



PROJECT PURPOSE AND SCOPE



What is the purpose of the Cottonwood Pass Concept Design project?

Safety improvements are needed on Cottonwood Pass between Gypsum in Eagle County and Colorado Highway (CO) 82 in Garfield County to make the county roads safer and more functional as a vital travel connection between the local communities.

What does the Cottonwood Pass Concept Design project include?

The Colorado Department of Transportation (CDOT) is supporting Eagle and Garfield counties with conceptual designs at the 14 specific locations along Cottonwood Pass to accommodate traffic more safely. Proposed site improvements include curve softening, improved sight distance, and increased road width in areas to accommodate two vehicles in passing.

The project includes:

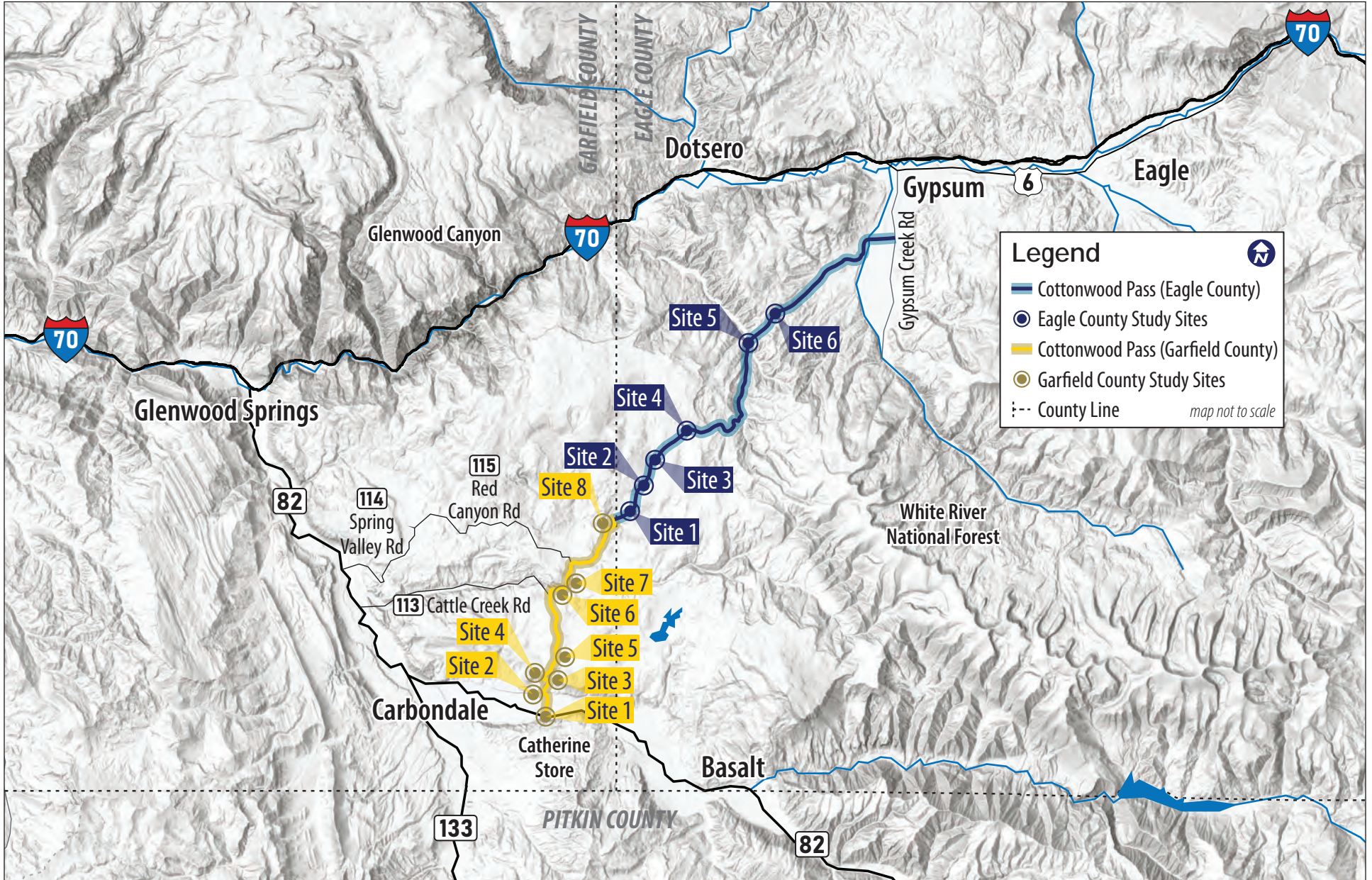
- ◆ survey of road right-of-way limits
- ◆ assessment of geotechnical and environmental conditions
- ◆ development and evaluation of safety improvement options
- ◆ estimates of conceptual cost

Items in Consideration

- ◆ Improving sight distance
- ◆ Widening to accommodate two-way traffic
- ◆ Improving curve geometry
- ◆ Improving intersection geometry
- ◆ Improving functionality on Cottonwood Pass for local traffic and increased traffic during I-70 Glenwood Canyon closures
- ◆ Cottonwood Pass remains a county road (not a state highway)



PROJECT SITE KEY MAP





PROJECT SITE SELECTION

How were the 14 sites selected?

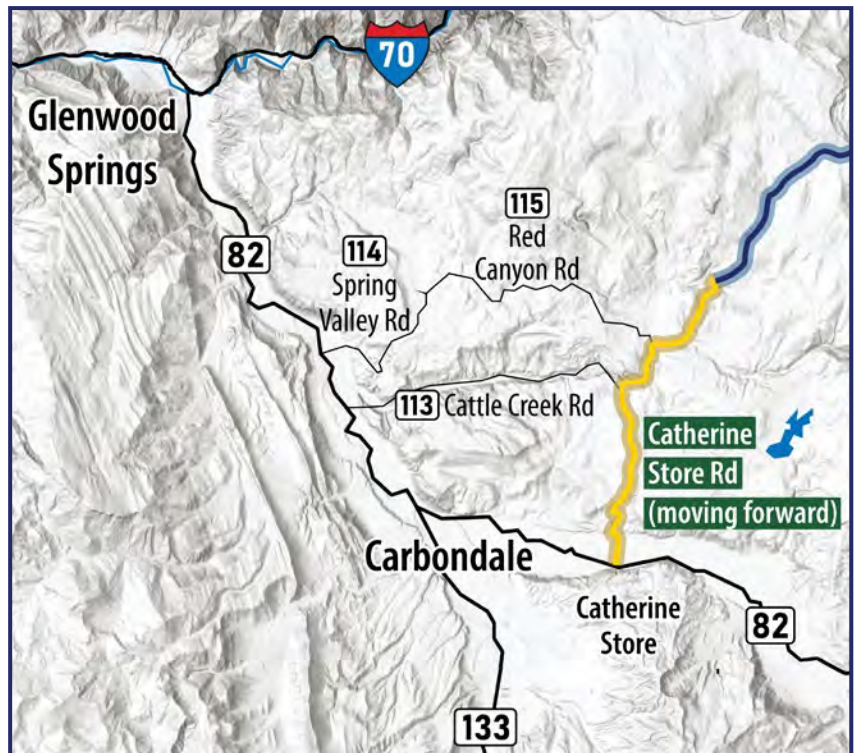
Eagle and Garfield counties selected the 14 locations along the alignment based on reported and recurring safety concerns including: limited site distance, tight curves, narrow roadway width, and lack of guardrail.

Why sites along Garfield County Road 100/Catherine Store Road?

During the summer of 2021, Garfield County evaluated multiple options for consideration as the official Cottonwood Pass alignment.

- ◆ 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 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 Colorado Highway 82 and Catherine Store Road is currently signalized and provides better visibility for traffic as compared the other routes, CR 113 (Cattle Creek) and CR 114 (Spring Valley Road). In addition, the geometry of the existing intersections is not optimal for site distance and turning movements.





CONTEXT STATEMENT AND CORE VALUES

Context Statement

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 Bureau of Land Management 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 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

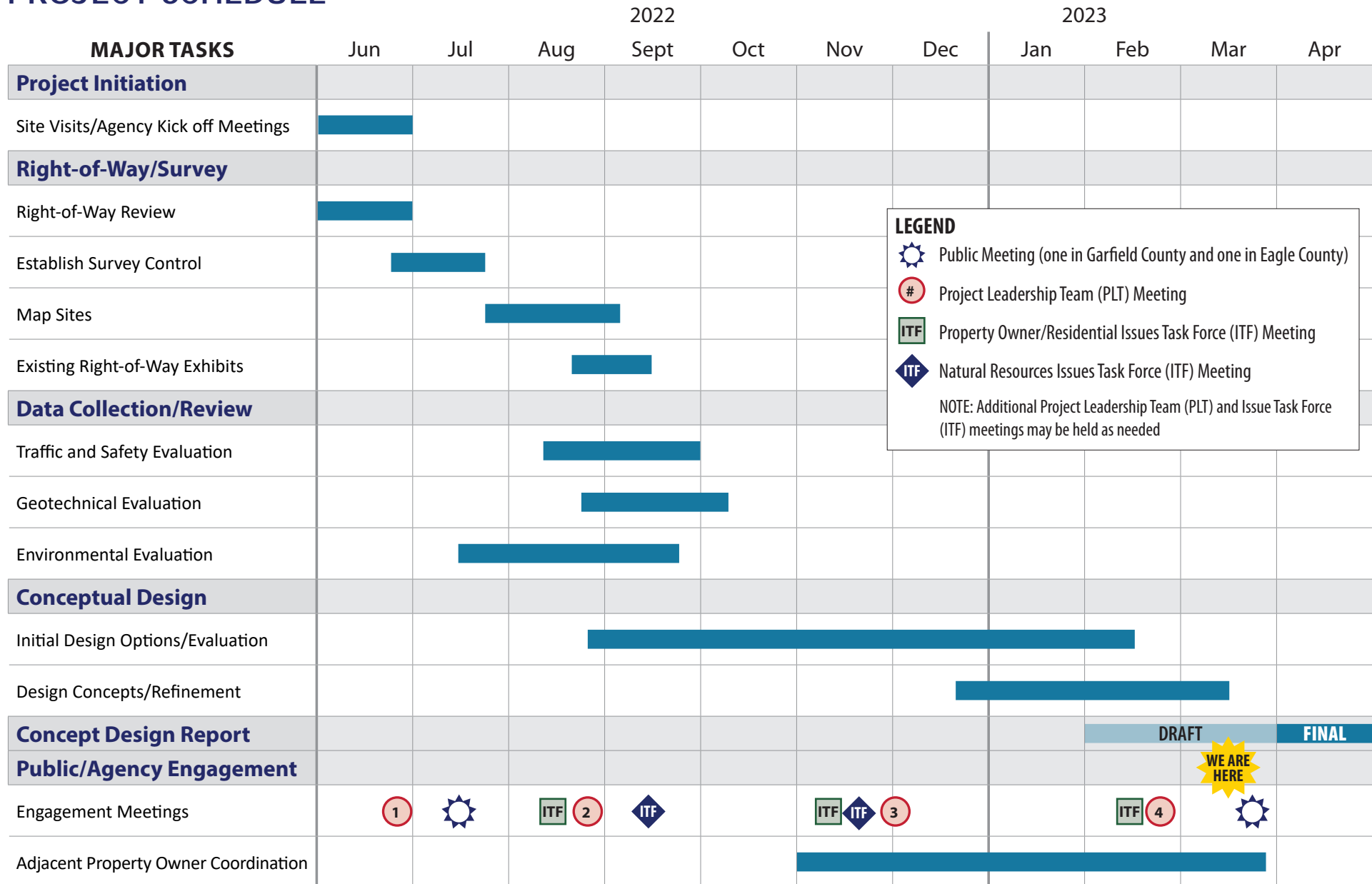
Minimize impacts to nearby wildlife habitat and waterways

COLLABORATIVE IMPROVEMENTS

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



PROJECT SCHEDULE



LEGEND

- Public Meeting (one in Garfield County and one in Eagle County)
- Project Leadership Team (PLT) Meeting
- Property Owner/Residential Issues Task Force (ITF) Meeting
- Natural Resources Issues Task Force (ITF) Meeting

NOTE: Additional Project Leadership Team (PLT) and Issue Task Force (ITF) meetings may be held as needed

WE ARE HERE

DRAFT FINAL



SUMMARY OF CORRIDOR CONDITIONS



TRAFFIC

- ◆ Catherine Store Road - April 2019 count
 - ◇ Average 1,240 vehicles/day
 - » Weekday 1,390 vehicles/day
 - » Weekend 930 vehicles/day
 - ◇ Mean speed: 34.6 mph
 - » 85th-percentile speed = 39.6 mph (current speed limit 25 mph)
- ◆ Cattle Creek Road – 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
 - ◇ Counts with Canyon closed collected after route removed from Google Maps: Average 3,700 vehicles/day
 - » Weekday = 3,790
 - » Weekend = 3,650



ENVIRONMENTAL

- ◆ High-level overview with available information, windshield survey, and input from regulatory agencies and area stakeholders
 - ◇ Field survey verification needed with future design
 - ◇ Further evaluation of potential impacts 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 Road and Cottonwood Pass Road) are cultural resources, but a site project option is unlikely to result in adverse effects to the resource



GEOTECHNICAL

- ◆ Cottonwood Pass corridor generally has collapsible and evaporite soils
- ◆ Some sites within mapped landslide, but no evidence of slope failure or movement
- ◆ Rockfall analysis and protection may be required with excavation into some rock outcrops
- ◆ All geotechnical conditions found to date can be mitigated during design and construction and would not preclude improvements



ADDRESSING SPEED CONCERNS

The following may be considered to address speeding concerns with strategies 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 for adjacent homes with bright lights at night

SPEED FEEDBACK SIGNS

Pros:

- ◆ Interactive
- ◆ Reduced speeds

Cons:

- ◆ Cost
- ◆ Maintenance
- ◆ Visual impacts for adjacent homes with bright lights at night

RUMBLE STRIPS

Pros:

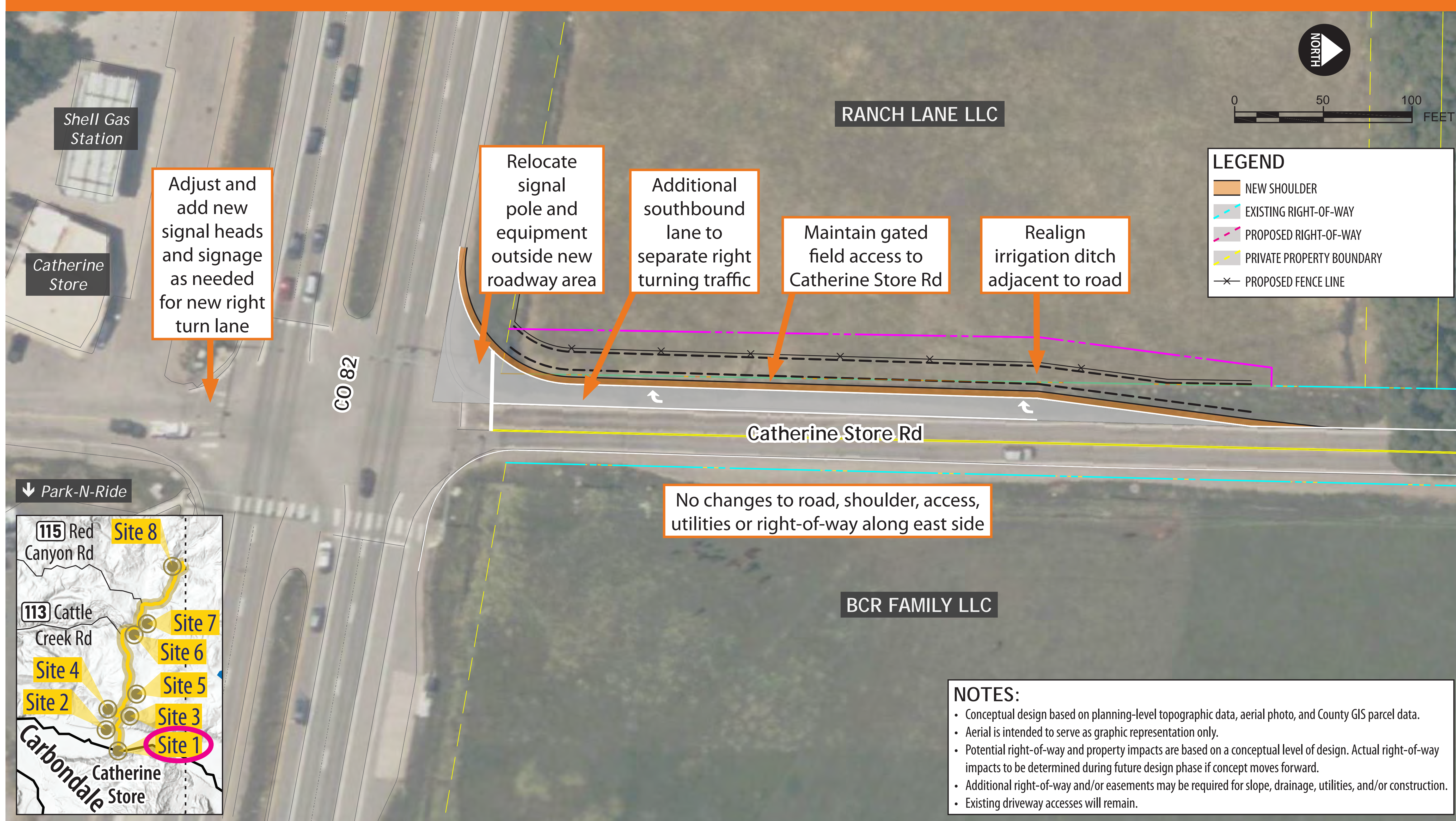
- ◆ Promotes drivers to stay in lane/slow down

Cons:

- ◆ Cost
- ◆ Noise impacts for adjacent homes



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 benefit of proposed changes

CONCEPTUAL COST

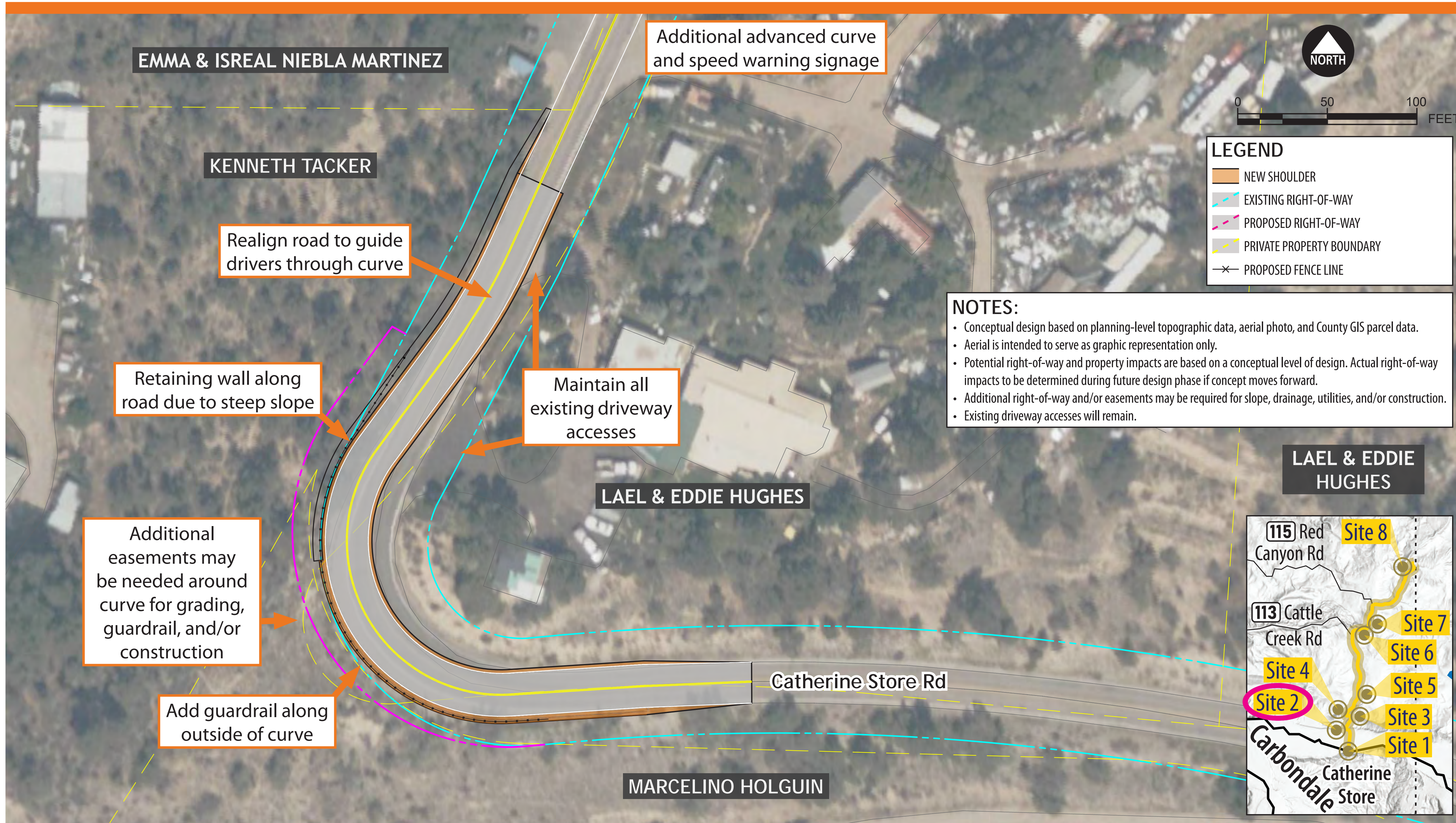
- **\$300 - 350k**

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

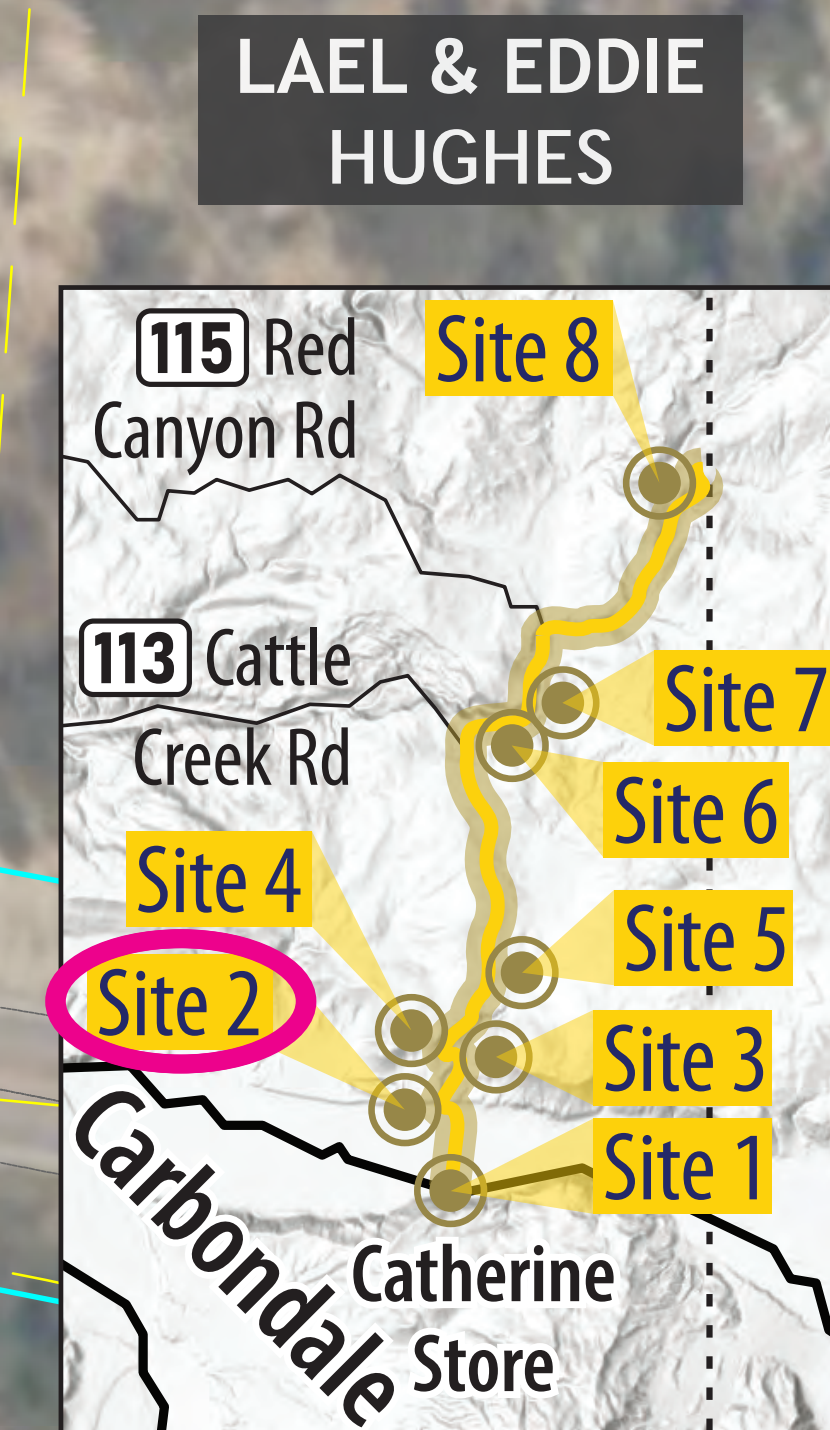


INITIAL EVALUATION DIFFERENTIATORS

- **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
 - Some public preference for option

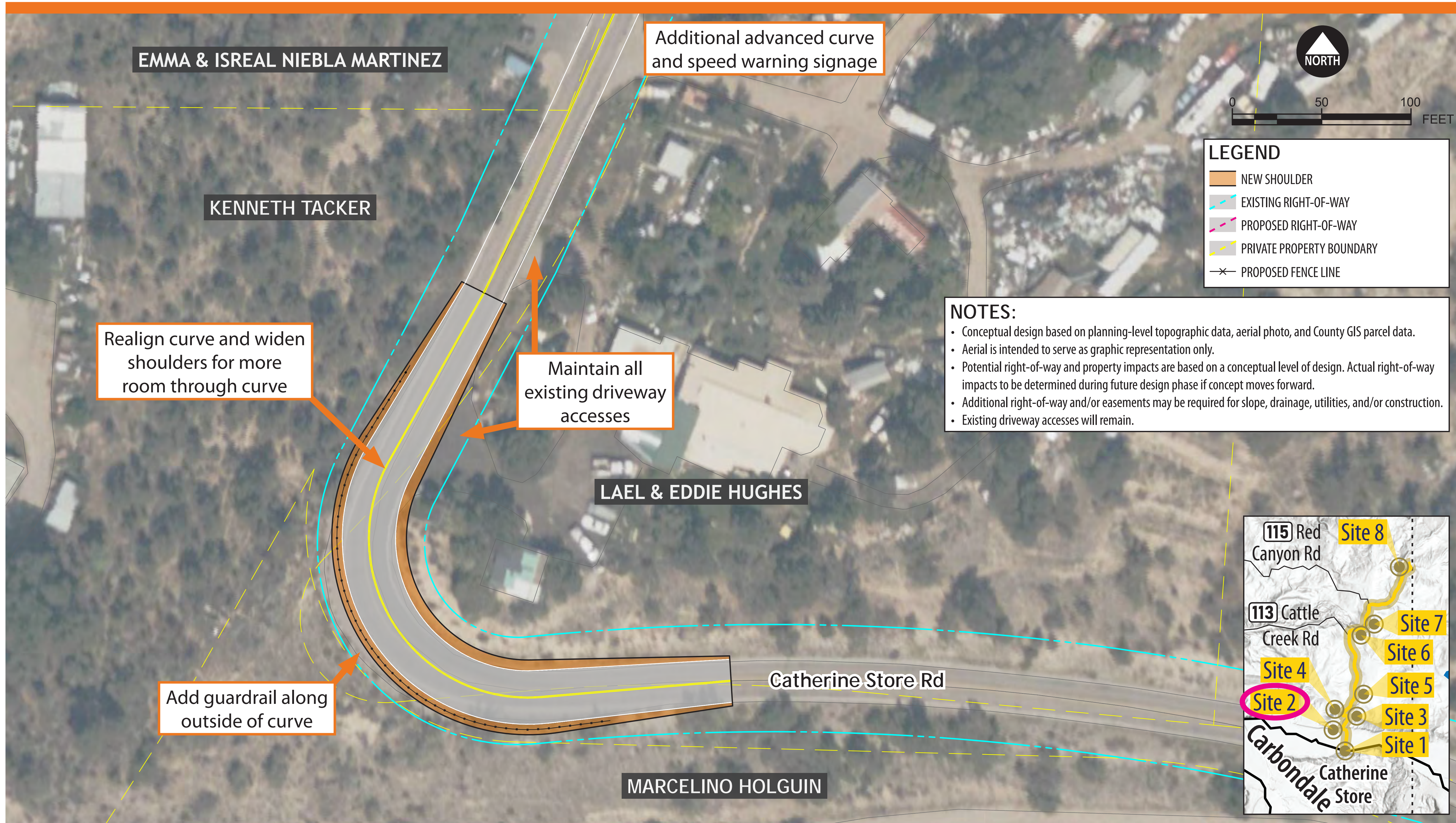
CONCEPTUAL COST

- \$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

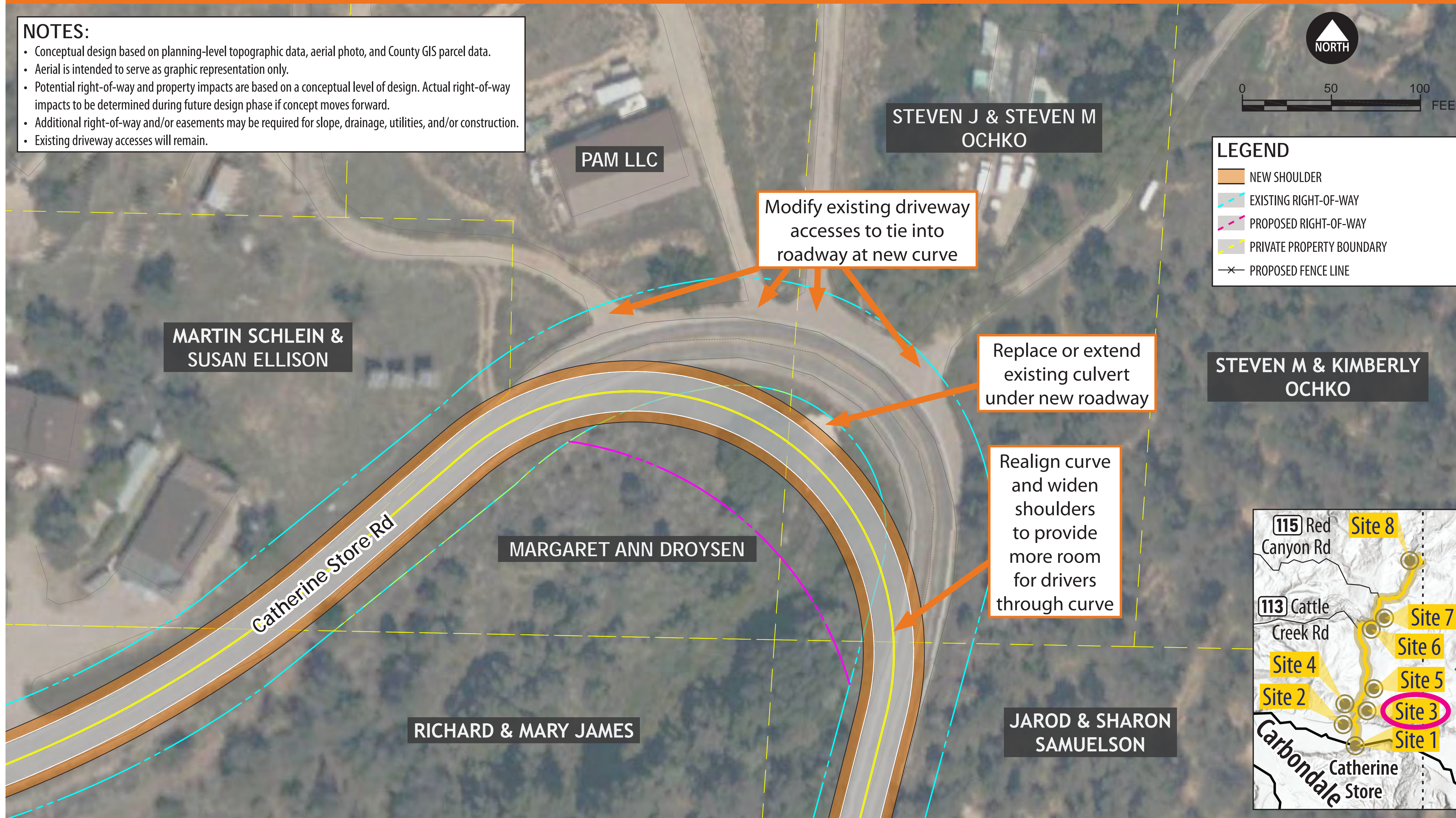
- \$600 - 700k



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

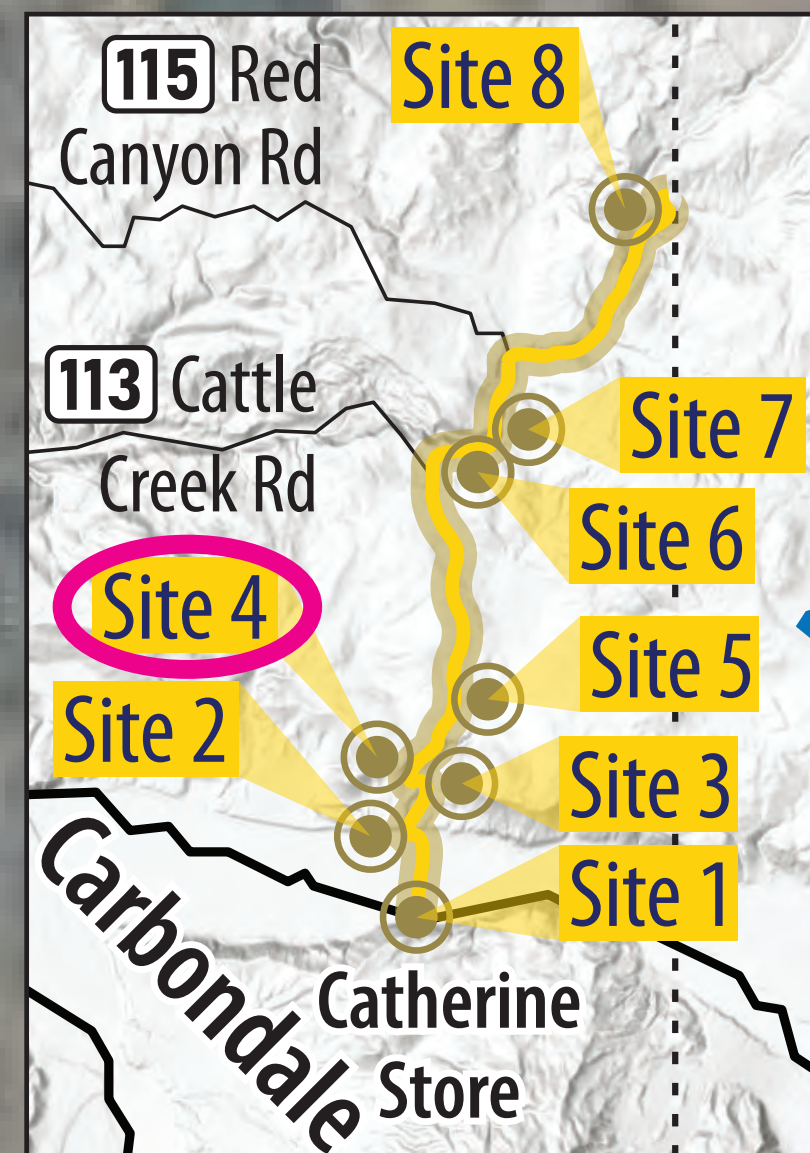
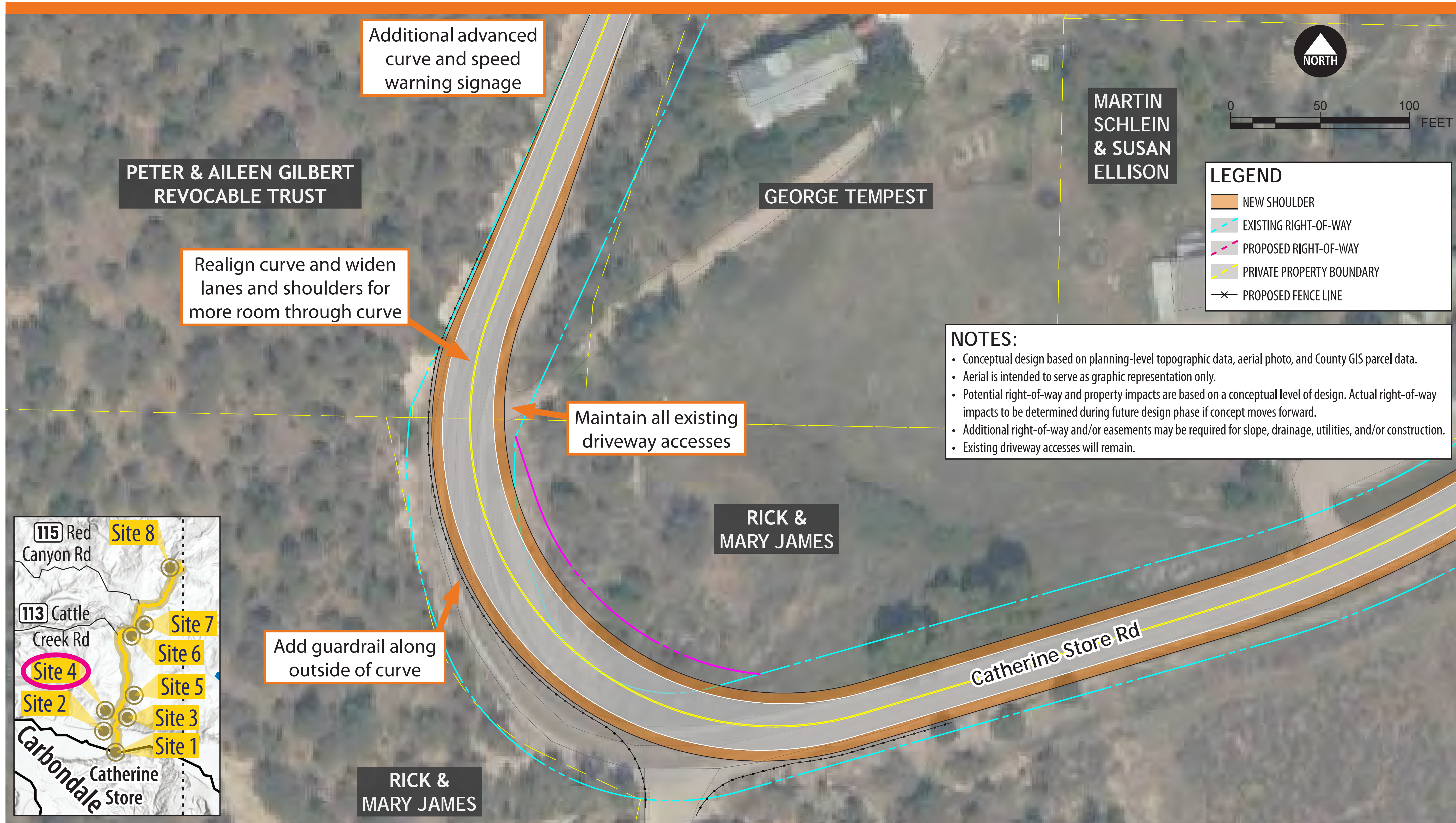
- **Safety**
 - Minor improvement with modifications and more room through curve plus access consolidation
- **Respecting Corridor Character**
 - Less than 0.25 ac of ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - Strong concern about property impacts
 - Some support, but concern with speeds

CONCEPTUAL COST

- \$1.0 - 1.1 M



Garfield County Site 4



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 agreement with benefit of 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

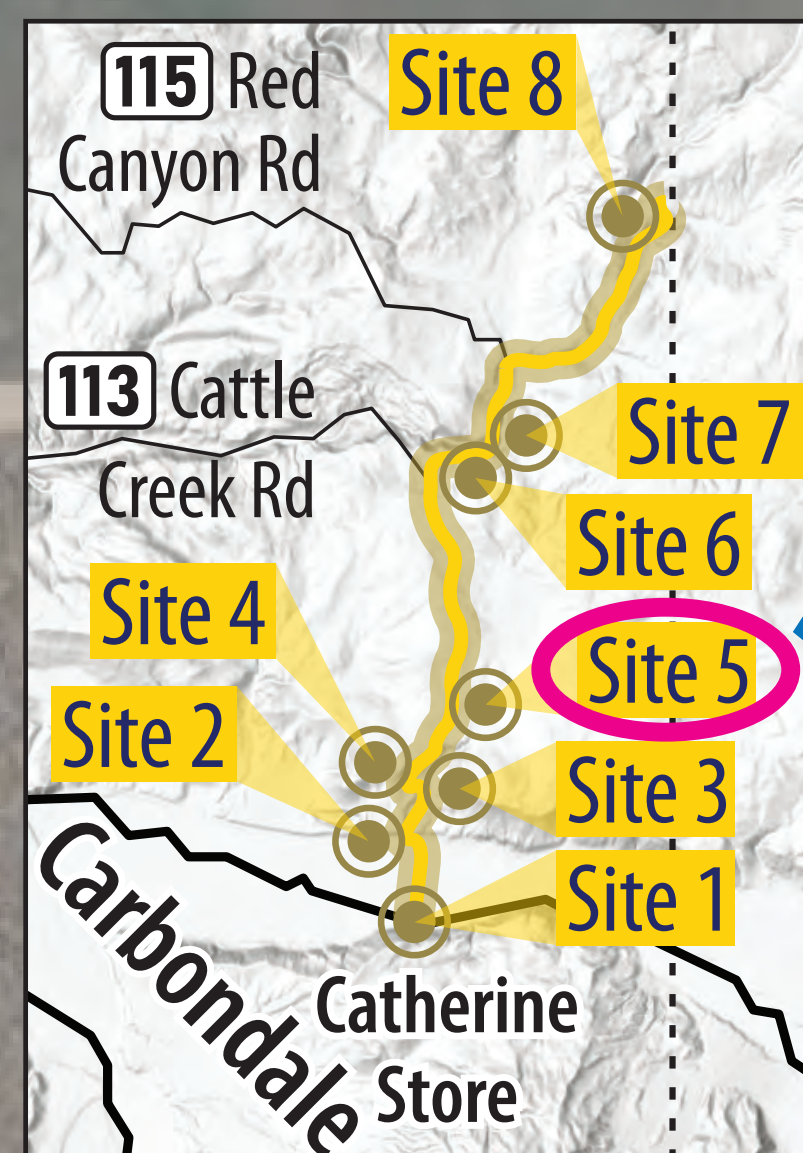
FELIX & SARAH TORNARE

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

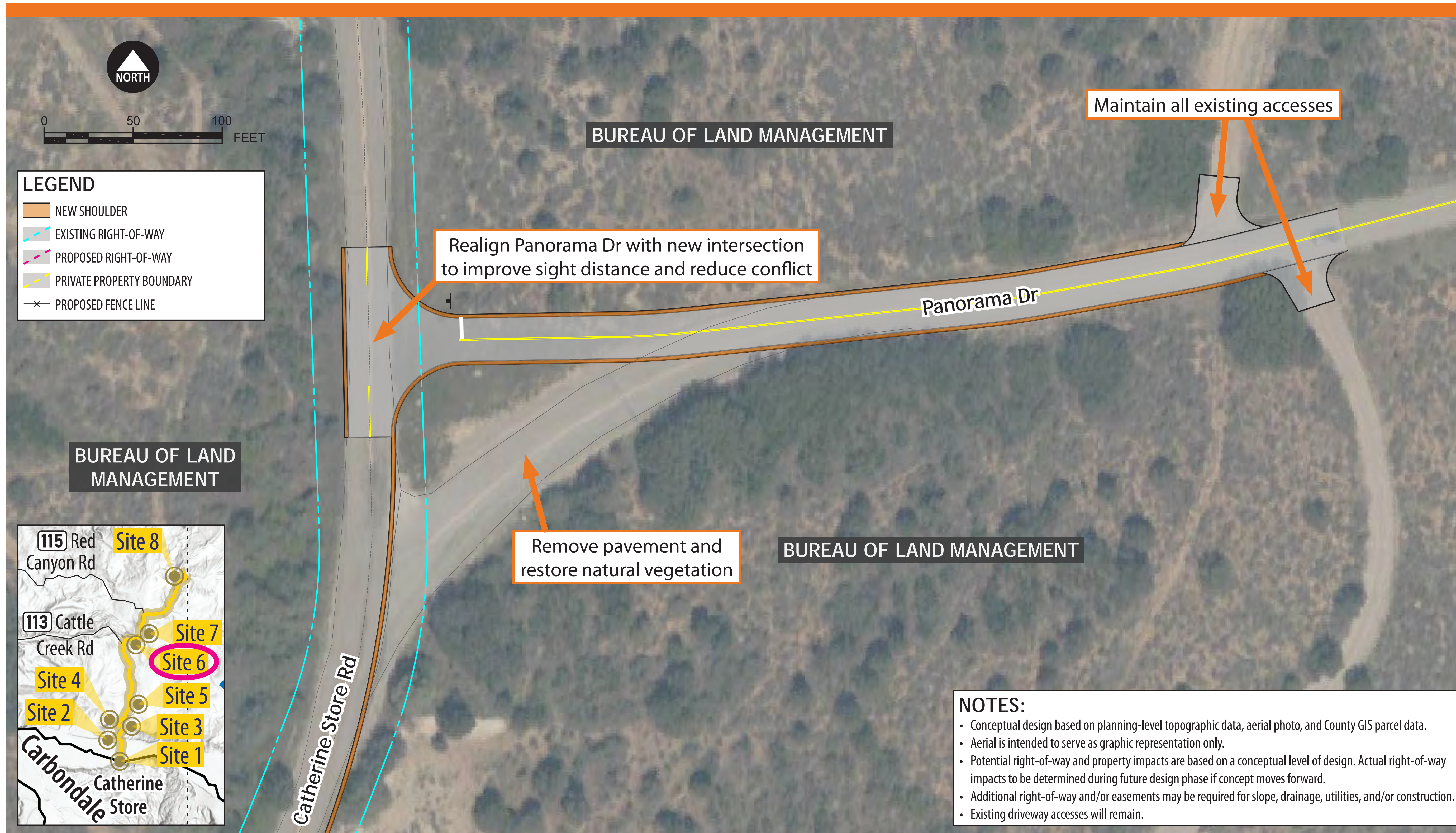
- **Safety**
 - Moderate improvement with increased sight distance around curve
- **Respecting Corridor Character**
 - No expected permanent ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - Concern about impact to area spring
 - Some agreement with benefits, 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 private property ROW impacts
- **Natural Resource Preservation**
 - Potential stream and habitat impacts
- **Collaborative Improvements**
 - General agreement with benefits of proposed changes

CONCEPTUAL COST

- \$500 - 600k

NOTES:

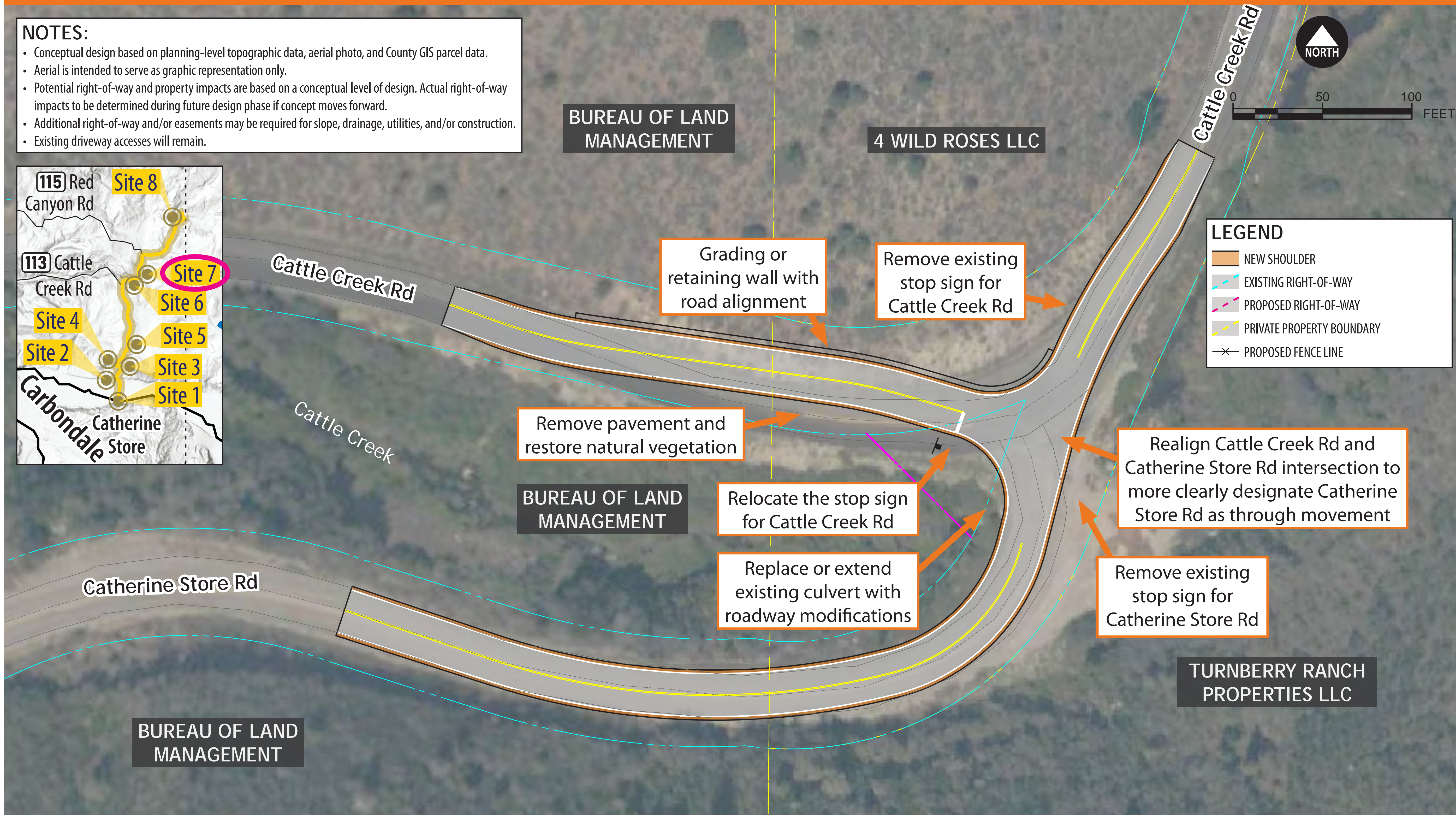
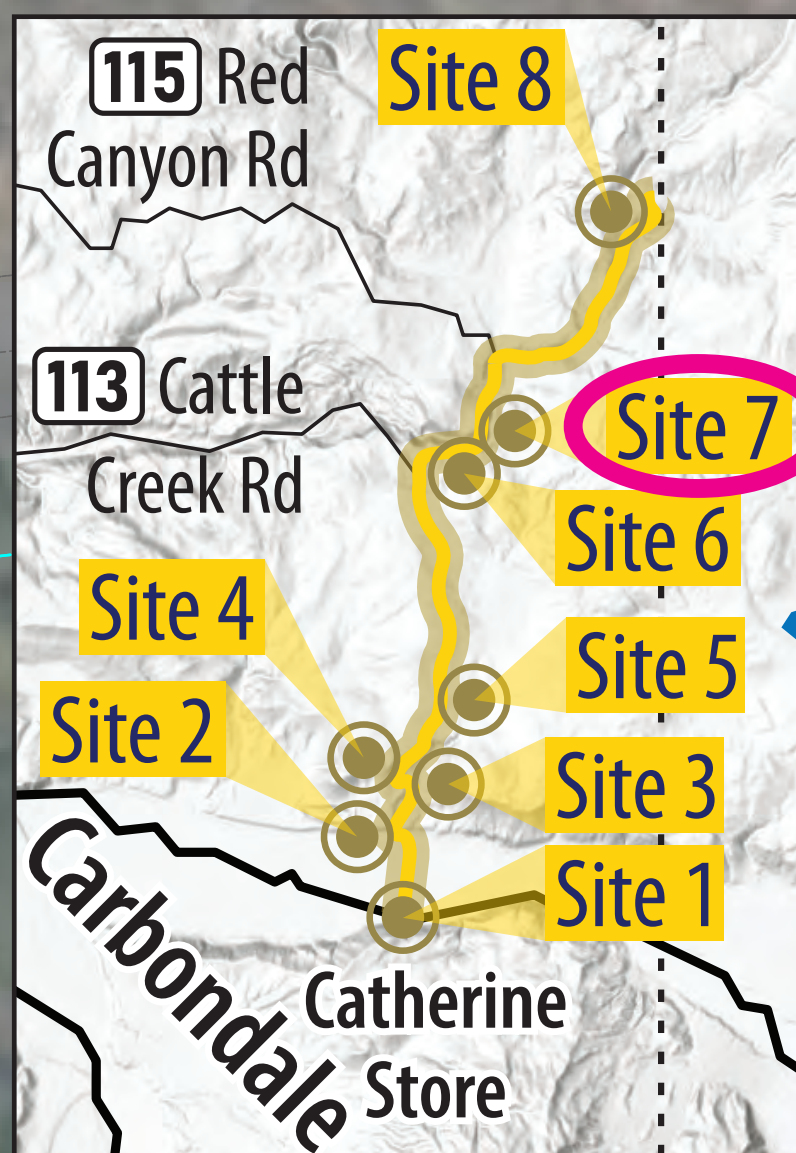
- Conceptual design based on planning-level topographic data, aerial photo, and County GIS parcel data.
- Aerial is intended to serve as graphic representation only.
- Potential right-of-way and property impacts are based on a conceptual level of design. Actual right-of-way impacts to be determined during 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 benefits of proposed changes

CONCEPTUAL COST

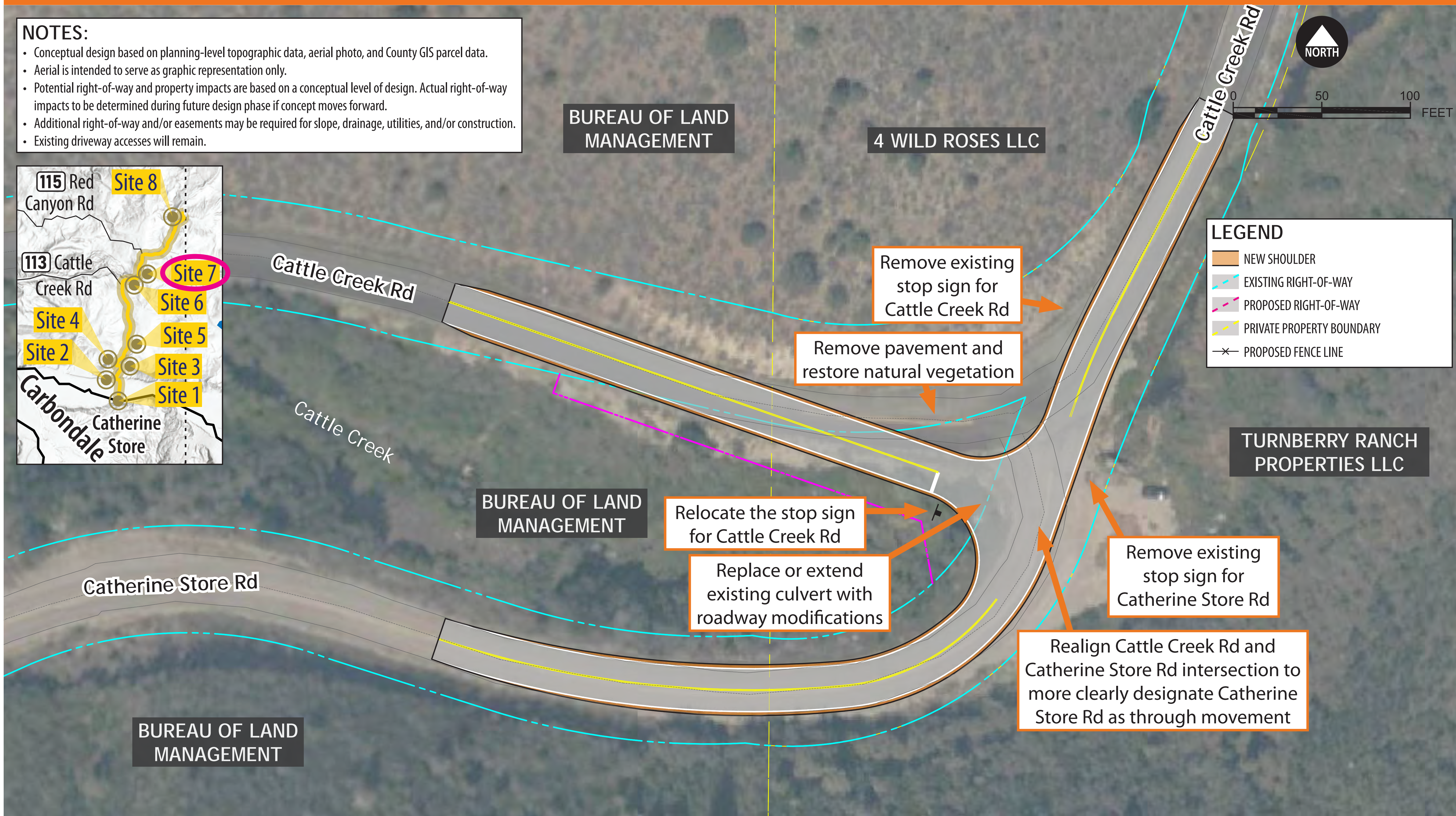
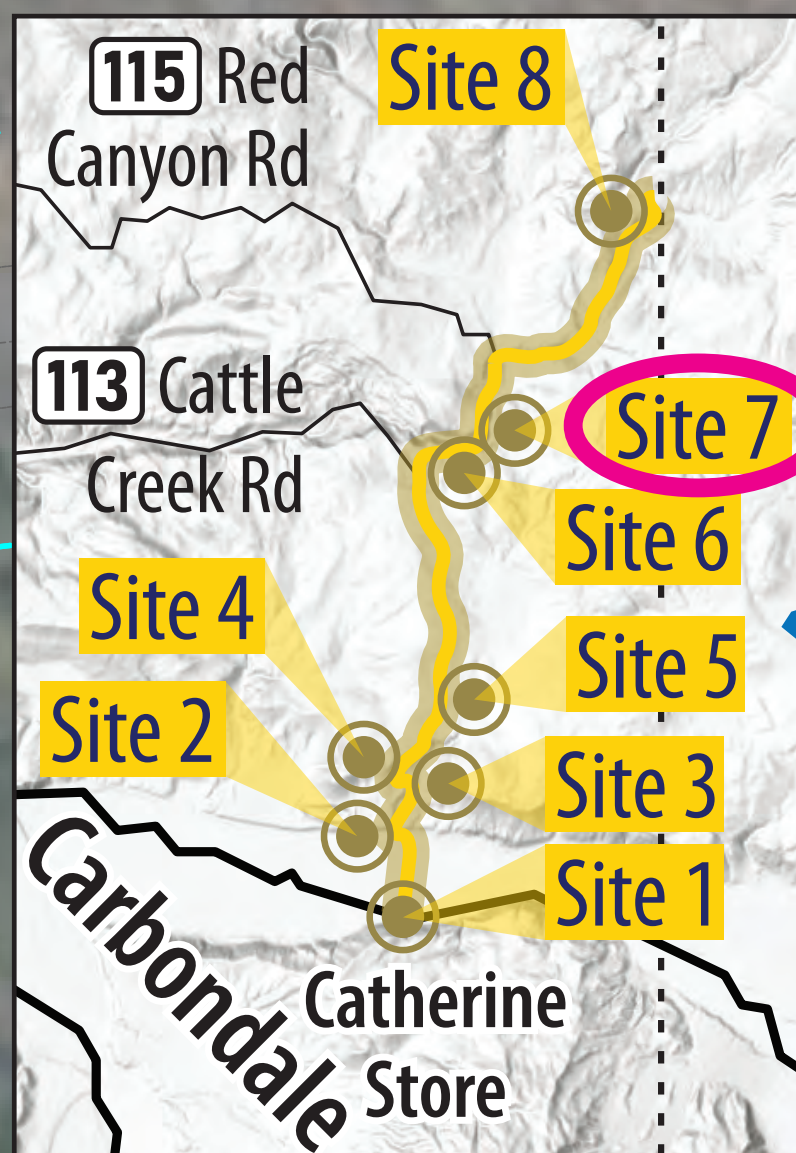
- \$3.0 - 3.2 M



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

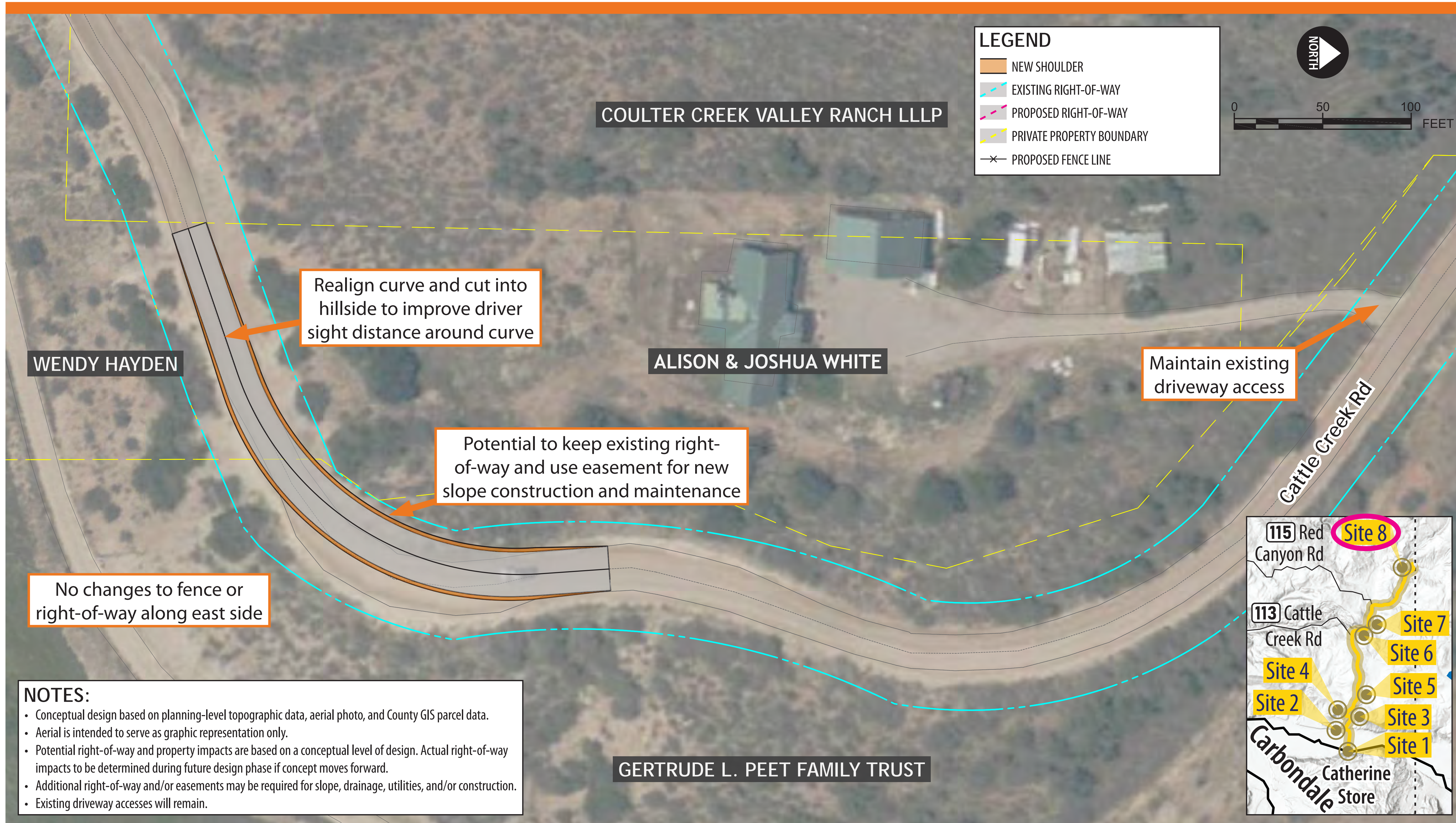
- **Safety**
 - Moderate improvement with improved wayfinding and reduced conflicts
- **Respecting Corridor Character**
 - Less than 0.20 ac of ROW impacts
- **Natural Resource Preservation**
 - Potential moderate Cattle Creek impacts
 - Potential habitat impacts
- **Collaborative Improvements**
 - General agreement with benefits of proposed changes

CONCEPTUAL COST

- \$1.7 - 1.8 M



Garfield County Site 8



INITIAL EVALUATION DIFFERENTIATORS

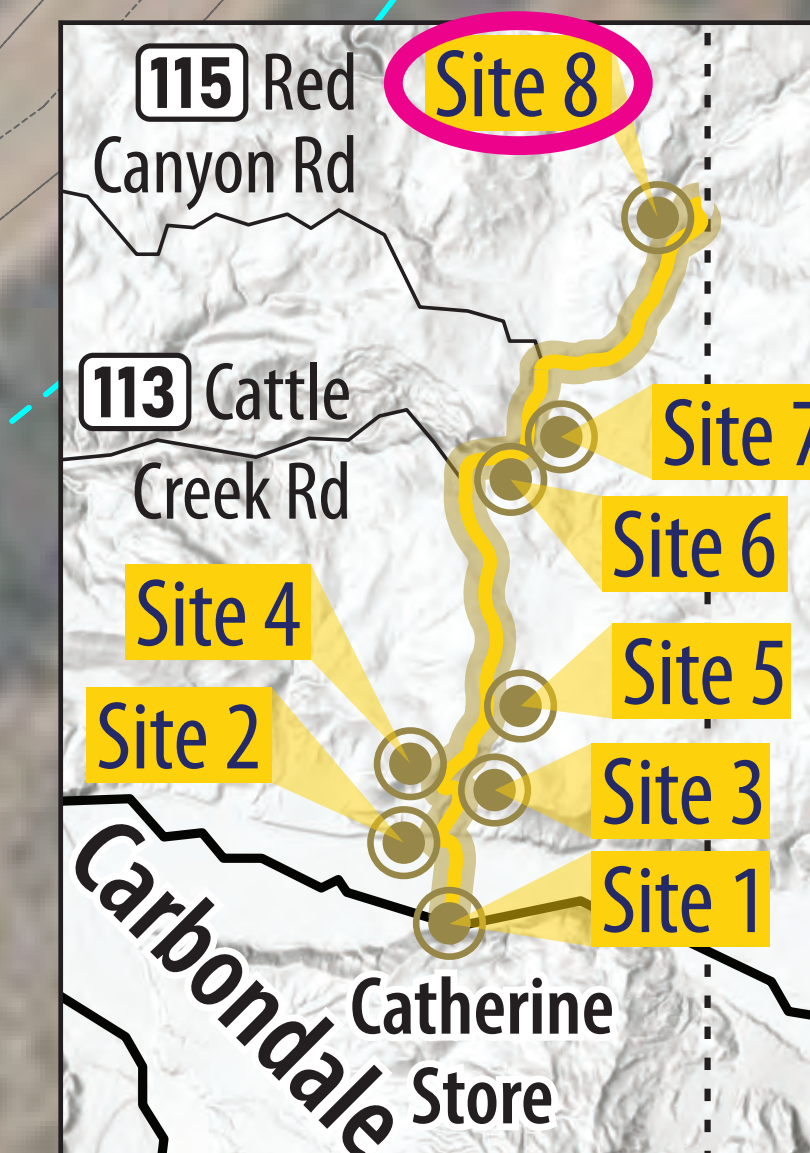
- **Safety**
 - Moderate improvement with increased sight distance around curve
- **Respecting Corridor Character**
 - No expected permanent ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - General agreement with benefits of proposed changes, but concern with speeds

CONCEPTUAL COST

- \$600 - 700k

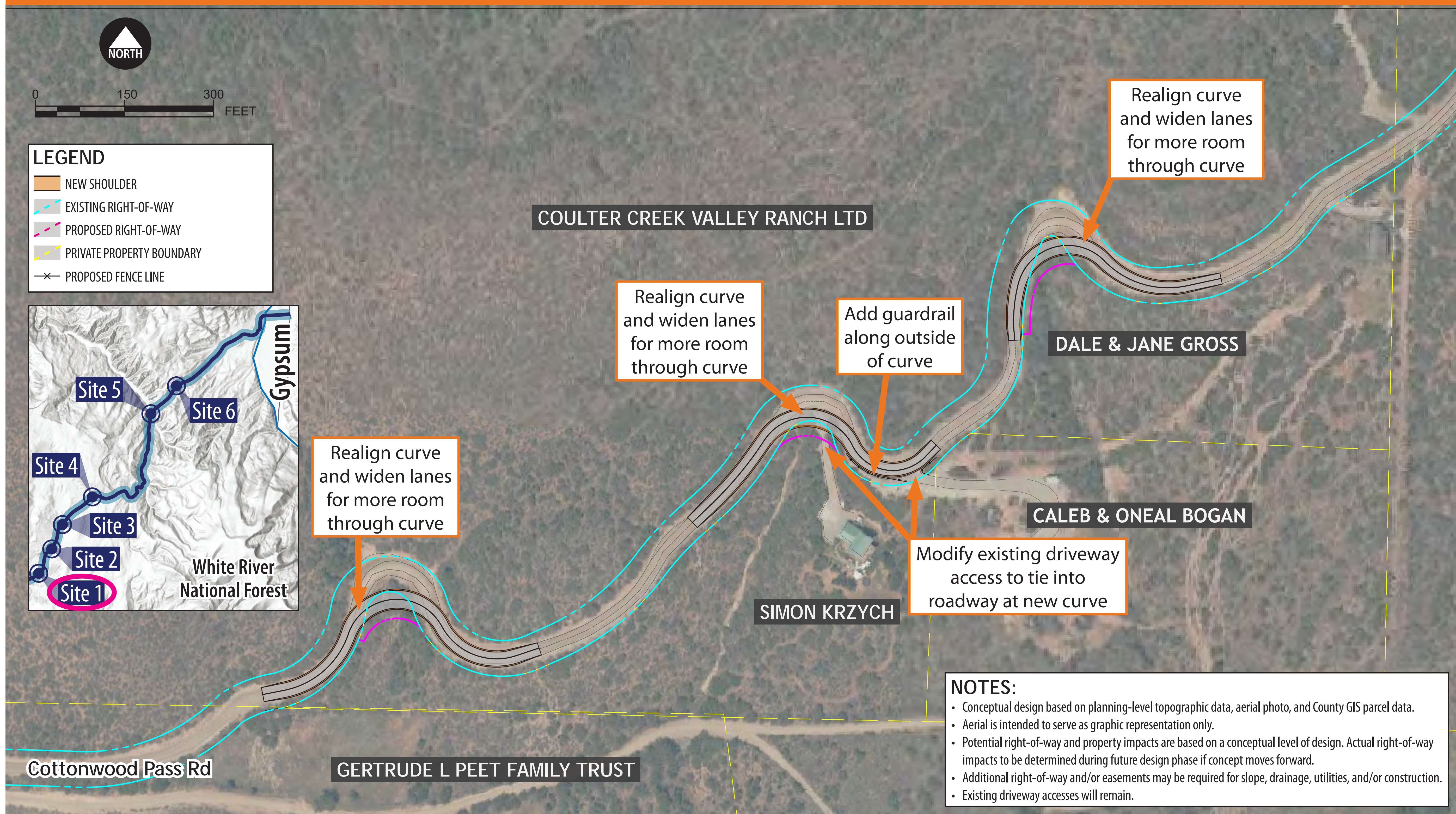
NOTES:

- 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



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
 - Preference for option to minimize property impacts and speeds

CONCEPTUAL COST

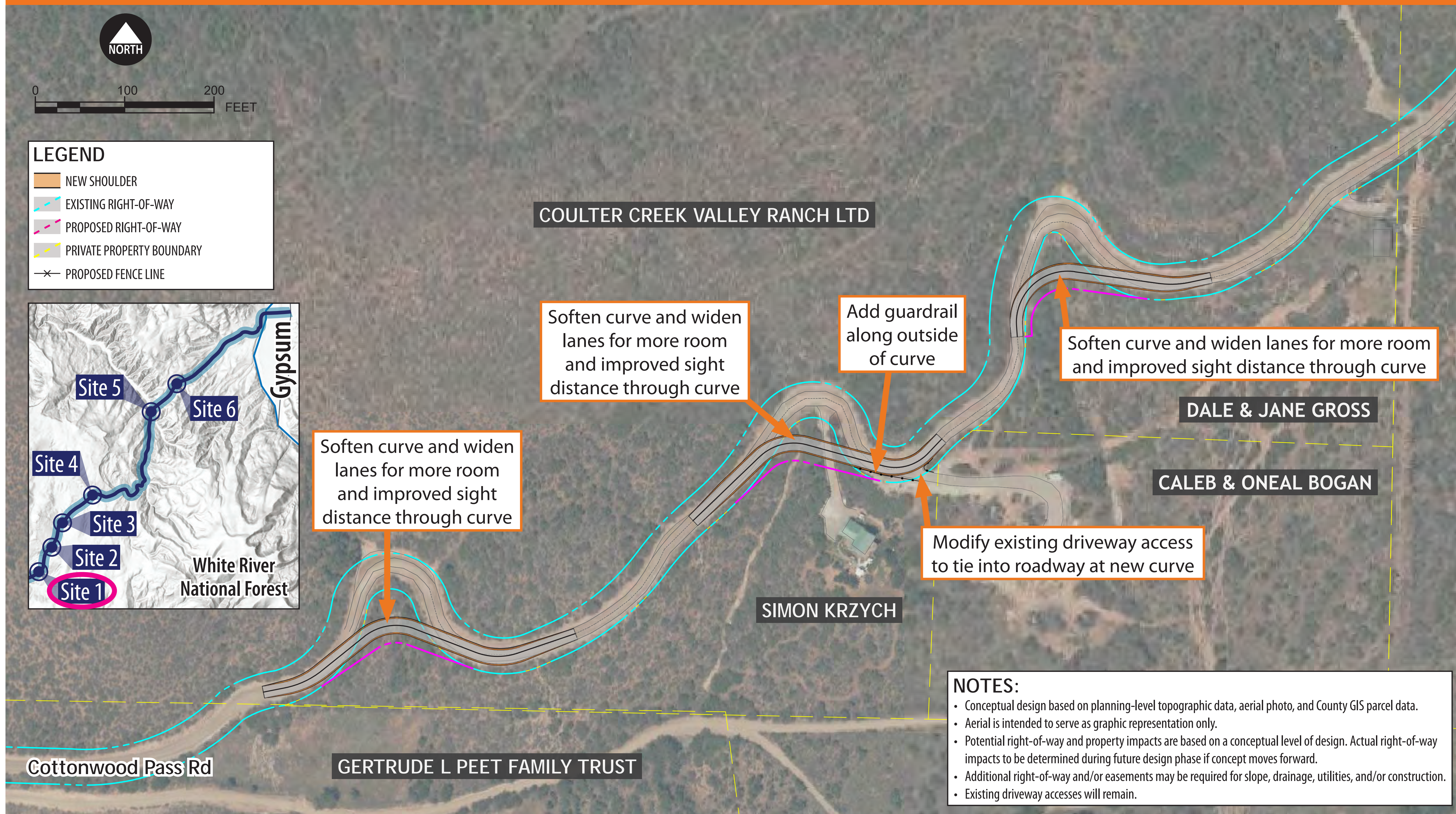
- **\$900k - 1.1 M**

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 - Option 2



INITIAL EVALUATION DIFFERENTIATORS

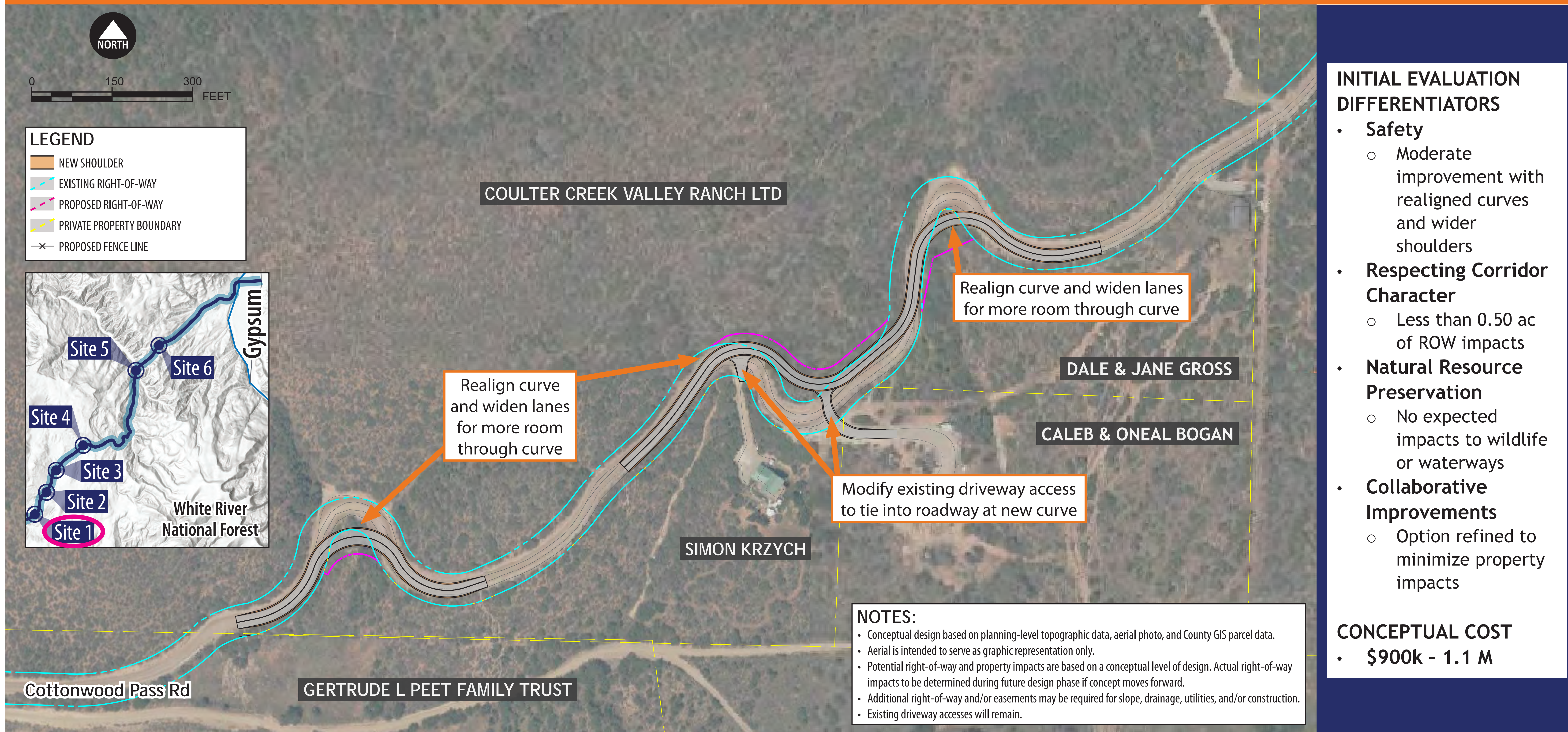
- **Safety**
 - Moderate improvement with realigned curves and wider shoulders
- **Respecting Corridor Character**
 - 0.50 - 1.0 ac of ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - Strong concern about property impacts
 - General agreement with benefits of proposed changes

CONCEPTUAL COST

- **\$900k - 1.1 M**

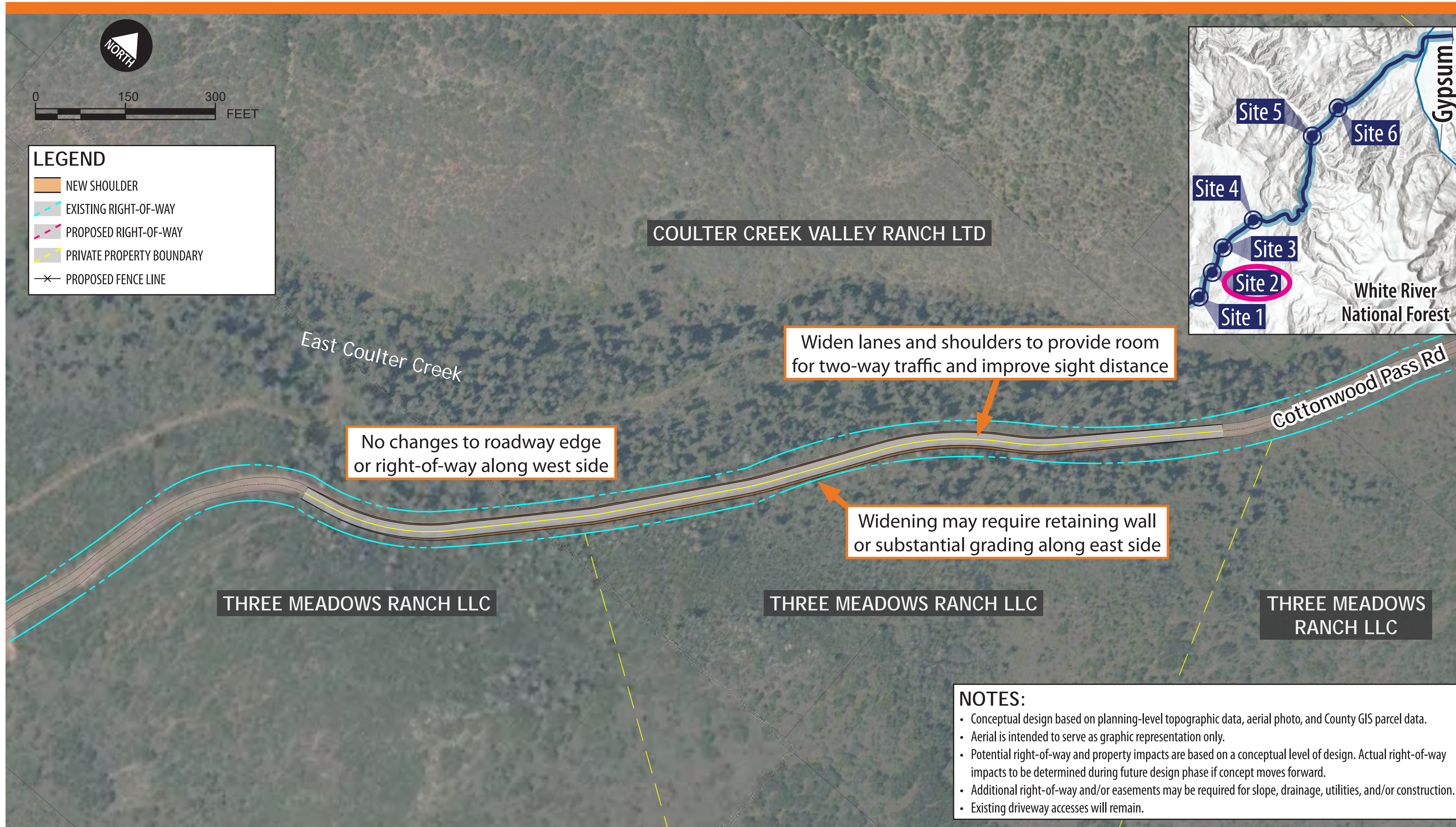


Eagle County Site 1 - Option 3





Eagle County Site 2 - Option 1



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 and surrounding habitat
 - General agreement with benefits of proposed changes

CONCEPTUAL COST

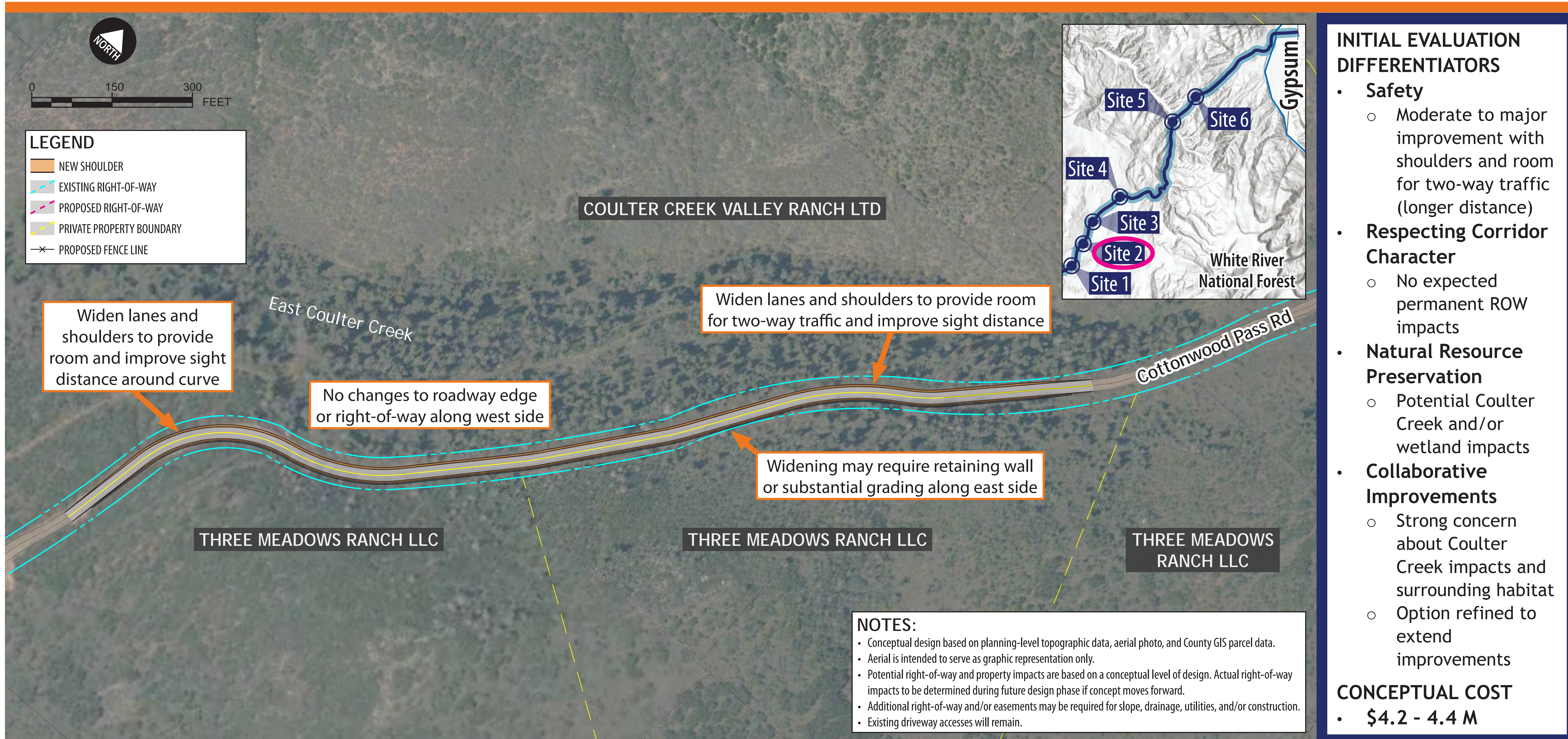
- **\$3.7 - 4.0 M**

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 - Option 2



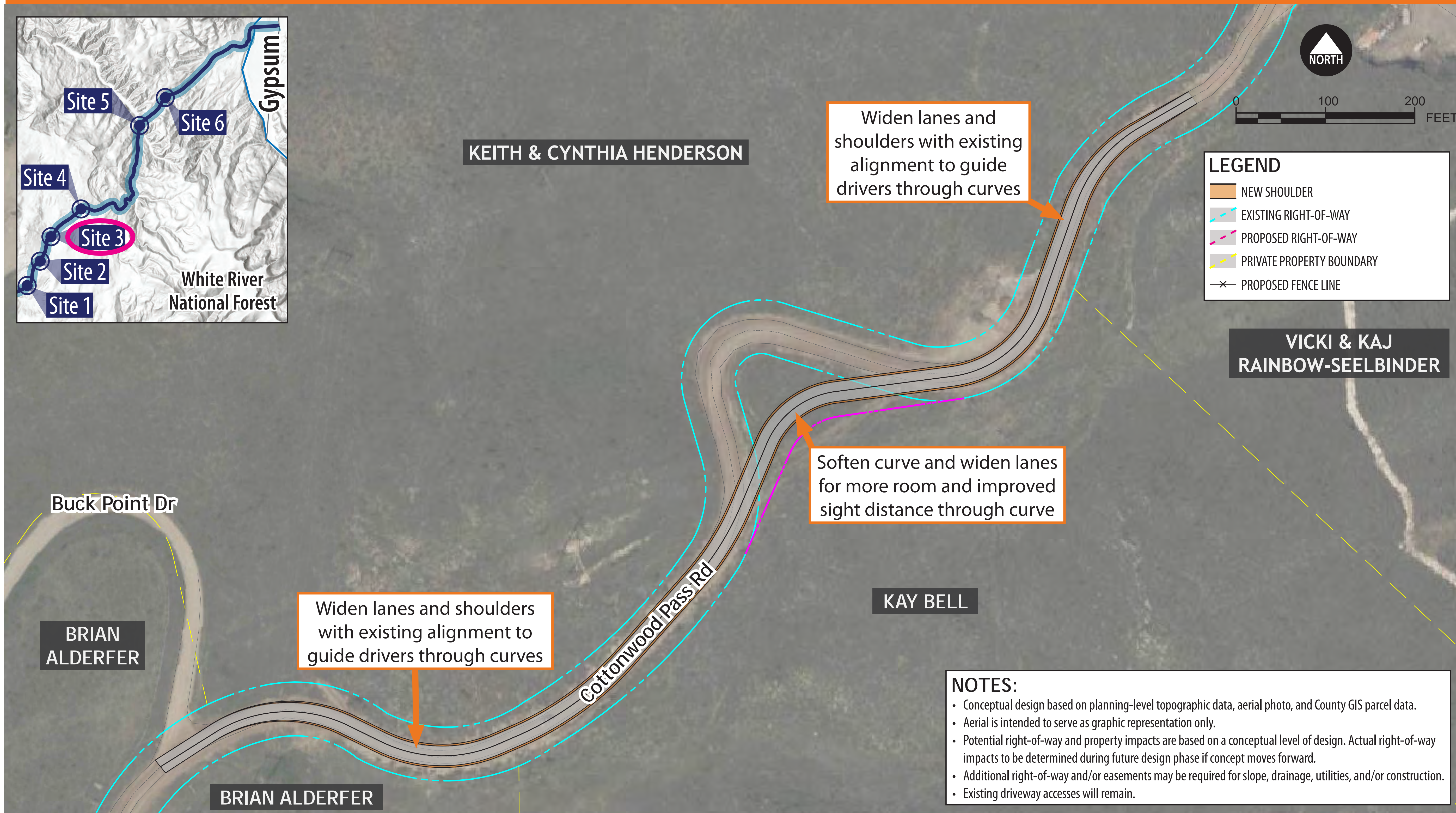
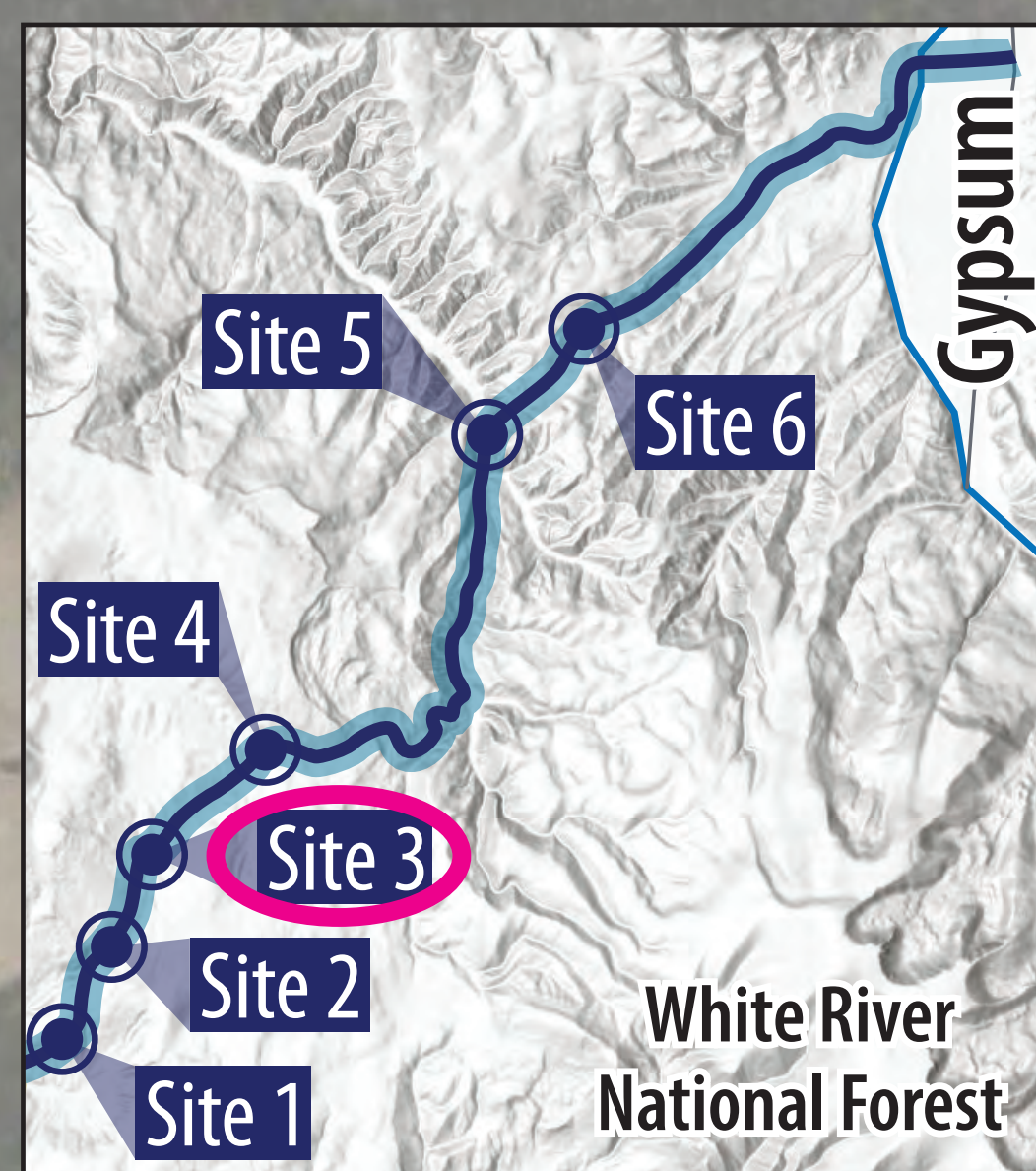
- INITIAL EVALUATION DIFFERENTIATORS**
- **Safety**
 - Moderate to major improvement with shoulders and room for two-way traffic (longer distance)
 - **Respecting Corridor Character**
 - No expected permanent ROW impacts
 - **Natural Resource Preservation**
 - Potential Coulter Creek and/or wetland impacts
 - **Collaborative Improvements**
 - Strong concern about Coulter Creek impacts and surrounding habitat
 - 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.



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 benefits of proposed changes

CONCEPTUAL COST

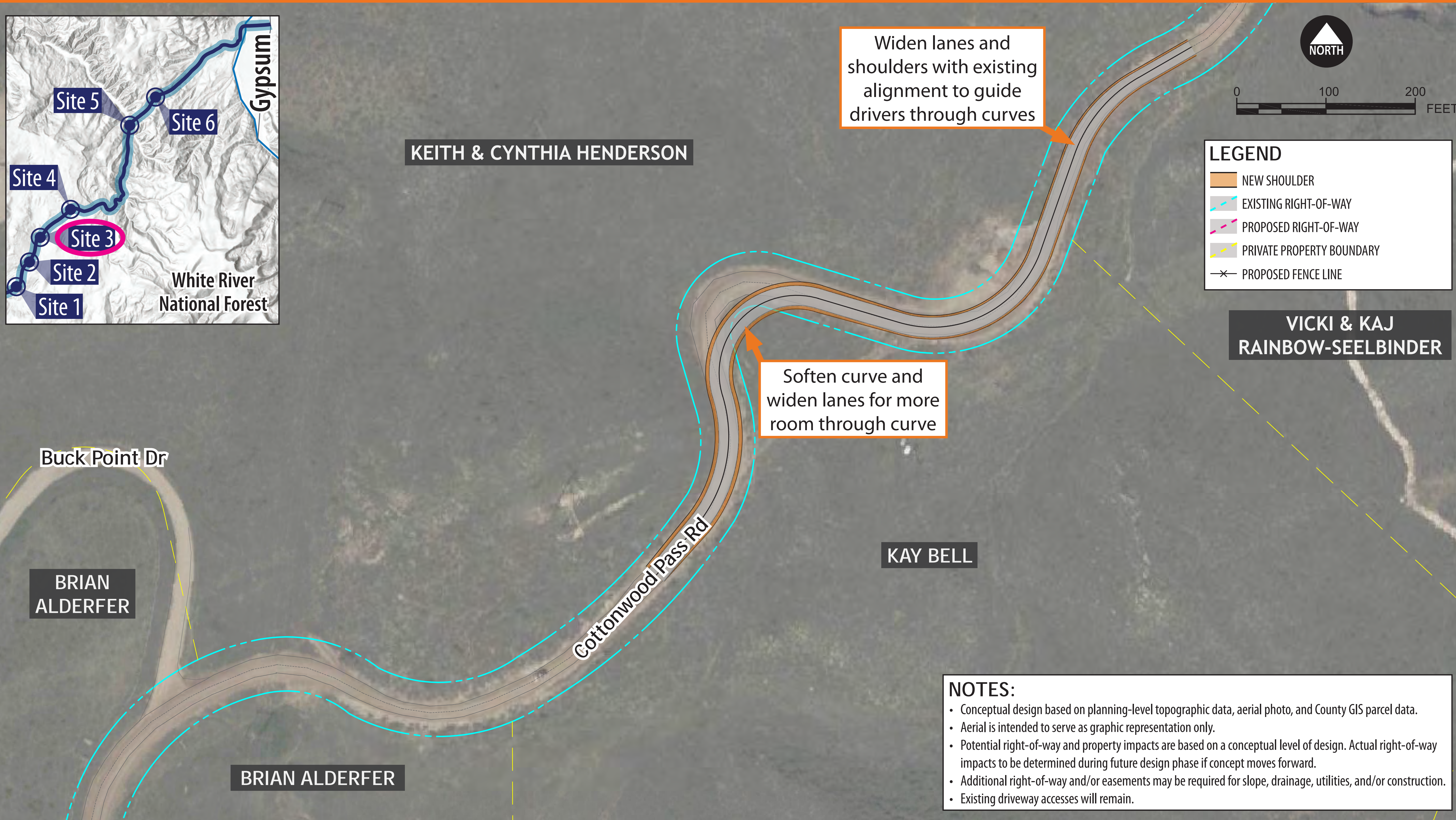
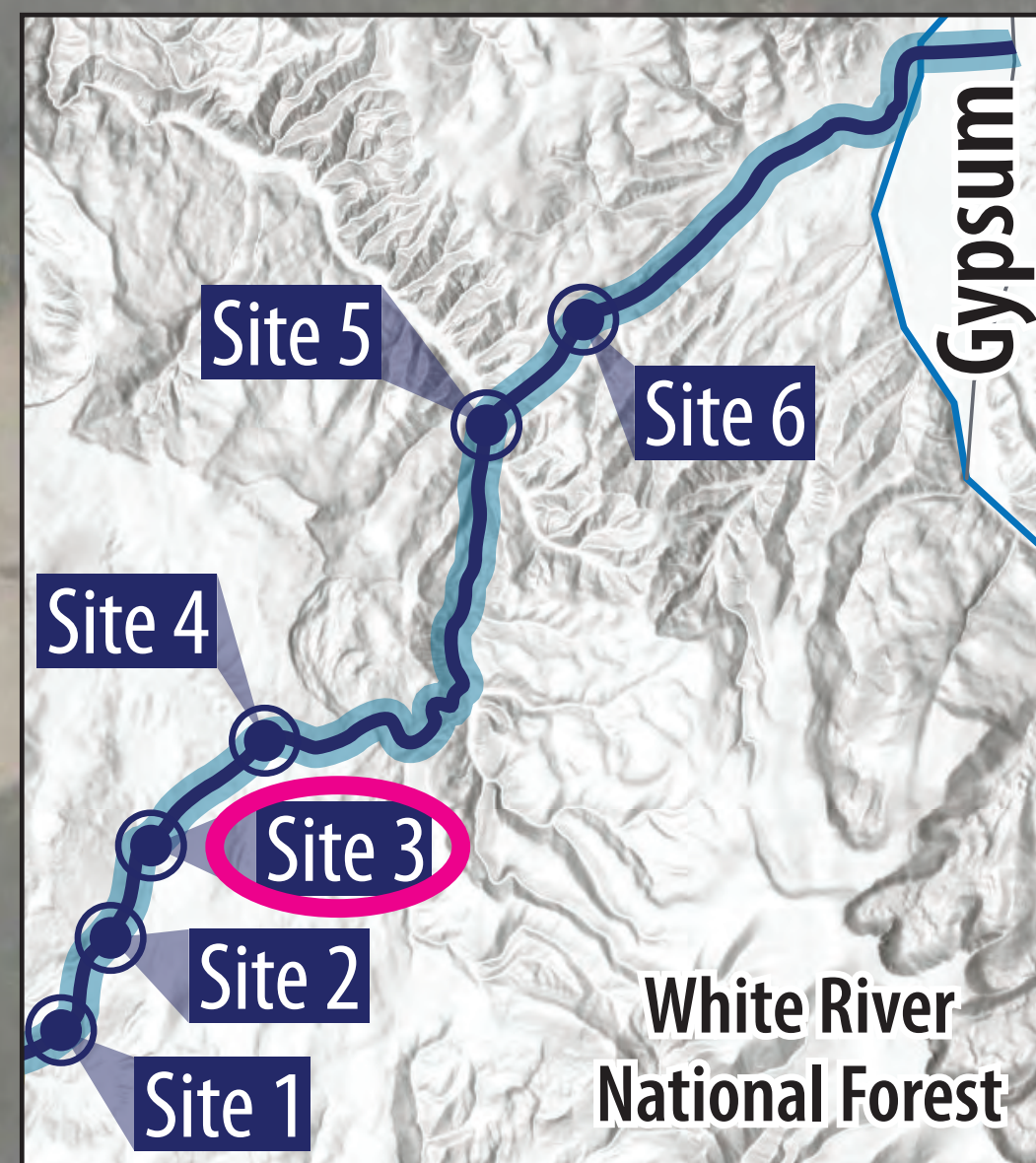
- \$1.2 - 1.4M

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

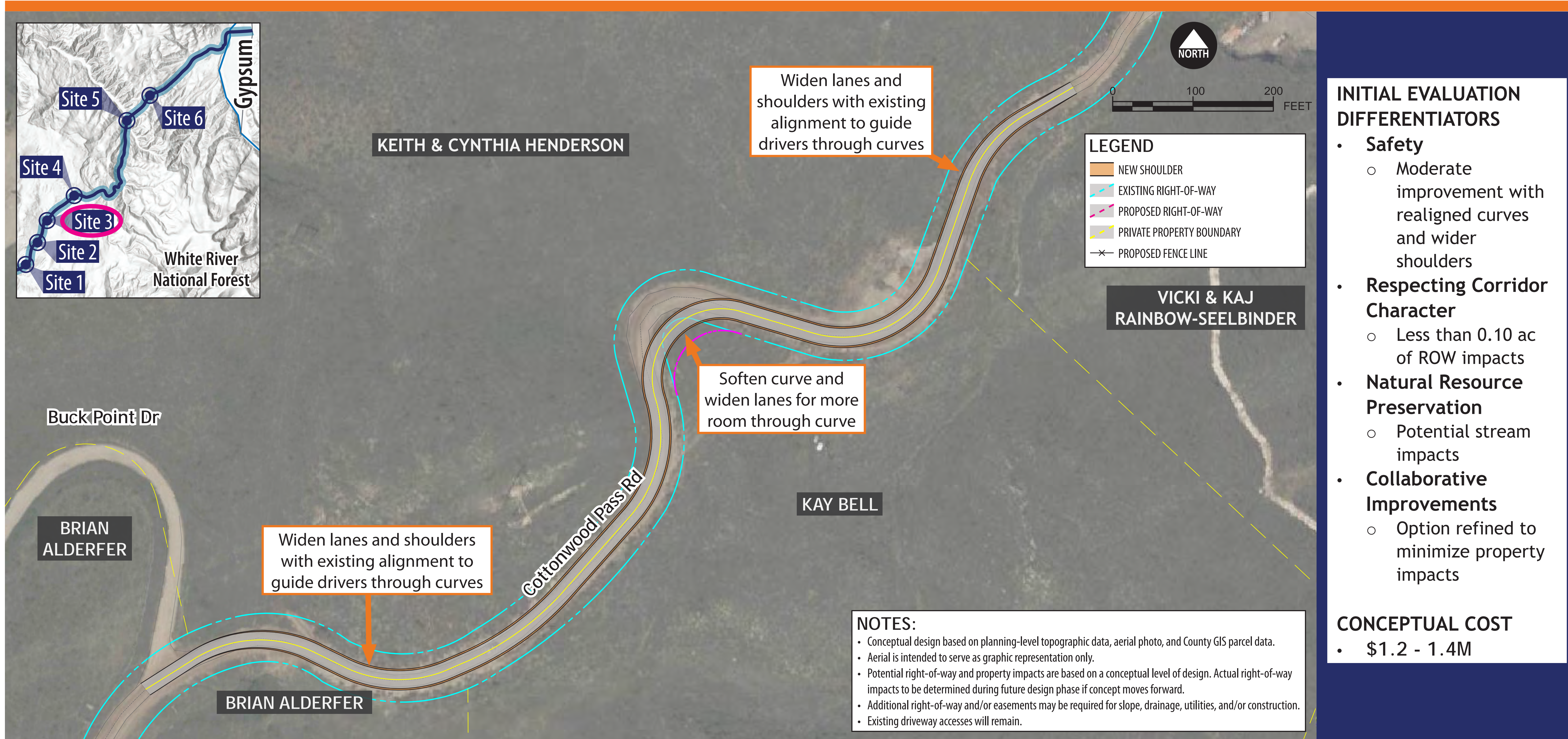
- \$550 - 700k

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 3 - Option 3

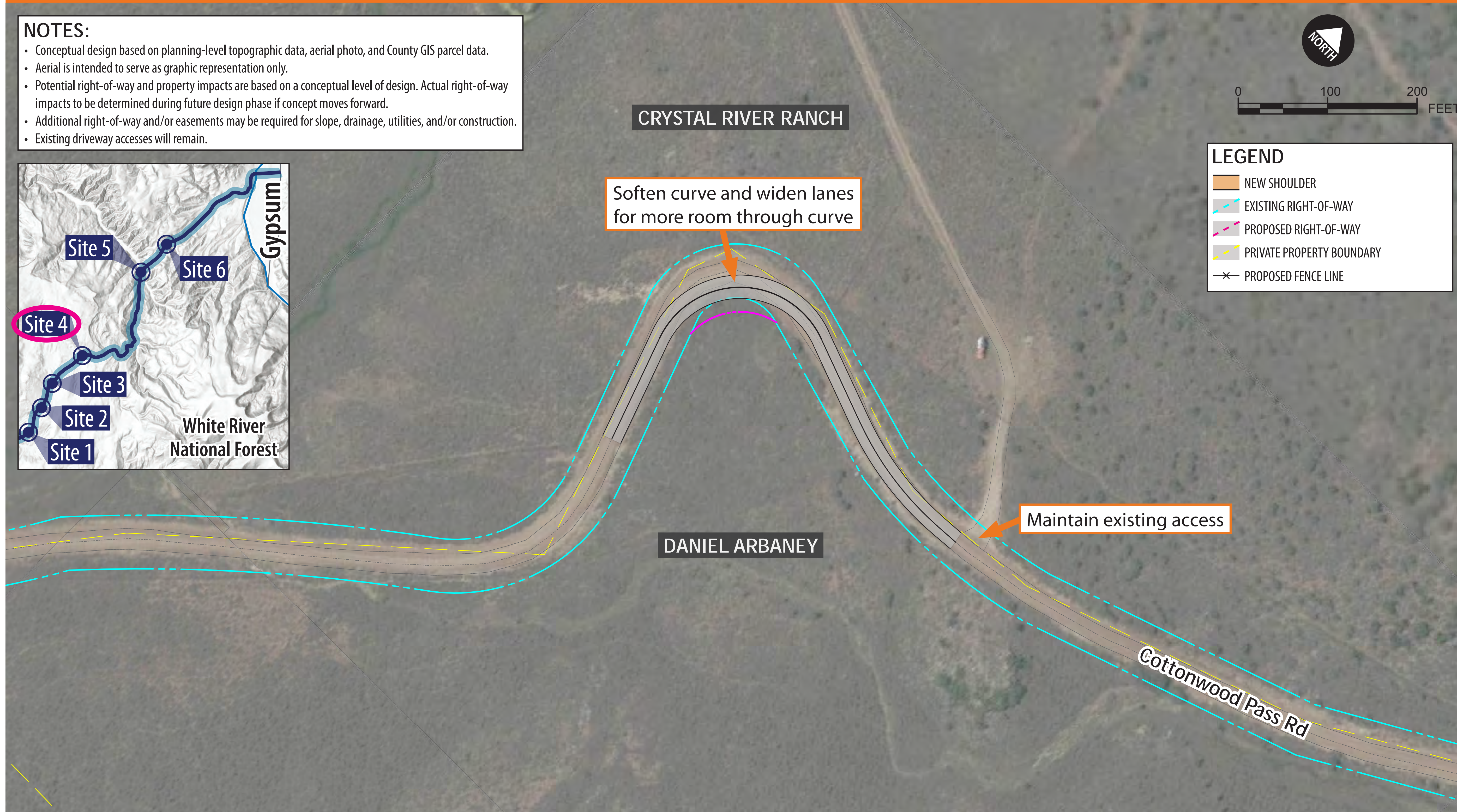
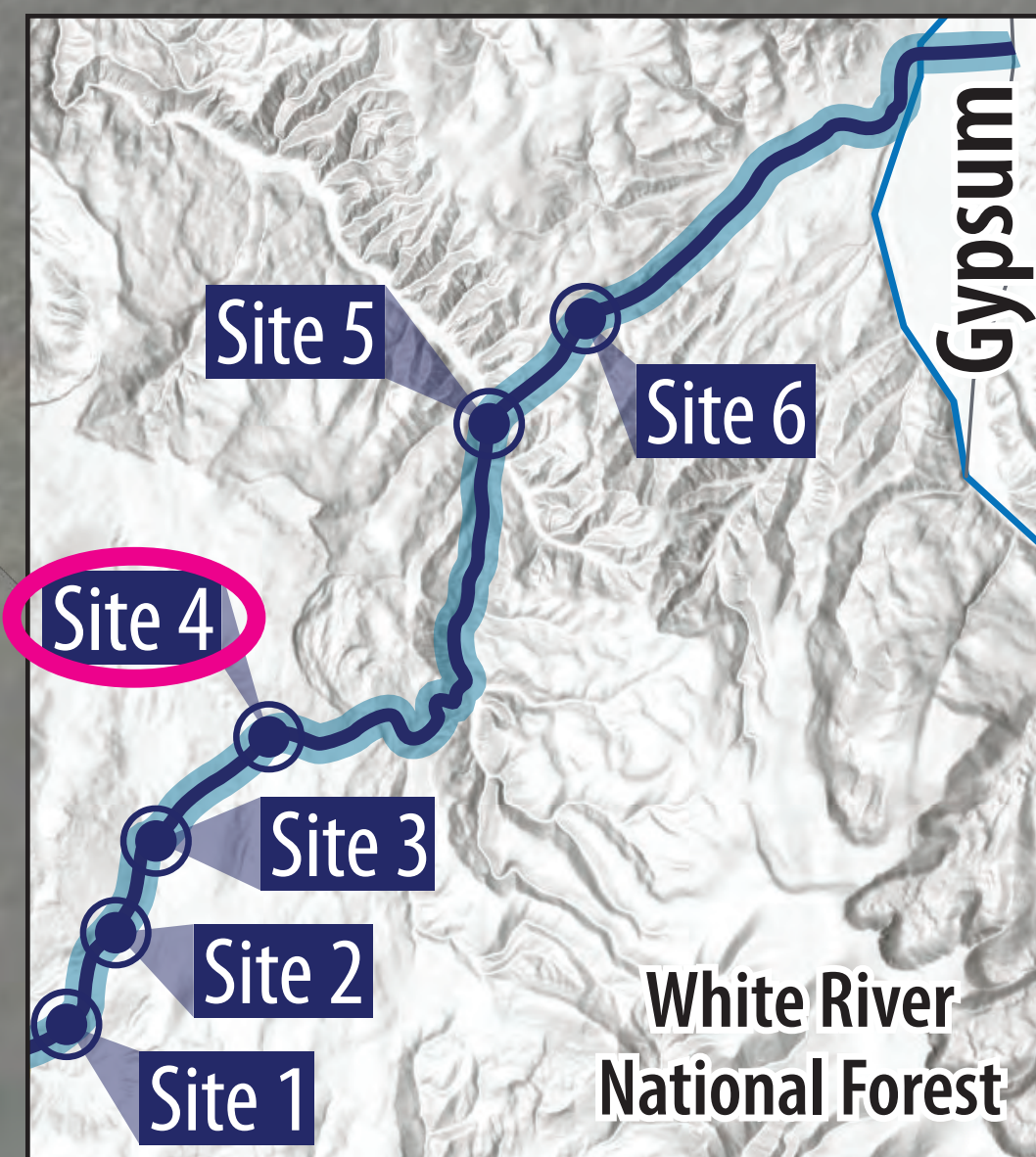




Eagle County Site 4

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

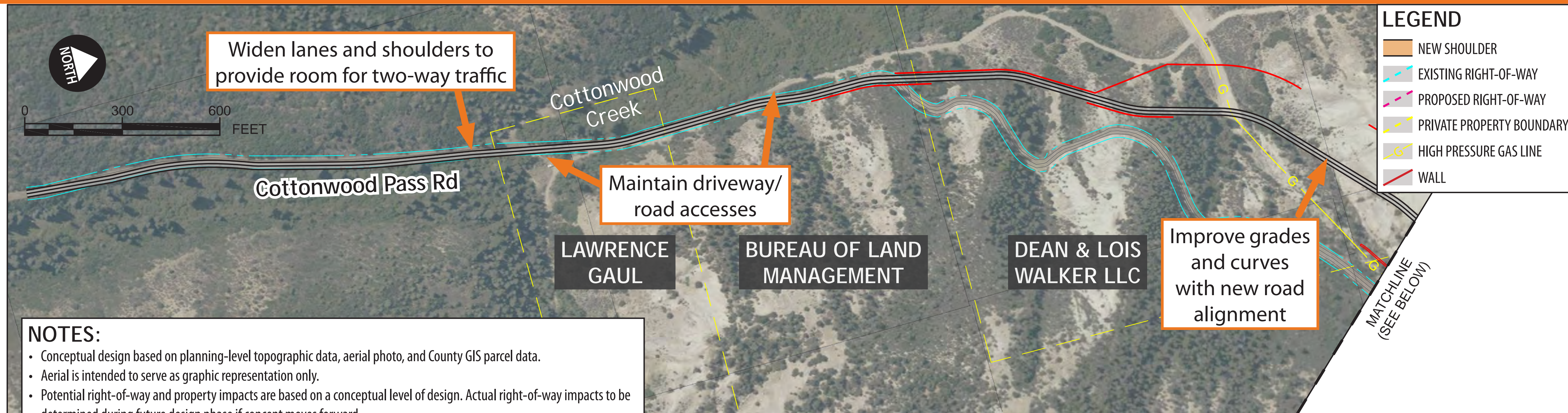
- **Safety**
 - Minor improvement with modifications and more room through curve
- **Respecting Corridor Character**
 - Less than 0.10 ac of ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - Concern with increased speeds and unnecessary change

CONCEPTUAL COST

- \$200 - 250k

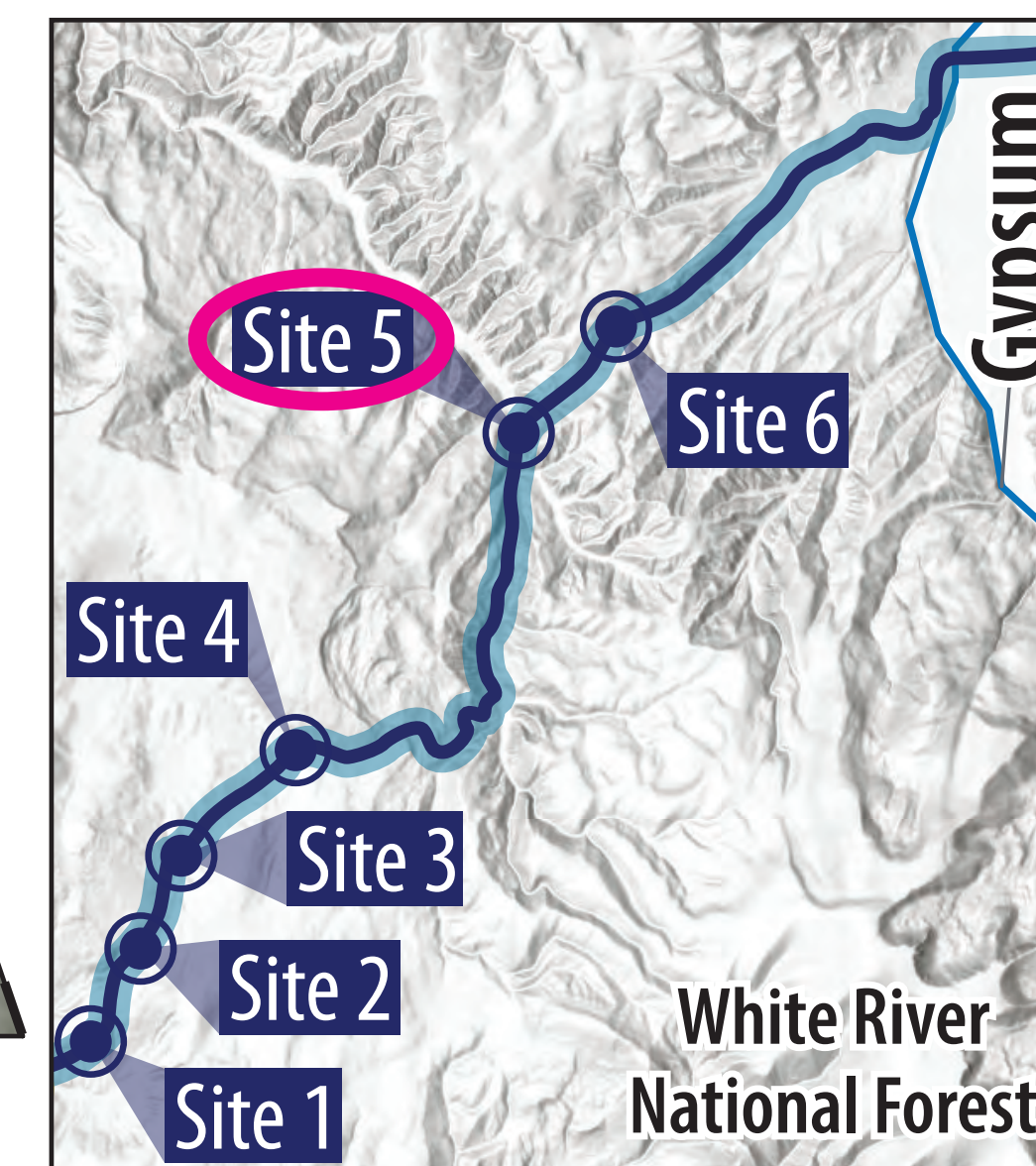
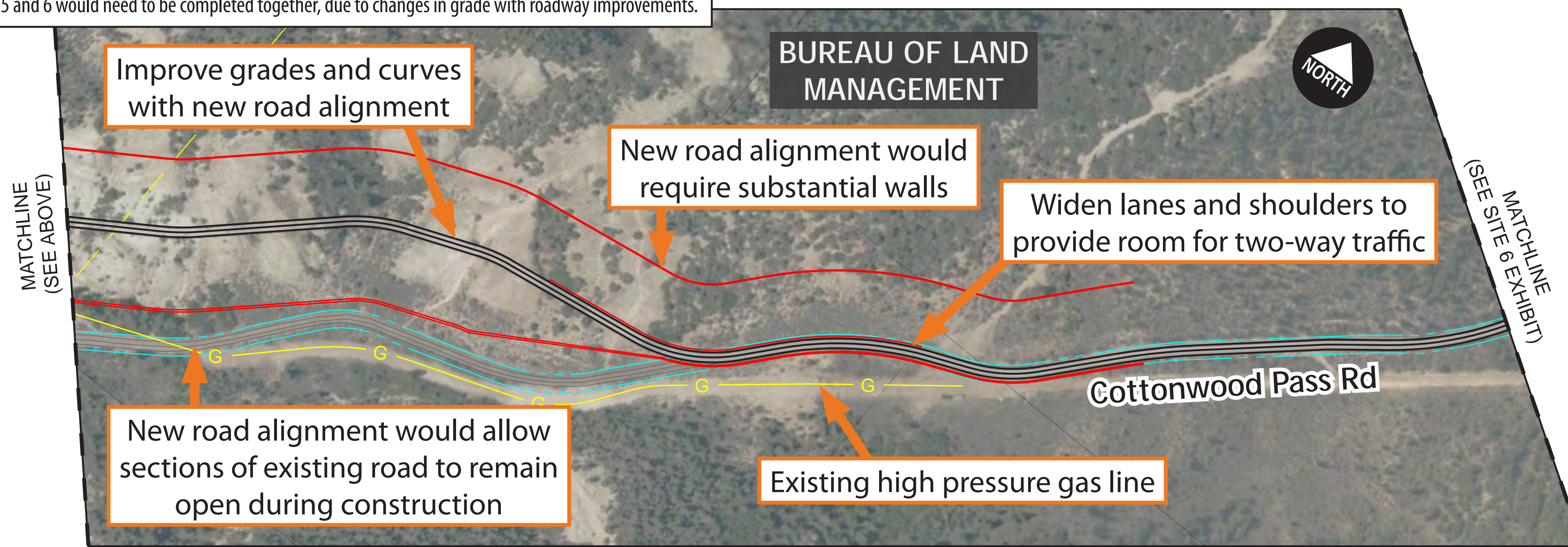


Eagle County Site 5 - Option 1



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

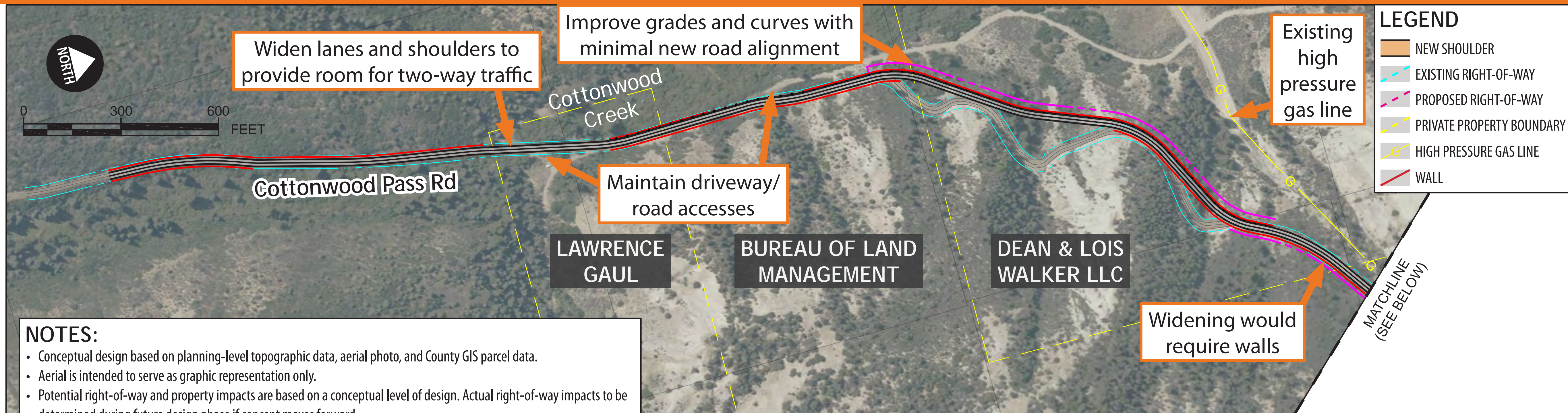
- **Safety**
 - Major improvement with realigned curves, reduced grades, and room for two-way traffic
- **Respecting Corridor Character**
 - About 27 - 28 ac of ROW impacts
- **Natural Resource Preservation**
 - Potential Cottonwood Creek and/or wetland impacts
- **Collaborative Improvements**
 - Allows use of existing road during construction
 - Strong concern for property impacts
 - Concern for expense

CONCEPTUAL COST

- \$350 - 380 M



Eagle County Site 5 - Option 2

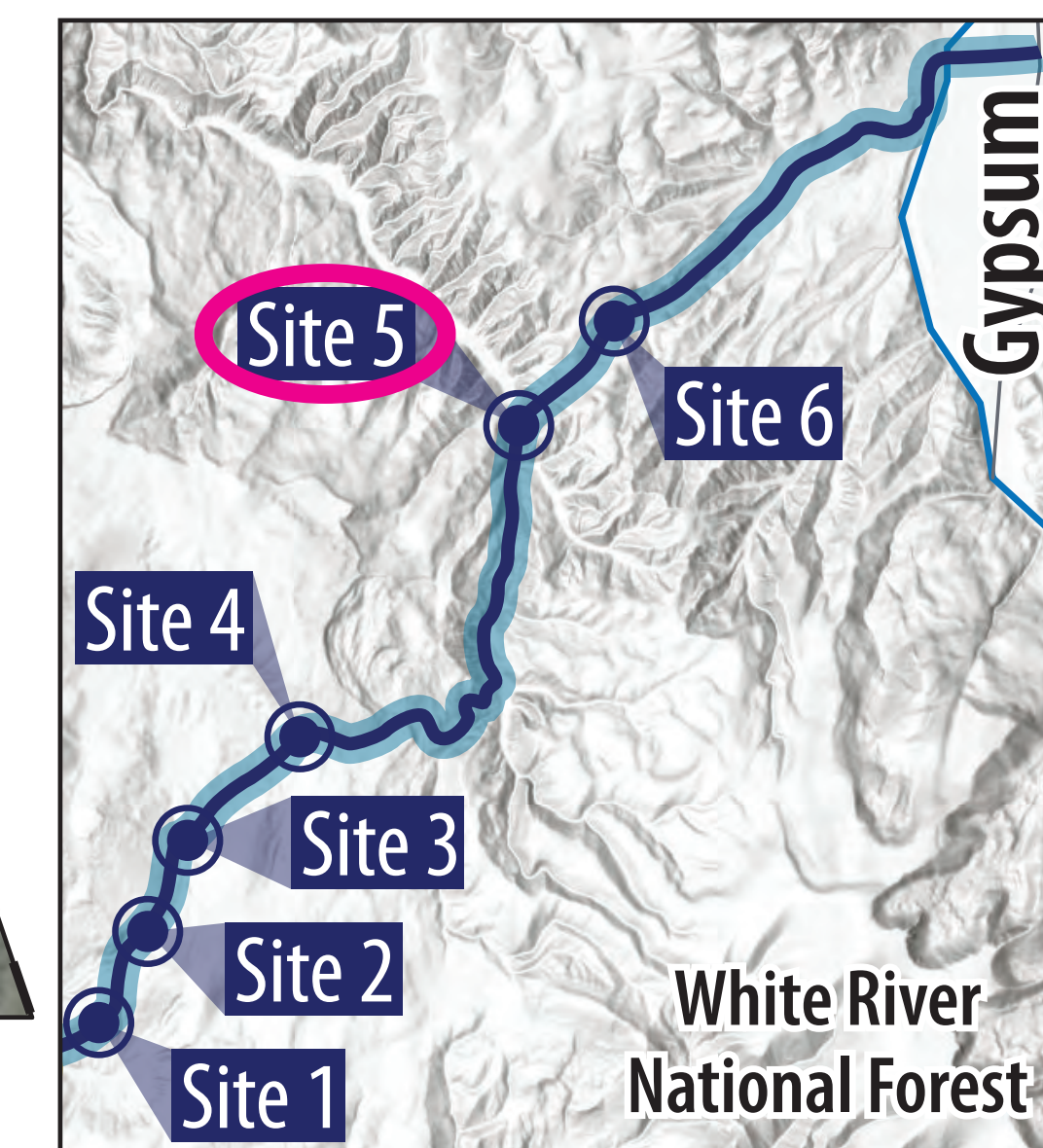
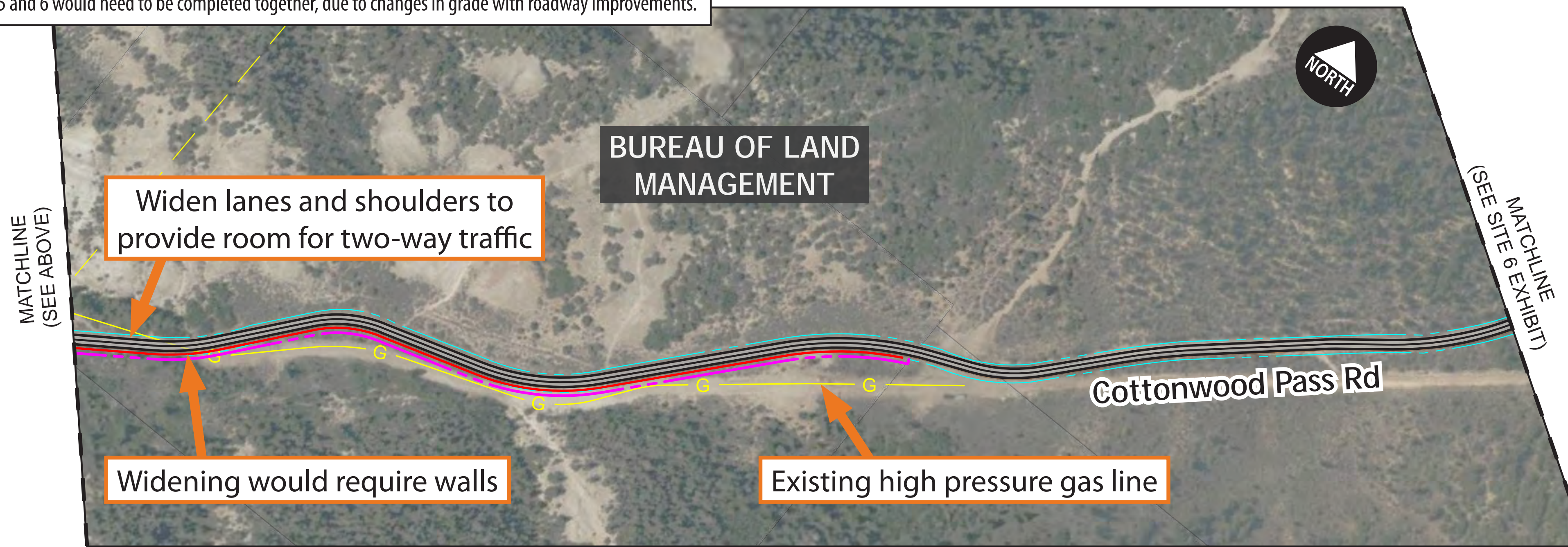


LEGEND

- NEW SHOULDER
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PRIVATE PROPERTY BOUNDARY
- HIGH PRESSURE GAS LINE
- WALL

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

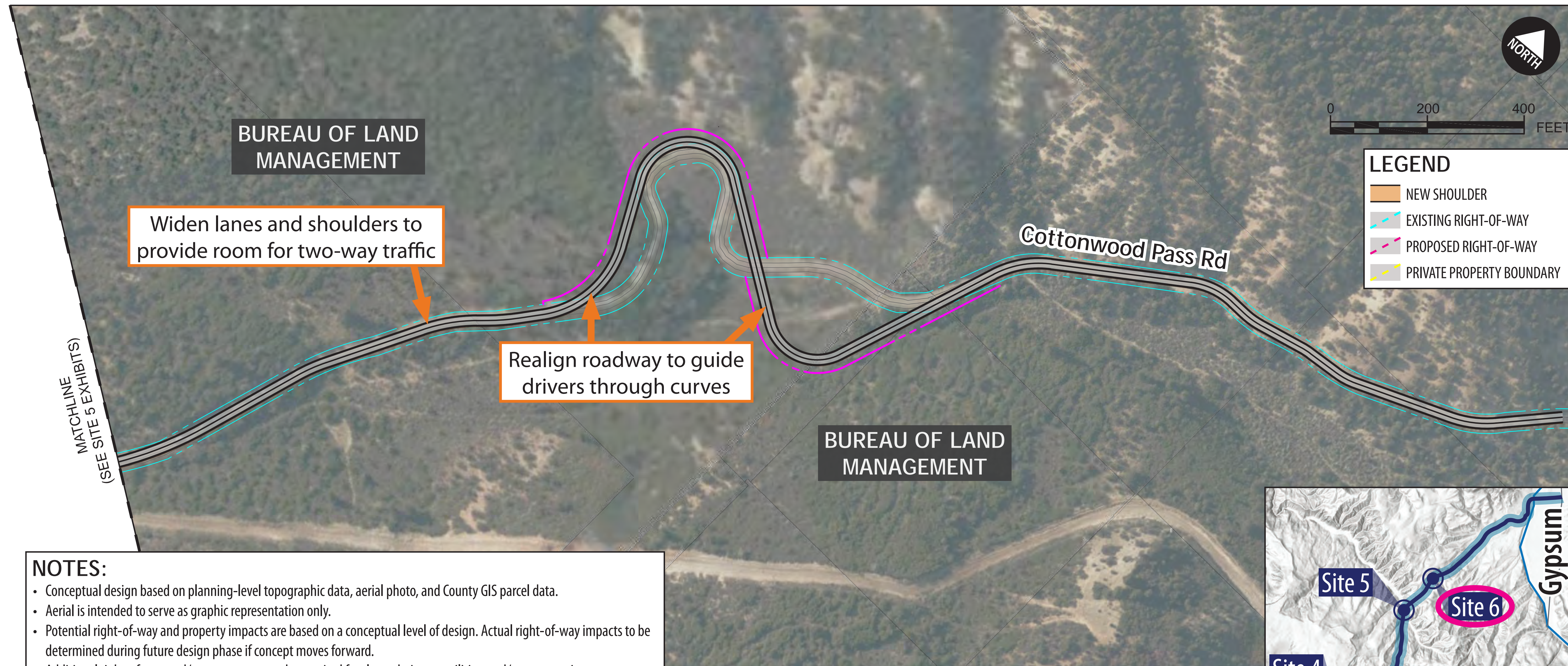
- **Safety**
 - Moderate improvement with realigned curves and room for two-way traffic
- **Respecting Corridor Character**
 - About 2.5 - 3.0 ac of ROW impacts
- **Natural Resource Preservation**
 - Potential Cottonwood Creek and/or wetland impacts
- **Collaborative Improvements**
 - Agreement with benefits of proposed changes
 - Concern for property impacts
 - Concern for expense

CONCEPTUAL COST

• \$55 - 59 M

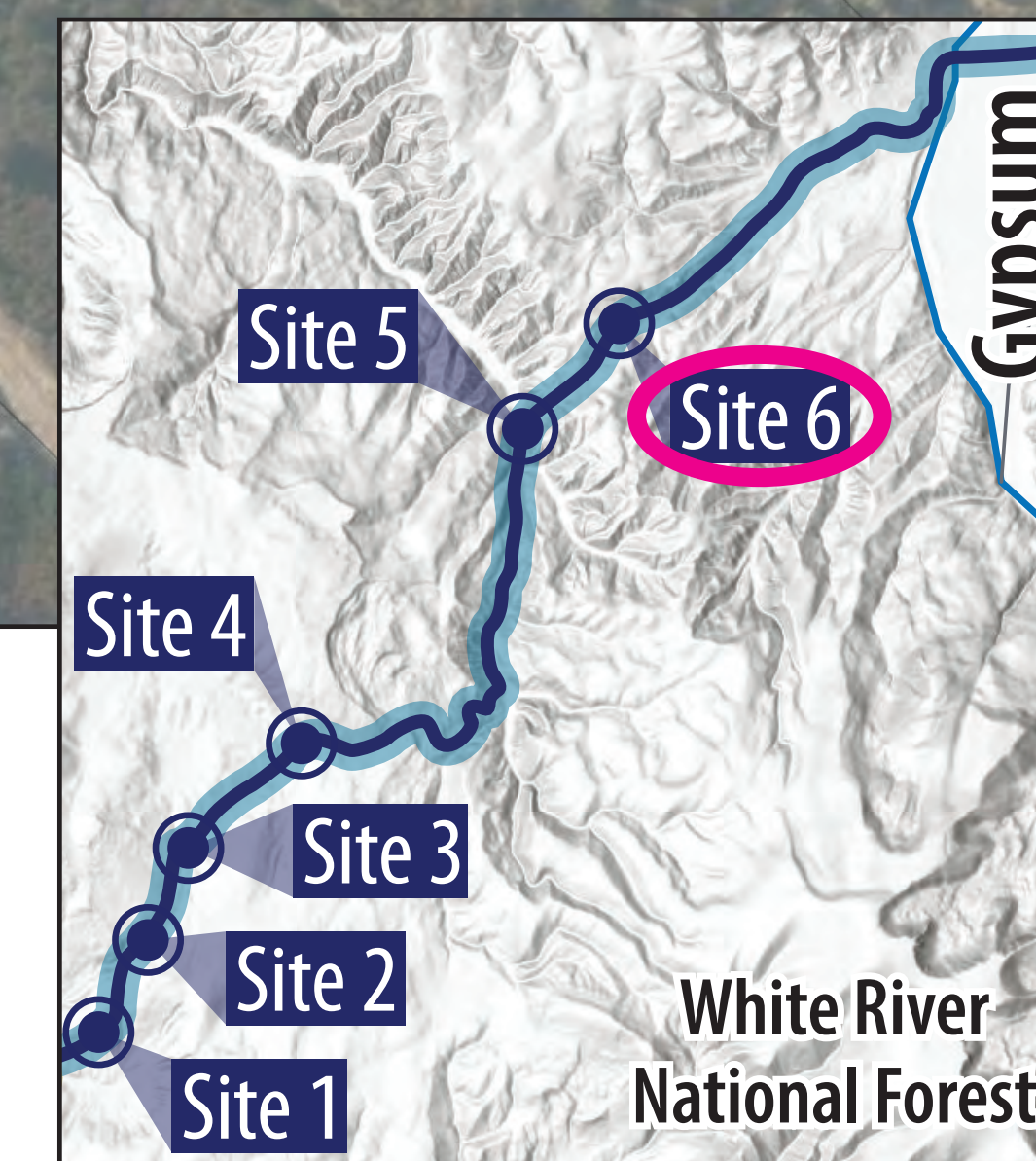


Eagle County Site 6



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**
 - No expected permanent private property ROW impacts
- **Natural Resource Preservation**
 - No expected impacts to wildlife or waterways
- **Collaborative Improvements**
 - Agreement with benefits of proposed changes

CONCEPTUAL COST

- Included with Site 5 (to be constructed together due to grade changes)

Draft Evaluation of Garfield County Design Options

GARFIELD COUNTY SITE 1

Adding a dedicated right turn lane for southbound Catherine Store Road is being considered to 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. This project would improve safety by reducing queue lengths and conflicts at the signal.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – NEW SOUTHWEST RIGHT TURN LANE
Core Value: Safety	
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
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
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
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$300,000 - \$350,000

GARFIELD COUNTY SITE 2

Two options are being 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.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION EVALUATION	
	DESIGN OPTION 1 – REALIGNED CURVE WITH RETAINING WALLS	DESIGN OPTION 2 – MODIFIED CURVE WITH GRADING
Core Value: Safety		
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve to guide drivers through curve Max grades reduced from 10% to less than 5%	Moderate improvement in safety with modified curve and widened shoulders for more room through curve Minimal change in grades (<0.5%)
Core Value: Respecting Corridor Character		
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
Core Value: Natural Resource Preservation		
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
Core Value: Collaborative Improvements		
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$1.4 - \$1.5 Million	\$600,000 - \$700,000

GARFIELD COUNTY SITE 3

Road modifications are being considered to 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.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED SHOULDERS
Core Value: Safety	
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%)
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unnamed) No federal or state-listed T&E species habitat
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$1.0 - \$1.1 M

GARFIELD COUNTY SITE 4

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. Guardrail may be added along the outside of the curve to direct errant vehicles.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED SHOULDERS
Core Value: Safety	
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve and widened shoulders for more room through curve Max grades reduced from over 10% to 8.5%
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$1.3 - \$1.4 M

GARFIELD COUNTY SITE 5

Road modifications are being considered to 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 right-of-way acquisition. The increased sight distance will improve visibility for drivers and bicyclists through the curve.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – HILLSIDE GRADING
Core Value: Safety	
Changes to vehicular safety concerns at site	Moderate improvement in safety with increased sight distance around curve Minimal change in grades (<0.5%)
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands No federal or state-listed T&E species habitat
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$1.3 - \$1.4 M

GARFIELD COUNTY SITE 6

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.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – PANORAMA DR INTERSECTION REALIGNMENT
Core Value: Safety	
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%
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unnamed) Potentially suitable habitat for federal T&E species
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$500,000 - \$600,000

GARFIELD COUNTY SITE 7

Two options are being 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.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION EVALUATION	
	DESIGN OPTION 1 – REALIGNED AND SHIFTED INTERSECTION	DESIGN OPTION 2 – REALIGNED AND SHIFTED INTERSECTION
Core Value: Safety		
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%)
Core Value: Respecting Corridor Character		
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
Core Value: Natural Resource Preservation		
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
Core Value: Collaborative Improvements		
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$3.0 - \$3.2 M	\$1.7 - \$1.8 M

GARFIELD COUNTY SITE 8

Road modifications are being considered to 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 right-of-way acquisition. The increased sight distance will improve visibility for drivers and bicyclists through the curve.

Design Option Evaluation

CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – HILLSIDE GRADING
Core Value: Safety	
Changes to vehicular safety concerns at site	Moderate improvement in safety with increased sight distance around curve Minimal change in grades (<0.5%)
Core Value: Respecting Corridor Character	
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
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands Potentially suitable habitat for federal T&E species
Core Value: Collaborative Improvements	
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
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$600,000 - \$700,000

Draft Evaluation of Eagle County Design Options

EAGLE COUNTY SITE 1

Road modifications are being considered to 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. A refined option (Option 3) realigns 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.

Design Option Evaluation			
CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – SOFTEN CURVES	DESIGN OPTION 2 – REALIGN AND SOFTEN CURVES	DESIGN OPTION 3 – REALIGN AND SOFTEN CURVES
Core Value: Safety			
Changes to vehicular safety concerns at site	Minor improvement in safety with minor curve softening and widened shoulders through curves. Max grade at middle curve increased by <0.5%.	Moderate improvement in safety with realigned curves and widened shoulders through curves. Max grade at middle curve reduced by <0.5%.	Moderate improvement in safety with combination of softening and widened shoulders through curves. Max grade at middle curve increased by <1%.
Core Value: Respecting Corridor Character			
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.
Core Value: Natural Resource Preservation			
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.
Core Value: Collaborative Improvements			
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 and speed increase. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$900,000 - \$1.1 Million	\$900,000 - \$1.1 Million	\$900,000 - \$1.1 Million

DRAFT Recommendation: Design Option 3 – Realign and Soften Curves

EAGLE COUNTY SITE 2

Road modifications are being considered to 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. A refined option (Option 2) extends improvements further south.

Design Option Evaluation		
CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – WIDENED LANES AND SHOULDERS	DESIGN OPTION 2 – FURTHER WIDENED LANES AND SHOULDERS
Core Value: Safety		
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.
Core Value: Respecting Corridor Character		
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.
Core Value: Natural Resource Preservation		
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.
Core Value: Collaborative Improvements		
Concerns and support from adjacent property owners	Strong concerns for impacts to Coulter Creek and surrounding habitat.	Strong concerns 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. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$3.7 - \$4.0 M	\$4.2 - \$4.4 M

DRAFT Recommendation: Design Option 2 – Further Widened Lanes and Shoulders

EAGLE COUNTY SITE 3

Road modifications are being considered to 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. A refined option (Option 3) minimizes property impacts at the curve, but extends the improvements through Buck Point Drive.

Design Option Evaluation			
CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION 1 – REALIGN CURVES	DESIGN OPTION 2 – SOFTEN CURVES	DESIGN OPTION 3 – FURTHER SOFTEN CURVES
Core Value: Safety			
Changes to vehicular safety concerns at site	Moderate improvement in safety with realigned curve and widened shoulders. Max grades reduced from 7% to 5.5%.	Minor improvement in safety with minor curve softening and widened shoulders. Max grades reduced from 7% to almost 6%.	Moderate improvement in safety with softened curve and widened shoulders. Max grades reduced from 7% to almost 6%.
Core Value: Respecting Corridor Character			
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.
Core Value: Natural Resource Preservation			
Potential impacts to wildlife habitat and waterways	Potential jurisdictional mapped stream (unarmad) and wetlands. No federal or state-listed T&E species habitat.	Potential jurisdictional mapped stream (unarmad) and wetlands. No federal or state-listed T&E species habitat.	Potential jurisdictional mapped stream (unarmad) and wetlands. No federal or state-listed T&E species habitat.
Core Value: Collaborative Improvements			
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. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$1.2 - \$1.4 M	\$550,000 - \$700,000	\$1.2 - \$1.4 M

DRAFT Recommendation: Design Option 3 – Further Soften Curves

EAGLE COUNTY SITE 4

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

Design Option Evaluation	
CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – MODIFIED CURVE WITH WIDENED LANES
Core Value: Safety	
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%).
Core Value: Respecting Corridor Character	
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.
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands. No federal or state-listed T&E species habitat.
Core Value: Collaborative Improvements	
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. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$200,000 - \$250,000

EAGLE COUNTY SITE 5

Road modifications are being considered to 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.

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
Core Value: Safety		
Changes to vehicular safety concerns at site	Major improvement in safety with reduced grades, improved curves, and room for two-way traffic. Max grades reduced from some areas above 20% to <15% and most areas <10%.	Moderate improvement in safety with reduced grades, improved curves, and room for two-way traffic. Max grades reduced from some areas above 20% to <15% and most areas <10%.
Core Value: Respecting Corridor Character		
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.
Core Value: Natural Resource Preservation		
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.
Core Value: Collaborative Improvements		
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. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	\$80 - \$80 M	\$5 - \$9 M

DRAFT Recommendation: Design Option 2 – Improved Grades and Curves

EAGLE COUNTY SITE 6

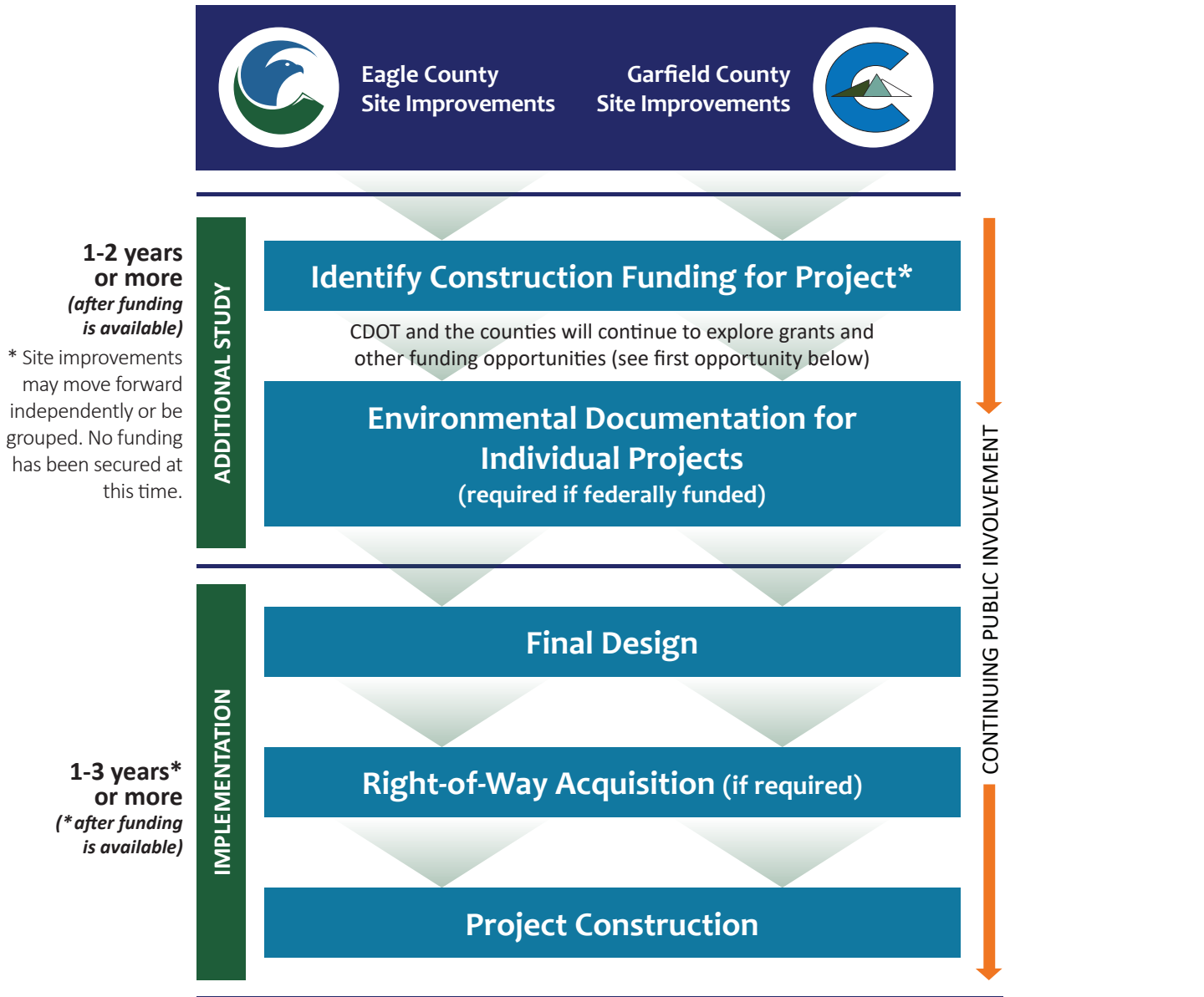
Road modifications are being considered to improve safety by realigning the road through the tight curve to guide drivers through the curves and widening lanes to provide more room for drivers through the area.

Design Option Evaluation	
CORE VALUE AND EVALUATION CRITERIA	DESIGN OPTION – ROAD REALIGNMENT THROUGH CURVES
Core Value: Safety	
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%.
Core Value: Respecting Corridor Character	
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.
Core Value: Natural Resource Preservation	
Potential impacts to wildlife habitat and waterways	No mapped streams or wetlands. No federal or state-listed T&E species habitat.
Core Value: Collaborative Improvements	
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. <small>T&E - Threatened and Endangered Species</small>
Conceptual Construction Cost Estimate: (not including right-of-way or easements)	Included with Site 5 (to be constructed together due to grade changes)



STEPS TO IMPLEMENTATION

This concept design project is the first of many steps required before these types of safety improvements would be constructed along Cottonwood Pass. Each county will independently determine if and when improvements within their jurisdiction will move forward.



RAISE Grant Opportunity

CDOT recently applied for a Federal RAISE (Rebuilding American Infrastructure with Sustainability and Equity) Grant. This is a competitive grant program, so funds are not yet guaranteed (awards are expected in Summer 2023). If the application is successful, \$3.5M RAISE funds would be applied towards a Cottonwood Pass project and CDOT would contribute an additional \$1.5M of resiliency funds, for a total of \$5M to cover design and construction of improvements for Eagle County Site 2.



PUBLIC MEETING #2

The Colorado Department of Transportation (CDOT) is supporting Eagle and Garfield counties to design safety improvements on county roads that traverse Cottonwood Pass between Gypsum and Colorado Highway 82. The counties identified 14 areas that need enhancements to make the county road safer and more functional as a vital travel connection between the local communities. This concept design project is the first of many steps required before these types of safety improvements would be constructed along Cottonwood Pass. Each county will independently determine next steps for improvements within their jurisdiction. No funding has been secured for further design and construction at this time.

Purpose of this Public Meeting

Exhibits are arranged around the room to present the project introduction, design options by site, draft evaluation of design options, and next steps. The purpose of this second round of public open house meetings is to gather feedback regarding the improvement options and the draft evaluation of the options. Let us know which improvements would best improve travel along this corridor. Input received will be documented in a final concept design report and considered by Eagle and Garfield counties as they determine if and when improvements at each project site will move forward. These are the final public meetings for the concept design phase of this project.

Ways to Comment

- ◆ Talk with project personnel (with name tags) during tonight's open house or contact them following the meeting
- ◆ Fill out a comment sheet and leave it at the sign-in table or mail/email it in later
- ◆ Type your comment on the project web page comment form:

Public Meeting #2 Agenda

March 22 Garfield County Meeting

Open House: 5:30 - 7:30 PM

March 23 Eagle County Meeting

Open House: 5:00 - 7:00 PM

No formal presentations



Contact Information

dot_CottonwoodPassConceptDesign@state.co.us

Karen Berdoulay
CDOT Project Manager
970-328-9934
karen.berdoulay@state.co.us

Leah Langerman
Consultant Public Engagement Specialist
720-225-4651
leah.langerman@deainc.com

www.codot.gov/projects/cottonwood-pass-concept-design





FACT SHEET

Cottonwood Pass Concept Design (Eagle and Garfield Counties)

Project Overview

Safety improvements are needed on county roads that traverse Cottonwood Pass between Gypsum in Eagle County and Colorado Highway (CO) 82 in Garfield County. The county roads have been used as a local detour route during I-70 closures through Glenwood Canyon, leading to increased traffic volumes and incidents during I-70 closure events. Eagle and Garfield counties identified 14 areas that need improvement to make the county roads safer and more functional as a vital travel connection between the local communities. Potential site improvements include curve softening, improved sight distance, and increased road width in areas to accommodate two vehicles in passing.

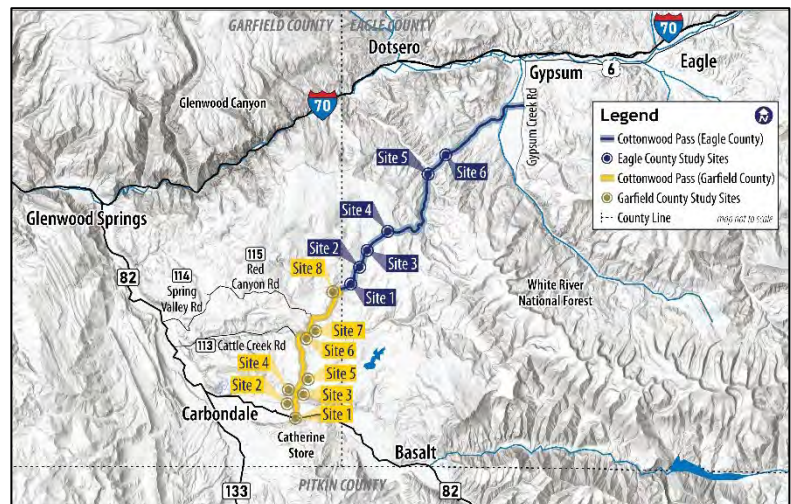
The Colorado Department of Transportation (CDOT) is supporting Eagle and Garfield counties with conceptual designs at the 14 specific locations along Cottonwood Pass shown below to more safely accommodate traffic.

The project included concept design (approximately 10% design level) and:

- ◆ survey of road right-of-way limits
- ◆ assessment of geotechnical and environmental conditions
- ◆ development and evaluation of safety improvement options
- ◆ estimates of magnitude of conceptual costs

Public and stakeholder coordination occurred throughout the process.

With the information provided by this project, Eagle and Garfield counties will determine if and when improvements would move forward. **Further design and construction funds have not been identified and there is no schedule for construction.**



Key Schedule Milestones

- ◆ Summer 2022: Conduct right-of-way survey and field data collection
- ◆ July 2022: Hold first public open houses in Eagle and Garfield counties
- ◆ Late summer 2022: Conduct first small-group outreach meetings
- ◆ Late 2022/early 2023: Develop and evaluate safety improvement options and conduct adjacent property owner coordination and additional small-group outreach meetings
- ◆ Early 2023: Refine design concepts
- ◆ March 2023: Hold second public open houses in Eagle and Garfield counties
- ◆ April 2023: Finalize concept design report

Contact Information

For more information contact Leah Langerman at 720-225-4651 or dot_CottonwoodPassConceptDesign@state.co.us



QUESTIONS AND ANSWERS

Q: What is the purpose of this project?

A: The purpose of the project 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. Site improvements being considered include curve softening, improved sight distance, improved intersection geometry, and increased road width in areas to accommodate two vehicles in passing.

Q: What was the impetus to start this project?

A: 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.

Q: What process is being used to guide this concept design project?

A: The [Context Sensitive Solutions \(CSS\) process](#) was used. CSS is a 6 step process designed to foster collaboration, partnerships, transportation innovation, and environmental sustainability for transportation projects. The CSS process reflected the unique context of Cottonwood Pass in design development.

Q: Who is making decisions about Cottonwood Pass improvements?

A: As part of the CSS process, a Project Leadership Team/Technical Team 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, U.S. Forest Service, and Bureau of Land Management. 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.

Q: How did this project consider environmental resources?

A: This concept design project included a high-level review of environmental conditions in order to document issues to be considered by the counties with project design and construction in the future. In addition, an Issue Task Force was formed of regulatory agency staff to focus on natural resources including wetlands, water quality, and wildlife. This group included U.S. Forest Service, Bureau of Land Management, Colorado Parks & Wildlife, and U.S. Fish and Wildlife Service representatives. More in depth review of individual sites will be conducted if and when projects move forward with design development and construction.



Q: Will these improvements allow Cottonwood Pass to stay open year-round?

A: This is a high-altitude road that experiences heavy snow and drifting and has steep grades. While the spot improvements will improve driver safety at specific locations, the overall corridor will remain mountainous with tight curves, steep grades and narrow areas. 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.

Q: Is the project considering the amount of bicyclists using Cottonwood Pass?

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

Q: Google Maps and other wayfinding apps direct travelers to Cottonwood Pass when Glenwood Canyon is closed. Can someone correct this?

A: Eagle County has been actively working with wayfinding companies to ensure Cottonwood Pass is not shown as a detour route.

Q: There are multiple routes on the south (Garfield County) end of Cottonwood Pass. How did you determine which corridor is called Cottonwood Pass and which spur gets safety improvements as part of this project?

A: Garfield County evaluated multiple routes in depth last year during the Glenwood Canyon I-70 closure events. The Catherine Store route was selected by the county commissioners after reviewing the other routes in detail. Generally, the other routes are extremely narrow (one-lane) in locations and have multiple residences directly adjacent to the roadway. Using Lower Cattle Creek Road would likely result in a full property acquisition if the road was widened to accommodate two lanes of traffic. Additionally, the intersection of Colorado Highway (CO) 82 and Catherine Store Road is currently signalized and has better visibility and roadway geometry for traffic as compared to the CO 82 intersections with other routes (CR 113 and CR 114).

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.

Q: What about traffic volumes and large trucks?

A: While the site improvements will improve safety at specific locations with improved curve geometry 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. The improvements being 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 they are today.



Q: Can speed bumps or speed dips be installed to slow speeding traffic?

A: Speed bumps, humps, or dips are not being considered for recommendations with the site concept designs along Cottonwood Pass. A speed bump is a bump of asphalt about a foot wide, 3 to 4 inches high, and placed laterally across the travel lane. These are used in parking lots to discourage cut-through traffic. A speed hump is an elongated mound in the roadway pavement surface extending across the travel way at a right angle to the traffic flow. A speed hump is typically 3 inches in height and 12 feet or more in length along the vehicle travel path. Speed humps are 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, spaced no more than 500 feet apart. 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.

Q: When will the improvements be constructed?

A: The timeline for construction of improvements is dependent on funding availability. Funding has not yet been secured for full design or construction. However, completing this concept design 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.

Q: If the recommended improvements are too expensive for the counties to handle, will this become a state or federal project using infrastructure bill funds?

A: The door is open for any type of funding the counties and/or CDOT would like to pursue. Agencies submit a defined scope and cost estimate when they apply for grants. Receiving state and/or federal funding wouldn't change the type of project or improvements. Any grant money received would be passed to the appropriate county and they would be responsible for conducting final design and construction activities.

Q: Have any potential funding sources been identified?

A: CDOT applied for a Federal RAISE (Rebuilding American Infrastructure with Sustainability and Equity) Grant in late February 2023. This is a competitive grant program, so funds are not guaranteed (awards are expected in Summer 2023). If the application is successful, \$3.5M RAISE funds would be applied towards a Cottonwood Pass project and CDOT would contribute an additional \$1.5M of resiliency funds, for a total of \$5M to cover design and construction of improvements for Eagle County Site 2. CDOT and the counties will continue to explore grants and other funding opportunities.

Q: Why are there draft recommendations shown for Eagle County sites, but not for Garfield County sites?

A: The intent of this study has been to provide the site concepts, information, and evaluations to the counties for them to decide about priorities, funding, and next steps. At sites in Eagle County with multiple options, Eagle County staff identified a draft recommendation for the option that the County would likely move forward at the site, if funding is secured. However, 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.

Q: Where can I find more information about the project and submit a comment?

A: Visit the project web page: www.codot.gov/projects/cottonwood-pass-concept-design



PUBLIC MEETING #2 COMMENT FORM

Please provide your preferences, issues, or concerns for Eagle and Garfield counties to consider when they determine if and when safety improvements should move forward at the 14 specific sites.

Eagle County

Garfield County

General Cottonwood Pass Corridor (for both counties)





Please provide feedback regarding the draft evaluation of design options. Do you suggest any revisions to the evaluation findings? If so, please list your suggestion along with the project site, design option number, and Core Value evaluation criteria your comment applies to.

How did you hear about this meeting?

- | | |
|--|--|
| <input type="checkbox"/> Postcard mailer | <input type="checkbox"/> News story/notice |
| <input type="checkbox"/> Email from project team | <input type="checkbox"/> Word of mouth/Forwarded email |
| <input type="checkbox"/> Social media | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Agency's email blast/newsletter | |

YOUR NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE #: _____

EMAIL: _____

Return To: Leah Langerman (720) 225-4651 phone
David Evans and Associates, Inc. dot_CottonwoodPassConceptDesign@state.co.us
1600 Broadway, Suite 800,
Denver, CO 80202

Visit the project web page to submit a comment and learn more:
www.codot.gov/projects/cottonwood-pass-concept-design

