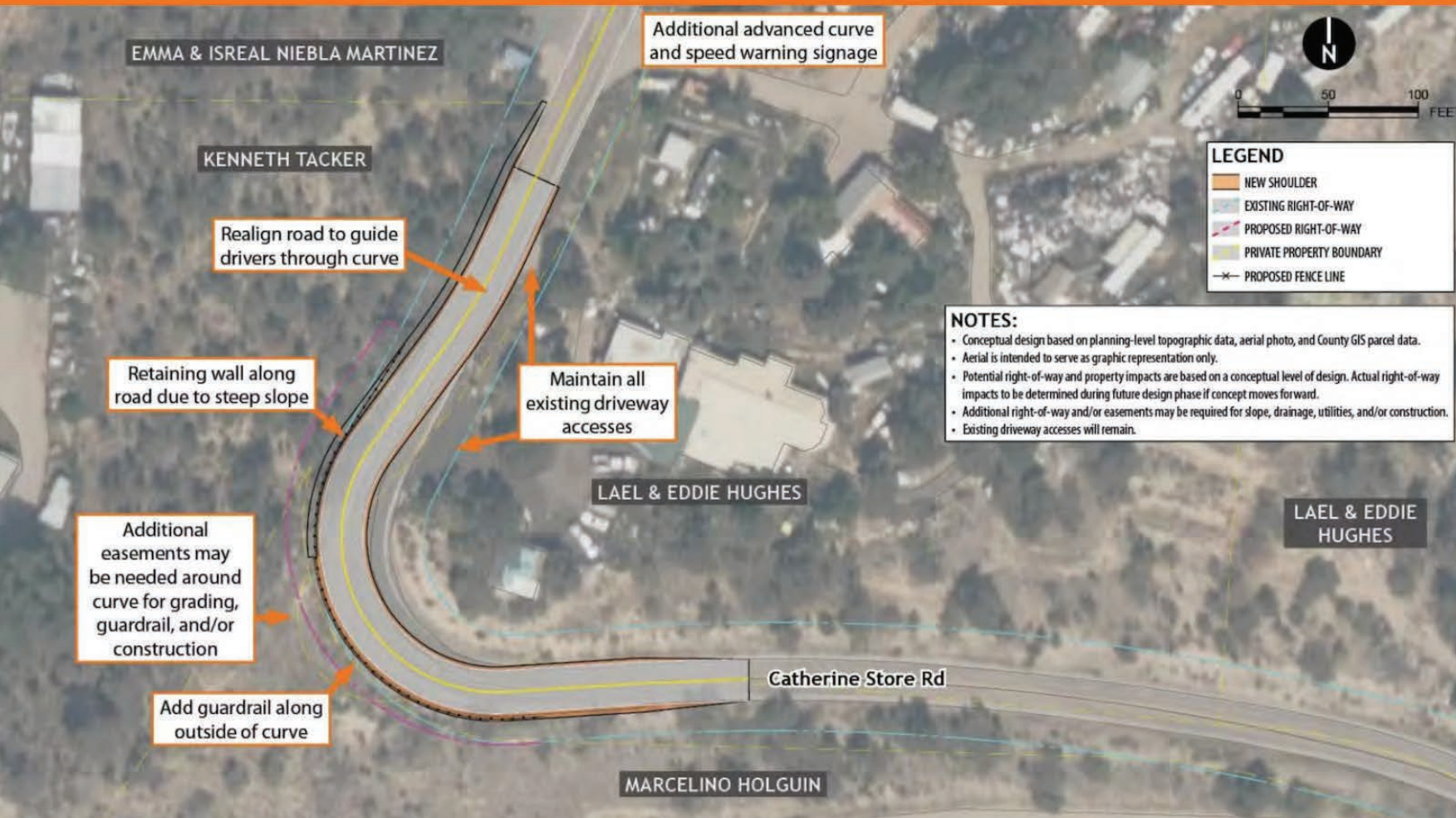
# Share Your Thoughts Garfield County Site

## 1

Right turn from CSR to west 82 is so needed, this is a very good addition. Ensure there is adequate opportunity to get into that lane if the light causes a back up further up the road.



# Garfield County Site 2 - Option 1

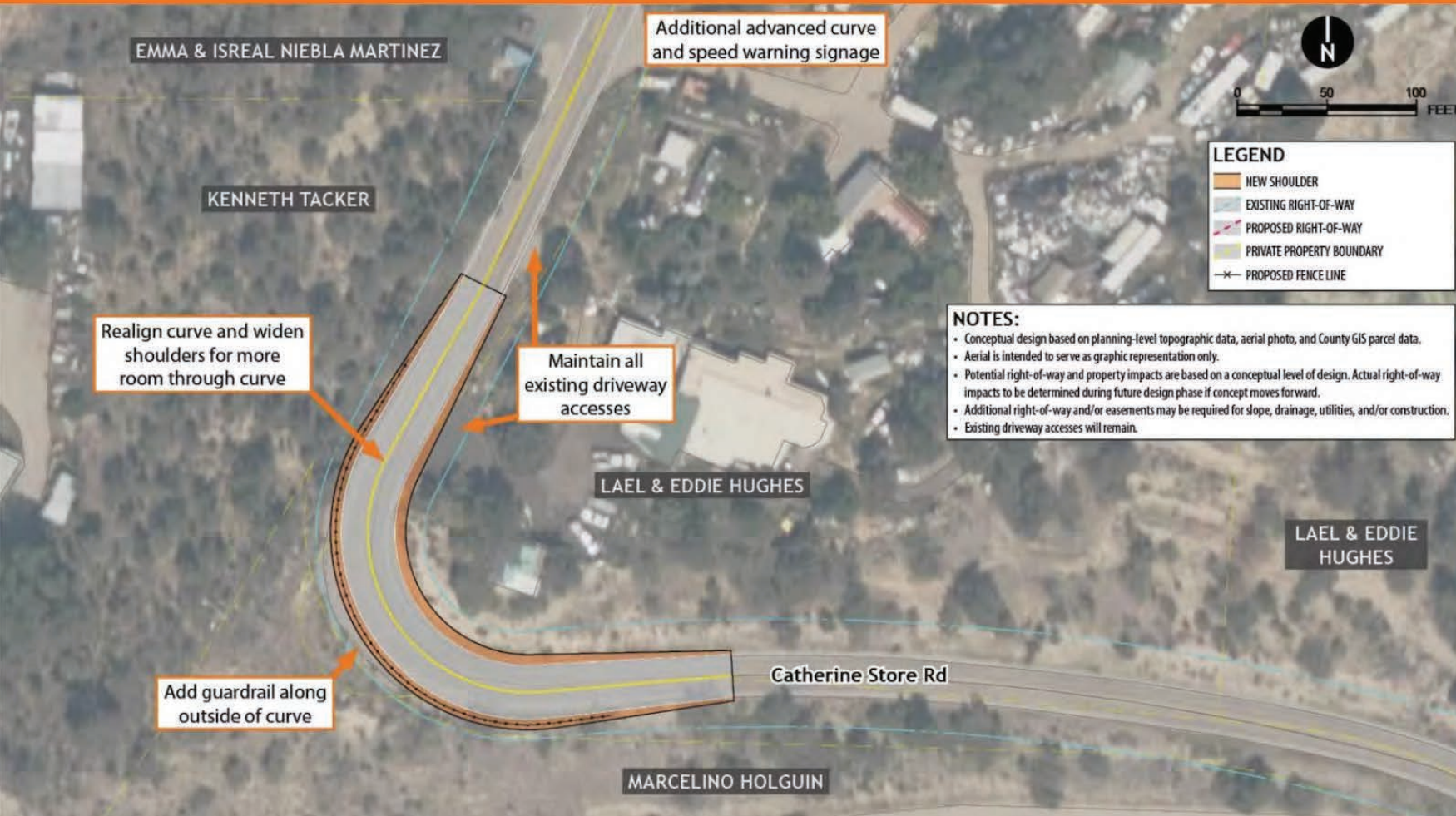


## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resource - 1960 residential building
- **Geotechnical**
  - Collapsible and evaporite soils



# Garfield County Site 2 - Option 2



Realign curve and widen shoulders for more room through curve

Maintain all existing driveway accesses

Add guardrail along outside of curve

Additional advanced curve and speed warning signage

**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resource - 1960 residential building
- **Geotechnical**
  - Collapsible and evaporite soils

# Share Your Thoughts Garfield County Site

## 2

Option 2 (no wall) seems easier and just as beneficial.

Winding the curve will increase speeds. You can hear as they come out of curve they romp on the gas. And coming down they won't worry about oncoming traffic.

There are herds of deer in the area.

What CR100 mile marker is this? I know two curves that look like that -- before the hill and before the old landfill.

Who pays for the driveway extensions?

Widening seems like a waste of money. The biggest issue here is when someone pulls into the first drive that's on a blind corner. Today I past a 5th wheel going down while I was going up w out issue. IMO both are money wastes

Option 1 is better because the inside of the curve is very tight. The Hughes driveway intersects 100 on a blind turn and should be mitigated to minimize conflicts with uphill traffic.

Who would pay for my land you are taking ?

Option 1 is preferred. By expanding the turn to the west you also give the up-hill drivers a bit of advance warning as to upcoming downhill traffic. This turn as it exists today is a blind corner.

# Share Your Thoughts Garfield County Site

## 2

Straighten out this hairpin turn. It's quite dangerous at its present configuration.

Widen & straighten.

Will need to go through the dump of the landowner at the hairpin turn.

Widen & straighten.

Neither option addresses the blind driveway entrances. Neither option addresses speeding and rolling the car when going downhill.

Not much difference between options. Signage is key. Is curve is not significantly smoothed, slow speeds here are paramount. Safety wall and guardrails are good.

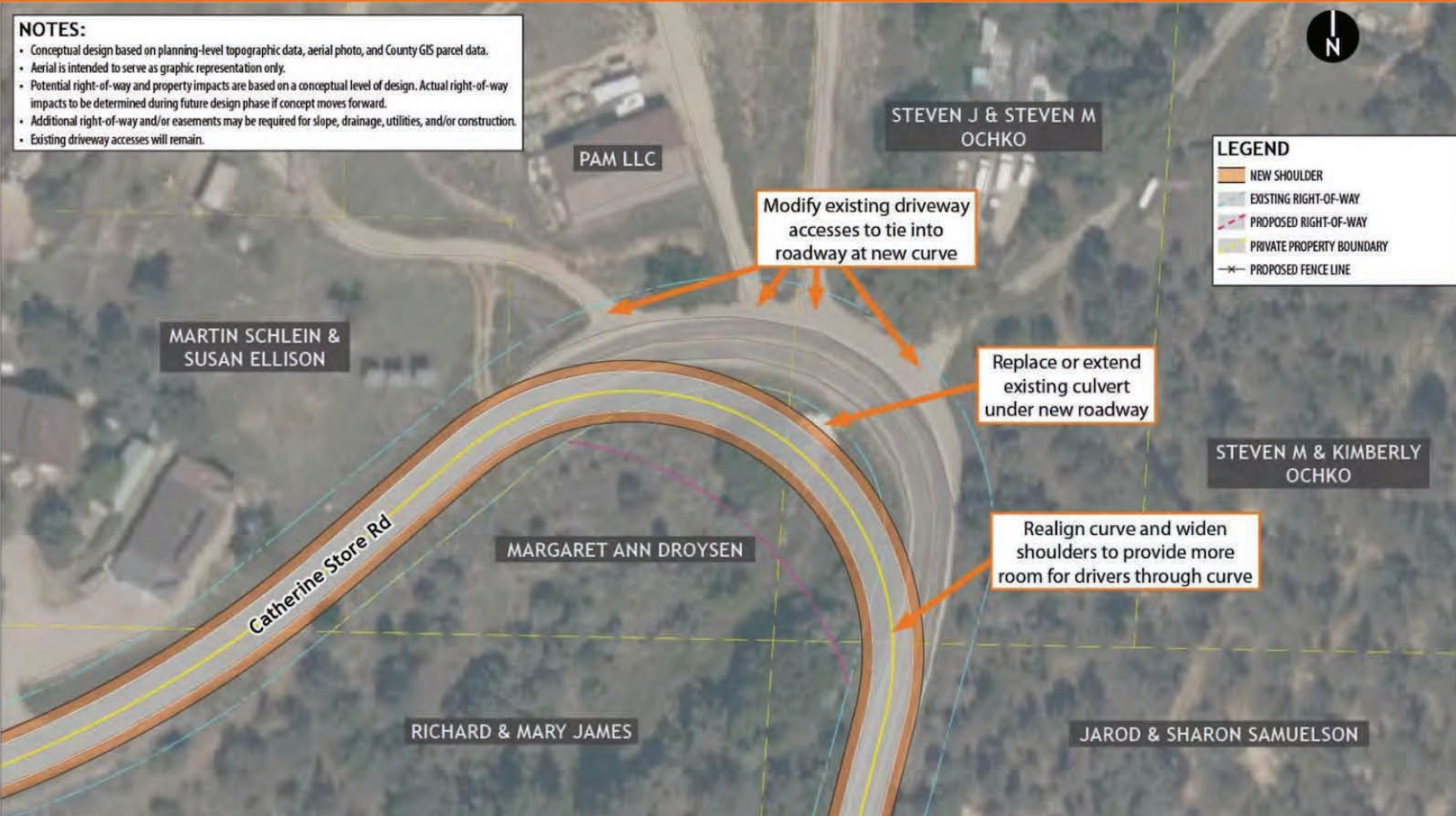




# Garfield County Site 3

## NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



## CONSIDERATIONS

- **Environmental**
  - Potential jurisdictional mapped stream (unnamed)
  - No federal or state-listed threatened & endangered species habitat
  - No cultural resources near site
- **Geotechnical**
  - Collapsible and evaporite soils
  - Site within mapped landslide, but no evidence of slope failure or movement

# Share Your Thoughts Garfield County Site

## 3

There was considerable work a few years ago to improve the culvert and road. Plan seems OK. Not sure what it really does but maybe makes the curve less sharp?

Property owner impacts on inside of curve, mostly.

Who pays for driveway extensions and who pays for my land that is being taken for the realignment?

That change seems unnecessary and cuts pretty deep into the Droyson property.

Any straight of the road you want to increase traffic up to 5000 cars a day on a road at 25mph where 85% speed now.

Do not want to have noise related traffic control installed. Sound rises and it would be extremely disruptive to my enjoyment of my home and property

If the radius of the curve does not change, I wonder what the benefit of modification is.

Doesn't it make the curve even more pronounced?

None other than leaving Cattle Creek Rd. (County Road 113) alone.

# Share Your Thoughts Garfield County Site

## 3

Signage would be much more cost effective over moving the road. I get changing the angle a bit bc it is sharp but again is it really needed?

Widen & straighten.

Widen & straighten - add a bike lane.

Good improvement

Widen & straighten - add a bike lane.

Widen & straighten - add a bike lane.

Widen & straighten.

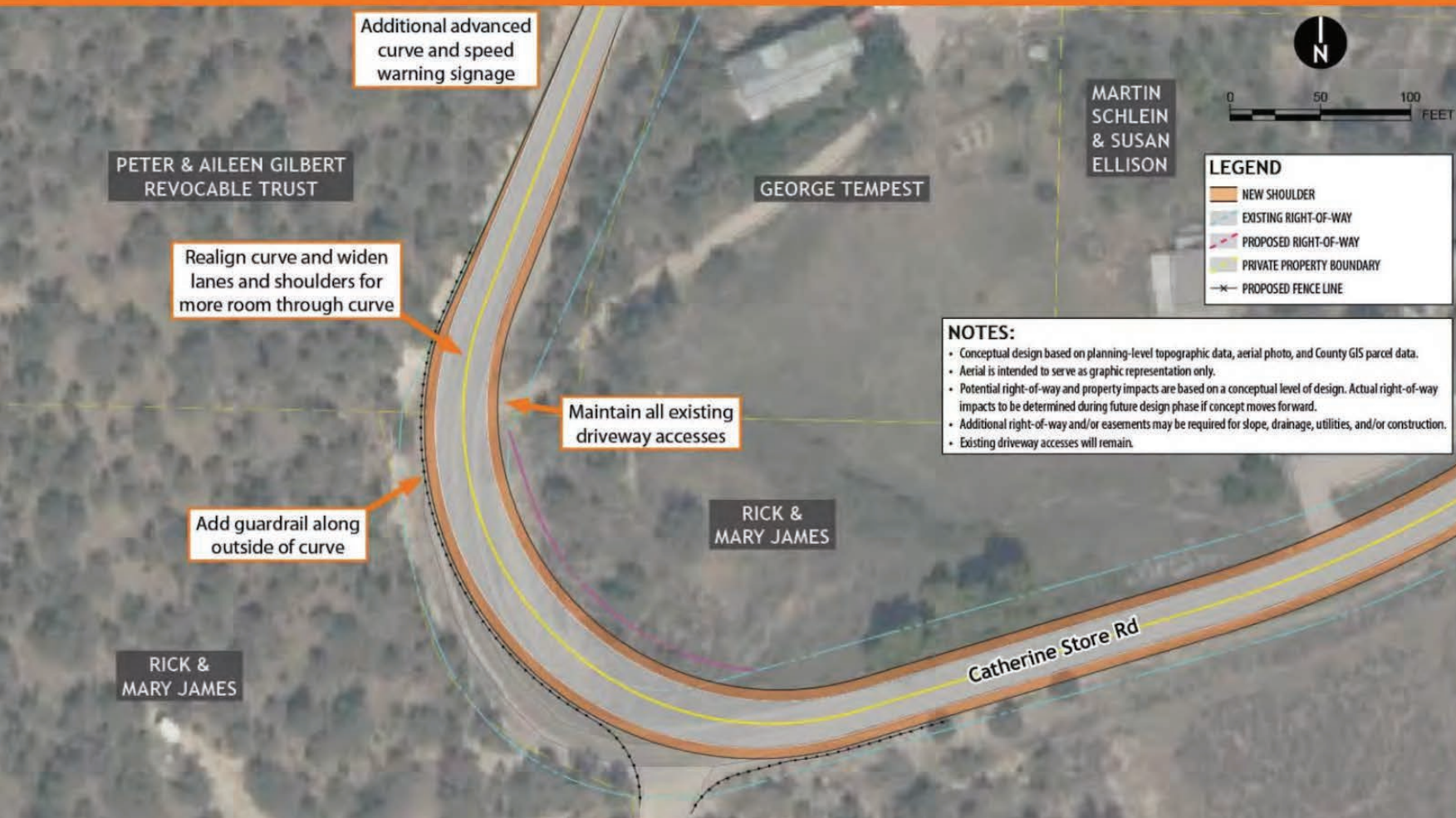
Widen & straighten - add a bike lane.

Better.





# Garfield County Site 4



## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - No federal or state-listed threatened & endangered species habitat
  - No cultural resources near site
- **Geotechnical**
  - Collapsible and evaporite soils
  - Site within mapped landslide, but no evidence of slope failure or movement

# Share Your Thoughts Garfield County Site

## 4

Active wetland on north side.

Expanding shoulders. Are cyclists being considered in these alternatives?

Trees, water, wells all impacted by salt, ice, sand etc.

Not a Cottonwood Pass issue, but for winter this is an ice nightmare coming downhill. So making wider really is a good thing.

Guardrail after impacts and buildup of sand etc will become hazardous. High concern of well water and natural spring.

Speed bumps do work look at midland in Glenwood. Plow drivers would not be hindered. Permanent damage done to our property with every accident. Have a road next to county Plowed down trees and broken trees, sagebrush, litter from accident. Oil, gas

That seems like a good option.

Guardrails shown above the old dump access. Vehicles going off the road there just going to the ditch. Below the old dump access there is a serious drop-off and guardrail must be added there

Federal, state, county-M&S standards must all be met. Signage, delineation, guardrails are not maintained now to existing or are non existing. When there is an accident and this corner is notorious road is closed. Then what? Patrols are non-existent.

# Share Your Thoughts Garfield County Site

## 4

Trained personnel in NIMS hazardous material cleanup. Cops won't give a ticket unless exceeding 10 mph over speed limit. Not enough personal and they would have to go to court taking away from patrol.

Safety for children. School bus route. I have personally seen bus passed and car off road 7 feet from bus stop. Noise control. Who will be responsible for everyday maintenance? Man power is down by 50% or more now.

CMC road is already established with 90% of the "improvements" your proposing and most traffic coming through the canyon is headed further than Glenwood so why add an additional 7 miles by 100 road. Feasibility doesn't make sense.

As property owners we strongly oppose this project. There are better alternatives and it seemed on this meeting minds are made up already our concerns and lives are being brushed aside or disregarded. Speed, alcohol & general safety. No answers.

In my 6 years experience this is the dangerous curve. Especially in winter. I think it's a good idea to create a bit more 'wiggle room' especially for the down hill traffic. Signage with your speed flashing might be helpful for those who are unaware

Widen & straighten - add a bike lane.

Not better. Coming downhill off a steep grade with a hidden drive and resident wild turkeys needs wider shoulders- enough to avoid a crash or slow a truck without brakes.

Between this curve (aka dead horse curve) and 102 road is where the elk migrate every October- November and they come back for Christmas.

Curve changes don't seem very significant, but if they are these are all good changes. Guardrails and signage long overdue.



# Garfield County Site 5



## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - No federal or state-listed threatened & endangered species habitat
  - No cultural resources near site
- **Geotechnical**
  - Collapsible and evaporite soils
  - Site within mapped landslide, but no evidence of slope failure or movement
  - Rockfall analysis and protection may be required with excavation into rock outcrops

# Share Your Thoughts Garfield County Site

## 5

I know dreams and now Lng back the Cutti

Cutting into rock outcroppings, rock fall considerations as you said.

Cutting back the hillside in the west side 100 Road as shown is a good idea for sight distance and to improve the turn.

Our spring comes under the road near that location... cannot tell from the small map. The spring feeds 5 homes. Who will make sure our spring is not affected?

You give them more vision they speed even more, unknowing around the corner slows people down. Right now only another bumper currently slows speeders down.

The stream may feed our spring... will the path be affected?

X

Option 1

X





# Share Your Thoughts Garfield County Site 5

This would just increase traffic speeds heading down hill IMO

What's the cost of doing this? Is it really worth it??

Widen & straighten - add a bike lane.

It's the bicycles- none of these improvements address the bicycle loop from Catherine's store to 102 to Fender to Cattle Creek to El Jebel.

This is one of the biggest area for speeding when heading "down" towards 82. Better speed mitigation needed here.



# Garfield County Site 6



- CONSIDERATIONS**
- **Environmental**
    - Potential jurisdictional mapped stream (unnamed)
    - Potentially suitable habitat for federal threatened & endangered species (yellow-billed cuckoo and Ute ladies'-tresses orchid)
    - Cultural resource - Panorama Dr
    - Cultural resources (Hopkins-Basalt Section 15kv Transmission Line and Needham Ditch) to be avoided
  - **Geotechnical**
    - Collapsible and evaporite soils
    - Site within mapped landslide, but no evidence of slope failure or movement

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

# Share Your Thoughts Garfield County Site 6

You missed the sharp bend around the big tree just before that intersection.

I completely support the realignment of the intersection to a 90 degree intersection.

I think this is a good idea. It will reduce close calls from people merging

I support this.

This will make a left turn from Panorama Dr to downhill direction of CR100 more dangerous from traffic coming downhill on CR100.

Again it seems like a waste of resources, but it will force the families on Panarama to actually stop instead of pulling out without looking like they do now

I live closer to cottonwood so drive this intersection a lot and can see the benefit to this. Always wondering if people can see me coming down towards 82, but the flow going up hill is very nice and again doesn't seem to be that big of a problem.

The scarier intersection where I've MULTIPLE times almost gotten hit is the intersection with CR 103. That intersection needs to be straightened and changed to a stop sign before any of the other proposed work.

This seems like an unnecessary "improvement". Monies could be better utilized elsewhere along the route.

# Share Your Thoughts Garfield County Site 6

Widen & straighten - add a bike lane.

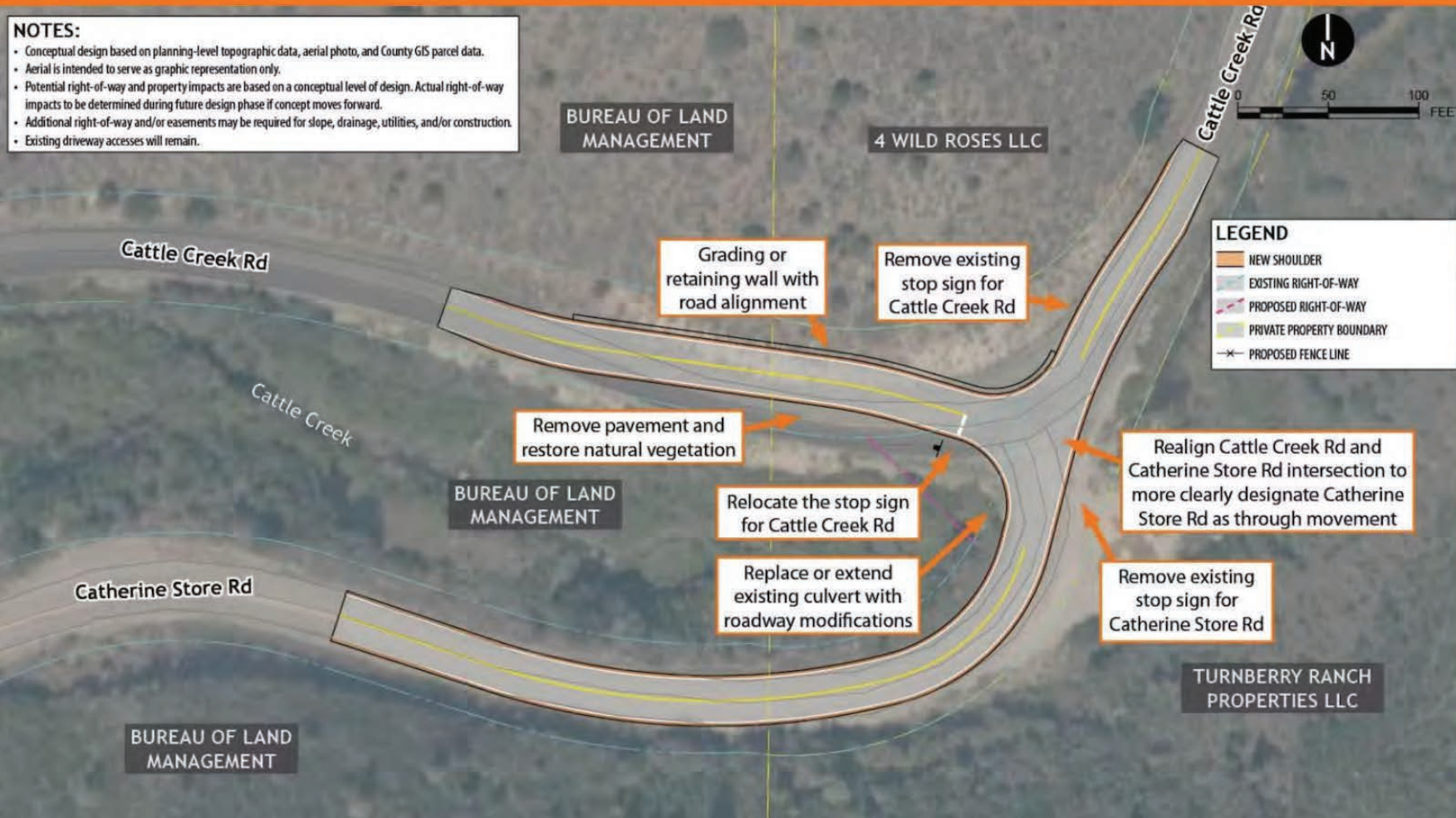
As most traffic leaving Panorama Dr. makes a left turn I think this is a great safety improvement.



# Garfield County Site 7 - Option 1

## NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



## CONSIDERATIONS

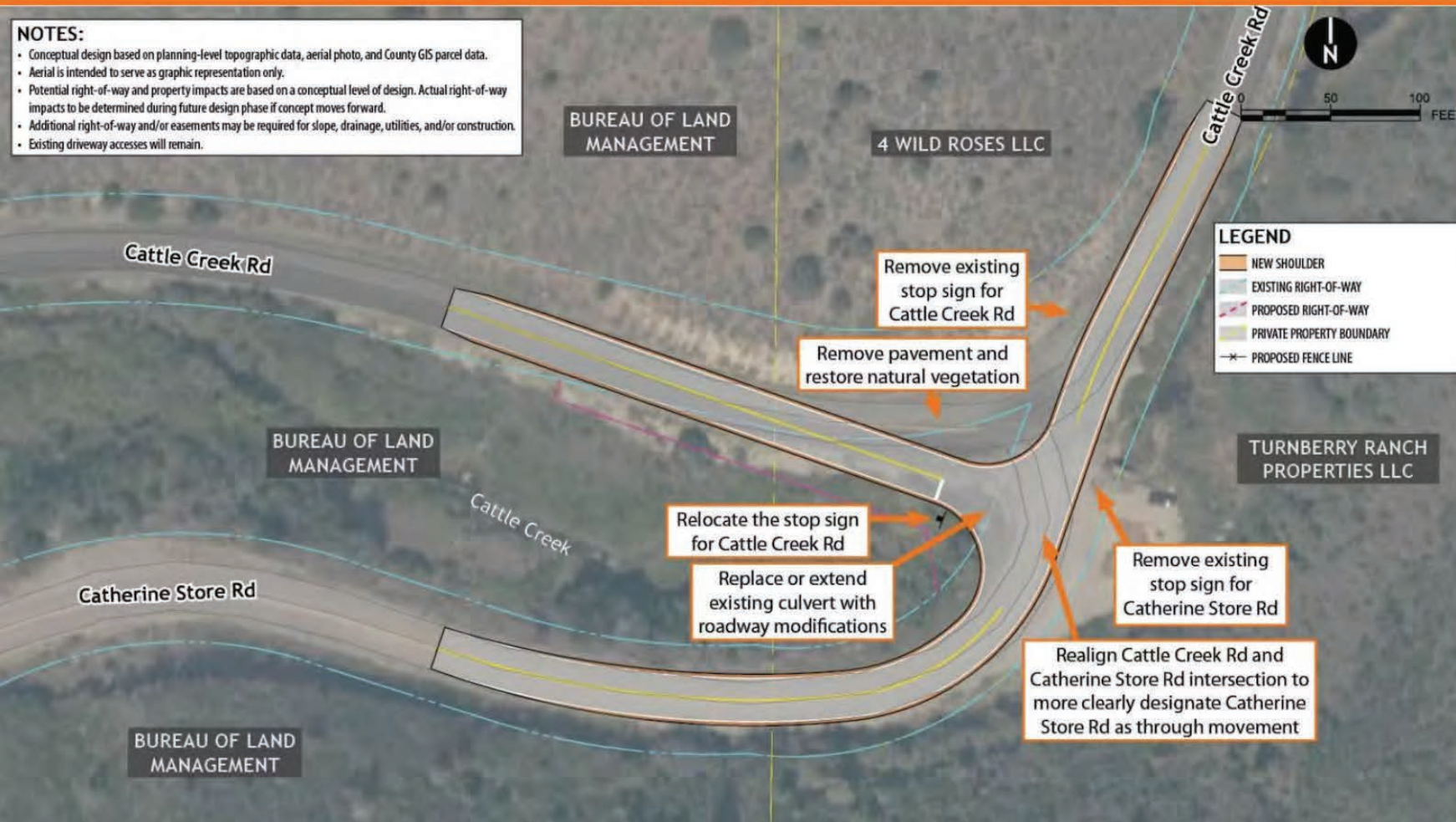
- **Environmental**
  - Cattle Creek and associated wetlands presumed to be jurisdictional waters
  - Potentially suitable habitat for federal threatened & endangered species (yellow-billed cuckoo and Ute ladies'-tresses orchid)
  - Cultural resource - Cattle Creek Rd
- **Geotechnical**
  - Collapsible and evaporite soils
  - Site within mapped landslide, but no evidence of slope failure or movement



# Garfield County Site 7 - Option 2

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



- CONSIDERATIONS**
- **Environmental**
    - Cattle Creek and associated wetlands presumed to be jurisdictional waters
    - Potentially suitable habitat for federal threatened & endangered species (yellow-billed cuckoo and Ute ladies'-tresses orchid)
    - Cultural resource - Cattle Creek Rd
  - **Geotechnical**
    - Collapsible and evaporite soils
    - Site within mapped landslide, but no evidence of slope failure or movement

# Share Your Thoughts Garfield County Site

## 7

Removing the stop sign for N/S traffic makes lots of sense as does the road realignment.

Option 2 looks better.

No thru traffic sign going from cattle creek to Catherine store, 82 traffic turn right . Want these signs .

Option 1: No one stops -- no one -- at the sign anyway. But really not a bad idea to really clarify what is the way to go. Most coming from Gypsum would initially shy away from the uphill look going south.

I think the 90 degree angle for option 2 makes it better defined

Option 1 encroaches on private property? Option 2 look like a more difficult right turn at the stop

important environmental concerns to be considered to protect Cattle Creek riparian area

Option one has less impact on the creek. Removing the stop signs doesn't change anything, nobody stops anyway.

Prefer option 2. But i think removing the stop signs is just asking for more issues w people traveling s, towards 82, and speeding up hill. And for N bound traffic increasing people going too fast and ending up in the creek



# Share Your Thoughts Garfield County Site

## 7

I get that you want to take away the temptation of people turning at that stop sign down cattle creek but unless you take it off Maps then that is still going to happen. And it will increase speeds and accidents on Catherine store road.

Removing the stop signs will make it challenging during canyon closures to make a left hand turn from Cattelcreek , also line of sight is not good weather you are turning Rt. or Lf. Currently nobody stops if no traffic is present but they slow us.

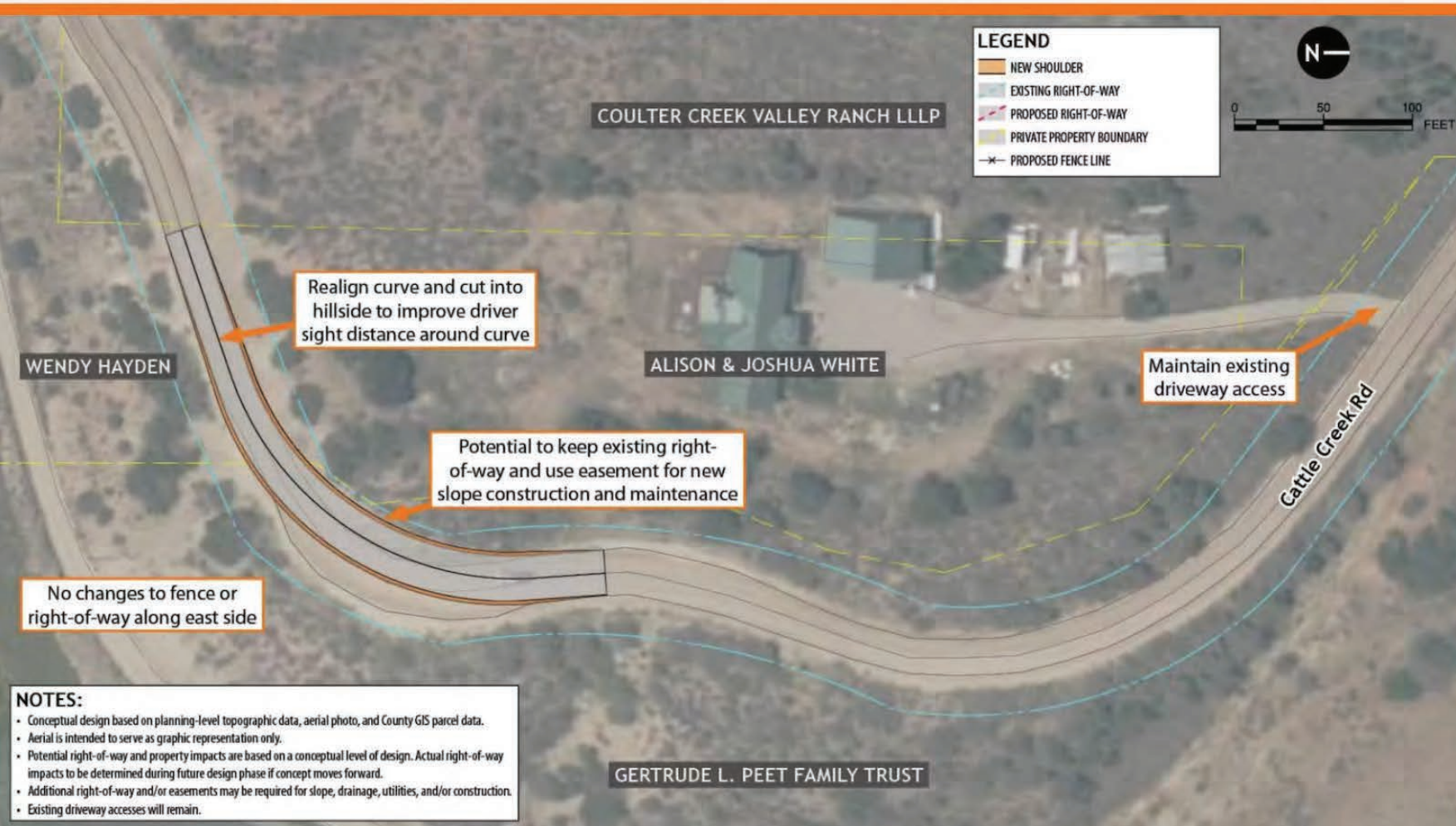
Option 1 is preferred

Widen & straighten - add a bike lane.





# Garfield County Site 8



## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - Potentially suitable habitat for federal threatened & endangered species (yellow-billed cuckoo and Ute ladies'-tresses orchid)
  - No cultural resources near site
- **Geotechnical**
  - Collapsible and evaporite soils
  - Rock outcrops were observed and bedrock appears workable for cut slopes

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
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# Share Your Thoughts Garfield County Site

## 8

That makes sense, it is fairly narrow at this site.

Yes, this is really dangerous, particularly with sliding on rock a times of year. More sight around will help.

Sight distance regardless of speed limit the speeding will naturally increase.

a straighter alignment is a good idea.

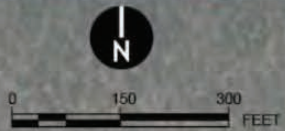
Just along 1/2 mile of our property line I pick up several 30 gallon trash bags full of alcohol containers. Again no patrols.

No opinion on this area, I don't drive it often

Widen & straighten - add a bike lane.

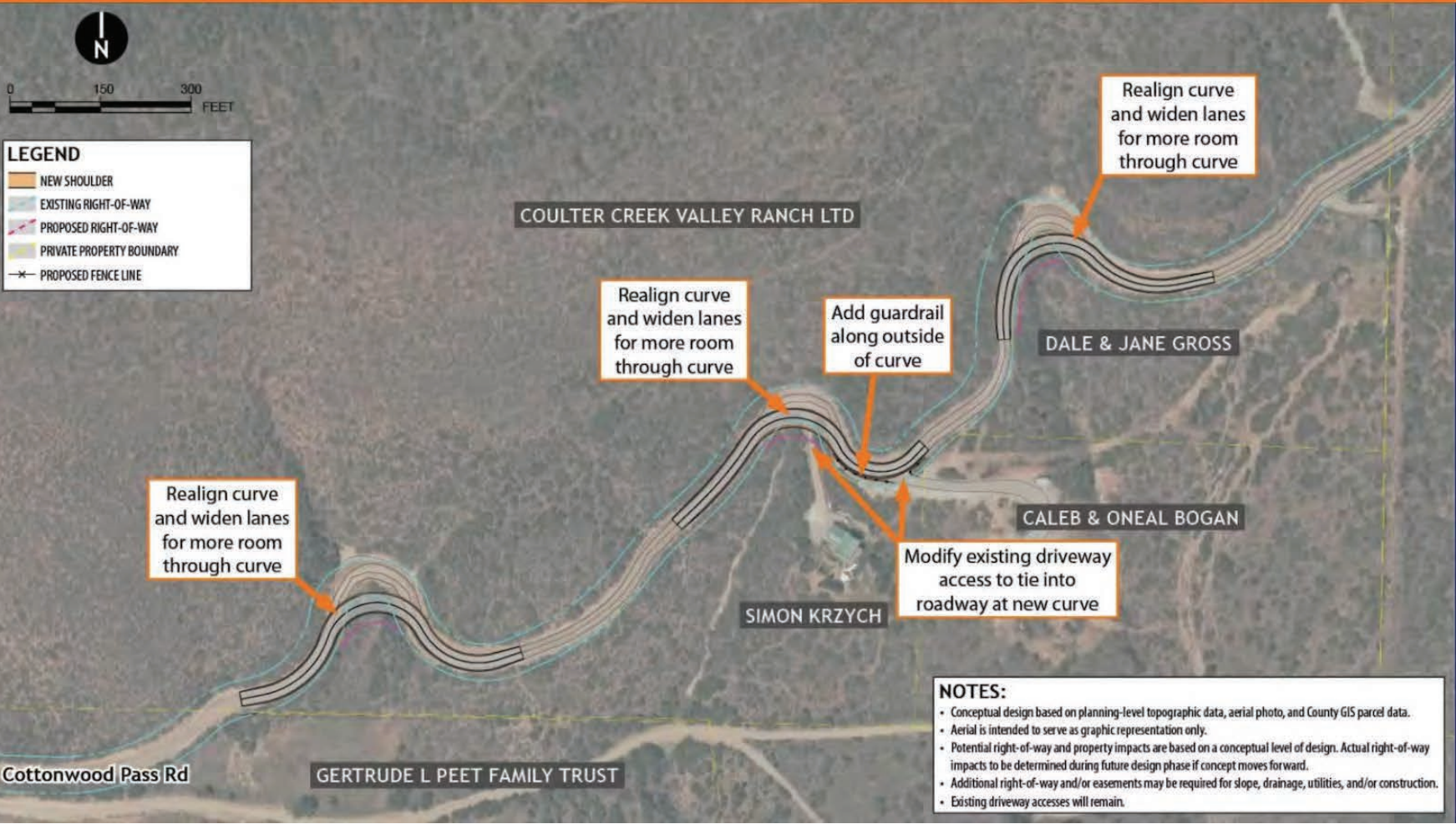


# Eagle County Site 1 - Option 1



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



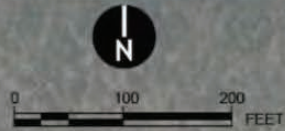
**NOTES:**

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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

- CONSIDERATIONS**
- **Environmental**
    - No mapped streams or wetlands
    - No federal or state-listed threatened & endangered species habitat
    - No cultural resources near site
  - **Geotechnical**
    - Collapsible soils
    - Rock outcrops were observed and bedrock appears workable for cut slopes



# Eagle County Site 1 - Option 2



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
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- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

- CONSIDERATIONS**
- **Environmental**
    - No mapped streams or wetlands
    - No federal or state-listed threatened & endangered species habitat
    - No cultural resources near site
  - **Geotechnical**
    - Collapsible soils
    - Rock outcrops were observed and bedrock appears workable for cut slopes

# Share Your Thoughts Eagle County Site

## 1

Curve realignments are a good idea and improve sight distance.

Hell no to option 2. That would be a nightmare with people speeding through the curves.

Prefer Option 1. Less impact on private property

Option 2 looks better.

All good. Note the ditches are deep along here and can catch smaller car wheels when truck is going the other direction and forces the car into the shoulder -- dropping the car wheels into the ditch. So wider is better.

Option 2 seems safer and better drive way access but either is fine

Option 2

Option 2 looks better

Option 2 seems safer and better driveway access

# Share Your Thoughts Eagle County Site

## 1

Option 1 to lessen impact to residence.

Widen & straighten - add a bike lane.

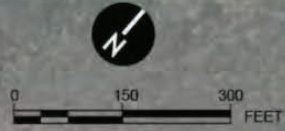
Option 2 straightens too much, impacts land owner and will increase speeds on a downhill grade. I think option 1 is more appropriate.

I prefer option 1. Less impact on property owners and keeps curves to keep speed down.

All of the softening, widening of curves look great on paper from an aerial view, but these hairpin curves were likely created due to steep slopes in this area...without knowing how the slope of these curves would change make it hard to evaluate.



# Eagle County Site 2



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

**CONSIDERATIONS**

- **Environmental**
  - East Coulter Creek and associated wetlands presumed to be jurisdictional waters
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resource - unnamed 1908 Trail
- **Geotechnical**
  - Site within mapped landslide, but no evidence of slope failure or movement
  - Rock outcrops were observed and bedrock appears workable for cut slopes

# Share Your Thoughts Eagle County Site

## 2

This area is dangerous and needs to be widened, especially near the curve to the south/south west.

environmental concerns about substantial grading into hillside

The road is to remain unpaved, but will class 6 roadbase be added to all road sections to reduce the very slippery clay soils that when wet are dangerous?

Curve at left of sight map is also a little blind.

We have some concerns about a potential wetland seep located on the east side of the road that drains into E. Coulter Creek. Are there plans to mitigate impacts to this area?

widening the road is a good idea here

It definitely needs to be widened

The most dangerous portion of this road is the south end. That is where cars go off the road.

looks good



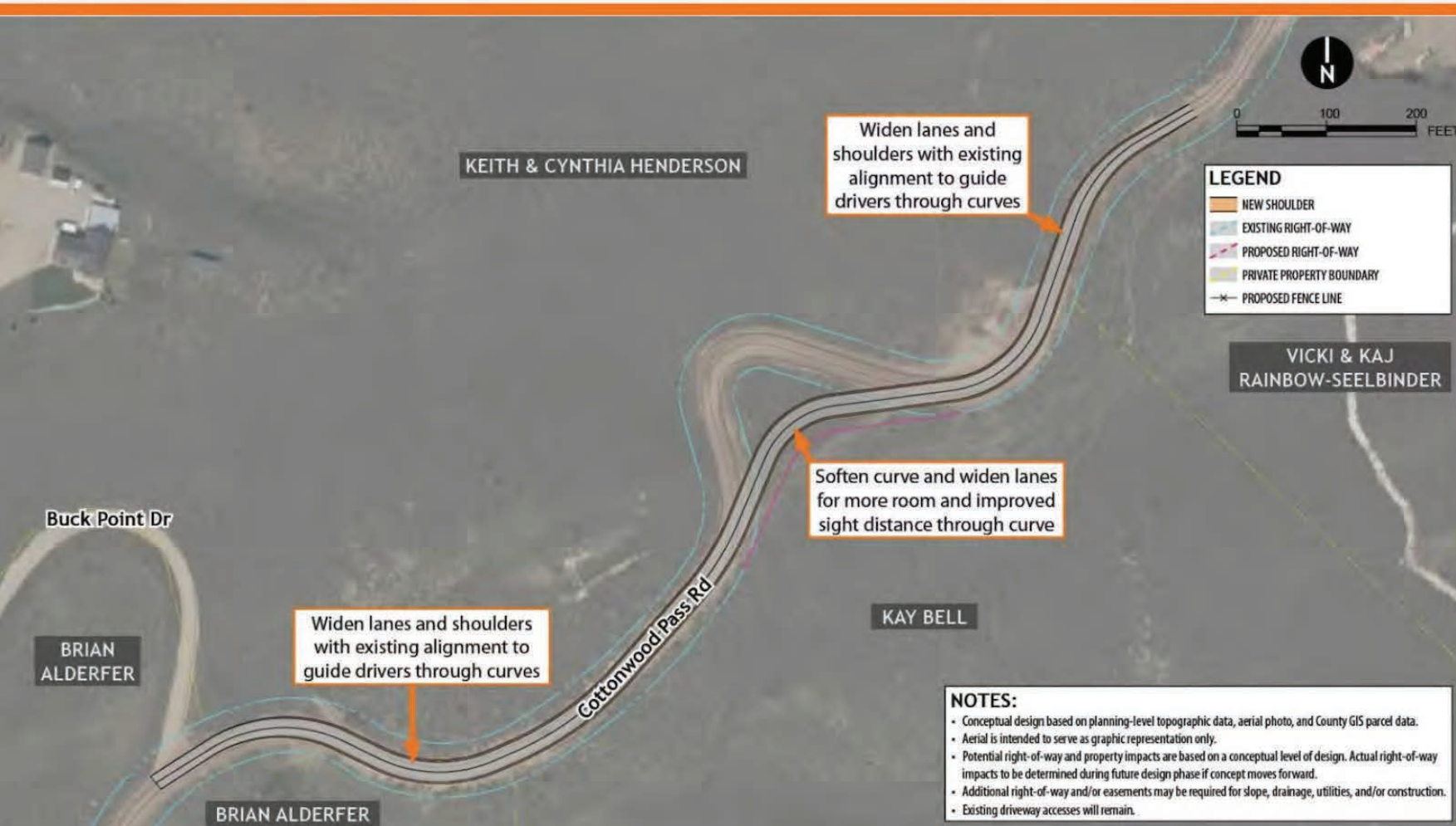
# Share Your Thoughts Eagle County Site 2

No opinion

Widen & straighten - add a bike lane.



# Eagle County Site 3 - Option 1



## CONSIDERATIONS

- **Environmental**
  - Potentially jurisdictional mapped stream (unnamed) and wetlands associated with Von Springs Reservoir 1
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resource - the Lower Von Springs Reservoir and dam

## Geotechnical

- Potential for evaporite soils
- Site within mapped landslide, but no evidence of slope failure or movement



# Eagle County Site 3 - Option 2



## CONSIDERATIONS

- **Environmental**
  - Potentially jurisdictional mapped stream (unnamed) and wetlands associated with Von Springs Reservoir 1
  - No federal or state-listed threatened & endangered species habitat
  - Cultural resource - the Lower Von Springs Reservoir and dam

## Geotechnical

- Potential for evaporite soils
- Site within mapped landslide, but no evidence of slope failure or movement

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

# Share Your Thoughts Eagle County Site

## 3

The left most curve is REALLY dangerous. I've been side swiped by a downhill driver when I was on the outside edge going uphill. It is blind and not enough room for two vehicles even going slowly at the sharp point of the curve.

Option 1.

ECO has added roto-mill to the roadway to make a somewhat paved surface, but it has fallen apart. Will that be replaced?

important to protect wetlands

Option 2 is preferred less private property impact

Option 1 addresses the first curve which is narrow and blind- more imp than second curve

Option 2 is a better option

Option 1 seems better, but probably less impact with Option 2

Either is fine

# Share Your Thoughts Eagle County Site

## 3

Option 2. Less impact to Kay and area

Option 1 definitely. Option 2 is no improvement.

Widen & straighten - add a bike lane.

Need a 3rd option. I prefer option 2 along with the Southern improvements in option 1. It would also be great incorporating some methods of speed control at Buck Point Dr. as any further straightening will just encourage more speed.

Benefits would be no stoped traffic because of narrow road way with canyon closure. Impact will be increased speed with daily commute as speed is already a problem around Buck Point intersection.

Need a 3rd option. This directly impacts me as I am the property owner

It will require me loosing property.



# Eagle County Site 4

## NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



## CONSIDERATIONS

- **Environmental**
  - No mapped streams or wetlands
  - No federal or state-listed threatened & endangered species habitat
  - No cultural resources near site
- **Geotechnical**
  - No evidence of geologic hazards or geotechnical features that would adversely impact design or construction

# Share Your Thoughts Eagle County Site

## 4

seems pointless, that curve isn't dangerous and you can see around it.

Not sure the improvements will make much difference

looks fine

important to maintain culvert

Looks like you could move the curve to the north and achieve the same result without any new right of way needed.

I'm just not sure what the purpose is of making it easier at this curve for people to go faster considering the open range aspect of this pass. This is ranch land priority not traffic IMO.

Loose gravel on the curve is the biggest issue going downhill. Washboard is the issue after the curve going uphill.

Looks like you could move the curve to the north and achieve the same result without any new right of way needed.

Widen & straighten - add a bike lane.





# Eagle County Sites 5 & 6 (Blue Hill)



NOT TO SCALE



**CONCEPT IN  
PROCESS**



# Share Your Thoughts Eagle County Sites 5 & 6

Hard to answer when concept is incomplete

Straightening this section makes lots of sense & improves safety and sight distance.

Shale!

We call this the hairy part. Much nail biting with each drive. New alignment would be much appreciated.

any possibility of a automated stop light at each end of blue hill like on indy pass?

This is the most important part. Needs to be two way traffic or one way with light. WIDEN It. Big enough for fire fighters to come through

Shore up both below and above the road. Guard rails.

This seems like a HUGE financial undertaking that isn't really needed. This money would be better used on this entire project put towards making sure i-70 is passable and this areas traffic isn't being increased.

This all seems ridiculous to make these areas more friendly for commuters when we are loosing farm land left and right and this is open range. With all the land that has been lost in coulter creek to 2nd home owners this land on cottonwood is needed



# Share Your Thoughts Eagle County Sites 5 & 6

This is the most dangerous portion of the Cottonwood Pass road and should take priority. Money well spent!

Widen & straighten - add a bike lane.



## Next Steps

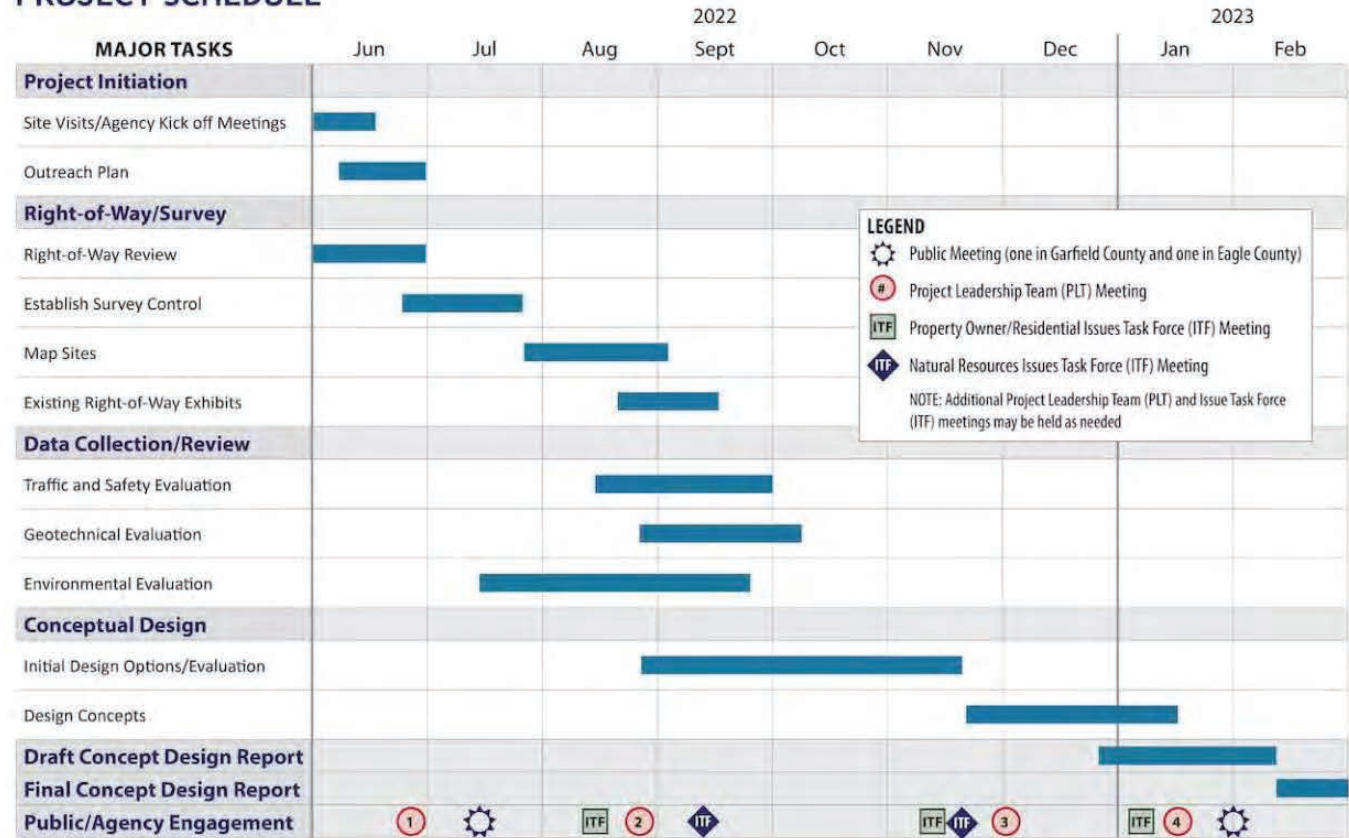




# Next steps

- Next meeting of this group in January to discuss site assessments and refined designs

## PROJECT SCHEDULE





# Group Discussion/Q & A





Thank you!

[www.codot.gov/projects/cottonwood-pass-concept-design](http://www.codot.gov/projects/cottonwood-pass-concept-design)



# PROPERTY OWNER/RESIDENTIAL ISSUE TASK FORCE MEETING #3 SUMMARY

February 15, 2023

The third meeting of the Property Owner/Residential Issue Task Force (ITF) was held via Zoom videoconference on February 15, 2023, from 3:00 – 5:00 p.m. This meeting was interactive and combined a presentation by the project team with comment opportunities. The draft concepts were reviewed (they had been presented at the second meeting of this group) and newly developed refined options for some sites and design options for Blue Hill sites were shared, along with a summary of differentiators found during the design option evaluation. Participants were asked to share their thoughts on the refined options and Blue Hill options, and to give suggestions for best presenting this information at the upcoming public meetings. The final portion of the meeting was reserved for answering audience questions and gathering comments. Nearly 20 members of the public attended.

All ITF members (including those unable to attend) received a link to the presentation following the meeting and the same in-meeting survey was open for two additional days. The presentation and survey results are attached to this summary in **Appendix A**. Comments from the meeting chat are listed below in the Chat Comments section. Questions from the chat are listed in the open discussion portion if they were addressed at that time. Written comments are listed as typed by the participant with some minor spelling and capitalization errors corrected. The comments/responses and questions/answers in the group discussion section were summarized without compromising the speaker's intent.

## CHAT COMMENTS

- ◆ Speed mitigation is needed. Speed mitigation is surely less expensive.
- ◆ Speed is a huge factor all the way across Cottonwood! We do not need I-70 coming through every time it's closed. Local traffic only!

## OPEN DISCUSSION

- ◆ **Question:** Has the final environmental or natural resources report been completed at this point? If so, could a copy of it be posted online?
  - ◇ **Answer:** This project will not have a separate environmental scan or environmental evaluation report. The information gathered for the environmental evaluation and coordinated with the Natural Resources ITF is in presentations to that group. The presentations and notes from those meetings are on the project web page and information will be included in the Concept Design Report.
- ◆ **Question:** What will the next public meeting involve? Will homeowners be able to provide input on the plans presented at that phase?



- ✧ **Answer:** The design concepts presented today and the evaluation of those concepts will be shown at the public open house meetings. Today, we showed the highlights of evaluation differentiators in the presentation. We will share the full evaluation for each option at the meetings. We are hoping to have one meeting in Glenwood Springs and one in Gypsum – possibly on back-to-back nights. Everyone on the ITF list will receive an email advertising the dates/times and the advertisements will be shared many other ways.

In addition to the public meetings, we're also gathering feedback from adjacent owners through direct coordination. All of the input will be rolled up, considered, and documented in the final report. The documentation of all the feedback will be provided to the counties so they can use it to inform their decisions.

- ◆ **Question:** The plans state that additional right-of-way or easements may be required for construction. Can you provide an estimate of how much additional land would be required aside from what is represented on the plans?

- ✧ **Answer:** We are at a very high level of design. Temporary or construction-type easements are determined during final design. Many more specifics will be determined in final design and the environmental evaluation may show other things that need to happen adjacent to the roadway to avoid or mitigate impacts. We cannot even give a guess at that type of information at this point. Lines shown in the design options are based on a concept level of design. Things can still change if improvements move forward with more design, such as a wall versus grading, or based on how things would be constructed.

- ◆ **Question:** Will the old roadways, or the pieces that are no longer being used, be re-vegetated or maintained as a pull-off? There were some concerns with it becoming a pull-off.

- ✧ **Answer:** That would need to be determined if the projects move forward. The original intent would be that those areas would be re-vegetated or taken back to their natural vegetation. However, if a pull-out would help with safety it could be considered. We heard from the Sheriff's representatives that one reason they don't increase enforcement along here is that they don't have places to park because the road is too narrow. This project is not at a level where pull-out versus revegetation will be determined and improvements were not proposed with the intent of creating pull-out areas along the curves.

- ◆ **Question:** Will there be a joint session with the Commissioners of both the counties for discussion about their perceptions and likelihood of actually funding any of the options? Are the Garfield County Commissioners interested in pursuing and funding any of the sites in Garfield County?

- ✧ **Answer:** We haven't heard about talks around a joint meeting between the boards, though that doesn't mean it's not going to happen. The counties likely want to wait to see what is documented in this project's report and decide direction from there.

Garfield County hasn't been as interested as Eagle County in finding funding at this time. This could partially be because Blue Hill and some of the more significant problems are on the Eagle County side. This is not to say that Garfield County isn't interested in improving some of their sites, but Garfield County does not intend to select options as part of this process. They want to leave all options on the table until they're ready to actually do something. Eagle County is in the





opposite court right now. They are interested in making improvements, so they will likely select options as part of this process.

- ◆ **Question:** Please summarize the total grant money expected to go to the Blue Hill site.
  - ✧ **Answer:** As it currently stands, CDOT is applying for \$5M for the improvements at Eagle County Site 2. There is another grant not yet advertised that CDOT is watching, and the draft plan at this time is to ask for \$23M for Blue Hill from that possible grant, but these things tend to change. That will be \$23M out of an \$80-ish million-dollar grant application that would focus the rest of the funds on I-70, Glenwood Canyon, and the designated detour on Highways 9 and 40.
- ◆ **Question:** How do you propose to work with the counties to foster collaboration instead of creating a piecemeal approach?
  - ✧ **Answer:** These are individual sites and they are individual projects, but that is not piecemeal. They have independent utility and safety improvements are associated with each of them. This process was meant to give a big-picture look, determine core values and concerns, and make decisions at each site about how to balance all those core values. Improvements can be adjusted as needed for each site. How the county moves forward if they are granted money is up to them, but they will take all the information we've gathered so far and use that to inform their design.
- ◆ **Question:** Could you remind me which sections involve the Crystal River Ranch property? I think it was the upper 2 sections, near the top of the pass, but I didn't see any reference to them on your graphics today. It was more BLM sites.
  - ✧ **Answer:** Eagle County Site 4 (*corrected answer*).
- ◆ **Question:** Can you remind me what was the cost estimate for Sites #4, 5, and 6?
  - ✧ **Answer:** Site #4 is \$250,000 to \$400,000. Site 5 Option 1, off alignment, is \$350M to \$360M. Site 5 Option 2, closer to on-alignment, is \$55M to \$59M. Site 6 is mostly BLM.
- ◆ **Question:** Given that this was just 5% design level and doesn't even include all right-away costs, at some point the counties are going to make some decisions about options they like or whether they want to go forward. So there's a big gap, between that decision making process and then taking grant money and starting construction. So what happens to get it to the next level of cost estimate, and then environmental study that has to go through a big process?
  - ✧ **Answer:** Using the example of Blue Hill, with large costs, part of that grant money would be for design and environmental study costs. That would go to the counties and they would take it from the current 5% design and complete necessary environmental studies and design, and move into construction if sufficient money is available. This is similar for the other locations, though obviously much smaller scale. The counties could move forward with their own funding to complete design and move into construction on smaller improvements. The approach would be up to them at that point.
- ◆ **Question:** I just want to confirm it's the county that would go to the next step of cost estimating and going through the environmental study... that happens at the county level?



- ✧ **Answer:** This project put together the high-level cost estimates we presented. Yes, further design refinement from this point would be through the counties.
- ◆ **Comments:** My property is on Site Design 4, on both sides of the curve in the road. Please bring the graphic up. [Summary of each main comment point follows]
  - ✧ Last winter we had a tractor trailer rollover right in our driveway. It shut down county road 100 for 2 days.
  - ✧ A little background on me, I've got 7 years in with Pitkin County Road and Bridge. I worked for Peter Kiewit in Glenwood Canyon on and off for 7 years, had 22 years at State of Colorado on Hoosier Pass and Summit County area Vail Pass – so I know design and building.
  - ✧ I had the county come in and they put in chevrons to denote that corner. I asked them to put in a speed limit sign up above. It should be 25 miles per hour. The speed will increase with improvements. People cut the corner now, so you can't see stripes on the road. There is a lot of pavement going toward the guardrail that isn't used because people cut the corner. There is a big problem if a road is not maintained with delineation and correct signage.
  - ✧ In June of 2017 I went to the County Commissioners to request traffic counts. We had over 10,000 vehicle trips in a week on County Road 100. The County Road average speed limit is 35 mph, the fastest vehicle was 56 mph. The sheer volume of traffic has only increased over the last 5-6 years. Only cops, speed bumps/dips, or another bumper will slow people down. Get speed taken care of and this project isn't needed.
  - ✧ On Site #3, on the corner where all the driveways come in, the shoulders need to be maintained. If the road was maintained, there is no need for any development on this road.
  - ✧ Using Spring Valley Road would be better than using Catherine Store, because that road is wide, has big shoulders, and has good visibility. This project is not needed and isn't common sense. I don't want changes on my road. This area has a lot of wildlife including mountain lion, big horned sheep, deer, wild turkeys.
  - ✧ If you remove dirt from the hillside on Garfield County Site 5, people will speed more.
  - ✧ You put guardrail around my driveway in the design. There is erratic traffic around the corner. I've lost pinyon trees that have been there for over 40 years and people run into the 400-500-pound boulders I put there.
  - ✧ The first snowstorm this year, almost on the straight stretch, we had a driver shoot off the road in the same spot my grandkids were waiting for the bus 10 minutes earlier. She took out some fence posts. It was someone who lives in Missouri Heights.
  - ✧ **Response:** We're capturing all of these concerns that you've said and it is all really good feedback. It sounds like you're thinking enforcement and maintenance would be a better solution than the designs concepts.
  - ✧ Absolutely right. I want two speed bumps right out here in front of where the school bus stops and another one up on the lower side of this corner. That would be the best expenditure of any money put on this road short of having the work crews get out here and start doing their delineation, start cutting the vegetation back, start addressing with verticals on the pavement,



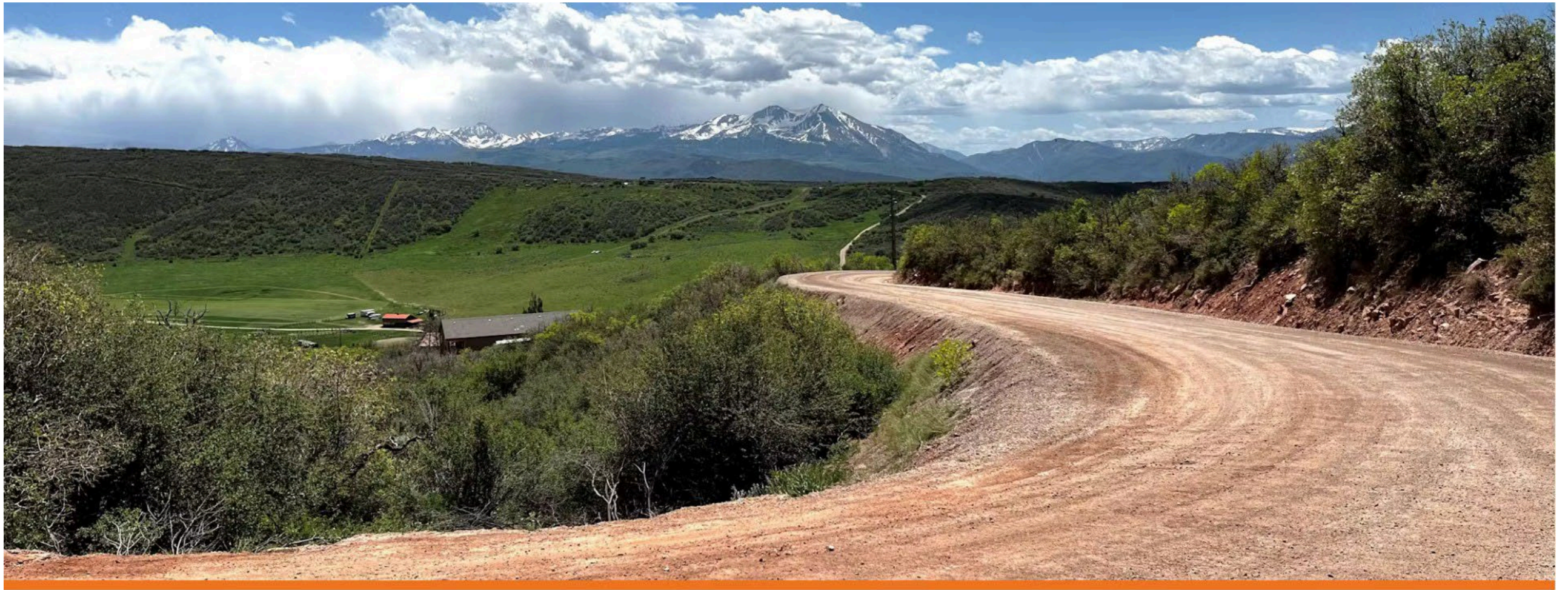
plowing and maintaining the shoulders. I welcome the project team to come look at it in person with me.

- ◆ **Question:** Will there be any specific recommendations for enforcing this speed? We know that there's not a lot of law enforcement, they have other things to do, so why not use speed bumps? We need an actual physical impediment to slow down all of the people who are speeding. So, is there going to be a recommendation specifically addressing speed in any of these areas?
- ◇ **Answer:** We did look into a few options around the speed limit or the speeding problem. It's posted at 25-mph but most people are speeding along the road which is creating a problem in and of itself with the speeding issue. We looked at signage options and sat down with enforcement officials from Eagle County and Garfield County to talk about what could be done. One of their major issues is there's not a lot of good places to pull someone over due to the narrow road, so they could create a bigger safety issue if they pull someone over where someone could come around a corner and hit them. Identifying locations for them to sit and pull people over is something for the counties in the future. We did reach out to Garfield County Road and Bridge about the idea of speed bumps. It sounds like they have a little bit of history with it. They did have a property owner put in some dips near their home and it sounded like it really only helped immediately, a couple hundred feet before and after the dip. Eventually, the owner just hears people start squealing breaks before they hit the dip and then hears the engine speeding back up on the way back out. The property owner subsequently went back in and added about four more dips and they are having the same result. So, it sounds like that hasn't been super successful. Speed mitigation will be a topic in the report. We've talked to both counties about it, and they're going to do what they can to help with this.



## Appendix A

# Property Owner/Residential Issue Task Force Meeting #3 Presentation and Interactive Survey Results



Cottonwood Pass Concept Design  
Property Owner/Residential  
Issue Task Force (ITF) Meeting #3  
February 15, 2023



# Welcome!

## AGENDA

- Project overview
- Design options and refinements
- Initial evaluation findings
- Next steps
- Group discussion/Q&A

## WHAT TO EXPECT

- A mix of presentation and interactive polling
- Respectful communication
- ITF input used to inform evaluation results and refinement of concept designs at each site



# Project team presenters



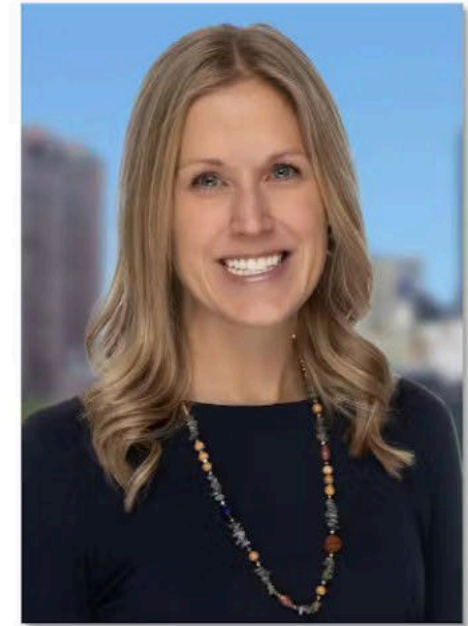
**Jacob Rivera**  
CDOT Region 3  
Project Manager



**Stacy Tschuor**  
David Evans and  
Associates, Inc.  
Project Manager



**Sarah Rachal-  
Dormand**  
David Evans and  
Associates, Inc.  
Engineer



**Leah Langerman**  
David Evans and  
Associates, Inc.  
Public Engagement

# What is your main interest in the Cottonwood Pass Corridor?



I own property adjacent to one of the site design options



I own property/live somewhere else along Cottonwood Pass



I own property/live along CR 113, 114, or 115

0

I commute along Cottonwood Pass



I bike along Cottonwood Pass



Other





# Project Overview





# Project purpose

## FOCUS

- Cottonwood Pass between Gypsum in Eagle County and CO 82 in Garfield County

## PURPOSE

- Road safety improvements to make the county roads safer and more functional as a vital travel connection between the local communities

## IMPETUS

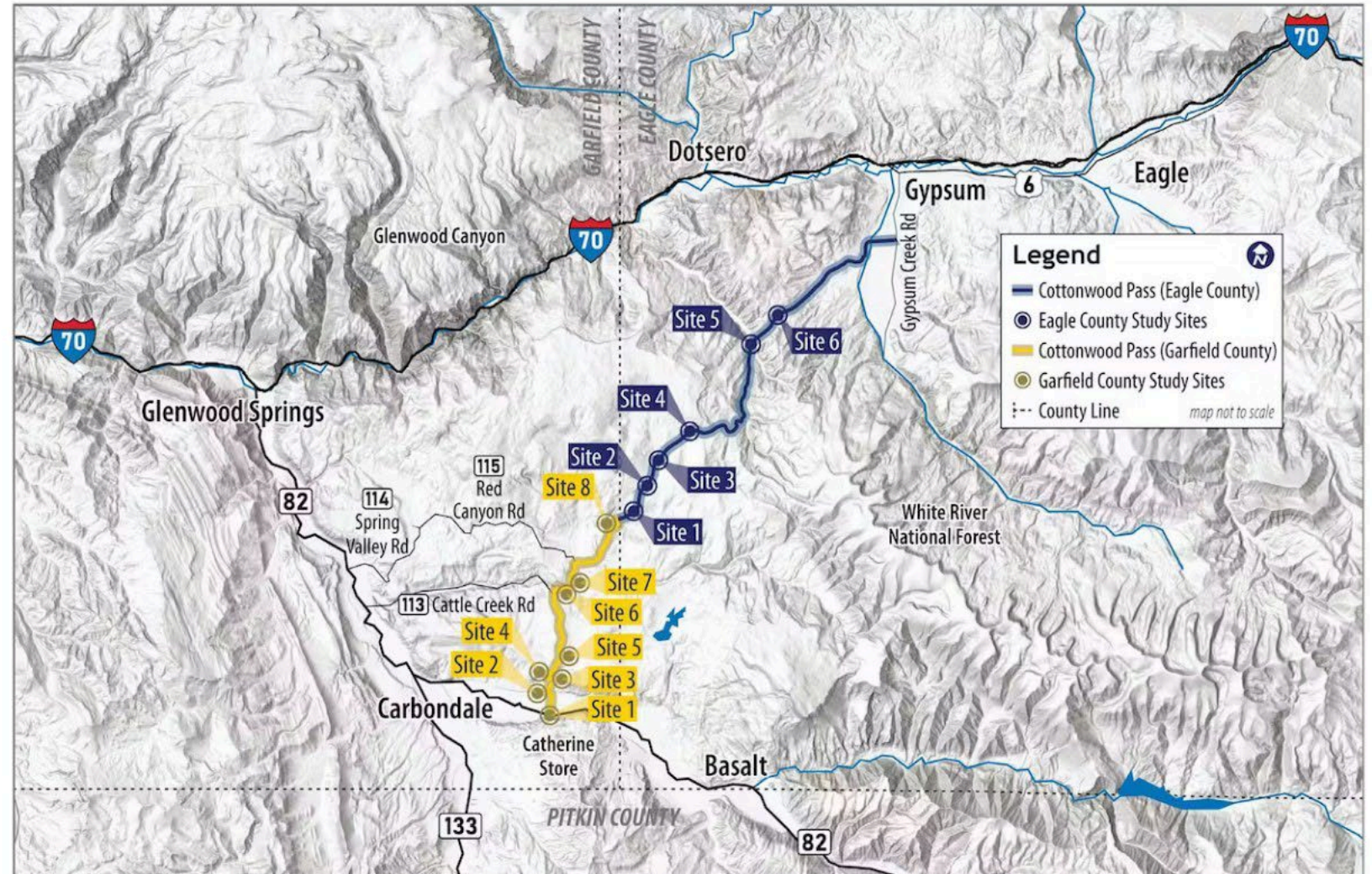
- Eagle and Garfield counties recognized the need for safety improvements
- This need became more apparent during Glenwood Canyon closures

*This project IS NOT preparing Cottonwood Pass to be a detour route for I-70 traffic!  
The detour will remain north of I-70.  
Cottonwood Pass improvements are needed for the safety of local travelers.*

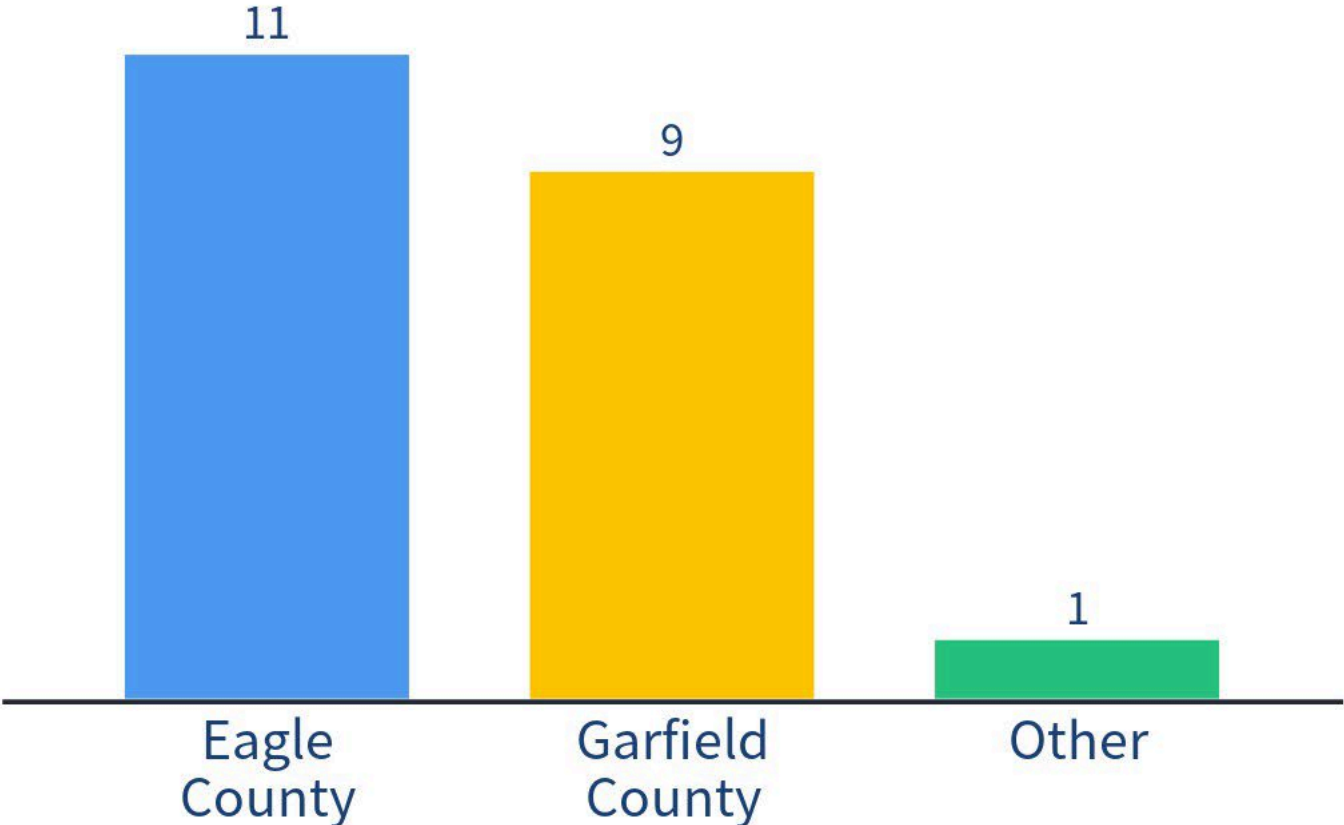


# Project site key map

- Focus on 14 specific sites:
  - 6 in Eagle County
  - 8 in Garfield County
- Potential improvement areas account for 14% of total length of Cottonwood Pass
  - Corridor-wide improvements are not being considered with this project

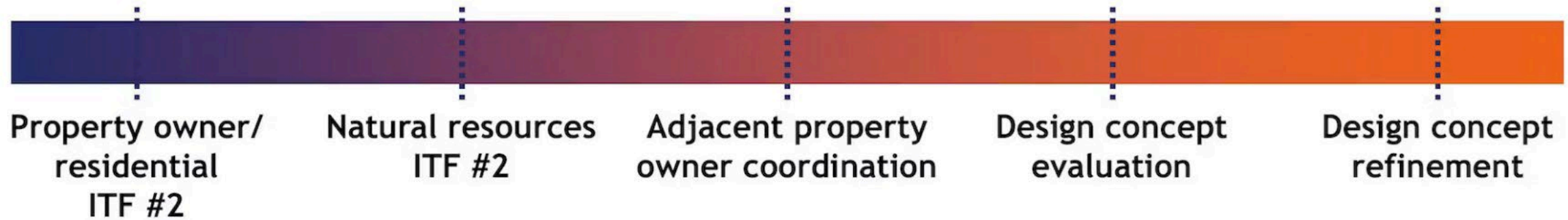


# Where do you live?





# Progress since last ITF meeting





# Context Sensitive Solutions (CSS) process

- ✓ Establishing project goals
- ✓ Establishing participant roles and responsibilities
- ✓ Establishing criteria for evaluating alternatives
- ✓ Developing options for improvements
- ✓ Evaluating design options based on established criteria
- Documenting the process and final recommendations



# Evaluation criteria - Core Values

## Core Values

The core values identified below are intended to be used to evaluate safety improvements at 14 locations as part of this concept design project.

### WHAT IS IMPORTANT?

#### SAFETY

Improve driver safety by making improvements at critical areas of geometric deficiencies

#### RESPECTING CORRIDOR CHARACTER

Maintain the rural feel of road

Minimize impacts to private property

Mitigate visual impacts from improvements

#### NATURAL RESOURCE PRESERVATION

Minimize impacts to nearby wildlife habitat and waterways

#### COLLABORATIVE IMPROVEMENTS

Engage public and stakeholders to provide meaningful input into the concept design process



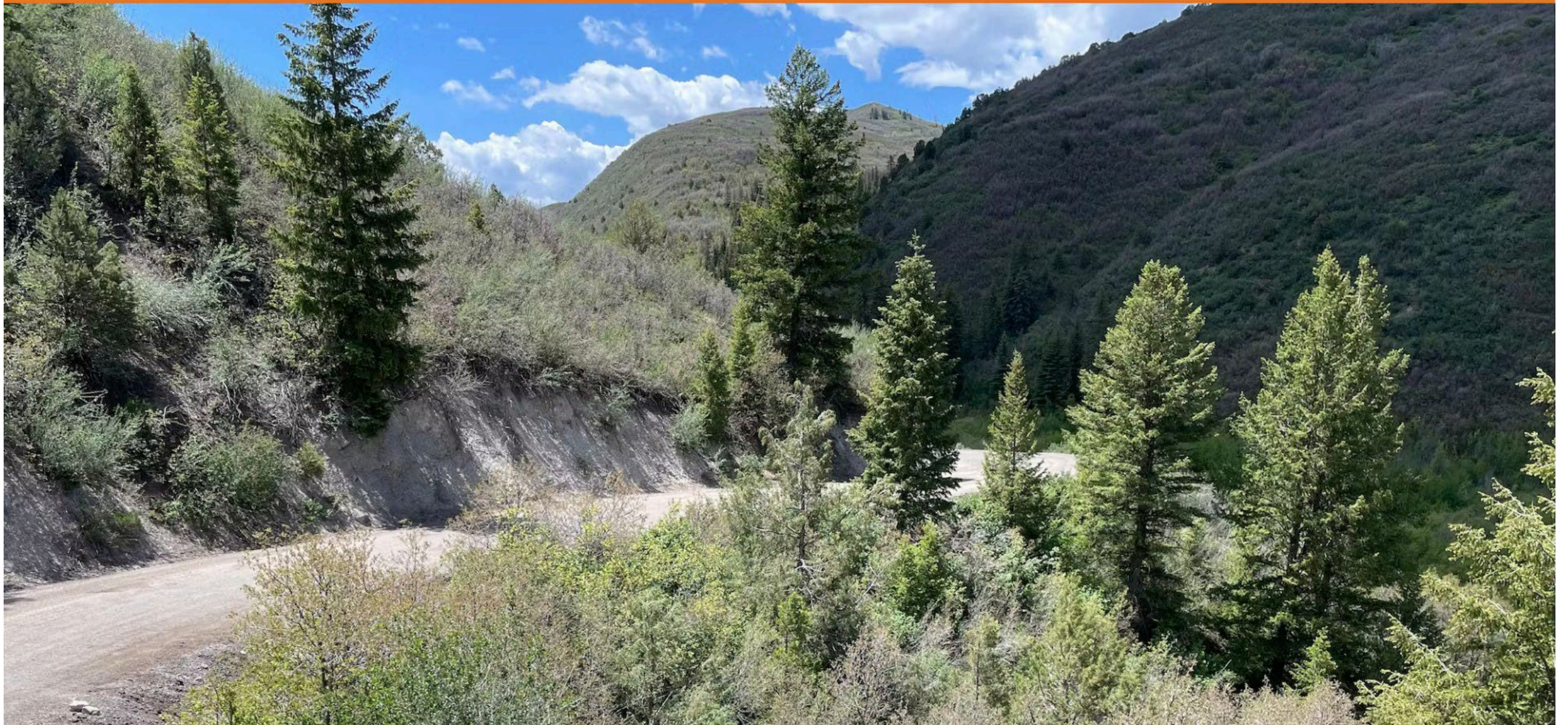
# Evaluation criteria

Core Value	Criteria/Measure
Safety	Assessment of changes to vehicular safety concerns at site (speed, off-road vehicles, two-way traffic conflicts)
Respecting Corridor Character	Ability to maintain rural feel of road
	Potential right-of-way impacts to private property
Natural Resource Preservation	Potential visual impacts
Collaborative Improvements	Potential impacts to wildlife habitat and waterways
	Concerns and support from adjacent property owners
	Concerns and support from corridor travelers and general public





# Design Options and Initial Evaluation Findings by Site



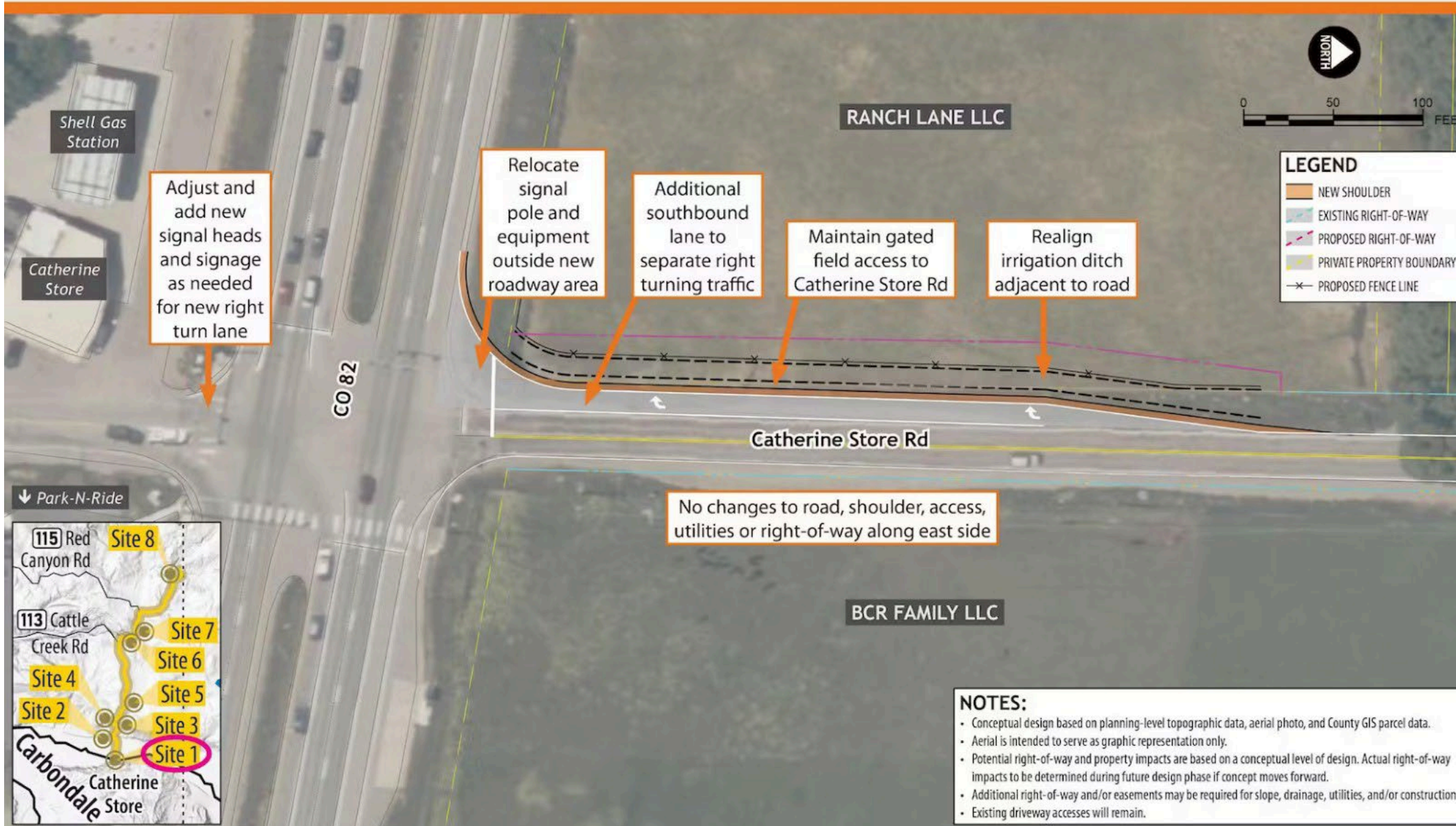


## CONCEPTS

- Conceptual design based on planning-level survey data, aerial photo, and County GIS parcel data
- Potential right-of-way and property impacts are based on conceptual design
  - Actual right-of-way impacts to be determined during future design
  - Concepts would have temporary construction easements beyond permanent right-of-way acquisitions
- Driveways and access will remain with all site concepts



# Garfield County Site 1



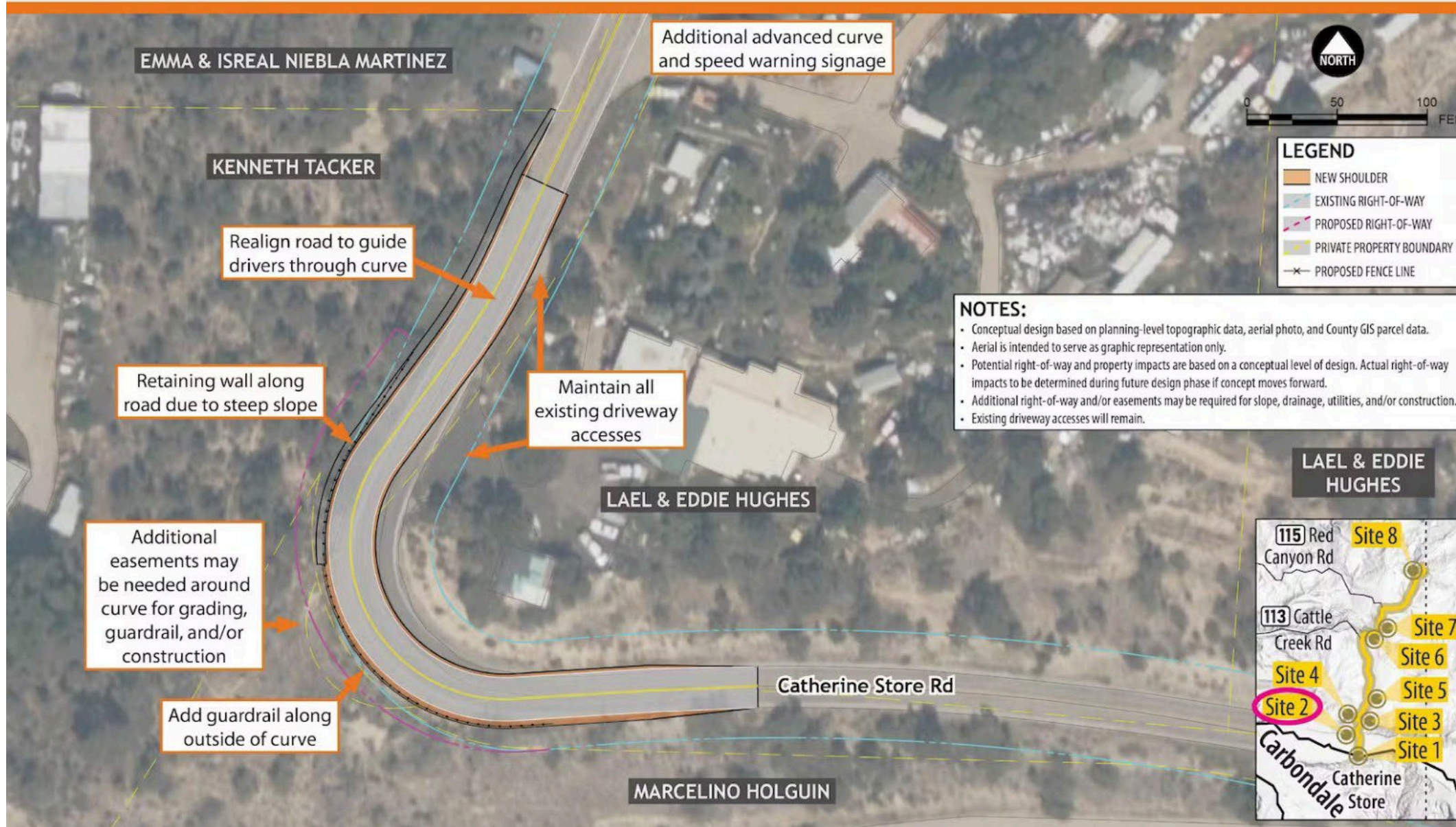
- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with reduced queue lengths and separation of right-turning traffic
  - **Respecting Corridor Character**
    - Less than 0.25 ac of ROW impacts
  - **Natural Resource Preservation**
    - Irrigation ditch would need to be realigned
  - **Collaborative Improvements**
    - General agreement with proposed changes
- CONCEPTUAL COST**
- \$350 - 400k

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



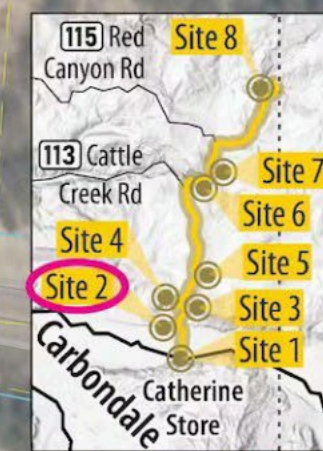
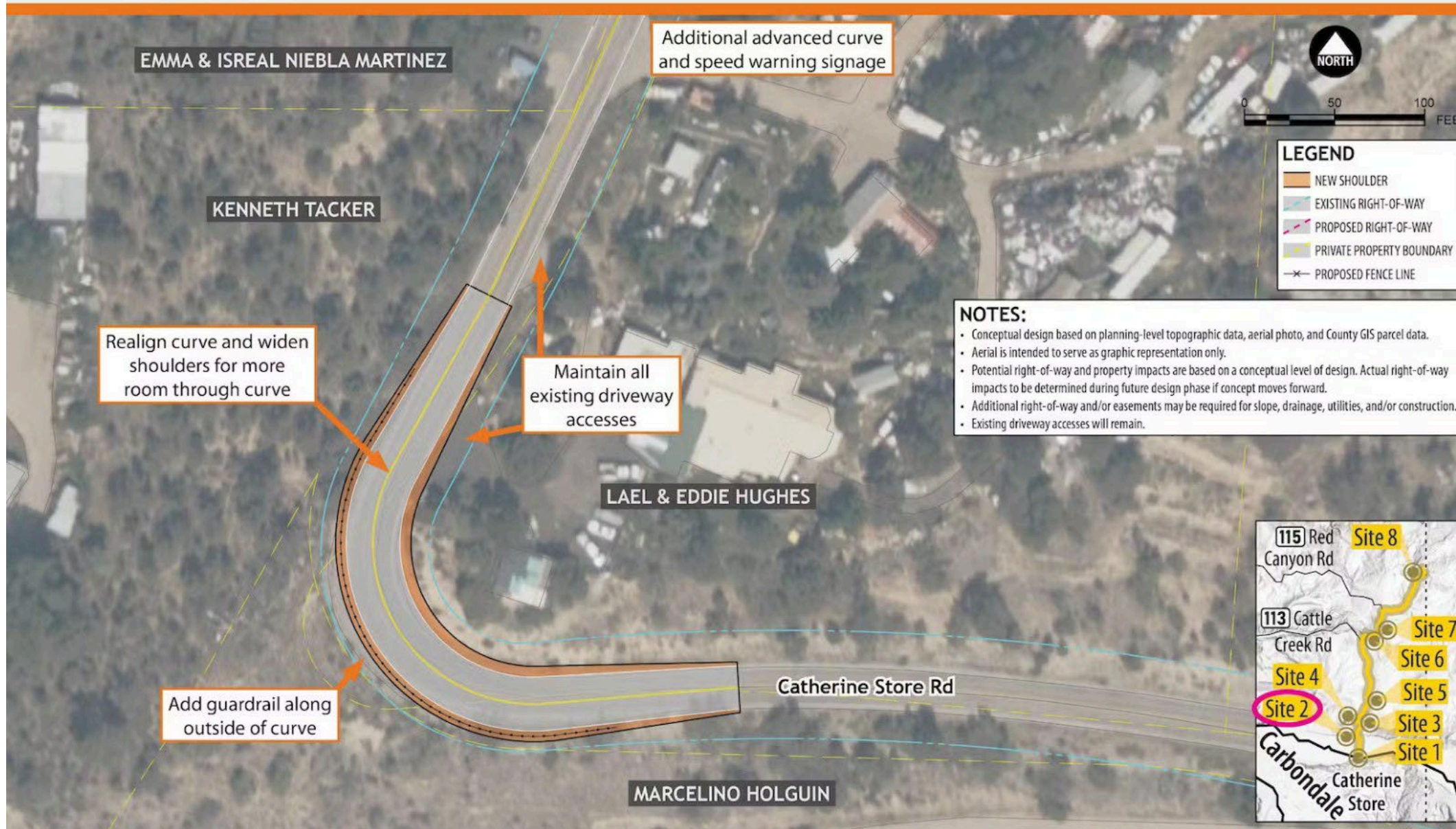
# Garfield County Site 2 - Option 1



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curve to guide drivers
  - **Respecting Corridor Character**
    - Less than 0.10 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Strong concern about speeds
    - General preference for option
- CONCEPTUAL COST**
- \$1.4 - 1.5 M



# Garfield County Site 2 - Option 2



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with modifications and more room through curve
- **Respecting Corridor Character**
  - No expected permanent ROW impacts
- **Natural Resource Preservation**
  - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
  - Strong concern about speeds
  - Public noted option seems easier and just as beneficial

## CONCEPTUAL COST

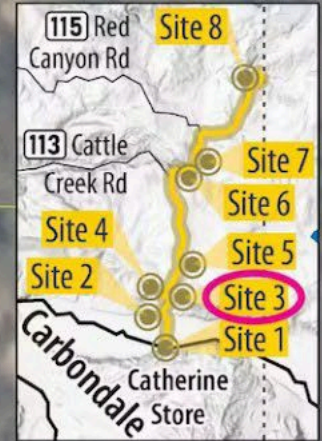
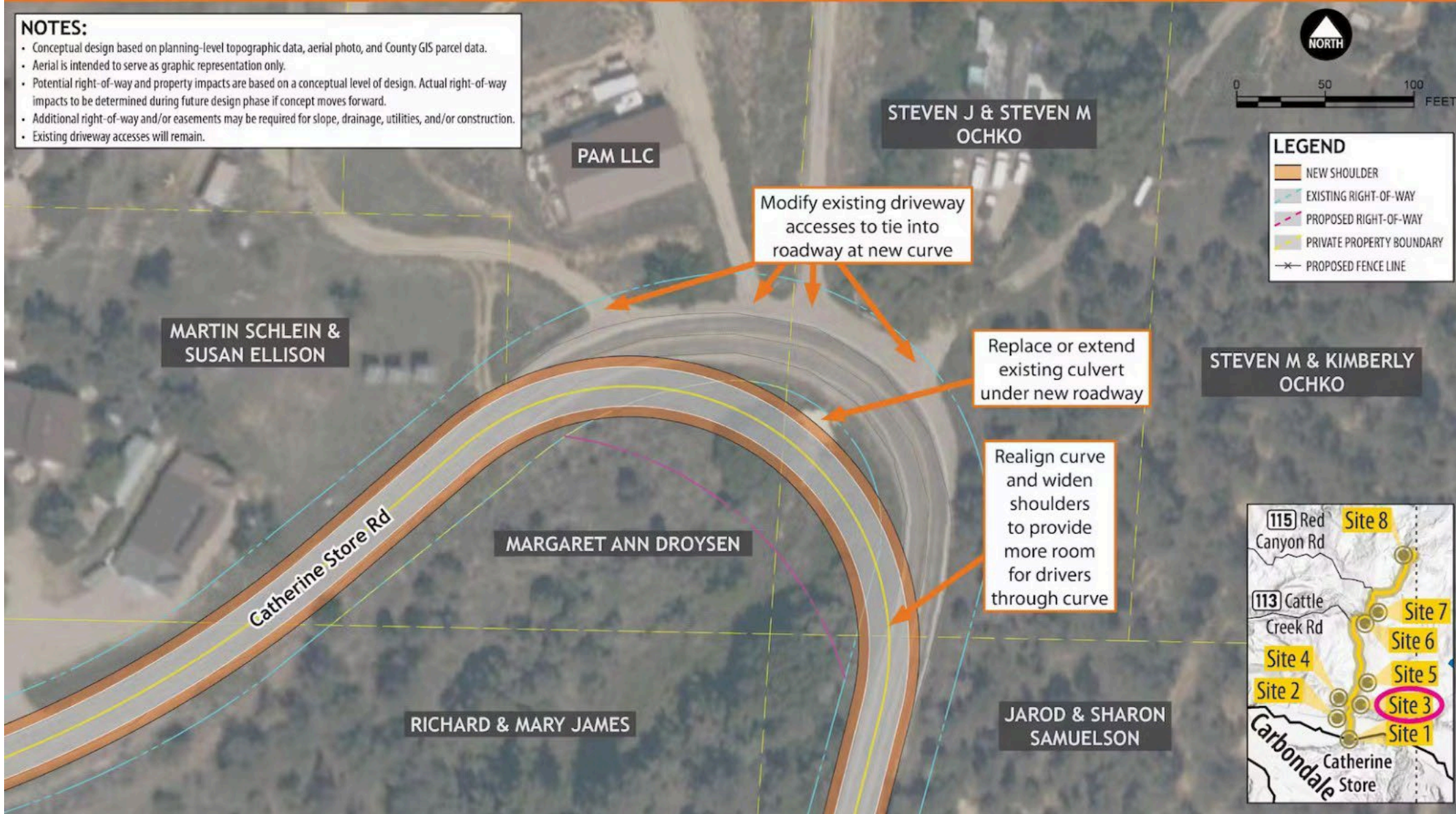
- \$600 - 700k



# Garfield County Site 3

**NOTES:**

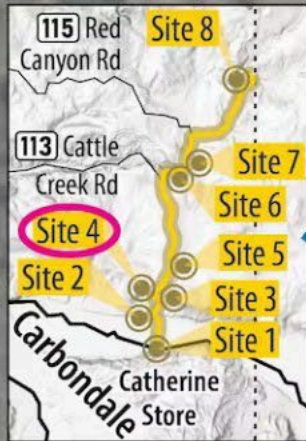
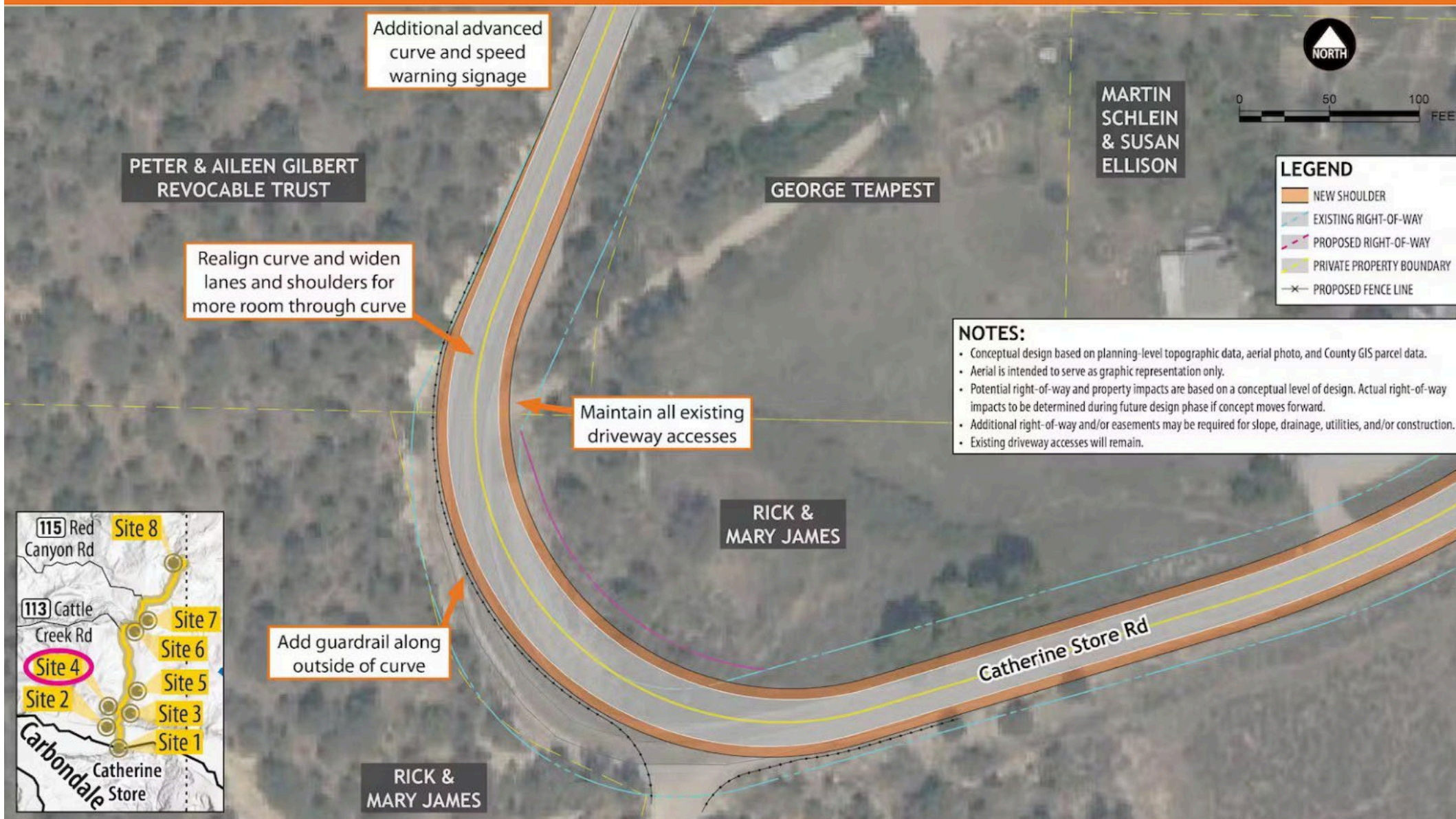
- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Minor improvement with modifications and more room through curve plus access consolidation
  - **Respecting Corridor Character**
    - Less than 0.25 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Strong concern about property impacts
    - Some support, but concern with speeds
- CONCEPTUAL COST**
- \$1.0 - 1.1 M



# Garfield County Site 4



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curve and more room
  - **Respecting Corridor Character**
    - Less than 0.10 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Strong concern about speeds
    - General support for improvements
- CONCEPTUAL COST**
- \$1.3 - 1.4 M



# Garfield County Site 5

REBECCA DONELSON  
REVOCABLE TRUST

Potential to keep existing right-of-way and fence line and use easement for new slope construction and maintenance

Cut into hillside and widen inside shoulder to improve driver sight distance around curve

No changes to road, shoulder, fence, guardrail or right-of-way along east side

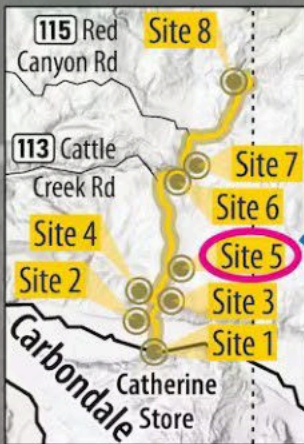
FELIX & SARAH TORNARE

RICHARD & BETTY GREEN



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with increased sight distance around curve
- **Respecting Corridor Character**
  - No expected permanent ROW impacts
- **Natural Resource Preservation**
  - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
  - Concern about impact to area spring
  - Some support, but concern with speeds

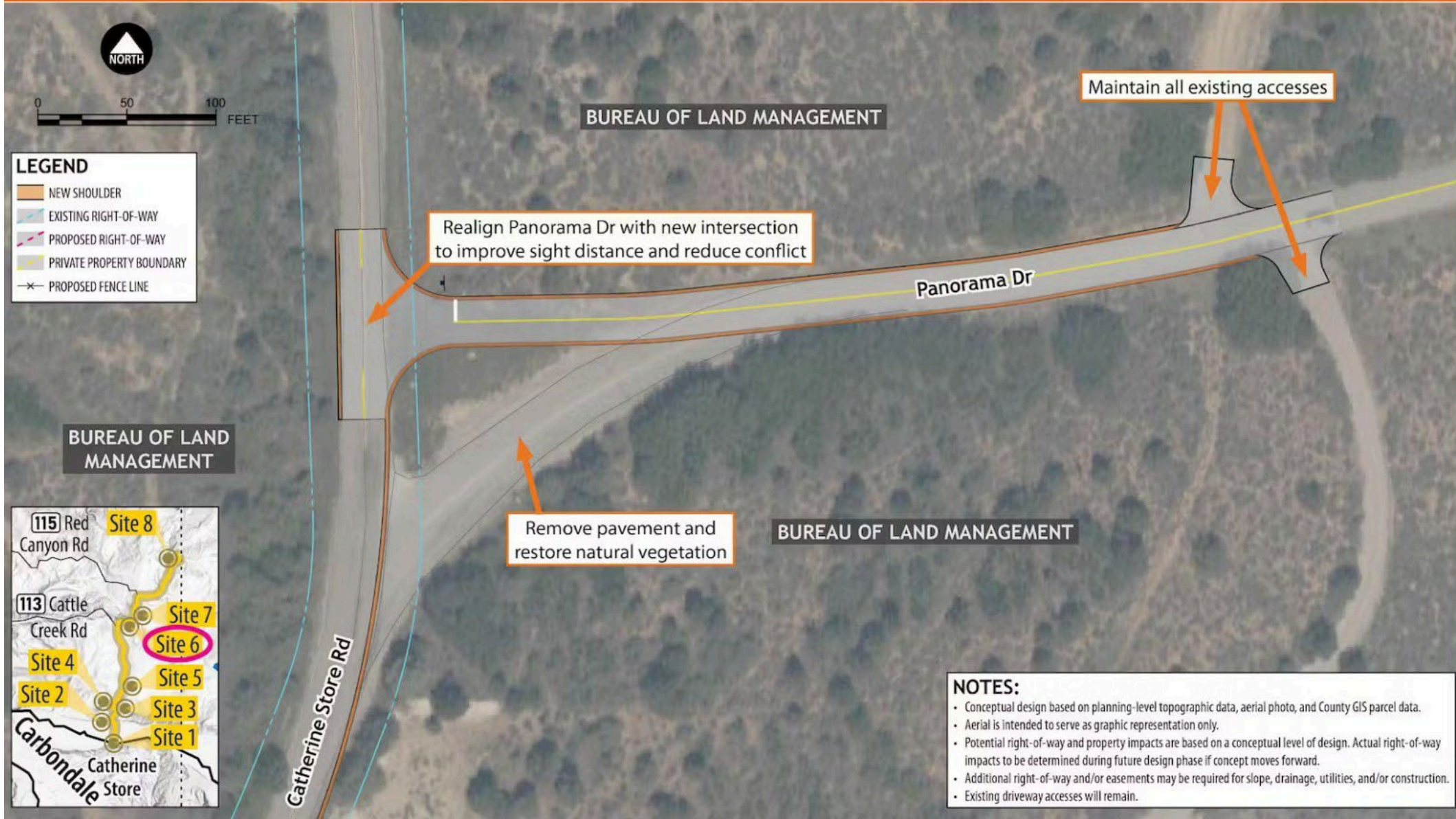
## CONCEPTUAL COST

- \$1.3 - 1.4 M





# Garfield County Site 6



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate to major improvement with increased sight distance and reduced conflicts
- **Respecting Corridor Character**
  - No expected permanent ROW impacts
- **Natural Resource Preservation**
  - Potential stream and habitat impacts
- **Collaborative Improvements**
  - General agreement with proposed changes

## CONCEPTUAL COST

- \$500 - 600k

### NOTES:

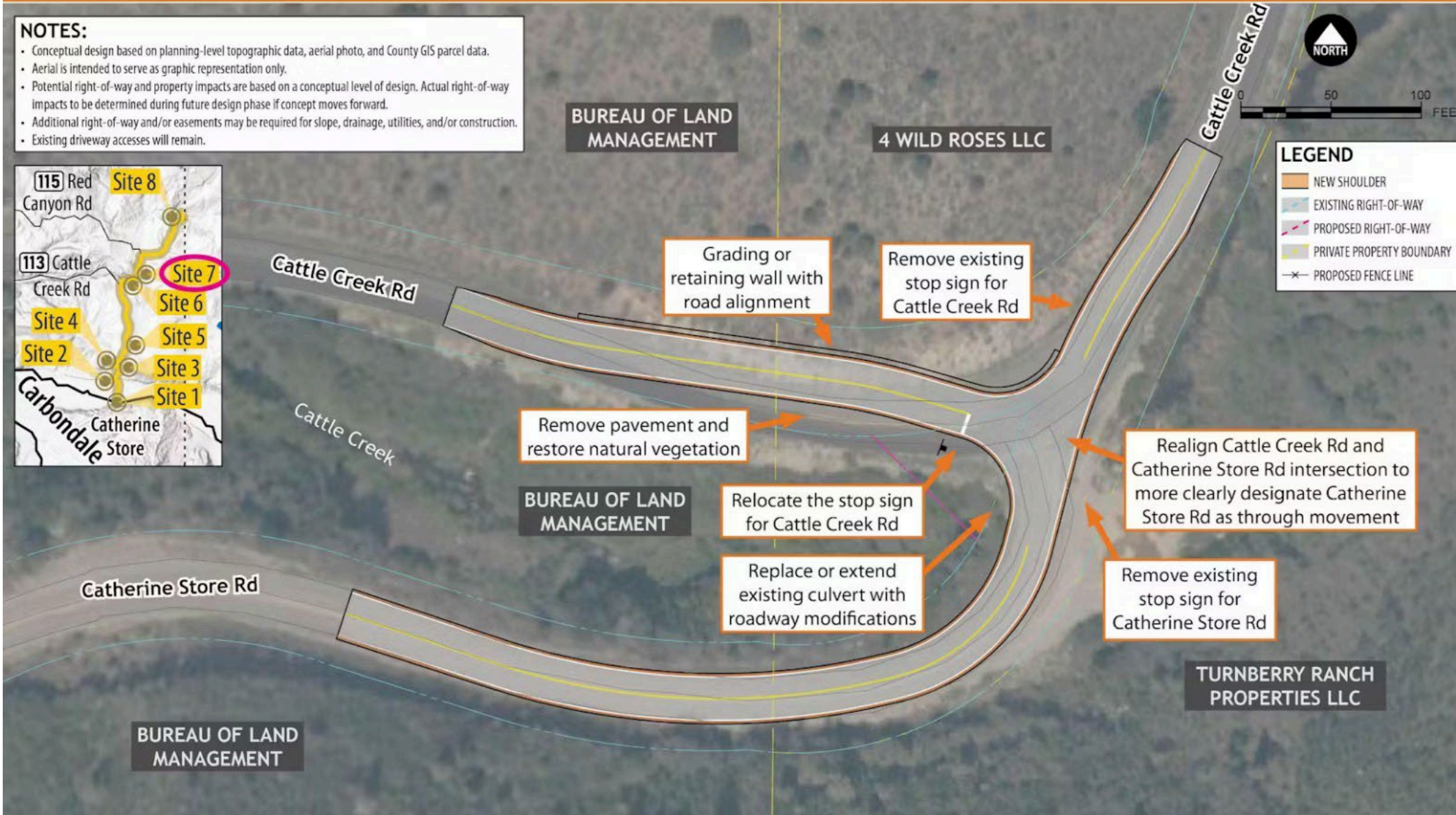
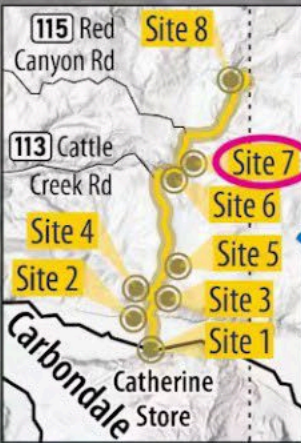
- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



# Garfield County Site 7 - Option 1

## NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with improved wayfinding and reduced conflicts
- **Respecting Corridor Character**
  - Less than 0.10 ac of ROW impacts
- **Natural Resource Preservation**
  - Potential Cattle Creek impacts
  - Potential habitat impacts
- **Collaborative Improvements**
  - General agreement with proposed changes

## CONCEPTUAL COST

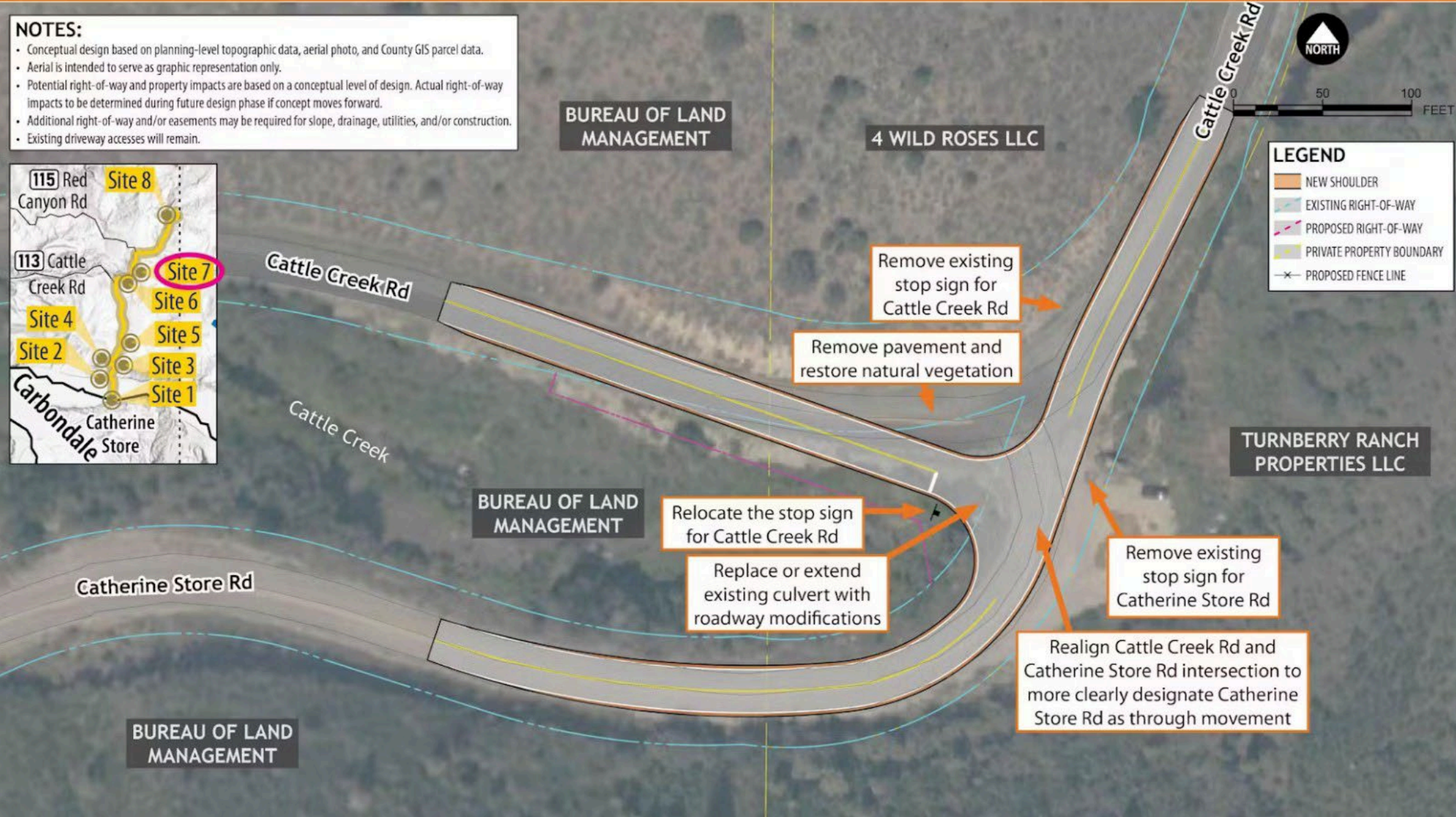
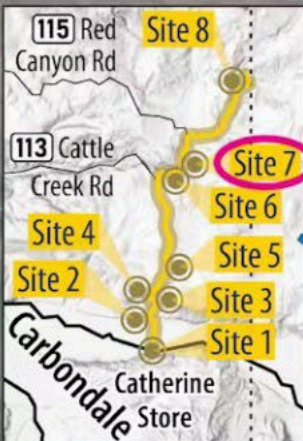
- \$3.0 - 3.2 M



# Garfield County Site 7 - Option 2

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with improved wayfinding and reduced conflicts
- **Respecting Corridor Character**
  - Less than 0.20 ac of ROW impacts
- **Natural Resource Preservation**
  - Potential moderate Cattle Creek impacts
  - Potential habitat impacts
- **Collaborative Improvements**
  - General agreement with proposed changes

## CONCEPTUAL COST

• \$1.7 - 1.8 M



# Garfield County Site 8



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with increased sight distance around curve
  - **Respecting Corridor Character**
    - No expected permanent ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - General agreement with proposed changes, but concern with speeds
- CONCEPTUAL COST**
- \$600 - 700k

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

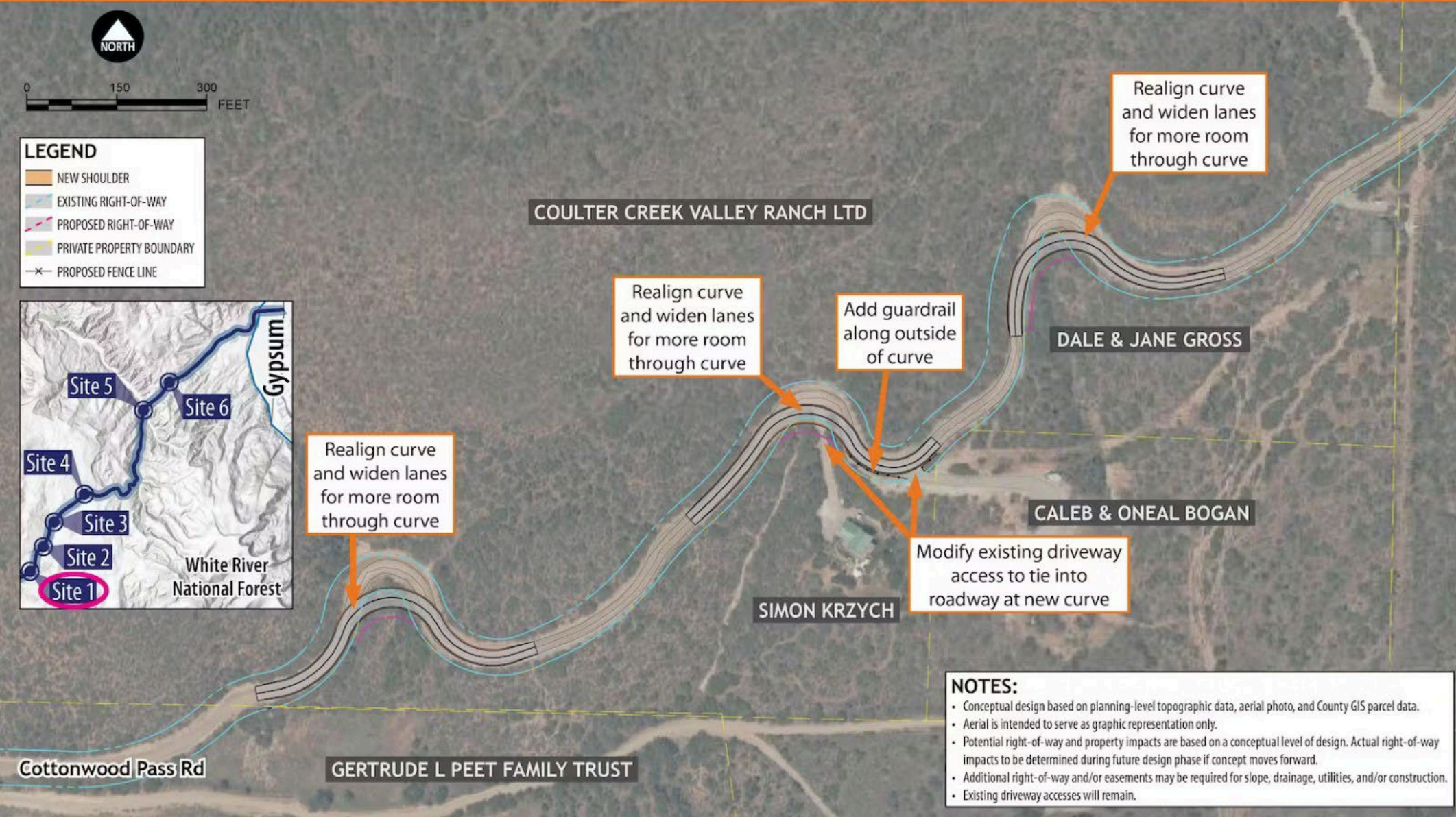
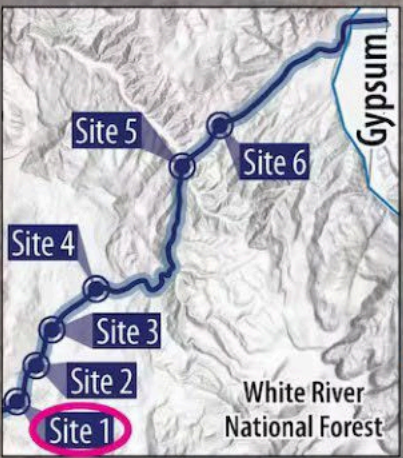


# Eagle County Site 1 - Option 1



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Minor improvement with curve softening and wider shoulders
  - **Respecting Corridor Character**
    - Less than 0.50 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Strong concern about property impacts
    - General preference for option to minimize property impacts and speeds

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

**CONCEPTUAL COST**

- \$900k - 1.1 M



# Eagle County Site 1 - Option 2



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curves and wider shoulders
  - **Respecting Corridor Character**
    - 0.50 - 1.0 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Strong concern about property impacts
    - General agreement with proposed changes

**CONCEPTUAL COST**

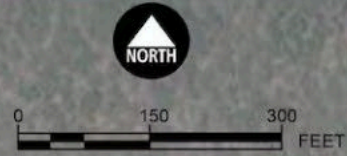
- \$900k - 1.1 M

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

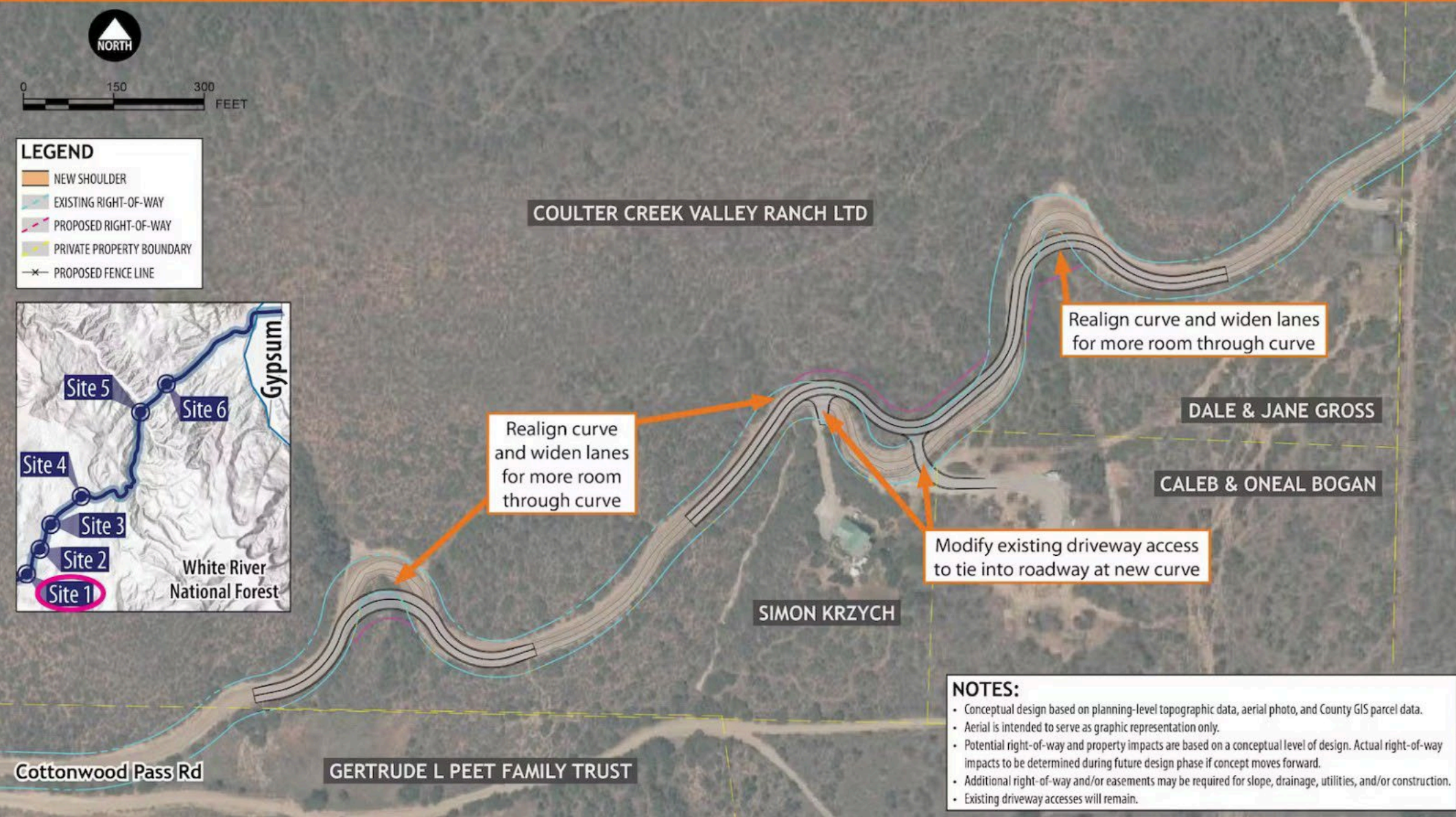
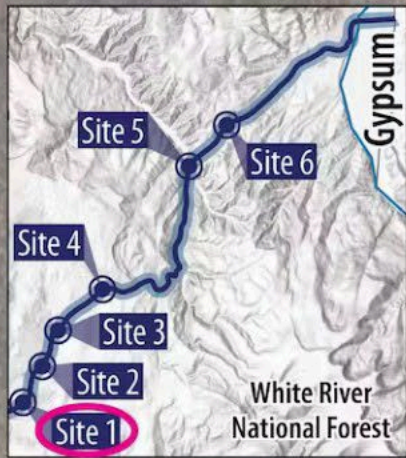


# Eagle County Site 1 - Refined Option



**LEGEND**

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- PROPOSED FENCE LINE



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curves and wider shoulders
  - **Respecting Corridor Character**
    - Less than 0.50 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Option refined to minimize property impacts
- CONCEPTUAL COST**
- \$900k - 1.1 M

# Please share your thoughts on the Eagle County Site 1 refined option.

16 Responses

The 3rd option seems like the best

When curves get flattened, do the grades / slopes of the roadway increase, if so, that could be troublesome.

The 3rd option seems like the best

Will the old roadways be revegetated or maintained as pull-offs? We have concerns about them being maintained as pull-offs, as this attracts people to use the areas for recreational activities that result in noxious weed spread and trash.

Can you provide an estimate of how much additional land would be required aside from what is represented on the plans or is that not possible yet?

Are there any plans for revegetation of the realigned curves? Will CDOT or Eagle County plan to manage noxious weeds and plant native species in reclaimed roadways? What options influence decisions?

What will be done with the current road cuts?  
Revegetation? Regrade?

Everything I have seen thus far will create a speed incentive for drivers. How does the plan propose to address that impact?

Can you provide more detail about the retaining wall along the east side – what materials will be used and if water drainage/conveyance features will be added to permit water movement across or under the road?





# Please share your thoughts on the Eagle County Site 1 refined option.

16 Responses

What materials will be used for the roadway? We are concerned about runoff from the road affecting E. Coulter Creek at this location

No comment

None

Please add a bike lane. Cycling on Catherine Store road is very popular. With the increase of traffic a bike lane is necessary.

I do like the second option much more near my house, however I am losing a large chunk of much liked property on the west end of my property. I really like this area due to the shade, soil and plant life. How much will I be compensated for this land?

How much will we be compensated for our prized land on the west one of our property?

I like this refined option as it appears to have the least impact on property owners while improving safety and maintaining curves to prevent speeding.





# Eagle County Site 2



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with shoulders and room for two-way traffic
- **Respecting Corridor Character**
  - No expected permanent ROW impacts
- **Natural Resource Preservation**
  - Potential Coulter Creek and/or wetland impacts
- **Collaborative Improvements**
  - Strong concern about Coulter Creek impacts
  - General agreement with proposed changes

## CONCEPTUAL COST

- **\$3.7 - 4.0 M**

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



# Eagle County Site 2 - Refined Option



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate to major improvement with shoulders and room for two-way traffic (longer distance)
- **Respecting Corridor Character**
  - No expected permanent ROW impacts
- **Natural Resource Preservation**
  - Potential Coulter Creek and/or wetland impacts
- **Collaborative Improvements**
  - Strong concern about Coulter Creek impacts
  - Option refined to extend improvements

## CONCEPTUAL COST

- **\$4.2 - 4.4 M**

### NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

# Please share your thoughts on the Eagle County Site 2 refined option.

20 Responses

Improvements lead to greater speed leads to wildlife impacts

like this option better due to straightening blind south curve

Even more concern for wildlife habitat disruption. Is this more important than improvements? Safety was second in overall importance in this process.

agree with first comment, improvements are good but concerns are not mitigated

Either option seems fine

What materials will be used for the roadway? We are concerned about runoff from the road affecting E. Coulter Creek at this location

How wide are the shoulders planned for the area? Will widening allow for 2 cars to easily pass one another? Can you provide more detail about the retaining wall along the east side -

Can you provide more detail about the retaining wall along the east side - what materials will be used and if water drainage/conveyance features will be added to permit water movement across or under the road?

What kind of patrols are you looking to provide because as of current over 90% speed.

# Please share your thoughts on the Eagle County Site 2 refined option.

20 Responses

What materials be used and if water drainage/conveyance features will be added to permit water improvement across or under the road? We are concerned about a potential seep located on the eastside

a

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

Drivers have acclimated themselves to I-70 speeds how are they to be controlled? People will use this as a permanent alternative.

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

the seep drains into East Coulter Creek. What materials will be used for the roadway? We are concerned with runoff from road affecting East Coulter Creek. at this location and throughout the project.

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

ditto

## Please share your thoughts on the Eagle County Site 2 refined option.

20 Responses

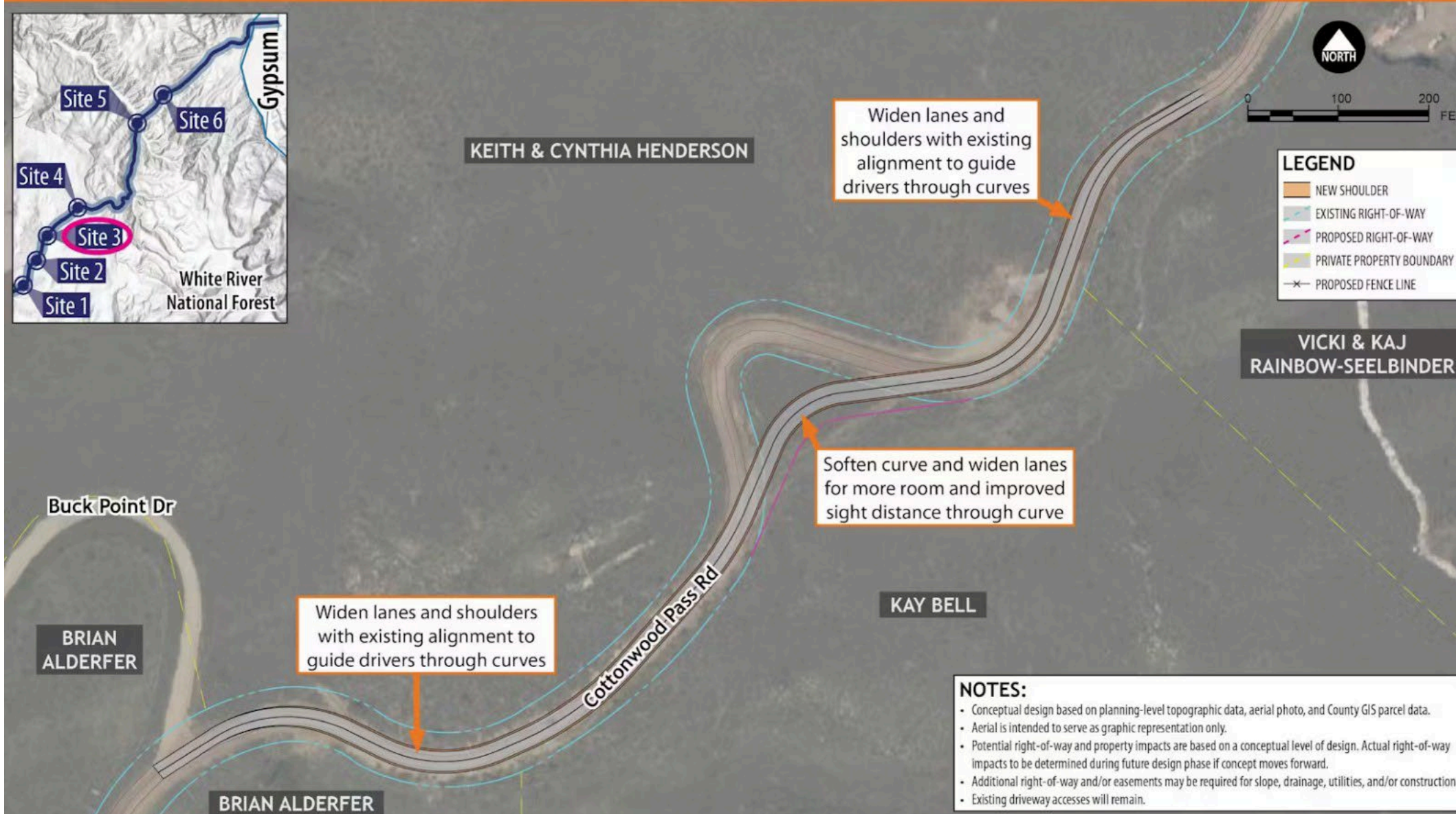
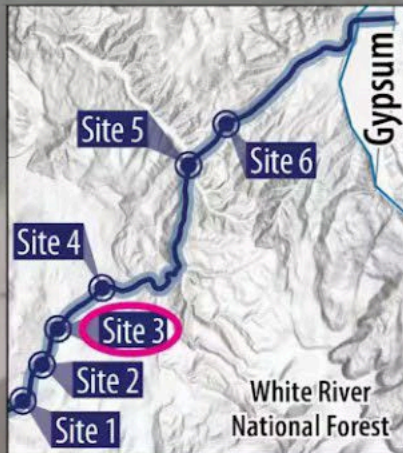
same as before I cant read these to make a statement

Does not look like any significant changes, lucky land owners!





# Eagle County Site 3 - Option 1



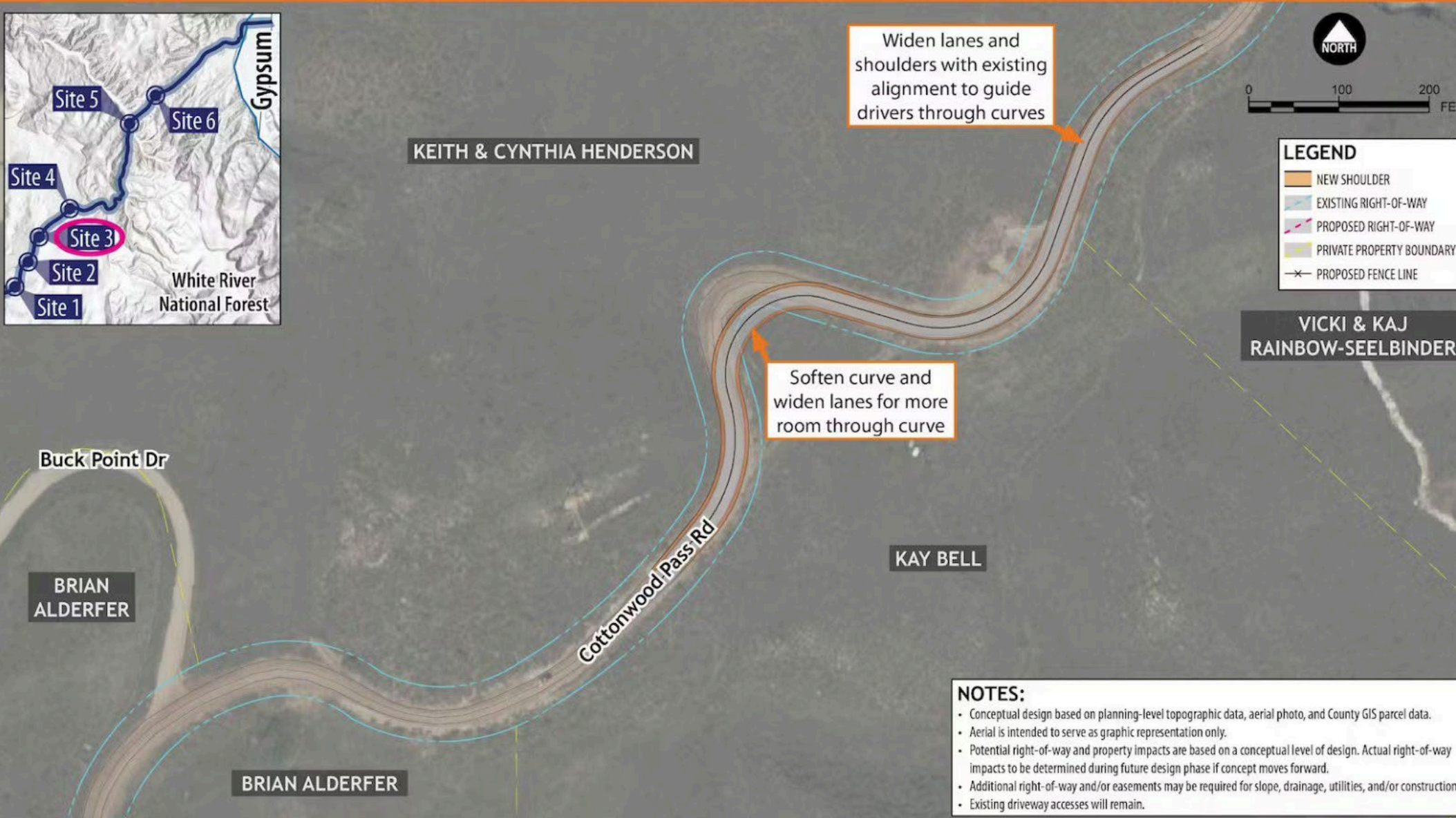
- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curves and wider shoulders
  - **Respecting Corridor Character**
    - About 0.30 ac of ROW impacts
  - **Natural Resource Preservation**
    - Potential stream impacts
  - **Collaborative Improvements**
    - Strong concern about property impacts
    - General agreement with proposed changes
- CONCEPTUAL COST**
- \$500 - 600k

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



# Eagle County Site 3 - Option 2



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Minor improvement with realigned curves and wider shoulders
- **Respecting Corridor Character**
  - Less than 0.10 ac of ROW impacts
- **Natural Resource Preservation**
  - Potential stream impacts
- **Collaborative Improvements**
  - Strong concern about property impacts
  - General preference for option to minimize property impacts and speeds

## CONCEPTUAL COST

- \$500 - 600k

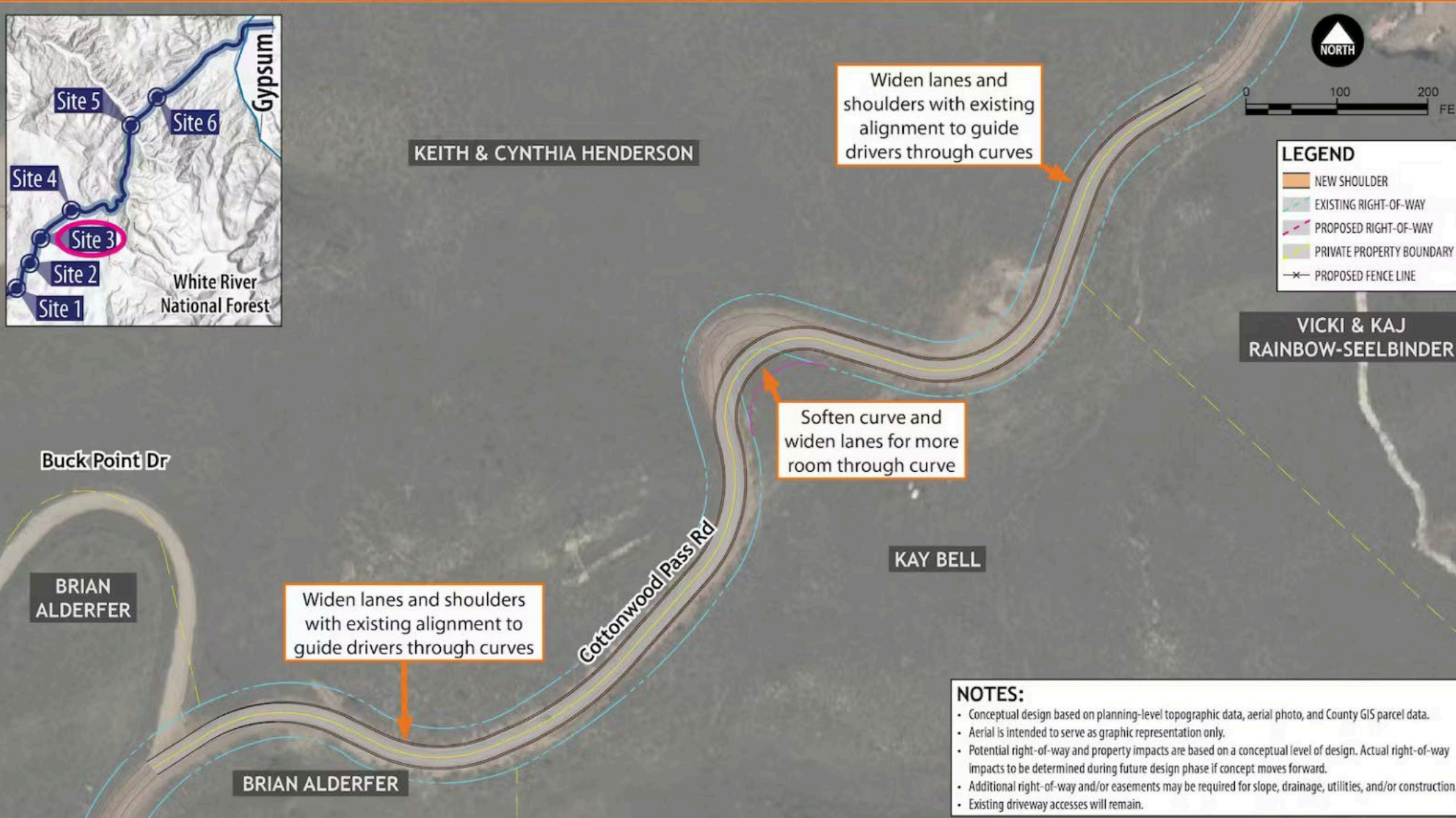
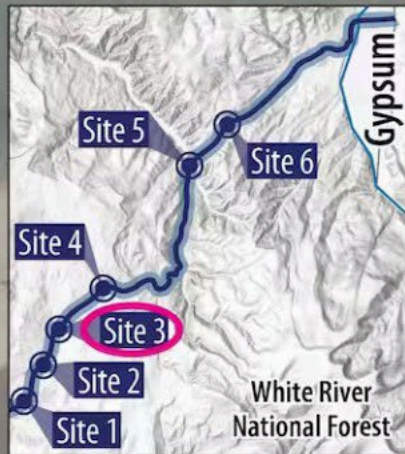
### NOTES:

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.





# Eagle County Site 3 - Refined Option



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curves and wider shoulders
  - **Respecting Corridor Character**
    - Less than 0.10 ac of ROW impacts
  - **Natural Resource Preservation**
    - Potential stream impacts
  - **Collaborative Improvements**
    - Option refined to minimize property impacts
- CONCEPTUAL COST**
- \$500 - 600k

**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.

# Please share your thoughts on the Eagle County Site 3 refined option.

9 Responses

Option 1 seems like the safest

How is emergency personnel going to utilize this alternative route

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

This option looks like a good compromise. making it straighter and allowing for faster speeds is never a good option!

Wondering why these curves were built so tight in the first place. looking down 2D doesn't give the whole picture. Concerned about slope and how that impacts speed and safety.

Looks much better for the land owners!

Without evaluating impacts on streams, it is difficult to evaluate what is a better option overall.

Protect stream impacts. Protect wetlands, install culverts

I like the refined option. This directly impacts me as I am the property owner on the West side of the road. It would still be nice to see a plan that includes speed dips or humps on either side of Buck Point Dr..

9

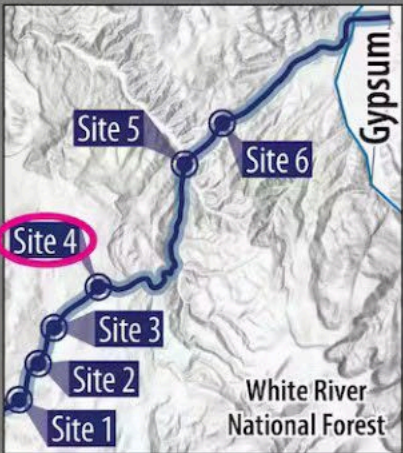




# Eagle County Site 4

**NOTES:**

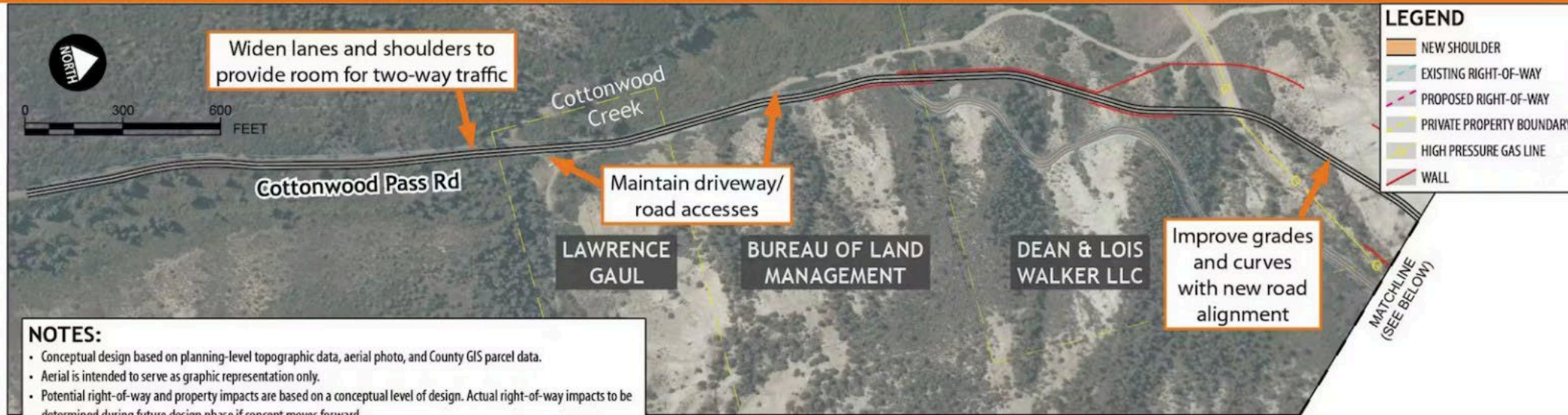
- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Minor improvement with modifications and more room through curve
  - **Respecting Corridor Character**
    - Less than 0.10 ac of ROW impacts
  - **Natural Resource Preservation**
    - No expected impacts to wildlife or waterways
  - **Collaborative Improvements**
    - Concern with increased speeds and unnecessary change
- CONCEPTUAL COST**
- \$250 - 400k

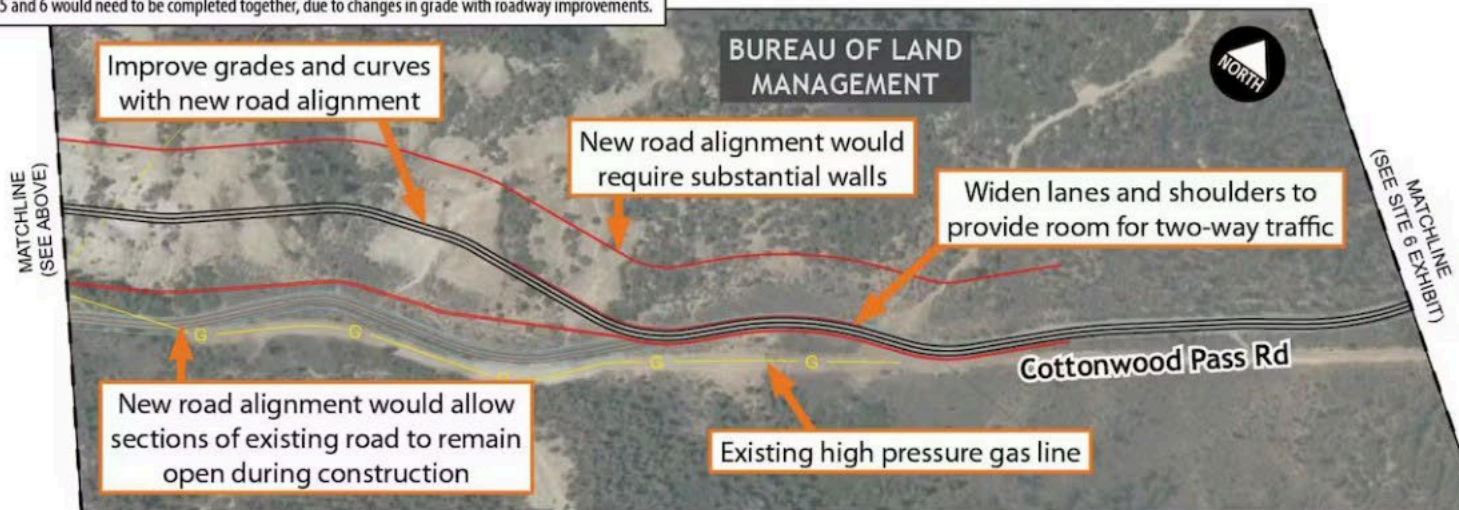


# Eagle County Site 5 - Option 1



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.
- Construction of Sites 5 and 6 would need to be completed together, due to changes in grade with roadway improvements.



## INITIAL EVALUATION DIFFERENTIATORS

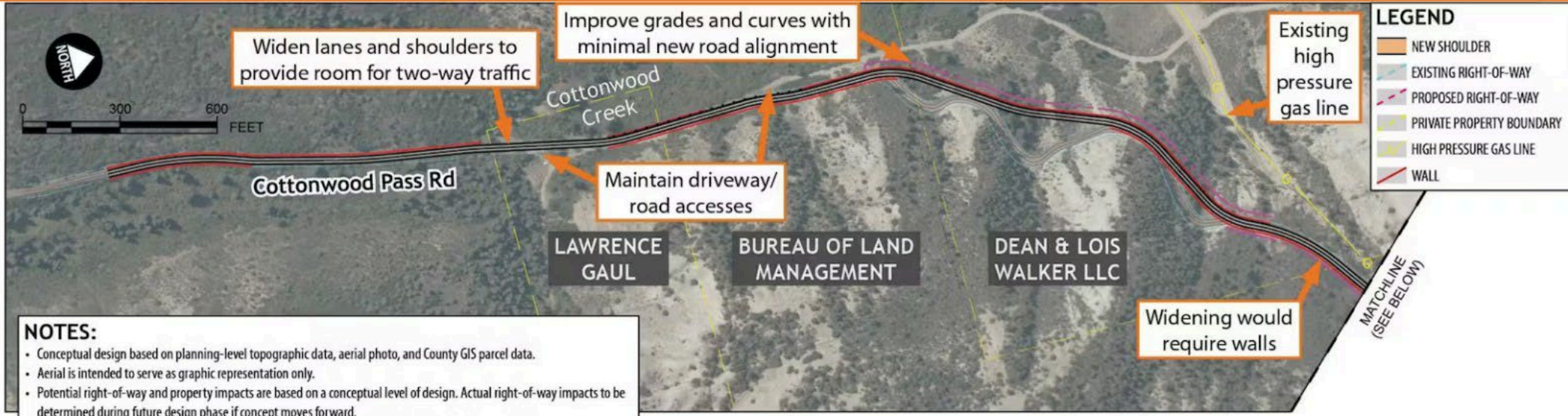
- **Safety**
  - Major improvement with realigned curves, reduced grades, and room for two-way traffic
- **Respecting Corridor Character**
  - About 27 - 28 ac of ROW impacts
- **Natural Resource Preservation**
  - Potential Cottonwood Creek and/or wetland impacts
- **Collaborative Improvements**
  - Improved maintenance with less shaded areas
  - Allows use of existing road during construction
  - TBD

## CONCEPTUAL COST

- \$350 - 360 M

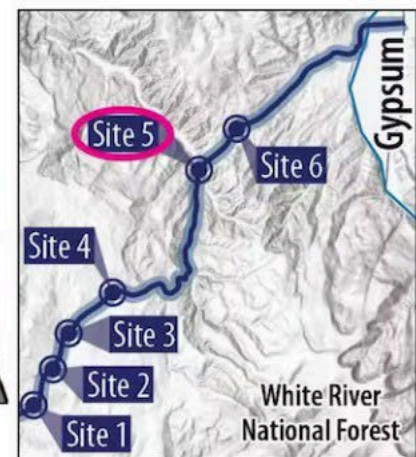
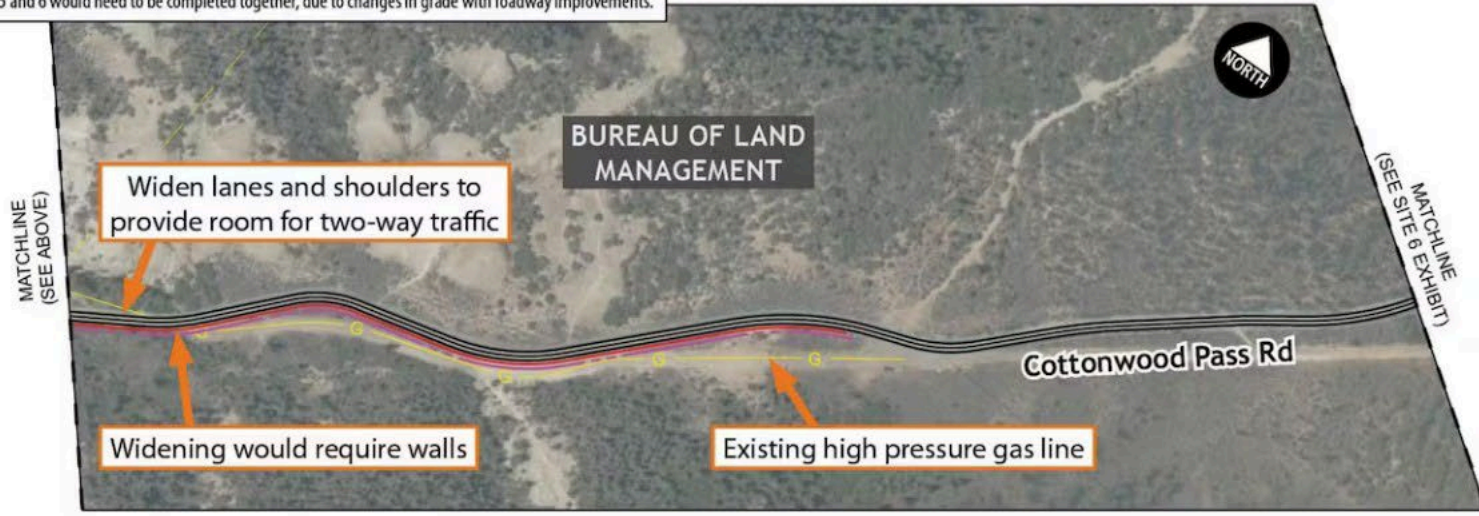


# Eagle County Site 5 - Option 2



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.
- Construction of Sites 5 and 6 would need to be completed together, due to changes in grade with roadway improvements.



- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
    - Moderate improvement with realigned curves and room for two-way traffic
  - **Respecting Corridor Character**
    - About 2.5 - 3.0 ac of ROW impacts
  - **Natural Resource Preservation**
    - Potential Cottonwood Creek and/or wetland impacts
  - **Collaborative Improvements**
    - Minimizes property impacts
    - TBD
- CONCEPTUAL COST**
- \$55 - 59 M

# Please share your thoughts on the Eagle County Site 5 design concepts.

13 Responses

Option 1 is the better version. Both options 1 & 2 are prohibitively expensive in my opinion.

Option 2 is reasonable, effective, and will allow for two way traffic while not making as large an environmental impact as Option 1.

Icing and shade are rarely issues during the summer months. This only becomes an issue if this is transformed into a year round road.

Your mention of less icing and shade suggests winter use, which we thought was not being considered.

Winter use should not be on the table for consideration.

Remark about lessening icing suggests some serious consideration to keep road open during winter season. Does option 2 also contemplate winter use? Does option 2 it provide "lessening icing".

Reducing the grade is important for this area

option 2 seems like a better option that will have less of impact on the area. This is an open grazing area as well so you need to think about more than wild animals and think of cows grazing along the roads

Both options are incredibly expensive for this project.

# Please share your thoughts on the Eagle County Site 5 design concepts.

13 Responses

Option 1 seems ideal if price tag was not an issue but of course it will be. Like the idea of having a drive around during construction

Option 1 should not even be considered due to the impacts on that area. Are you bringing in bridges for option 2? I cant see how that option is even possible

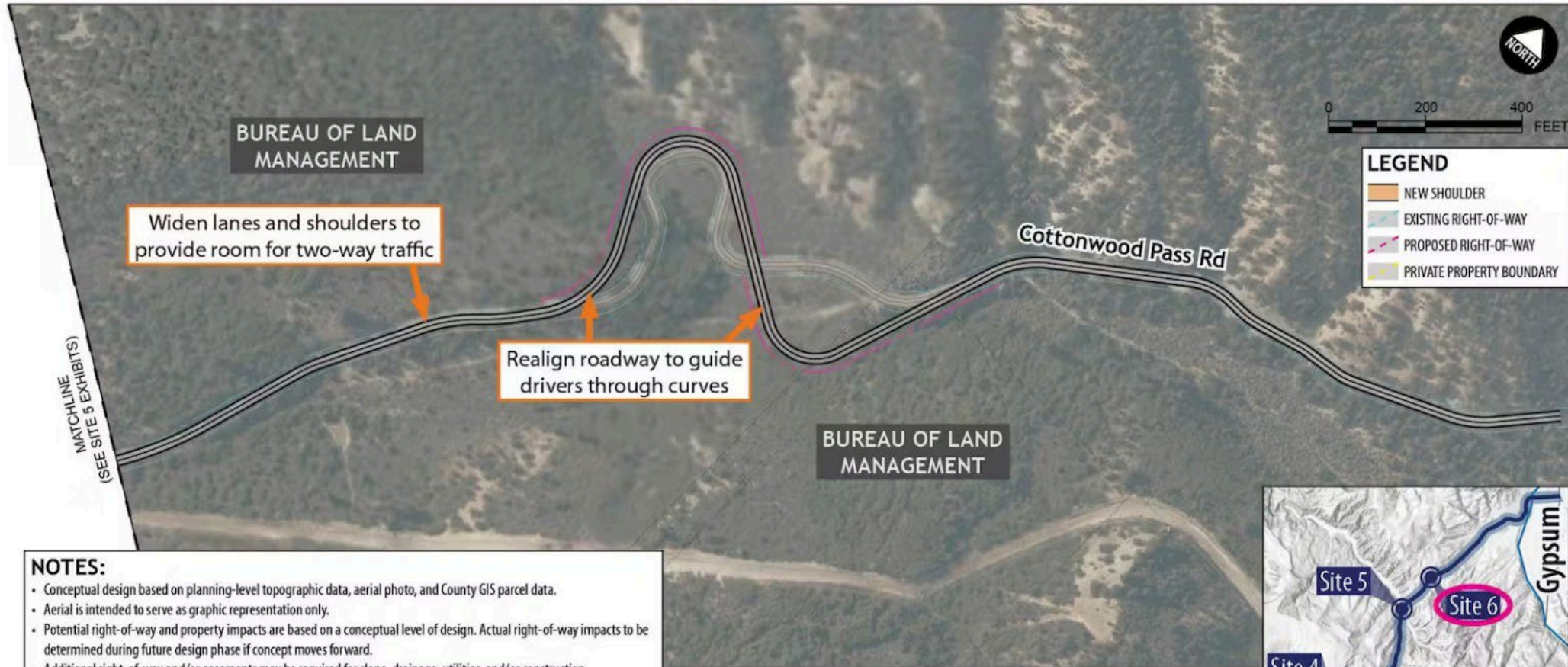
These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.

Looks like it turns this road into a disaster because of the ease of travel for all tourist who want to travel to aspen from the front range!





# Eagle County Site 6



**NOTES:**

- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during future design phase if concept moves forward.
- Additional right-of-way and/or easements may be required for slope, drainage, utilities, and/or construction.
- Existing driveway accesses will remain.
- Construction of Sites 5 and 6 would need to be completed together, due to changes in grade with roadway improvements.



## INITIAL EVALUATION DIFFERENTIATORS

- **Safety**
  - Moderate improvement with realigned curves and wider road
- **Respecting Corridor Character**
  - Less than 1.0 ac of ROW impacts
- **Natural Resource Preservation**
  - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
  - TBD

## CONCEPTUAL COST

- Included with Site 5 (to be constructed together due to grade changes)



# Please share your thoughts on the Eagle County Site 6 design concept.

7 Responses

Without decision on Blue hill option, can't comment if I understand this correctly.

It does not seem like enough improvement, but some is better than none.

Makes this road to easy to pass and sends large amounts of traffic over the pass!

Better for negotiating curve.

Agree that without a decision on Blue Hill improvements wouldn't make sense.

The Site 6 improvements look beneficial and make sense.

These are impossible to read. How are we supposed to give our opinions when we cant even read them. This is a waste of time. You are going to ram this down our throats regardless of what we want you are already doing it.



# Do you have any suggestions to make the concept graphics and evaluation information more understandable and useful to the public meeting audience?

## 16 Responses

I think you've done a pretty good job explaining and illustrating the options..

To better explain that this is a project for safety improvements and not intended as a bigger highway project.

There is not information about grade changes—current vs proposed.

Wish there had been more information about the grades of the roads and how they change with the options. And also how other mitigations can make this safer, like signage and speed limit changes.

The road needs to be heavily monitored to make sure that larger vehicles (trucks and such) are not on this road. The congestion when 70 is closed is unreal and a major problem for people that live off cottonwood.

Add grades on all options and if you don't have that info, then explain that information does not take into consideration grade changes. Also explain that full evaluation of stream impacts and wildlife have not been studied.

The graphics are a good representation of each area and option.

A summary of the costs of all improvements in one place would be helpful.

Where is funding for such an ambitious project coming from and provide actual data for traffic management. Are all Measurements and standards being implemented in this concept and will be implemented.

# Do you have any suggestions to make the concept graphics and evaluation information more understandable and useful to the public meeting audience?

## 16 Responses

I think your presentation is good. Reminders of impact to owners. What are the plans to limit traffic on this road? Will it remain a dirt road or is it paved the whole way?

Want in public meetings because on zoom we find it convenient to not actually answer adjacent property owners objections, which we have many.

Current roads need maintenance need patrolled and you want to add traffic. Add traffic surveys and findings.

Spring Creek road is a substantially more feasible and logical route than Catherine Store road.

Per these meetings it sounds like a done deal without actual concerns from actual property owners and regardless if we want it or not.

what environmental studies will be necessary going forward?

I guess I just don't want this pass to become a common highway to and from the front range. So what ever we can do to slow down the development of this road the better.



# Next Steps

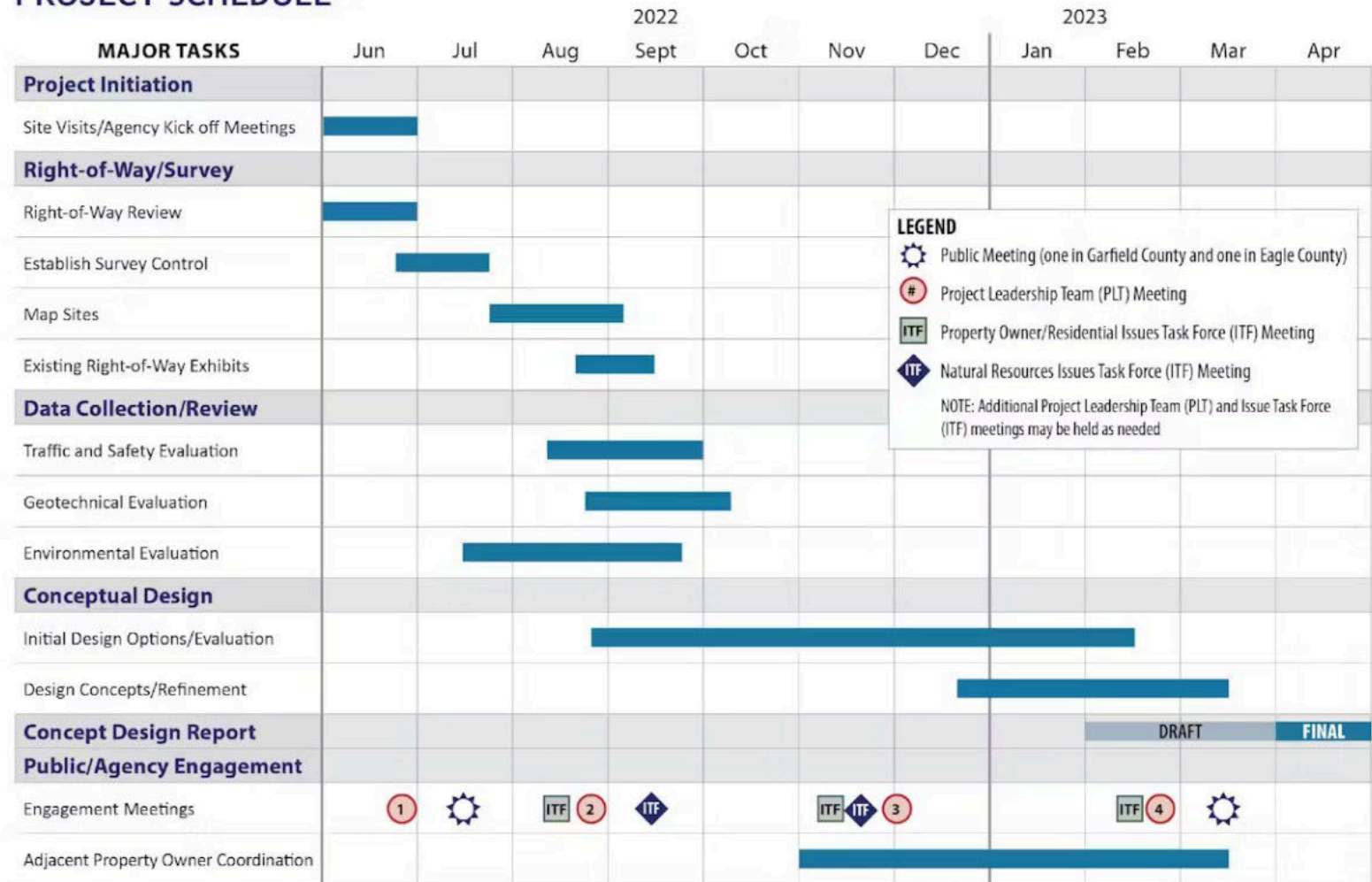




# Next steps

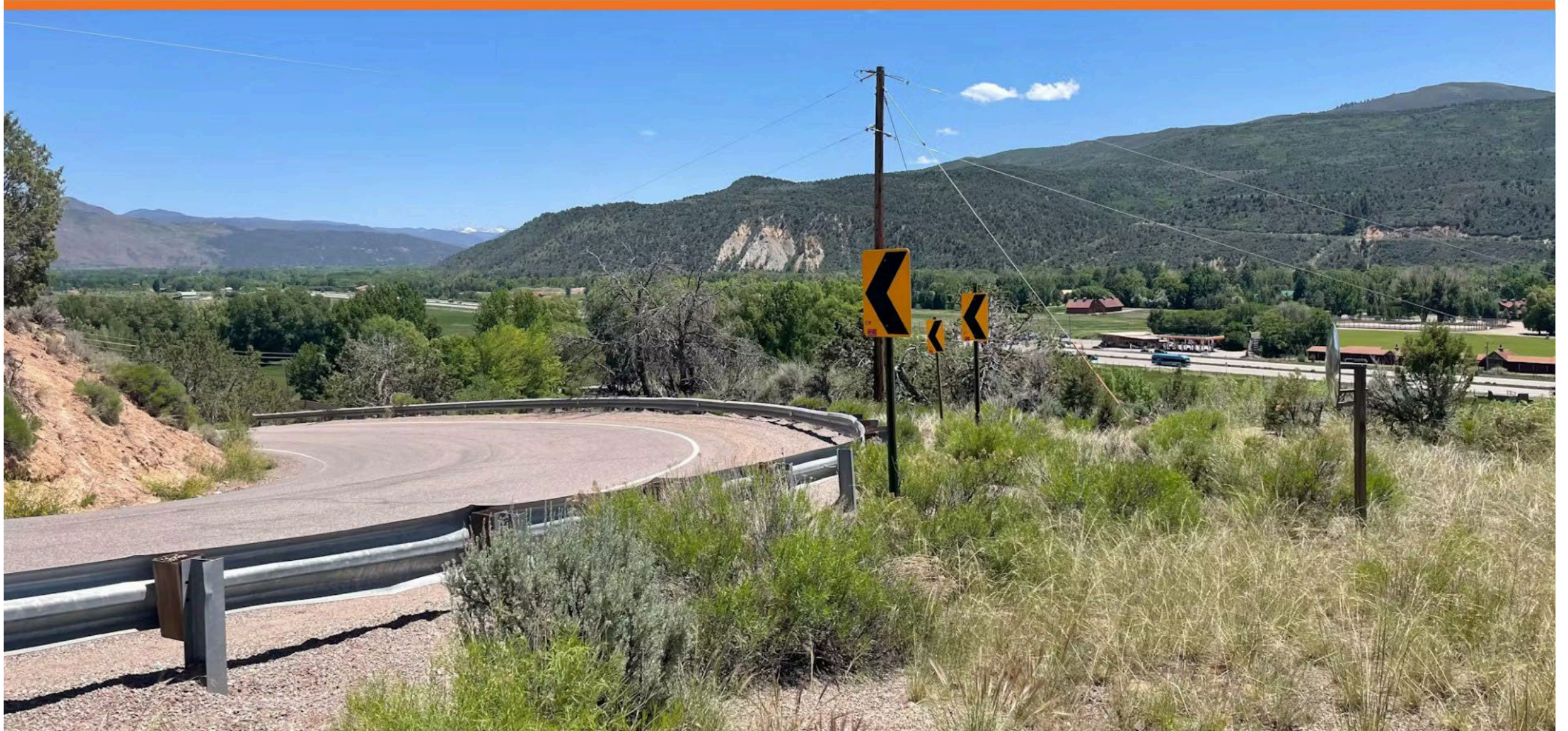
- Concept and/or evaluation refinements if needed
- Round 2 public meetings in March
- Documentation in concept design report

## PROJECT SCHEDULE





# Group Discussion/Q & A





Thank you!

[www.codot.gov/projects/cottonwood-pass-concept-design](http://www.codot.gov/projects/cottonwood-pass-concept-design)



**COLORADO**  
Department of Transportation



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