

## 4 | Wildlife Crossing Screening Methodology and Results

### TYPES OF WILDLIFE CROSSING MITIGATION STRATEGIES AND THEIR EFFECTIVENESS

There are several different wildlife crossing mitigation strategies that are effective in promoting the safe passage of wildlife across roadways and were considered for use within the project corridor. The term “wildlife crossing system” generally describes the mitigation strategy of utilizing variety of structures and/or non-structural measures, as discussed below, that work to provide safe passage of wildlife across roadways. The mitigation strategies assessed for the project corridor during screening are:

- **Underpasses.** Underpasses are structures that provide passage for wildlife underneath a roadway. They are typically built in the form of a bridge or culvert and can be used in level, sloped, or raised topography (FHWA, 2023). Depending on the size and design of the structure, underpasses can be effectively used by deer, elk, bears, mountain lions, bobcats, coyotes, and a variety of other species.
- **Overpasses.** Overpasses are structures that provide passage for wildlife over a roadway and are generally considered one of the most effective mitigation strategies for promoting the safe passage of wildlife and reconnecting fragmented habitat (USFS, 2021). A large overpass specifically designed for wildlife is highly effective and utilized by most species, including large ungulates and large mammals.
- **Fencing and Deer Guards.** Wildlife exclusion fencing and deer guards are designed to be impermeable to wildlife and help keep wildlife away from roadways. When used in conjunction with underpasses and overpasses, fencing and deer guards can help direct wildlife to the structures and increase their overall effectiveness.
- **Roadway Signage.** There are many different types of roadway signage that can be used as wildlife mitigation strategies. Some signage is designed to actively alert travelers to potential wildlife crossing, such as static and dynamic wildlife warning signage or variable message signs, while some signage passively mitigates, such as speed limit changes and roadside reflectors.
- **Public Information and Policy.** Part of effective wildlife mitigation involves efforts that span into the community in which the mitigation is being implemented. Utilizing public meetings, brochures, websites, and other outreach methods are effective methods of educating the

public about wildlife mitigation. Policy changes can also be an effective way to support a community-scale wildlife mitigation approach.

## SCREENING METHODOLOGY

### *What are influences that affected decision making, type of crossing, prioritization?*

A list of potential crossing locations within the project corridor was developed based on previous studies including the ESPWPS and CSU Pueblo study, site reconnaissance conducted by the design team, CDOT insight, input from the Steering Committee, which consisted of individuals from CDOT, CPW, NMDGF, and consultant biologists and engineers.

The list of potential crossing locations includes underpasses at existing drainageways; overpasses at locations where I-25 is in a cut; under and overpasses at each WVC hotspot; and crossings at existing interchanges. The potential crossing locations were grouped based on their proximity to a WVC hotspot, resulting in seven distinct groupings along the project corridor. The potential crossing locations were then compared with others in their group to determine the most favorable crossings within each group.

Potential wildlife crossings were screened based on the following criteria:

Screening Criterion*	Positive Rating	Neutral Rating	Low Rating	Fatal Flaw
<b>WVC Proximity</b> Captures the proximity of the proposed crossing to the CSU-Pueblo WVC hotspots and CDOT WVC data.	Hotspot within half a mile of location	Hotspot within a mile of location	No hotspot within a mile of location	N/A
<b>Cost</b> Compares the relative cost of constructing the proposed crossings within each group.	Least costly in the group	Medium relative cost	Highest cost in the group	N/A

<p><b>Site Feasibility</b></p> <p>Considers how well the proposed crossing fits in the environment and physical configuration of the existing infrastructure of the site.</p>	Very little disturbance to the site	Some disturbance to the site required	Highly disruptive to the site	Solution is not feasible
<p><b>Constructability</b></p> <p>Considers site access during construction and impacts to traffic during construction.</p>	Relatively easy to build with minimal disruption to traffic	Site access is reasonable with moderate disruption to traffic	Site is difficult to access, and construction would be very disruptive to traffic	N/A
<p><b>ROW Impacts</b></p> <p>Compares the amount of ROW acquisition needed to construct/operate/maintain the crossing, relative to other crossings in the same group.</p>	Least amount of ROW required	Moderate relative amount of ROW required	Most ROW required	N/A
<p><b>Likelihood of Animal Use</b></p> <p>Considers how likely animals are to use the proposed crossing, assuming it is sized appropriately for the target species.</p>	Likely to use	Moderately likely to use	Unlikely to use	N/A
<p><b>Permeability</b></p> <p>Considers how a proposed crossing improves the permeability for wildlife crossing I-25 at its location.</p>	Improves	N/A	Does not improve permeability	N/A
<p><b>Maintenance</b></p> <p>Compares the amount of maintenance required and ease of maintenance access at each potential crossing within each group.</p>	Relatively little maintenance and has good access	Moderate amount of maintenance and reasonable access	Relatively high amount of maintenance or maintenance would be difficult to provide	N/A

*\*Screening criteria were applied to potential crossing locations within each grouping; they were not used to compare locations corridor-wide.*

Using the screening criteria described above, each proposed mitigation was assigned positive (green), neutral (yellow), negative (red), or fatal flaw ratings for each screening criterion. The fatal flaw rating only existed under the Site Feasibility criterion and was assigned when a proposed mitigation strategy was not feasible in the existing environment and physical configuration of the site.

In general, the mitigation locations and strategies which were assigned the highest number of positive ratings under each screening criterion within each group were advanced for further analysis. Each of the seven groups had at least one mitigation strategy that was advanced into conceptual design and prioritization. There were some instances where mitigation strategies that did not rank highest in all screening criteria within their group were advanced due to circumstantial reasons. For example, an underpass location that ranked moderately within the Constructability criterion due to access constraints might still be advanced if it is a better option due to topography, habitat cover for wildlife, and proximity to a WVC hotspot when compared to other underpasses within the same group. Specifics on the advanced mitigation strategies, their locations, and their ranking within the screening matrix are discussed further in the report.

Potential non-structural wildlife crossing mitigation strategies (i.e., deer guards, variable message signs, etc.) were not fully evaluated during this screening process as they are ancillary to all of the potential wildlife crossings. Once the list of potential crossing locations advanced into conceptual design, the non-structural wildlife mitigation strategies were incorporated into the over/underpass to create a wildlife mitigation system for each location.

## **SCREENING RESULTS**

The team evaluated a total of 14 overpasses, 25 underpasses, and 4 existing interchanges as potential crossing locations spread across 7 groupings. The following pages present the screening matrix for each group, followed by a map showing those locations and the general environmental context.

The left side of the matrix indicates the number hotspot that is being addressed and the MP where the potential crossing is located and provides a short description of the crossing; the middle portion of the matrix shows the criteria with the ratings (red, green, yellow); the right side of each matrix are crossing-specific notes; the rightmost column indicates which crossings were recommended to be advanced for further analysis based on this screening and also contain information about potential traffic control and detour-related considerations. The discussion below each matrix provides further

explanation on the screening recommendations and clearly reiterates which crossing locations will be advanced within each group.

As a result of screening, 14 potential crossings were advanced for high-level conceptual design and to be prioritized for implementation. This included assessing potential crossing locations across groupings. At least one crossing location per group was advanced to provide geographic coverage within the corridor. Non-crossing mitigation strategies, though not fully evaluated under the screening criteria, were given consideration based on their implementation and maintenance requirements. Those that advanced included short segments of fencing, static warning signs, dynamic wildlife warning systems, variable message signs, public information campaigning, trash ordinance, and wildlife monitoring.

**Group 1**

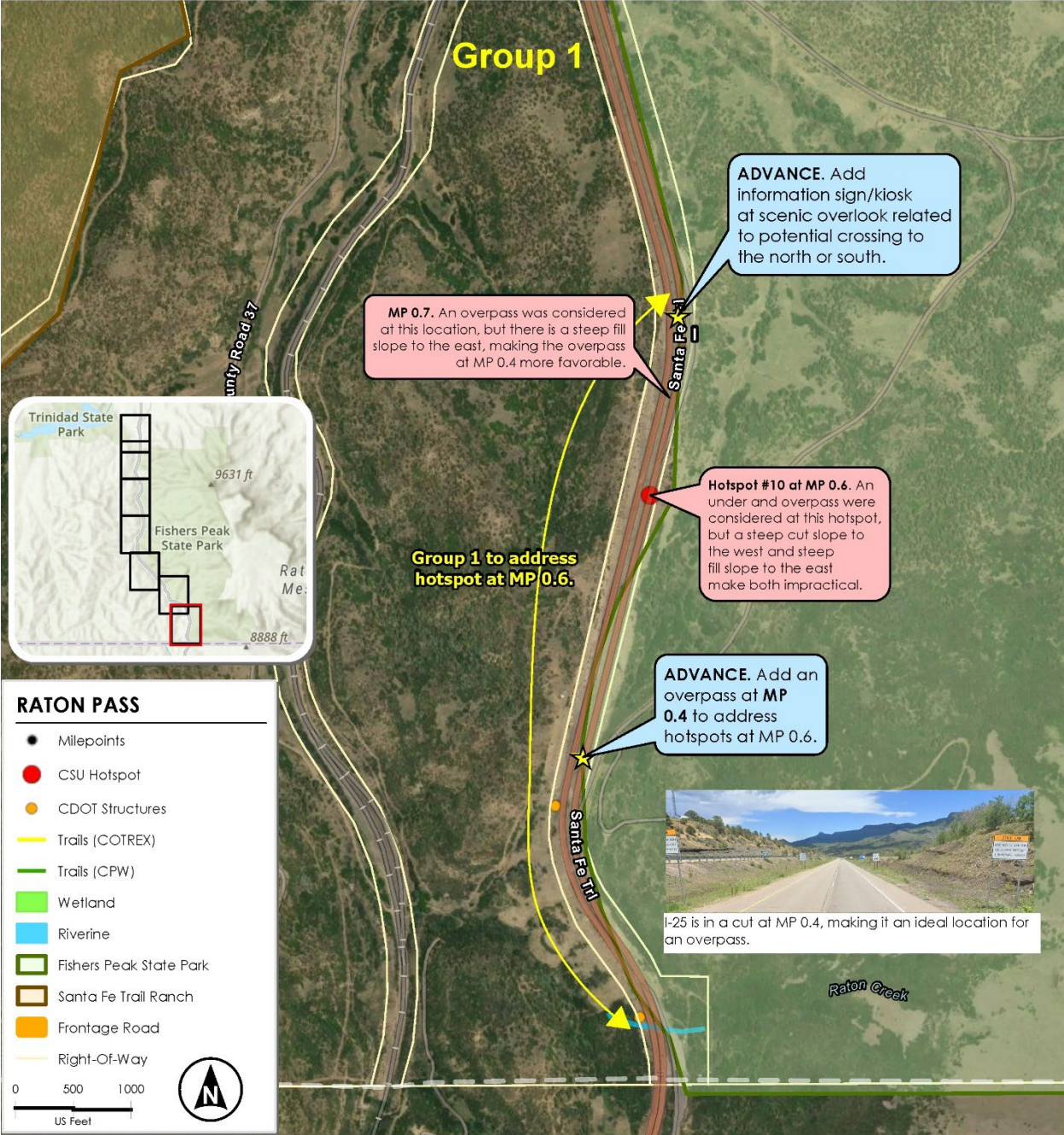
Location: MP 0.0 to 1.0

Hotspot addressed: #10 at MP 0.6

Potential solution for Hotspot at MP		MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of +'s	Notes / Issues	Solution to advance based on screening
Group 1	10 @ MP 0.6	0.4	Overpass	+		+	+		+	+		5	Crossing at state line after long stretch of NM fencing. Welcome to Colorado. Good public perception and visibility	Advance: Overpass at MP 0.4 to address hotspot at MP 0.6. An overpass here could be a kind of gateway into Colorado. Crossover detour opportunities near state line and at MP 1.9.
	10 @ MP 0.6	0.6	Underpass	+	+	-			+	+	+	5	Steep cut slope to the west makes underpass difficult	
	10 @ MP 0.6	0.6	Overpass	+	-	-			+	+	-	3	Steep fill slope to the east makes overpass difficult	
	10 @ MP 0.6	0.7	Overpass	+	-				+	+	-	3	0.4 is a much better location for an overpass. The east is sloped down here.	
		1.0	Informational signing at scenic overlook	+	+	+	+	+	N/A	N/A	+	6		Advance: Signing at scenic overlook

**Advance:** Overpass at MP 0.4. It fits well within the site topography as I-25 is in a cut. It scored better than the other overpass structures for maintenance because it would likely be easier to maintain due to the existing dirt road on the east side at the top of the cut.

**Advance:** Adding informational signs at the scenic overlook at MP 1.0. The purpose of the signage would be to educate the public about wildlife/vehicle collisions and mitigation strategies.



## Group 2

Location: MP 1.6 to 2.6

Hotspot addressed: #6 at MP 2.1

This group overlaps with group 3. The mapping for both groups is shown on one page with Group 3

	Potential solution for Hotspot at MP	MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of +'s	Notes / Issues	Solution to advance based on screening	
Group 2	6 @ MP 2.1	1.6	Underpass	+		+				+		3	McBride Creek. 50' of fill. May be possible to build an underpass partway down the embankment.	Advance: Underpass at MP 1.6 or 1.9 to address hotspot at MP 2.1. MP 1.6 is McBride Creek and may be a better wildlife corridor, but it is a deep embankment. Arrange the deer guards at the interchange to allow animals to use the interchange as an underpass. Example: Ray Nixon Exit in Fountain, and the interchange south of it.	
	6 @ MP 2.1	1.9	Underpass	+	+	+	+	+	+	+	+	8			
	6 @ MP 2.1	8 @ MP 2.6	2.1	Underpass	+		-		+	-	+	4	I-25 is in a cut here. Animals are not likely to use an underpass that has a cut on both sides. Significant amount of excavation to build.		
	6 @ MP 2.1	8 @ MP 2.6	2.1	Overpass	+		-		+	+	-	4	I-25 is in a cut here, so an overpass is feasible, but would be expensive		
	6 @ MP 2.1	8 @ MP 2.6	2.2	Deer Guards at interchange	+	+	+	+	+	N/A	N/A	+	6		
	6 @ MP 2.1	8 @ MP 2.6	2.2	Full-height abutment at interchange bridge	+		+	+	+			+	5		High cost. Wildlife can safely cross on the adjacent road.

Within group 2, The underpass at MP 1.9 scored highest in the matrix. However, there is a possibility that an underpass at MP 1.6, which is in the McBride Creek drainageway, would be more favorable from a wildlife movement perspective.

**Advance:** An underpass at both MP 1.6 or 1.9 for further evaluation.

**Advance:** Adding fencing and deer guards at the Exit 2 interchange and arranging them to allow the wildlife to cross under I-25 using the interchange. Exit 2 is within a half-mile of two hotspots: #6 at MP 2.1 and #8 at MP 2.6.



### Group 3

Location: MP 2.1 to 3.3

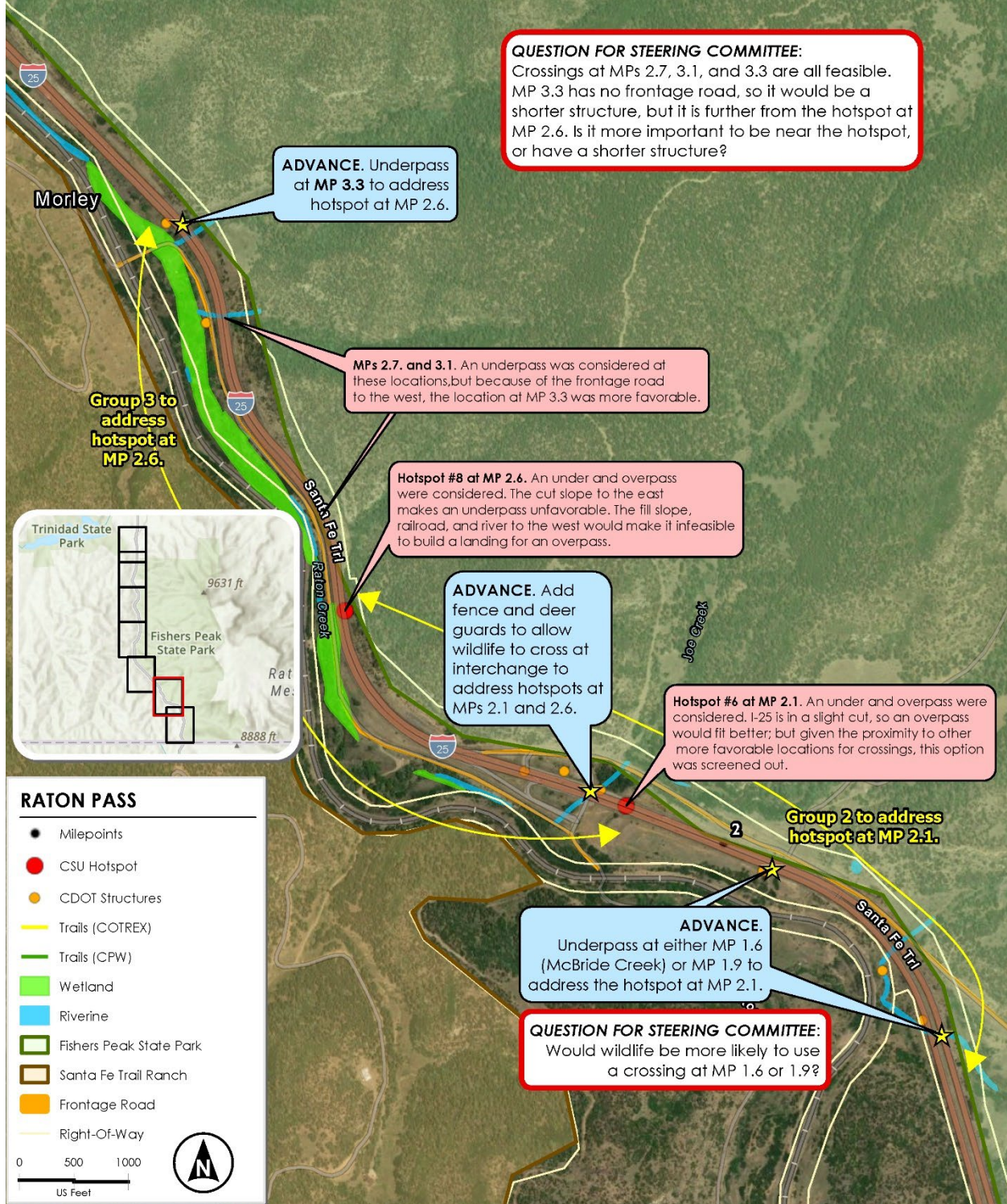
Hotspot addressed: #8 at MP 2.6

Potential solution for Hotspot at MP		MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of + 's	Notes / Issues	Solution to advance based on screening	
Group 3	6 @ MP 2.1	8 @ MP 2.6	2.6	Underpass	+	-			+	+	+	4	Cut slope to east is too steep for underpass	Advance: Underpass at MP 3.1 or 3.3 to address the hotspot at MP 2.6. Need further analysis to compare the locations. 3.3 has no frontage road, but it is further from the hotspot.	
	6 @ MP 2.1	8 @ MP 2.6	2.6	Overpass	+	-	-		+	+	-	3	River and RR to west makes landing overpass difficult		
		8 @ MP 2.6	2.7	Underpass	+	+			-	+	+	+	6		Cut slope to west. May be difficult to excavate enough to provide landing prior to underpass structure.
		8 @ MP 2.6	3.1	Underpass	+	+	+			+	+	+	6		
			3.3	Underpass	+	+	+	+	+	+	+	+	8		This was wet during the site visit

**Advance:** The potential underpass at MP 3.3.

On the mapping, note the location of the frontage road within this group’s geographic limits. The frontage road is located near the potential underpass at MP 3.3 but does not cross the drainageway. Near the other locations in this group, the frontage road does cross the drainageway. Therefore, the structure at MP 3.3 would be shorter than the others, which can be expected to cost less. However, the underpasses at MP 2.7 and 3.3 are also feasible and are closer to the WVC hotspot.

## Groups 2 and 3



## Group 4

Location: MP 4.0 to 5.0

Hotspots addressed: #4 at MP 4.5 and #11 at MP 4.7

Potential solution for Hotspot at MP		MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of +'s	Notes / Issues	Solution to advance based on screening
Group 4	4 @ MP 4.5	4.0	Overpass	+	-	-	-	-	+	+	-	3	Span I-25, river and railroad with an overpass	Advance: Underpass at 4.5 to address hotspots at 4.5 and 4.7  Crossover detour not likely in this group because SB is lower than NB. Shoofly detours into the median with shoring likely.
	4 @ MP 4.5	4.1	Underpass	+	-	-	-	-	+	+	+	4	East side is level, so excavation would be required for an underpass.	
	4 @ MP 4.5	11 @ MP 4.7	4.5	Underpass	+	+	+	-	+	+	+	7	Existing drainageway	
	4 @ MP 4.5	11 @ MP 4.7	4.5	Overpass	+	-	-	-	+	+	-	3		
	4 @ MP 4.5	11 @ MP 4.7	4.7	Underpass	+	-	-	-	+	+	-	3	Cut slope to west makes underpass difficult	
	4 @ MP 4.5	11 @ MP 4.7	4.7	Overpass	+	-	-	-	+	+	-	3	Steep fill slope, RR and river to east make overpass difficult	

**Advance:** The underpass at MP 4.5 was ranked as the best crossing location within group 4 based on the matrix evaluation.

## Group 4

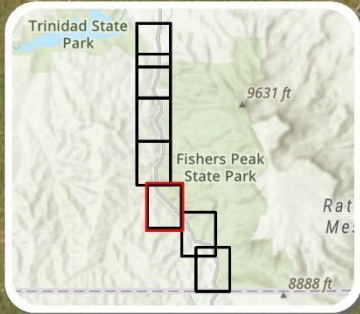
**Hotspot #11 at MP 4.7.**  
An over and underpass were considered. The cut slope to the east makes an underpass unfavorable. The fill slope, railroad, and river to the west would make it infeasible to build a landing for an overpass.

**ADVANCE. Underpass at MP 4.5 (Hotspot #4)** to address the hotspots at MPs 4.5 and 4.7.

**MP 4.1.** An underpass was considered. The area to the east is fairly level, so an underpass would require a significant amount of excavation.

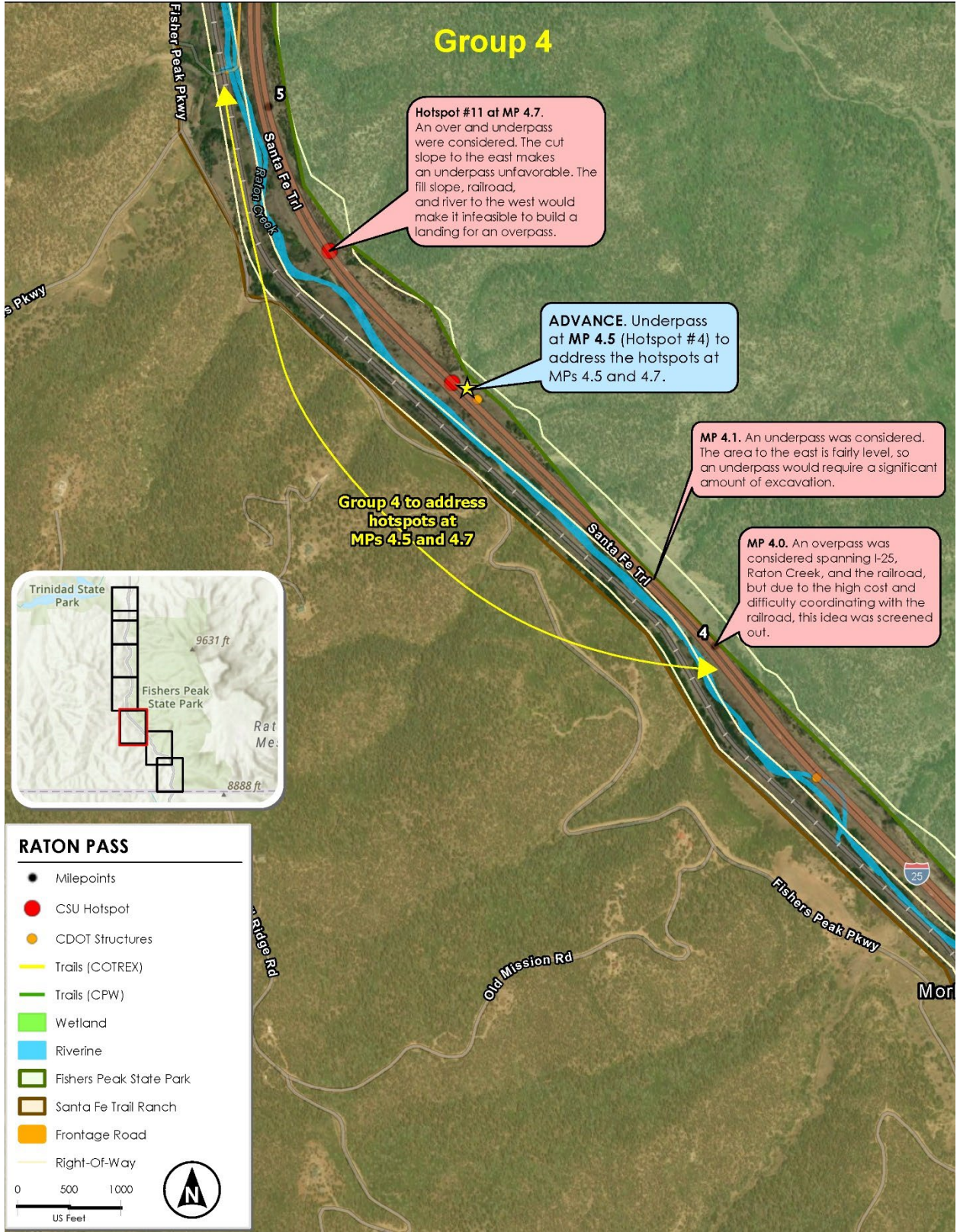
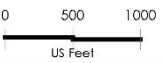
**MP 4.0.** An overpass was considered spanning I-25, Raton Creek, and the railroad, but due to the high cost and difficulty coordinating with the railroad, this idea was screened out.

**Group 4 to address hotspots at MPs 4.5 and 4.7**



### RATON PASS

- Milepoints
- CSU Hotspot
- CDOT Structures
- Trails (COTREX)
- Trails (CPW)
- Wetland
- Riverine
- Fishers Peak State Park
- Santa Fe Trail Ranch
- Frontage Road
- Right-Of-Way



**Group 5**

Location: MP 5.0 to 6.2

Hotspots addressed: #7 at MP 5.6 and #9 at MP 6.0

Potential solution for Hotspot at MP		MP of crossing	Solution (Simple Description)	WVCS	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of +'s	Notes / Issues	Solution to advance based on screening	
Group 5	7 @ MP 5.6	9 @ MP 6	5.6	Deer Guards at interchange	+	+	+	+	+	N/A	N/A	+	6		Advance: Underpass at 6.1 to address hotspots at 5.6 and 6. Arrange the deer guards at the interchange to allow animals to use the interchange as an underpass.  Crossover detour not likely in this group because SB is lower than NB. Shoofly detours into the median with shoring likely.
	7 @ MP 5.6	9 @ MP 6	5.6	Full-height abutment at interchange bridge	+		+	+	+			+	5	High cost. Wildlife can safely cross on the adjacent road.	
	7 @ MP 5.6	9 @ MP 6	5.6	Overpass	+	-	+		+	+	+	+	6	I-25 is in a steep cut section just north of the interchange. Short-term closure likely needed for safety-critical work.	
	7 @ MP 5.6	9 @ MP 6	6.0	Underpass	+			-		+	+		3	Saw signs of animals and a carcass during site visit. Level terrain to the east. Slopes down to the west.	
		9 @ MP 6	6.0	Overpass	+	-	-	-	-	+	+		3	Fill slope to the west makes landing an overpass difficult.	
		9 @ MP 6	6.1	Underpass	+	+	+	+	+	+	+		7	Existing drainageway	
			6.6	Underpass		+	-	+	+	+		-	5	6.9 is a much better site	This solution is in between hotspots

**Advance:** Underpass at MP 6.1

**Advance:** Addition of fencing and deer guards at the interchange at MP 5.6 to guide wildlife to cross at the interchange.

# Group 6

**ADVANCE.** Underpass at either MP 8.0 (Hotspot #3) or 8.2 to address the hotspot at MP 8.0.

**QUESTION FOR STEERING COMMITTEE:** Is one of these more favorable from a wildlife migration standpoint?

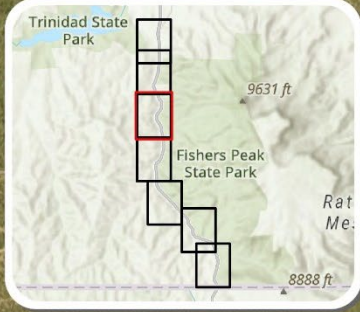
Group 6 to address hotspot at MP 8.0

**Hotspot #3 at MP 8.0.** An overpass was also considered, but was not advanced because the topography is better suited for an underpass.



Removing the slope under the bridge and adding a wall were considered, but because of the high cost of construction and unlikelihood of animal use, this idea was not advanced.

**ADVANCE.** Add fence and deer guards to allow wildlife to cross at interchange to address hotspot at MP 8.0.



**MP 6.9.** Topographically, this is an excellent location for an underpass. It is in a drainageway and lines up with the railroad bridge to the west. However, it is over a half mile from any hotspot.

**QUESTION FOR STEERING COMMITTEE:** Would this area benefit from a crossing here more than the other locations recommended for advancement?

### RATON PASS

- Milepoints
- CSU Hotspot
- CDOT Structures
- Trails (COTREX)
- Trails (CPW)
- Wetland
- Riverine
- Fishers Peak State Park
- Santa Fe Trail Ranch
- Frontage Road
- Right-Of-Way

0 500 1000  
US Feet

Fishers Peak Visitor Center

## Group 6

Location: MP 7.0 to 8.3

Hotspot addressed: #3 at MP 8.0

This group has two pages of mapping because the proposed crossings at MP 8.8 and 9.5 are both in this group and the scale of the figures is better when spread across two maps. They are not in the group because they are over a half-mile from any hotspot.

Potential solution for Hotspot at MP			MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of +'s	Notes / Issues	Solution to advance based on screening
			6.9	Underpass	+	+	+	+	+	+	+	-	5	Topographically, this is an excellent location for an underpass. Lines up with RR bridge. Waterway.	This solution is in between hotspots
Group 6	3 @ MP 8		7.7	Deer Guards at interchange	+	+	+	+	+	N/A	N/A	+	6		Advance: Underpass at MP 8.0 or 8.2. Need further comparison between the two. Arrange the deer guards at the interchange to allow animals to use the interchange as an underpass. Crossover detour not likely in this group because SB is lower than NB. Shoofly detours into the median with shoring likely.
	3 @ MP 8		7.7	Full-height abutment at interchange bridge	+	+	+	+	+	+	+	+	5	High cost. Wildlife can safely cross on the adjacent road.	
	3 @ MP 8		8.0	Underpass	+	+	+	+	+	+	+	+	5	8.2 has better maintenance access than 8.0. 8.0 is deeper and more vegetated	
	3 @ MP 8		8.0	Overpass	+	-	-	+	+	+	+	-	3	Road is in a fill section, making overpass difficult. Short-term closure of I-25 during safety-critical work likely.	
	3 @ MP 8		8.2	Underpass	+	+	+	+	+	+	+	+	8		
			8.8	Underpass	-	-	-	+	+	+	+	+	3	Two frontage roads. Not a hotspot. Driveways	
			9.5	Underpass	-	+	+	+	+	+	+	+	6	This has an arch site. It is a mile from any hotspot	

The topography at MP 6.9 is well-suited for a potential underpass, as it is a drainageway and lines up with a railroad bridge to the west. However, it is over a half mile from any WVC hotspot.

**Advance:** Add fencing and deer guards at the Exit 8 interchange, arranging them to allow wildlife to cross under I-25 at the interchange.

**Advance:** Underpass at either MP 8.0 or 8.2. While the crossing at MP 8.2 is scored better in the matrix evaluation than the crossing at MP 8.2, it is further from the hotspot.

# Group 5



Removing the slope under the bridge and adding a wall were considered, but because of the high cost of construction, and unlikelihood of animal use, this idea was not advanced.

**MP 6.6.** An underpass was considered at this location. It is feasible, but MP 6.9 is a better location. Both locations are over a half mile from any hotspot.

**ADVANCE.** Underpass at MP 6.1 to address hotspots at MPs 5.6 and 6.0.

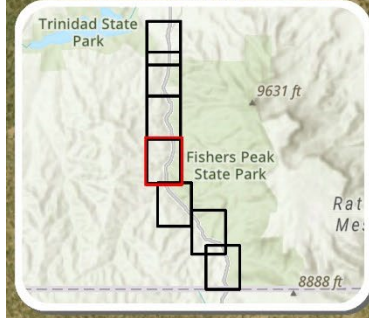
**Hotspot #9 at MP 6.0.** An under and overpass were considered. The cut slope to the east makes an underpass unfavorable. The fill slope and river to the west would make it infeasible to build a landing for an overpass.

**Group 5 to address hotspots at MPs 5.6 and 6.0**

**MP 5.6.** This cut section just north of the bridges could be a good location for an overpass. However, arranging the deer guards to allow wildlife to use the interchange bridges is a much lower-cost solution.

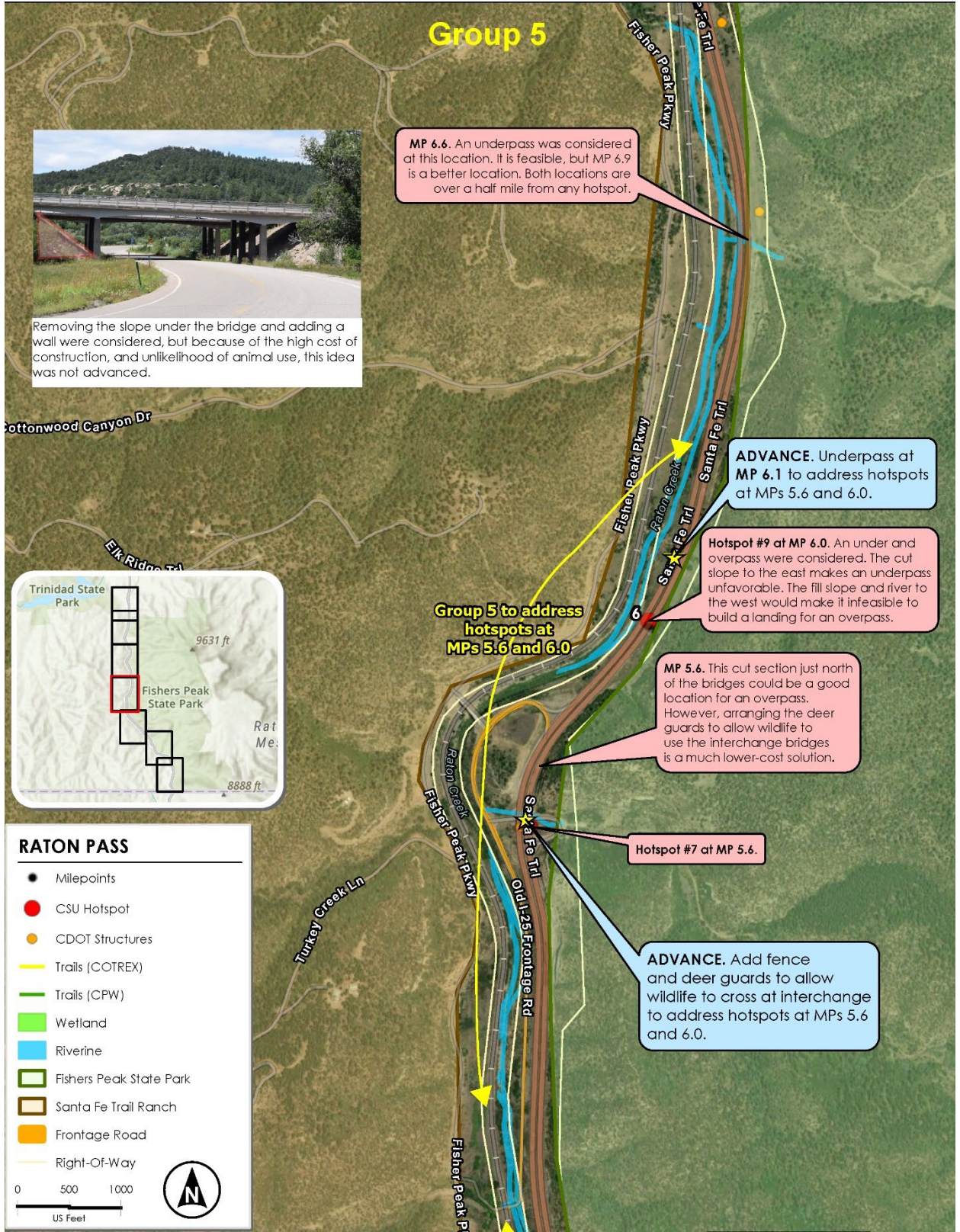
**Hotspot #7 at MP 5.6.**

**ADVANCE.** Add fence and deer guards to allow wildlife to cross at interchange to address hotspots at MPs 5.6 and 6.0.



## RATON PASS

- Milepoints
  - CSU Hotspot
  - CDOT Structures
  - Trails (COTREX)
  - Trails (CPW)
  - Wetland
  - Riverine
  - Fishers Peak State Park
  - Santa Fe Trail Ranch
  - Frontage Road
  - Right-Of-Way
- 0 500 1000  
US Feet
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## Group 7

Location: MP 10.0 to 11.0

Hotspots addressed: #5 at MP 10.5, #2 at MP 10.6, and #1 at MP 11.0

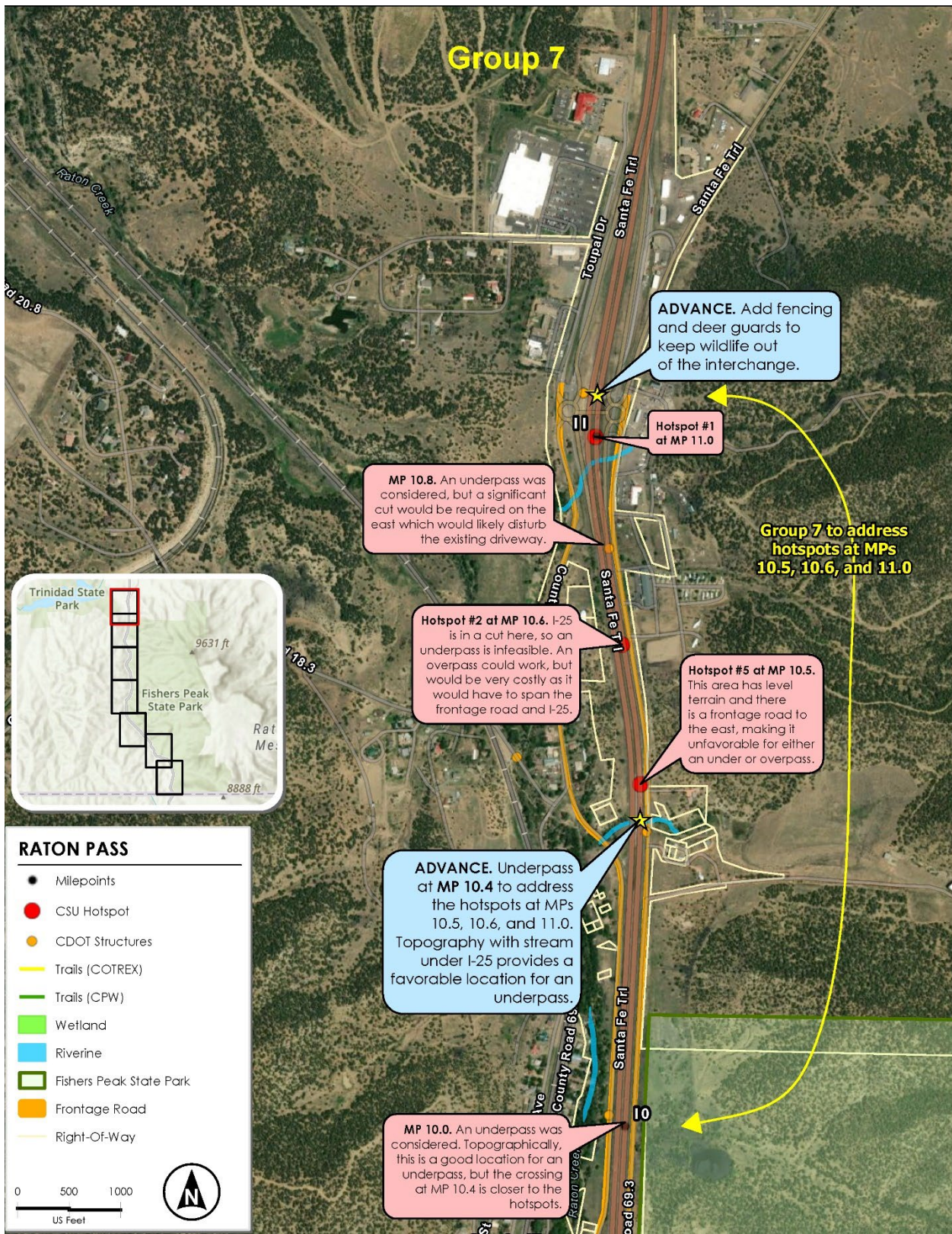
Potential solution for Hotspot at MP			MP of crossing	Solution (Simple Description)	WVCs	Cost	Site Feasibility	Constructability	ROW Impacts	Likelihood of animal use	Permeability	Maintenance	Number of + 's	Notes / Issues	Solution to advance based on screening
5 @ MP 10.5			10.0	Underpass	+		+	+	+	+	+	+	7	Frontage road on both sides	<p>Advance: Underpass at MP 10.4. Fencing through interchange. Arrange deer guards to keep wildlife out of the interchange area.</p> <p>A crossover exists at MP 10.4, so solutions north of there could be built using a crossover detour. South of MP 10.4 would likely be built with shoofly detours into the median with shoring.</p>
5 @ MP 10.5	2 @ MP 10.6	1 @ MP 11	10.4	Underpass	+	+	+		+	+	+	+	7	Frontage road on east side	
5 @ MP 10.5	2 @ MP 10.6	1 @ MP 11	10.5	Underpass	+		-		-	+	+		3	Topography not ideal for crossing. Frontage road on east side.	
5 @ MP 10.5	2 @ MP 10.6	1 @ MP 11	10.5	Overpass	+	-	-			+	+		3	Topography not ideal for crossing. Frontage road on east side.	
5 @ MP 10.5	2 @ MP 10.6	1 @ MP 11	10.6	Underpass	+		-		-	+	+		3	I-25 is in a cut here	
5 @ MP 10.5	2 @ MP 10.6	1 @ MP 11	10.6	Overpass	+	-	+		-	+	+		4	Overpass is feasible, but expensive due to long span	
5 @ MP 10.5		1 @ MP 11	10.8	Underpass	+		-		-	+	+	+	4	Significant cut required on east	
		1 @ MP 11	11.0	Deer Guards at interchange	+	+	+	+	+	N/A	N/A	+	6		
			11.0	Underpass		F	F							Interchange with ramps and frontage roads. Underpass infeasible	
			11.0	Overpass		F	F							Interchange with ramps and frontage roads. Overpass infeasible	

The potential underpasses at MP 10.0 and 10.4 scored comparably in the screening. However, the underpass at 10.4 is preferable because it has a frontage road on only one side, which would allow for a smaller structure, and it is closer to the WVC hotspots.

**Advance:** Underpass at MP 10.4.

**Advance:** Add fencing and deer guards through the interchange to keep wildlife out of the interchange area. This is recommended due to the high traffic volumes at the interchange.

# Group 7



**ADVANCE.** Add fencing and deer guards to keep wildlife out of the interchange.

Hotspot #1 at MP 11.0

**MP 10.8.** An underpass was considered, but a significant cut would be required on the east which would likely disturb the existing driveway.

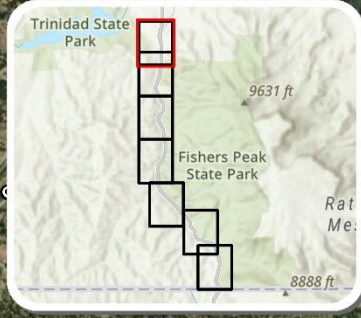
**Group 7 to address hotspots at MPs 10.5, 10.6, and 11.0**

**Hotspot #2 at MP 10.6.** I-25 is in a cut here, so an underpass is infeasible. An overpass could work, but would be very costly as it would have to span the frontage road and I-25.

**Hotspot #5 at MP 10.5.** This area has level terrain and there is a frontage road to the east, making it unfavorable for either an under or overpass.

**ADVANCE.** Underpass at MP 10.4 to address the hotspots at MPs 10.5, 10.6, and 11.0. Topography with stream under I-25 provides a favorable location for an underpass.

**MP 10.0.** An underpass was considered. Topographically, this is a good location for an underpass, but the crossing at MP 10.4 is closer to the hotspots.

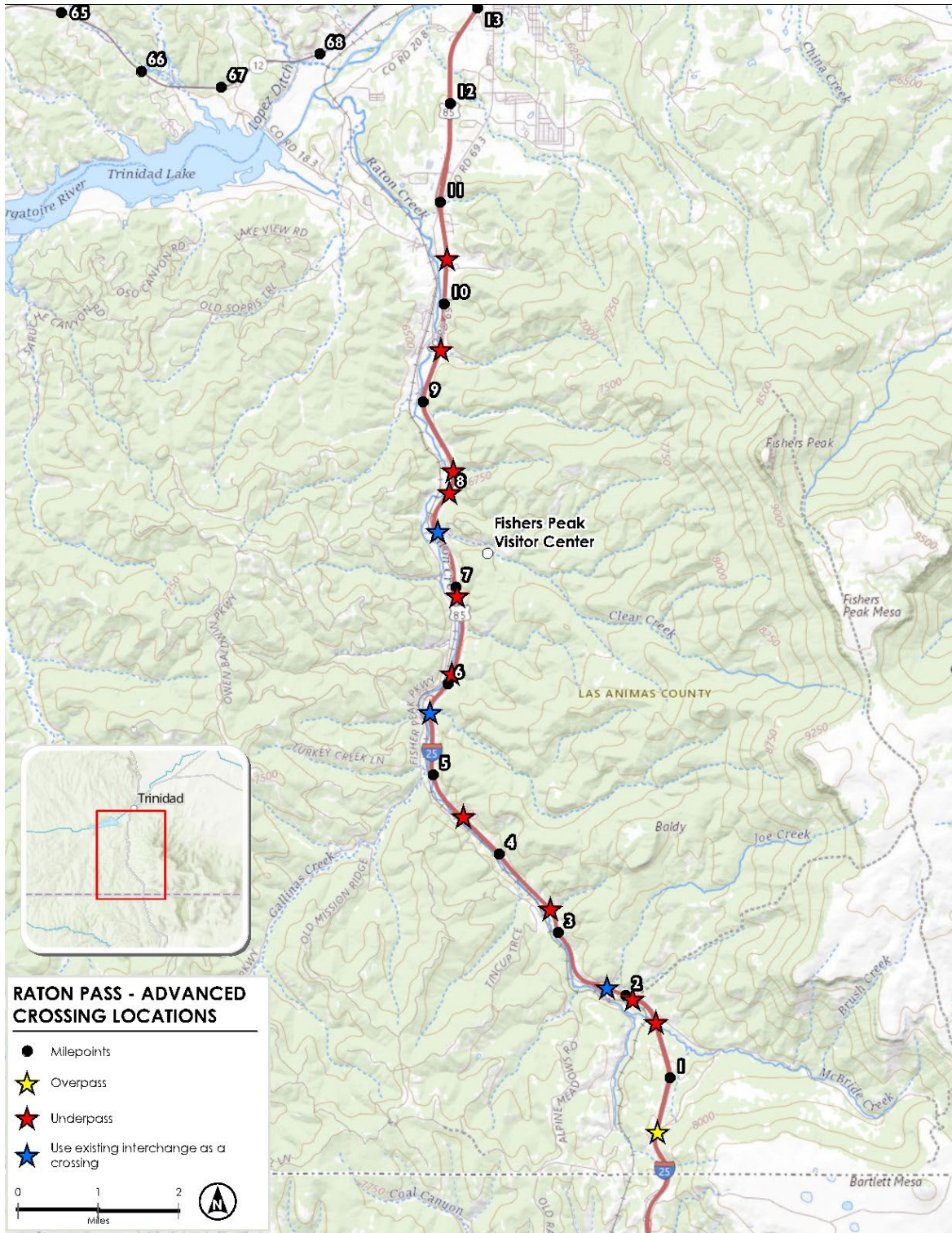


**RATON PASS**

- Milepoints
- CSU Hotspot
- CDOT Structures
- Trails (COTREX)
- Trails (CPW)
- Wetland
- Riverine
- Fishers Peak State Park
- Frontage Road
- Right-Of-Way

0 500 1000  
US Feet

**Figure 1. Mitigation Strategies Advanced Through the Screening Criteria**



## SUMMARY OF MITIGATION STRATEGIES ADVANCED

The tables below summarize the crossings and mitigation strategies that will be advanced for further evaluation and prioritization.

### Crossings

MP	Description
0.4	Overpass
1.0	Add informational signs at scenic overlook
1.6 or 1.9	Underpass
2.1	Fence and deer guards at interchange to allow wildlife to cross at interchange
3.3	Underpass
4.5	Underpass
5.6	Fence and deer guards at interchange to allow wildlife to cross at interchange
6.1	Underpass
7.7	Fence and deer guards at interchange to allow wildlife to cross at interchange
8.0 or 8.2	Underpass
10.4	Underpass
11	Fence and deer guards at interchange to keep wildlife out of interchange area

### Other Mitigation Strategies

Wildlife fencing with deer guards and escape ramps
Short segments of fencing
Static warning signs
Dynamic wildlife warning systems
Variable message signs
Public Information Campaign
Trash ordinance
Monitoring