



4.0 ALTERNATIVES DEVELOPMENT AND SCREENING

This section discusses the development of alternatives considered in the study, the process by which the alternatives were sequentially screened, and the results of each screening phase. The section on Quantitative Screening also discusses the potential effects of the alternatives considered in that final screening phase. For more information regarding the Initial and Qualitative Screening phases, refer to the technical memoranda entitled *SH 392 EOS Results of Initial Screening Phase Memorandum* and *SH 392 EOS Results of Qualitative Screening Memorandum*, respectively.

4.1 Screening Process

The EOS evaluated alternatives in a three-step screening process: Initial, Qualitative, and Quantitative. The process was designed to progressively screen alternatives from consideration, starting with ability to meet purpose and need and fatal environmental flaws in the Initial Screening, then progressing to a cursory assessment of discrete alternatives in the Qualitative Screening, and finally, a more detailed evaluation in the Quantitative Screening. Figure 4.1 illustrates the screening process.

Screening criteria were developed for each of the three screening levels, as appropriate for the progressive nature of the process. Table 4.1 lists the criteria employed in each level of screening. Generally, the same criteria is used at each level, but the performance measures by which each criteria is judged is done so in more detail at each subsequent level and as fewer alternatives are considered.

4.2 Alternatives Development

The initial set of alternatives consisted of numerous highway alternatives and several multi-modal options. These alternatives, shown in Figure 4.2, were route concepts sketched on an aerial photograph to show their general location. The development of highway alternatives was conducted at a regional level to consider the effects that all existing and planned regional roadways may have on the ability to meet regional east-west mobility needs, and to ensure that alternatives would also be considered where appropriate. Projects on fiscally-constrained transportation plans were assumed to be completed and in place. Other planned improvements that were not on approved, fiscally-constrained plans were also considered, namely the Crossroads Boulevard/O-Street Connection. Finally, in developing the alternatives that would be considered, the EOS took a regional approach to developing a comprehensive set of possible alignments that complemented this base network and which could meet the east-west mobility purpose of SH 392. In the Initial Screening phase, the routes did not contain specific typical sections. Alternative typical sections were developed and evaluated beginning in the Qualitative Screening phase.



Multi-modal options that were initially considered on SH 392 consisted of the following:

- Commuter rail stations
- Park-n-Ride lots
- Bus lanes/High-Occupancy Vehicle (HOV) lanes
- Regional multi-use trails

In addition to the action alternatives, a No-Action Alternative, under which the SH 392 corridor would remain unimproved, was also considered. This discrete alternative is distinct from other sections of no-action that were requested by some study stakeholders. There were two sections of no-action that were considered. One was the Carpenter Road/LCR 32 section from Timberline Road to I-25, requested by the Fort Collins Natural Resources Advisory Board in order to minimize effects to the natural areas around Duck Lake and Fossil Creek Reservoir. The second section of no-action was in downtown Windsor from SH 257 North to SH 257 South, requested by the Town of Windsor in order to preserve the parking and retail commerce downtown.

4.3 Screening Results

The following sections discuss the progressive screening of alternatives through the Initial, Qualitative, and Quantitative evaluation phases. The section on Quantitative Screening also includes a discussion of the potential effects of each alternative considered in that phase.

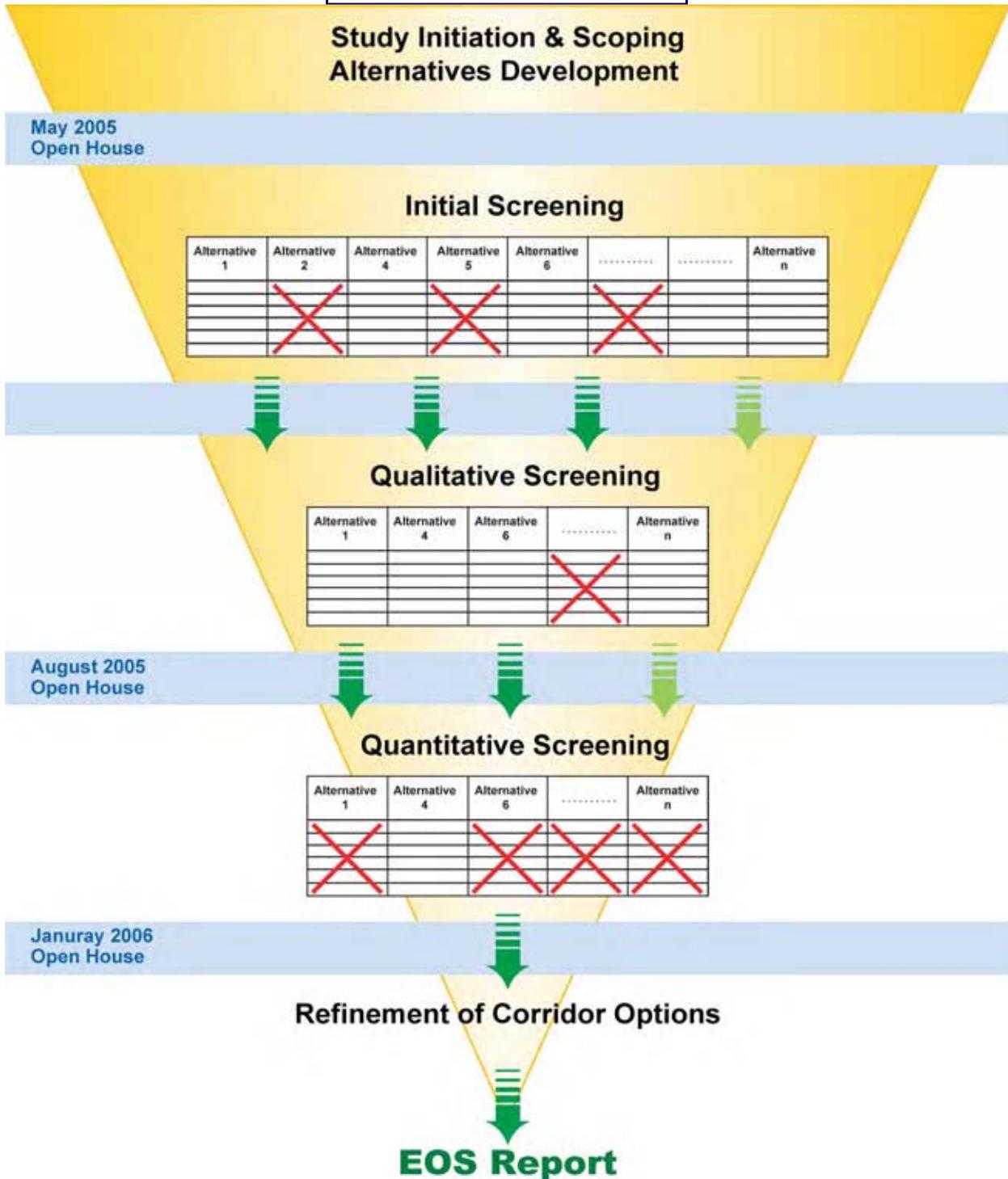
4.3.1 Initial Screening

At this preliminary level, the alternatives were merely concepts, and no geometry was developed for them. Therefore, no impact analysis was performed. Screening was based on a qualitative assessment of whether the alternative had the ability to meet the study purpose and need and whether any environmental fatal flaws were identified.

The disposition of each of the highway alternatives after the Initial Screening is shown in Figure 4.3. Those carried forward to the Qualitative Screening phase are shown in orange, and those eliminated from further consideration are shown in white.



Figure 4.1
Alternatives Screening Process





**Table 4.1
Screening Criteria**

Goals	Objectives	Screening Criteria	
		Qualitative Screening Level	Quantitative Screening Level
Mobility: To ensure adequate provisions are made to meet regional transportation mobility needs for 2030 and beyond	Provide adequate connectivity to regional transportation network	Is the alternative continuous over the study length? Distance of out of direction travel/increase in lane miles	Trip length and travel time
	Maintain an appropriate balance between accessibility and mobility (mainline)	Number of intersections per trip length	LOS and travel time
	Minimize congestion and delays (vehicular) [intersection]	N/A	LOS and travel time
	Accommodate regional trail system	Does the alternative enhance trail components?	Number of new trail connections and mileage of new trails
	Accommodates local and regional bus service	Ridership potential	Persons per miles traveled and transit travel times
	Accommodates potential regional passenger rail transfer/feeder	Does the alternative accommodate a potential station location?	Travel time, parking capacity, description of multi-modal connections
	Provides adequate vehicular capacity	Reserve Capacity	V/C, LOS
	Accommodate multimodal transfer stations	Does the alternative accommodate multi-modal transfer opportunities?	Travel time, parking capacity, description of multi-modal connections



**Table 4.1 (Continued)
Screening Criteria**

Goals	Objectives	Screening Criteria	
		Qualitative Screening Level	Quantitative Screening Level
Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Compatibility of transportation solution with land use plans	Does the alternative support land use patterns that are compatible with local land use plans?	Does the alternative support land use patterns that are compatible with local land use plans?
	Minimize impact to prime and unique farmlands	Acres of soil type	Acres, type, and severity
	Minimize impacts to ditches and canals	Number of crossings	Linear feet of impact and number of crossings
	Minimize impact to the Socioeconomics of the corridor	Number of businesses directly impacted	Assessment of affect on employment, housing, and commerce
	Minimize impacts to potential Environmental Justice communities	Number of potential EJ communities affected	Number and type of population impacted by census block group
	Minimize ROW impacts	Acres of ROW impact; number of residential and commercial displacements	Acres of ROW impact: number of residential and commercial displacements and cost
	Minimize the loss of access to properties	Does the alternative take access away from properties?	Number of properties impacted
	Minimize impacts to utilities	Number of major utilities crossed	Number of major crossings; linear feet impacted; cost
	Minimize impacts to Railroads	Number of crossings	Number of locations, linear feet, and type of crossing
	Ensure conformity with regional Air Quality standards	Does the alternative conform with the regional plan?	Number of intersections LOS D or worse



**Table 4.1 (Continued)
Screening Criteria**

Goals	Objectives	Screening Criteria	
		Qualitative Screening Level	Quantitative Screening Level
Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Minimize Noise impacts	Number of receptors with the 66 dba threshold	Number of receptors impacted
	Minimize encroachment on Hazardous Waste sites	Number of HAZ-MAT sites impacted, severity	Number of HAZ-MAT sites impacted, severity
	Minimize impact to Archaeologic/Paleontologic Resources	Number of sites	Number of sites impacted
	Minimize impact to Historic Resources	Number and type of sites	Number and type of sites impacted
	Minimize impact to Section 4(f)/6(f) Resources	Number of sites	Number of sites and area impacted
	Minimize impact to Open Space and Natural Areas	Acres impacted	Acres impacted
	Minimize impact to Wildlife/Fisheries	Qualitative Assessment (L/M/H)	Number of sites impacted
	Minimize impact to potential Threatened or Endangered Species and Habitat	Acres of Threatened or Endangered species habitat or Colorado Species of Special Concern habitat impacted, number of raptor nests impacted	Acres of Threatened or Endangered species habitat or Colorado Species of Special Concern habitat impacted, number of raptor nests impacted
	Minimize impact to Migratory Bird sensitive areas	Is the alternative in a sensitive area for breeding and/or foraging?	Acres impacted



**Table 4.1 (Continued)
Screening Criteria**

Goals	Objectives	Screening Criteria	
		Qualitative Screening Level	Quantitative Screening Level
Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Minimize impact to Riparian Areas	Acres impacted	Acres impacted
	Minimize impact to Wetlands and Waters of the US	Acres of wetlands impacted	Acres of wetlands impacted (Jurisdictional/Non-Jurisdictional)
		Acres of Waters of the US impacted	Acres of Waters of the US impacted
	Minimize Floodplain impacts	Is 100-year floodplain impacted?	Total length of floodplain crossed by alternative
	Minimize impacts to critical water resources; surface and ground Water Quality	Acres of impervious surface area of alternative, traffic volume	Acres of impervious surface area of alternative, traffic volume
Safety: Provide for the safe movement of people and goods	Provide a prudent design that addresses identified safety and design deficiencies	Does the alternative meet all/desirable/minimum project design criteria?	Does the alternative meet all/desirable/minimum project design criteria?
	Provide an Alignment that allows for proper sight distances and speed reduction areas	Does the alternative meet all/desirable/minimum project design criteria?	Does the alternative meet all/desirable/minimum project design criteria?
	Provide for adequate roadway shoulders and medians	Left and right shoulder widths; median width	Left and right shoulder widths; median width
Corridor Planning: Make full use of EOS to identify other opportunities to address the needs of SH 392	Long term corridor preservation	Conformity with RTPs	Conformity with the RTPs
	Minimize implementation costs	Is the alternative constructible?	Construction Cost

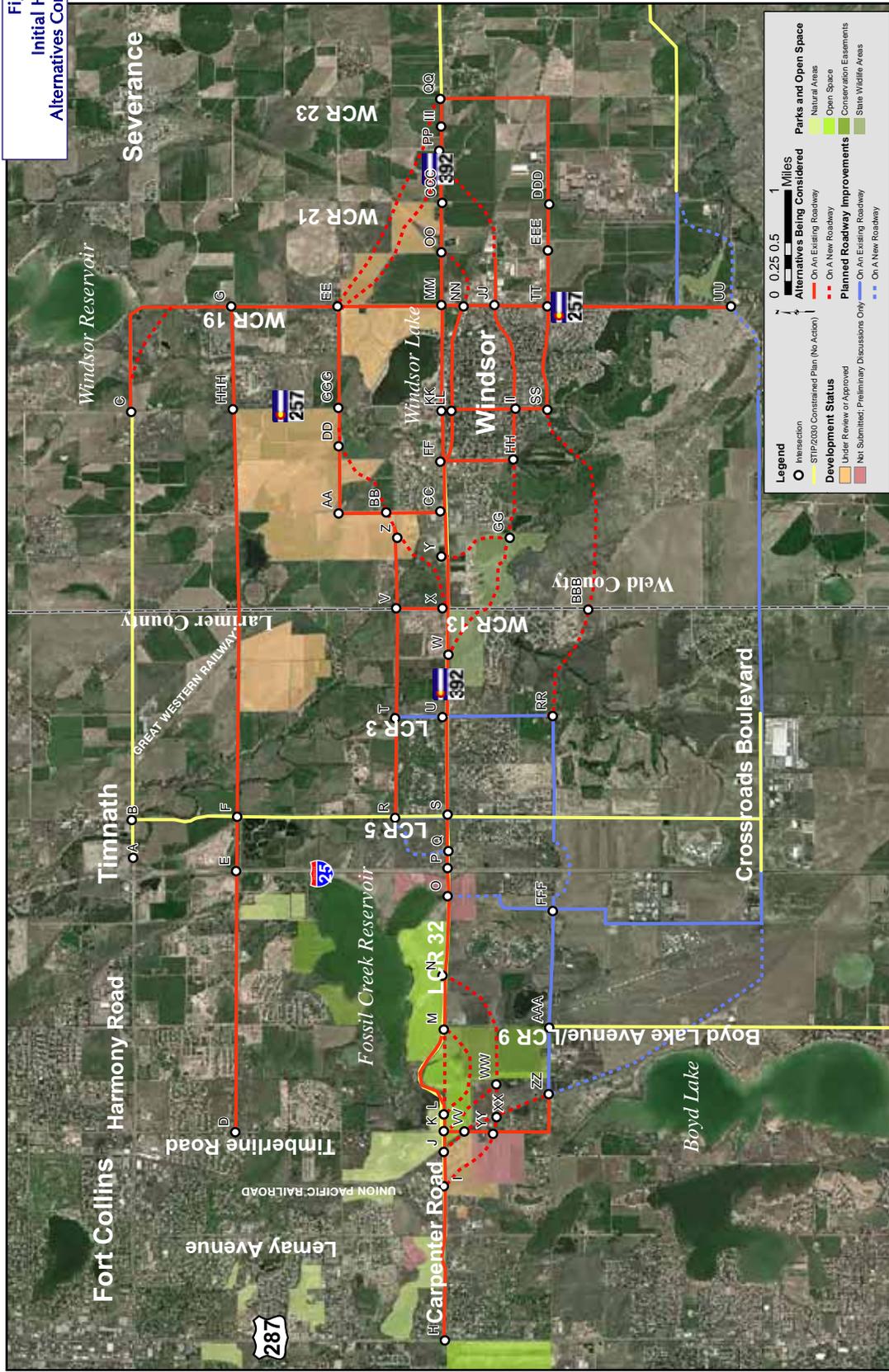


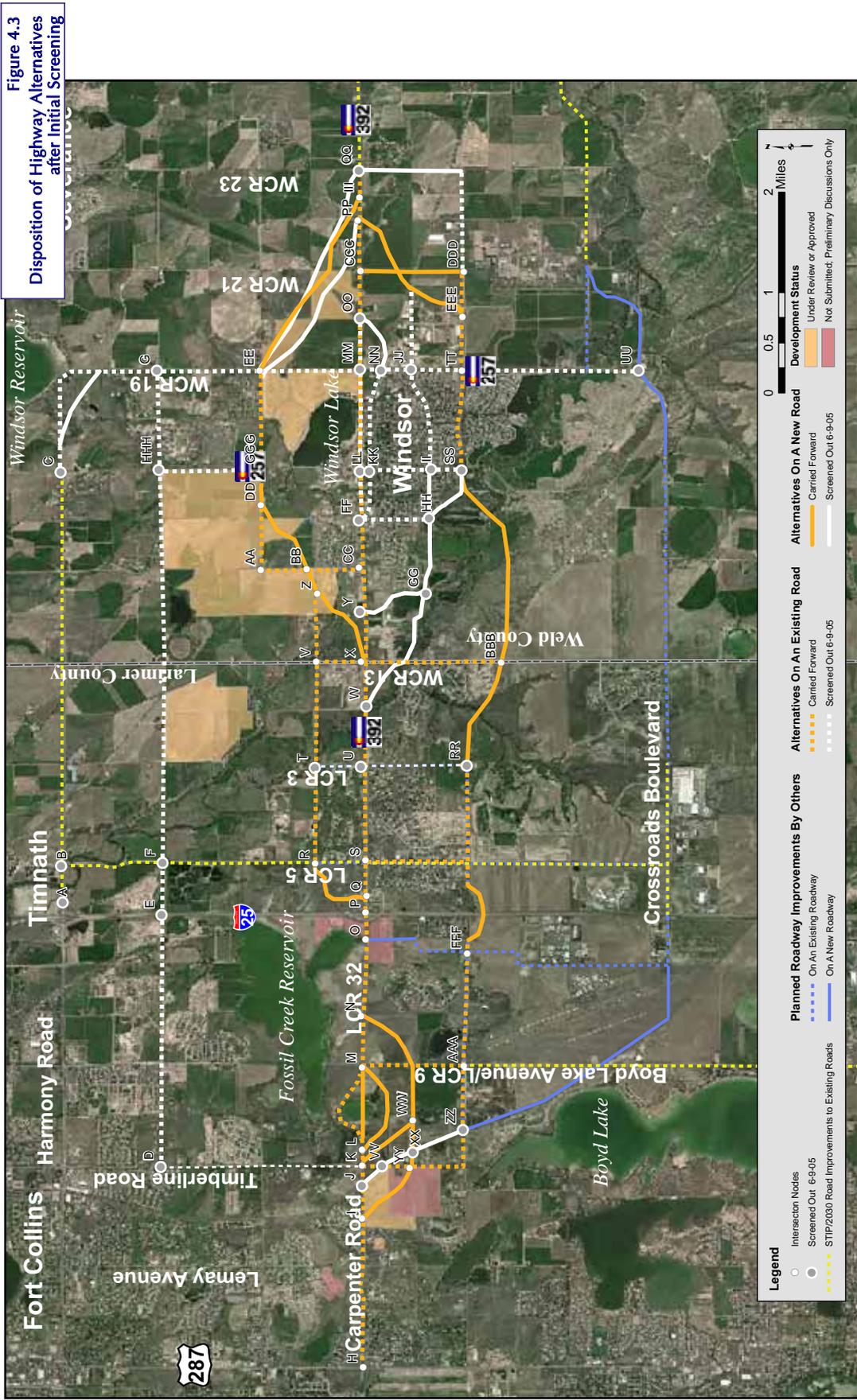
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Figure 4.2
Initial Highway Alternatives Considered







All multi-modal alternatives were carried forward to the Qualitative Screening phase for consideration with the highway alternatives.

Refer to the *SH 392 EOS Results of Initial Screening Phase Memorandum* for additional information on the Initial Screening process.

4.3.2 Qualitative Screening

In the Qualitative Screening phase, the highway alternatives carried forward from the Initial Screening were further developed with horizontal geometry, typical section (number of lanes), and an assumed ROW width. This allowed some identification of potential direct effects of the alternatives. In some cases these effects could be quantified; for others, they were simply described qualitatively based on available information.

The Qualitative Screening results are shown in Figure 4.4, which presents how each highway alternative was scored on the screening criteria. The disposition of each of the alternatives after completion of the Qualitative Screening is shown in Figure 4.5. Those carried forward to the Quantitative Screening phase are shown in yellow, and those eliminated from further consideration are shown in white.

Multi-modal alternatives were also screened in the Qualitative Screening phase. The screening recommendations for the multi-modal alternatives were:

- Bus/HOV Lanes were not carried forward due to low ridership potential
- Bus service in mixed traffic was considered for combination with highway alternatives
- Enhancements to regional trails were carried forward for combination with highway alternatives
- Transportation Systems Management (TSM) and TDM strategies were carried forward in combination with highway alternatives
- Multi-modal transfer stations and park-n-Ride lots will be considered where North I-25 EIS proposed transit alignments cross the study corridor

At this point in the screening, typical sections were introduced into the screening process. Two sets of typical sections were developed, as shown in Figure 4.6 and Figure 4.7 – one for rural applications and one for non-rural applications. Generally, these typical sections consisted of four through lanes, with a common center left turn lane, a raised median, or a depressed median. The difference between the rural and non-rural sets was the absence of curb and gutter and the presence of a separated bike path on the rural section. All six of these typical sections were carried forward for further consideration in the Quantitative Screening.

Refer to the *SH 392 EOS Results of Qualitative Screening Memorandum* for additional information on the Qualitative Screening process.



4.3.3 Quantitative Screening and Evaluation of Alternatives

This section discusses the alternatives considered in this phase and the potential effects each alternative would have on the environmental resources identified in *Section 3.0, Project Context*.

The alternatives considered in this Quantitative Screening phase are illustrated in Figure 4.8. They consist of a group of three alternatives around Duck Lake, and a group of two alternatives through and around the Town of Windsor. The No-Action Alternative was also considered in this phase.

The results of the Quantitative Screening essentially became the EOS recommendations, and are discussed in *Section 6.0, Recommendations*.

4.3.3.1 Transportation System

2030 Traffic

Future traffic projections were made using the 2030 NFRMPO travel demand model. No changes were made to the population and employment data in the model. Network changes were made as appropriate for the various alternatives. 2030 traffic volumes are forecasted to be, on average, two to three times existing volumes.

The four-lane alternative has adequate capacity to handle the 2030 travel demand, operating at LOS D or better. (Note that Alternatives A, C, and E of the West Alignment group all had the same volume, and thus LOS, since they do not involve different travel patterns. This is also the case for the other two alternatives – four lanes on existing alignment with two lanes in downtown Windsor, and M1-R.) Figure 4.9 presents the 2030 traffic and LOS for this alternative, and indicates that SH 392 will carry approximately 32,000 to 36,500 vpd west of I-25 and approximately 30,000 to 55,000 vpd between I-25 and Windsor. Main Street through the downtown area would carry about 30,000 vpd with this four-lane alternative, and would operate at LOS C. East of SH 257 South, the volumes drop considerably to approximately 20,000 vpd.

The four lane with two lanes in downtown Windsor alternative is the same as the four-lane alternative, except that it only has two lanes from 7th Street to 3rd Street, and thus does not have adequate capacity to handle the 2030 travel demand. Figure 4.10 presents the 2030 traffic and LOS for this alternative. The section through downtown would carry approximately 25,000 vpd with this two-lane option, and would operate at LOS F.

Alternative M1-R would carry the about same volumes as the other alternatives west of WCR 13, and would carry up to 16,000 vpd on the bypass section, diverting about 3,600 vpd off Main Street through downtown as compared to No-Action, a reduction of approximately 15 percent. Figure 4.11 presents the 2030 Traffic and LOS for this alternative. The bypass around town would operate at LOS A and B, and Main Street through downtown would operate at LOS C under a reduced volume of 21,000 vpd.



Figure 4.4
Qualitative Screening Results

More Desirable
 Moderate Desirability
 Less Desirable
 Indicates criteria was a different screen between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	Existing Alignment Group				
				Variations				
				A	B	C	D	E
Mobility: To investigate possible strategies to meet 2030 mobility needs for SH 392 for the purpose of corridor preservation, and to study potential alternative alignments in areas of special concern Environmental, cultural, and social transportation of the surrounding communities	Provide adequate connectivity to regional transportation network	Distance of out of direction travel/increase in lane miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles
	Maintain an appropriate balance between accessibility and mobility (mainline)	Number of intersections per trip length	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections
	Provides adequate vehicular capacity	Reserve Capacity (Volume per day)	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles
	Compatibility of transportation solution with land use plans	Is the alternative compatible with local land use plans?	<input type="radio"/> Yes <input checked="" type="radio"/> No					
	Potential prime and unique farmlands	Acres of soil type	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres
	Potential Low Income and Minority communities	Presence of potential Low Income and Minority communities	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence
	Right of Way	Acres of ROW impact	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres
		Number of residential and commercial displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements
	Ensure conformity with regional Air Quality standards	Does the alternative conform with the regional plan?	<input type="radio"/> Yes <input checked="" type="radio"/> No					
		Noise	Number of receptors within the 66 dba threshold	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable

Indicates criteria was a different criteria or screen alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	Existing Alignment Group				
					Variations				
					A	B	C	D	E
Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Hazardous Waste sites	Number of haz-mat sites impacted	<ul style="list-style-type: none"> <input type="radio"/> < 10 Sites <input checked="" type="radio"/> 10 to 20 Sites <input checked="" type="radio"/> > 20 Sites 	<input type="radio"/>	<input checked="" type="radio"/>				
	Archaeologic/Paleontologic Resources	Number of Non-Eligible, Eligible, Listed sites*	<ul style="list-style-type: none"> <input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input checked="" type="radio"/> > 10 Sites 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Historic Resources	Number of Non-Eligible, Eligible, Listed sites*	<ul style="list-style-type: none"> <input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input checked="" type="radio"/> > 10 Sites 	<input type="radio"/>	<input checked="" type="radio"/>				
	Section 4(f)(6)(f) resources	Number of sites	<ul style="list-style-type: none"> <input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input checked="" type="radio"/> > 10 Sites 	<input type="radio"/>	<input checked="" type="radio"/>				
	Open Space and Natural Areas	Acres impacted	<ul style="list-style-type: none"> <input type="radio"/> < 15 Acres <input checked="" type="radio"/> 15 to 30 Acres <input checked="" type="radio"/> > 30 Acres 	<input type="radio"/>	<input checked="" type="radio"/>				
	Potential T or E Species and habitat	Acres of T or E species habitat or Colorado Species of Special Concern habitat impacted, number of raptor nests impacted	<ul style="list-style-type: none"> <input type="radio"/> Low <input checked="" type="radio"/> Medium <input checked="" type="radio"/> High 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Migratory Bird sensitive areas	Is the alternative in a sensitive area for breeding and/or foraging?	<ul style="list-style-type: none"> <input type="radio"/> Low <input checked="" type="radio"/> Medium <input checked="" type="radio"/> High 	<input type="radio"/>	<input checked="" type="radio"/>				
	Riparian Areas	Acres impacted	<ul style="list-style-type: none"> <input type="radio"/> < 5 Acres <input checked="" type="radio"/> 5 to 10 Acres <input checked="" type="radio"/> > 10 Acres 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Wetlands and Waters of the US	Acres impacted	<ul style="list-style-type: none"> <input type="radio"/> < 5 Acres <input checked="" type="radio"/> 5 to 15 Acres <input checked="" type="radio"/> > 15 Acres 	<input type="radio"/>	<input checked="" type="radio"/>				
	Floodplain	Acres impacted	<ul style="list-style-type: none"> <input type="radio"/> < 20 Acres <input checked="" type="radio"/> 20 to 40 Acres <input checked="" type="radio"/> > 40 Acres 	<input type="radio"/>	<input checked="" type="radio"/>				



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable
 Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	Existing Alignment Group				
					Variations				
					A	B	C	D	E
Safety: Provide for the safe movement of people and goods of SH 392 opportunities to address the needs of other EOs Corridor Planning: Make full use	Provide a prudent design that addresses identified safety and design deficiencies	Does the alternative meet all/ desirable/ minimum project design criteria?	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Long term corridor preservation	Conformity with the regional transportation plans	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Minimize implementation costs	Construction Cost	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Constructability	Difficulty of construction	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Summary of Alternative Recommendation for Alternative: <input checked="" type="checkbox"/> Carry Forward to Quantitative Screening; <input type="checkbox"/> Screen Out: <input checked="" type="checkbox"/>					<input checked="" type="radio"/> Meets mobility needs <input type="radio"/> Moderate encroachment into Open Space areas <input type="radio"/> Moderate encroachment into Wetlands and Waters of the US <input type="radio"/> Greater encroachment upon potential 4(f) sites <input type="radio"/> Greater encroachment upon Historic Resources through Windsor <input type="radio"/> Enhances existing alignment	<input type="radio"/> Meets mobility needs <input type="radio"/> Greater encroachment into Open Space areas <input type="radio"/> Greater encroachment into Wetlands and Waters of the US <input type="radio"/> Greater encroachment upon potential 4(f) sites <input type="radio"/> Greater encroachment upon Historic Resources through Windsor <input type="radio"/> Requires construction of new roadway south of Duck Lake <input type="radio"/> Lacks local agency support	<input type="radio"/> Meets mobility needs <input type="radio"/> Greater encroachment into Open Space areas <input type="radio"/> Moderate encroachment into Wetlands and Waters of the US <input type="radio"/> Greater encroachment upon potential 4(f) sites <input type="radio"/> Greater encroachment upon Historic Resources through Windsor <input type="radio"/> Requires construction of new roadway south of Duck Lake	<input type="radio"/> Meets mobility needs <input type="radio"/> Moderate encroachment into Open Space areas <input type="radio"/> Lesser encroachment into Wetlands and Waters of the US <input type="radio"/> Moderate encroachment upon potential 4(f) sites <input type="radio"/> Greater encroachment upon Historic Resources through Windsor <input type="radio"/> Requires construction of new roadway south of Duck Lake	

* Number of Non Eligible sites for the State Register of Historic Places, Eligible sites for the State or National Register and Listed sites on the State or National Register



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable
 No Action

Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	North Alignment Group						
					Variation L & R	Variation L & S	Variation M & R	Variation M & S	Variation N & R	Variation N & S	
Mobility: To investigate possible strategies to meet 2030 mobility needs for SH 392 for the purpose of corridor preservation, and to study potential alternative alignments in areas of special concern	Provide adequate connectivity to regional transportation network	Distance of out of direction travel/increase in lane miles	<input type="radio"/> < 1 Mile <input type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Maintain an appropriate balance between accessibility and mobility (mainline)	Number of intersections per trip length	<input type="radio"/> < 11 Intersections <input type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Provides adequate vehicular capacity	Reserve Capacity (Volume per day)	<input type="radio"/> > 11,500 Vehicles <input type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Compatibility of transportation solution with land use plans	Is the alternative compatible with local land use plans?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
	Potential prime and unique farmlands	Acres of soil type	<input type="radio"/> < 25 Acres <input type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
	Potential Low Income and Minority communities	Presence of potential Low Income and Minority communities	<input type="radio"/> No Presence <input type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Right of Way	Acres of ROW impact	<input type="radio"/> < 100 Acres <input type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
			<input type="radio"/> < 25 Displacements <input type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
			<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Ensure conformity with regional Air Quality standards	Does the alternative conform with the regional plan?	<input type="radio"/> < 50 Receptors <input type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Noise	Number of receptors within the 66 dba threshold	<input type="radio"/> < 10 Sites <input type="radio"/> 10 to 20 Sites <input type="radio"/> > 20 Sites	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Hazardous Waste sites	Number of haz-mat sites impacted	<input type="radio"/> < 10 Sites <input type="radio"/> 10 to 20 Sites <input type="radio"/> > 20 Sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> < 10 Sites <input type="radio"/> 10 to 20 Sites <input type="radio"/> > 20 Sites				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable
 Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	North Alignment Group					
					Variation L&R	Variation L&S	Variation M&R	Variation M&S	Variation N&R	Variation N&S
Provide for the safe movement of people and goods Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Archaeologic/Paleontologic Resources	Number of Non-Eligible, Eligible, Listed sites*	<input type="radio"/> < 5 Sites <input type="radio"/> 5 to 10 Sites <input type="radio"/> > 10 Sites	<input type="radio"/>						
	Historic Resources	Number of Non-Eligible, Eligible, Listed sites*	<input type="radio"/> < 5 Sites <input type="radio"/> 5 to 10 Sites <input type="radio"/> > 10 Sites	<input type="radio"/>						
	Section 4(f)/(f) resources	Number of sites	<input type="radio"/> < 5 Sites <input type="radio"/> 5 to 10 Sites <input type="radio"/> > 10 Sites	<input type="radio"/>						
	Open Space and Natural Areas	Acres impacted	<input type="radio"/> < 15 Acres <input type="radio"/> 15 to 30 Acres <input type="radio"/> > 30 Acres	<input type="radio"/>						
	Potential T or E Species habitat and habitat	Acres of T or E Species habitat or Colorado Species of Special Concern habitat impacted, number of raptor nests impacted	<input type="radio"/> Low <input type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>						
	Migratory Bird sensitive areas	Is the alternative in a sensitive area for breeding and/or foraging?	<input type="radio"/> Low <input type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>						
	Riparian Areas	Acres impacted	<input type="radio"/> < 5 Acres <input type="radio"/> 5 to 10 Acres <input type="radio"/> > 10 Acres	<input type="radio"/>						
	Wetlands and Waters of the US	Acres impacted	<input type="radio"/> < 5 Acres <input type="radio"/> 5 to 15 Acres <input type="radio"/> > 15 Acres	<input type="radio"/>						
	Floodplain	Acres impacted	<input type="radio"/> < 20 Acres <input type="radio"/> 20 to 40 Acres <input type="radio"/> > 40 Acres	<input type="radio"/>						
	Safety: Provide for the safe movement of people and goods	Does the alternative meet all/ desirable/ minimum project design criteria?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/>						



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable

Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	North Alignment Group					
				Variation L & R	Variation L & S	Variation M & R	Variation M & S	Variation N & R	Variation N & S
Corridor Planning: Make full use of SH 392 opportunities to address the needs of EOS to identify other	Long term corridor preservation	Conformity with the regional transportation plans	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Minimize implementation costs	Construction Cost	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Constructability	Difficulty of construction	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
		Summary of Alternative	<ul style="list-style-type: none"> Does not meet mobility needs No opportunity for safety improvements 	<ul style="list-style-type: none"> Meets mobility needs New Bluff and River Crossings increase difficulty of construction Moderate encroachment into riparian areas Moderate potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost to construct longer parallel facility Encroaches on Bald Eagle nesting area 	<ul style="list-style-type: none"> Meets mobility needs Utilizes existing Bluff and River crossings Lesser encroachment into riparian areas Greater potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost No encroachment into Bald Eagle nesting area 	<ul style="list-style-type: none"> Meets mobility needs Utilizes existing Bluff and River Crossings Lesser encroachment into riparian areas Greater potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost No encroachment into Bald Eagle nesting area 	<ul style="list-style-type: none"> Meets mobility needs Utilizes existing Bluff and River Crossings Lesser encroachment into riparian areas Greater potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost No encroachment into Bald Eagle nesting area 	<ul style="list-style-type: none"> Meets mobility needs Utilizes existing Bluff and River Crossings Lesser encroachment into riparian areas Greater potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost No encroachment into Bald Eagle nesting area 	<ul style="list-style-type: none"> Meets mobility needs Utilizes existing Bluff and River Crossings Lesser encroachment into riparian areas Greater potential for noise increases Moderate encroachment into Wetlands and Waters of the US Higher cost No encroachment into Bald Eagle nesting area
		Recommendation for Alternative	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Carry Forward to Quantitative Screening:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Screen Out:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Number of Non Eligible sites for the State Register of Historic Places, Eligible sites for the State or National Register and Listed sites on the State or National Register



Figure 4.4
Qualitative Screening Results
(Continued)

Indicates effects was a differentiator between alternatives in a group.

Less Desirable Moderate Desirability More Desirable

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	South Alignment Group																
					Variation U & X	Variation U & Y	Variation U & Z	Variation V & X	Variation V & Y	Variation V & Z	Variation W & X	Variation W & Y	Variation W & Z								
Investigate possible strategies to meet 2030 mobility needs for SH 392 for the purpose of corridor preservation, and to study potential alternative alignments in areas of special concern Mobility: To investigate possible strategies to meet 2030 mobility needs for SH 392 for the purpose of corridor preservation, and to study potential alternative alignments in areas of special concern Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Provide adequate connectivity to regional transportation network	Distance of out of direction travel/increase in lane miles	<input type="radio"/> < 1 Mile <input checked="" type="radio"/> 1 to 2 Miles <input type="radio"/> > 2 Miles	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
	Maintain an appropriate balance between accessibility and mobility (mainline)	Number of intersections per trip length	<input type="radio"/> < 11 Intersections <input checked="" type="radio"/> 11 to 24 Intersections <input type="radio"/> > 24 Intersections	<input checked="" type="radio"/>																	
	Provides adequate vehicular capacity	Reserve Capacity (Volume per day)	<input type="radio"/> > 11,500 Vehicles <input checked="" type="radio"/> 0 to 11,500 Vehicles <input type="radio"/> < 0 Vehicles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Compatibility of transportation solution with land use plans	Is the alternative compatible with local land use plans?	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>																	
	Potential prime and unique farmlands	Acres of soil type	<input type="radio"/> < 25 Acres <input checked="" type="radio"/> 25 to 50 Acres <input type="radio"/> > 50 Acres	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Potential Low Income and Minority communities	Presence of potential Low Income and Minority communities	<input type="radio"/> No Presence <input checked="" type="radio"/> Some Presence <input type="radio"/> Definite Presence	<input type="radio"/>																	
	Right of Way	Acres of ROW impact	<input type="radio"/> < 100 Acres <input checked="" type="radio"/> 100 to 200 Acres <input type="radio"/> > 200 Acres	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Ensure conformity with regional Air Quality standards	Number of residential and commercial displacements	<input type="radio"/> < 25 Displacements <input checked="" type="radio"/> 25 to 50 Displacements <input type="radio"/> > 50 Displacements	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Noise	Does the alternative conform with the regional plan?	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>																	
	Hazardous Waste sites	Number of receptors within the 66 dba threshold	<input type="radio"/> < 50 Receptors <input checked="" type="radio"/> 50 to 100 Receptors <input type="radio"/> > 100 Receptors	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Archaeologic/ Paleontologic Resources	Number of haz-mat sites impacted	<input type="radio"/> < 10 Sites <input checked="" type="radio"/> 10 to 20 Sites <input type="radio"/> > 20 Sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Historic Resources	Number of Non-Eligible, Eligible, Listed Sites*	<input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input type="radio"/> >10 Sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Number of Non-Eligible, Eligible, Listed Sites*	<input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input type="radio"/> >10 Sites	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	



Figure 4.4
Qualitative Screening Results
(Continued)

Less Desirable
 Moderate Desirability
 More Desirable
 Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	South Alignment Group													
					Variation U & X	Variation U & Y	Variation U & Z	Variation V & X	Variation V & Y	Variation V & Z	Variation W & X	Variation W & Y	Variation W & Z					
Provide for the safe movement of people and goods Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Section 4(f)/(4)(f) resources	Number of sites	<input type="radio"/> < 5 Sites <input checked="" type="radio"/> 5 to 10 Sites <input type="radio"/> >10 Sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Open Space and Natural Areas	Acres Impacted	<input type="radio"/> < 15 Acres <input checked="" type="radio"/> 15 to 30 Acres <input type="radio"/> > 30 Acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Potential T or E Species and habitat	Acres of Tor E habitat or Colorado Species of Special Concern habitat impacted; number of raptor nests impacted	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Migratory Bird sensitive areas	Is the alternative in a sensitive area for breeding and/or foraging?	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Riparian Areas	Acres Impacted	<input type="radio"/> < 5 Acres <input checked="" type="radio"/> 5 to 10 Acres <input type="radio"/> > 10 Acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Wetlands and Waters of the US	Acres impacted	<input type="radio"/> < 5 Acres <input checked="" type="radio"/> 5 to 15 Acres <input type="radio"/> > 15 Acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Floodplain	Acres Impacted	<input type="radio"/> < 20 Acres <input checked="" type="radio"/> 20 to 40 Acres <input type="radio"/> > 40 Acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Safety: Provide for the safe movement of people and goods	Provide a prudent design that addresses identified safety and design deficiencies	Does the alternative meet all/ desirable/ minimum project design criteria?	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>													
	Corridor Planning: Make full use of EOS to identify other opportunities to address the needs of SH 392	Long term corridor preservation	Conformity with the regional transportation plans	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/>													
		Minimize implementation costs	Construction Cost	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>													
	Constructability	Difficulty of construction	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	



Figure 4.4
Qualitative Screening Results
(Continued)



Less Desirable
 Moderate Desirability
 More Desirable

Indicates criteria was a differentiator between alternatives in a group.

Goals	Objectives	Qualitative Screening Criteria	Thresholds	No Action	South Alignment Group									
					Variation U & X	Variation U & Y	Variation U & Z	Variation V & X	Variation V & Y	Variation V & Z	Variation W & X	Variation W & Y	Variation W & Z	
				<ul style="list-style-type: none"> Does not meet mobility needs No opportunity for safety improvements 	<ul style="list-style-type: none"> Meets mobility needs Greater encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Greater encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Greater encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Moderate encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Moderate encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Moderate encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Moderate encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 	<ul style="list-style-type: none"> Meets mobility needs Moderate encroachment into riparian areas Moderate encroachment into Wetlands and Waters of the US Greater out of direction travel New Interchange at I-25 not allowed Bluff and River Crossings increase difficulty of construction Building State Highway through residential area is not desirable 		
				✓	X	X	X	X	X	X	X	X	X	X
					Recommendation for Alternative: Carry Forward to Quantitative Screening: ✓ Screen Out: X									

Summary of Alternative

* Number of Non Eligible sites for the State Register of Historic Places, Eligible sites for the State or National Register and Listed sites on the State or National Register



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Figure 4.5
Disposition of Alternatives After Qualitative Screening

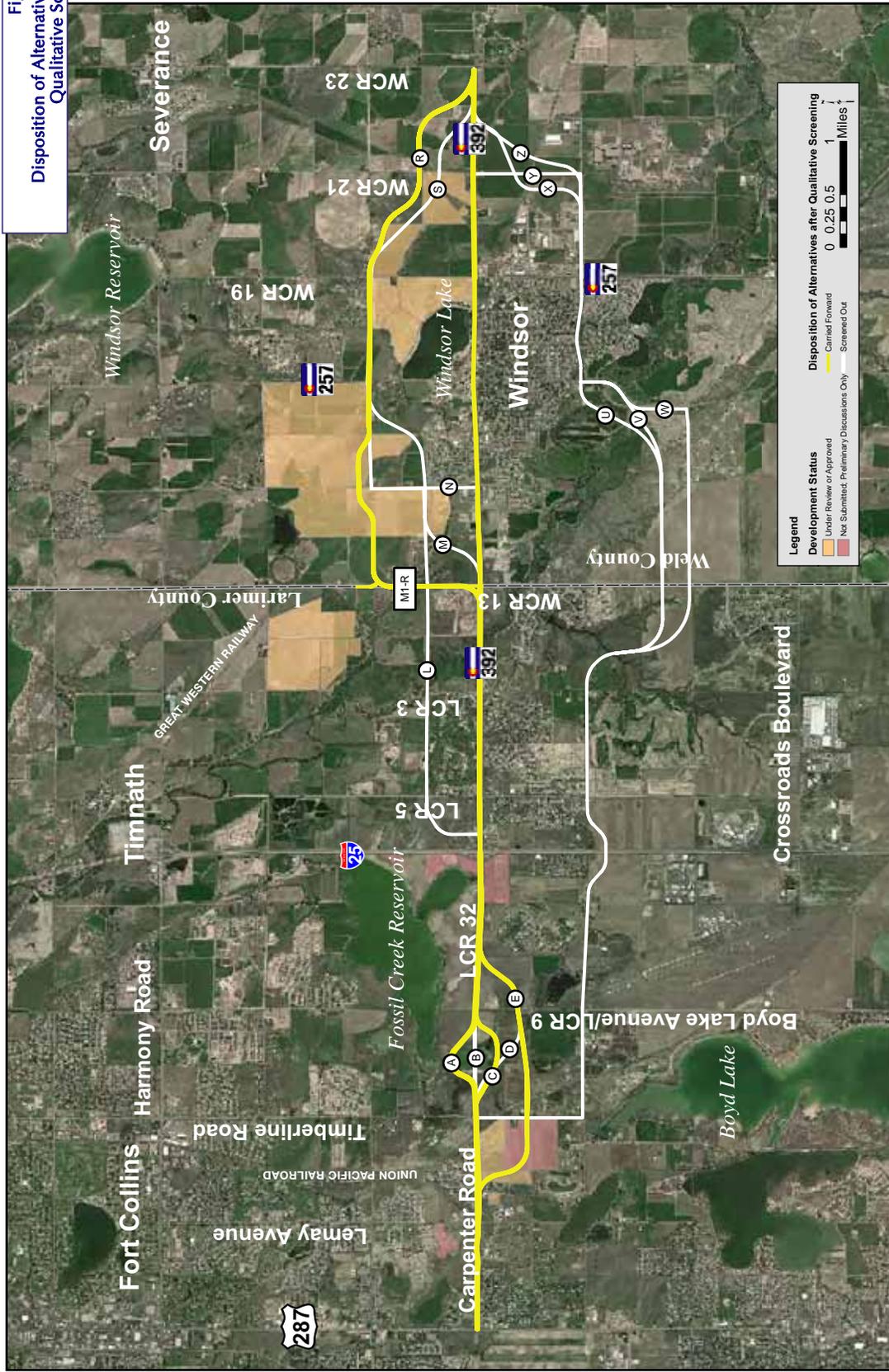
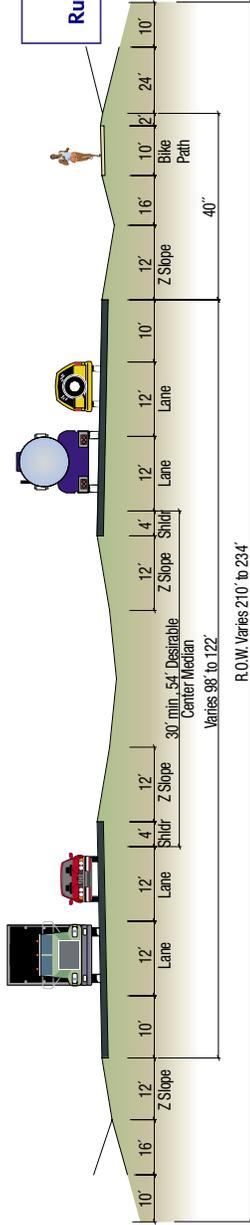


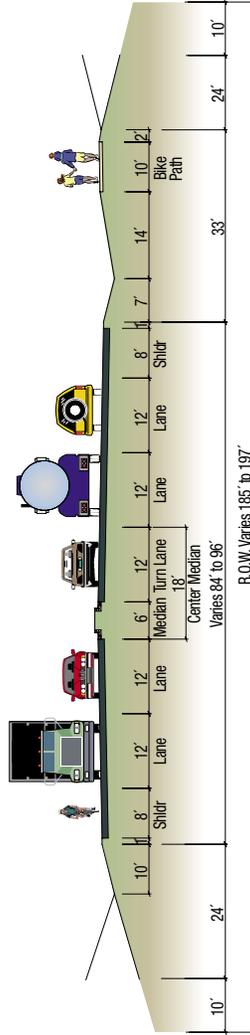


Figure 4.6
Rural Typical Sections Considered



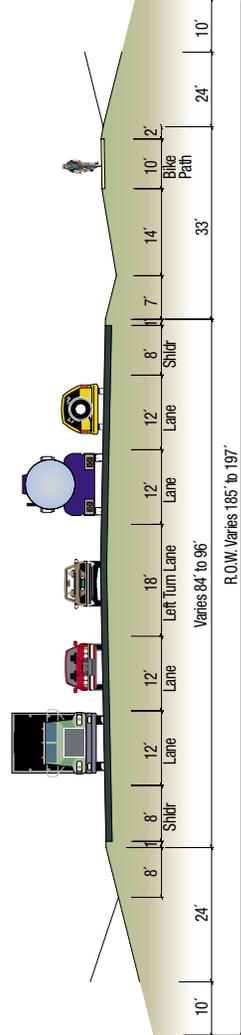
RURAL 4-LANE WITH DEPRESSED MEDIAN

Posted Speed \geq 45 mph
Access Category: R-A Regional Highway



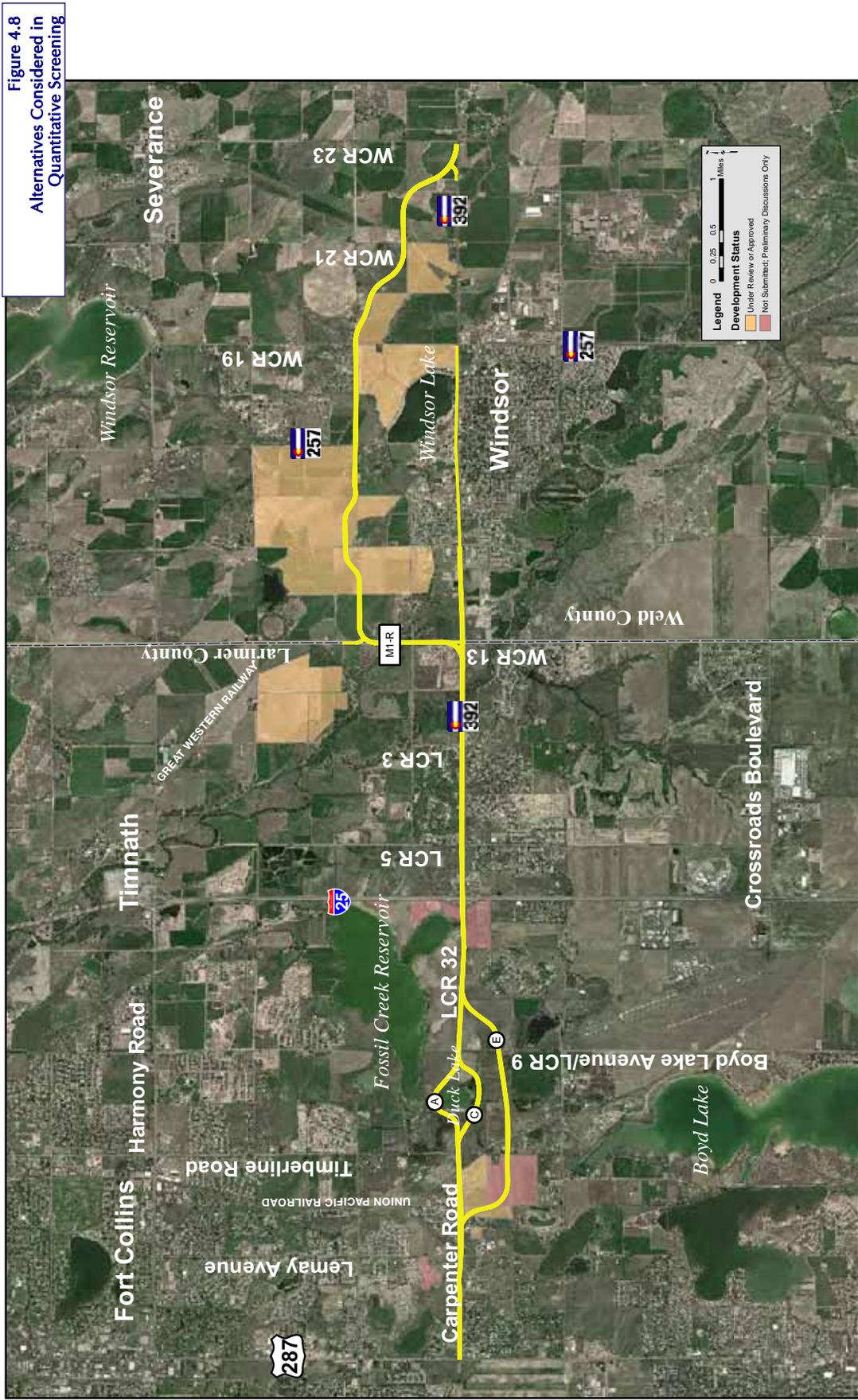
RURAL 4-LANE WITH RAISED MEDIAN

Posted Speed \leq 45 mph
Access Category: R-B Rural Highway



RURAL 4-LANE WITH COMMON LEFT TURN LANE

Posted Speed $>$ 45 mph
Access Category: R-B Rural Highway



(Improvement is 4 Lanes Except in Downtown Windsor Which Remains 2 Lanes)

**Figure 4.10
2030 4-lane Traffic and LOS, with
2 lanes in downtown Windsor**

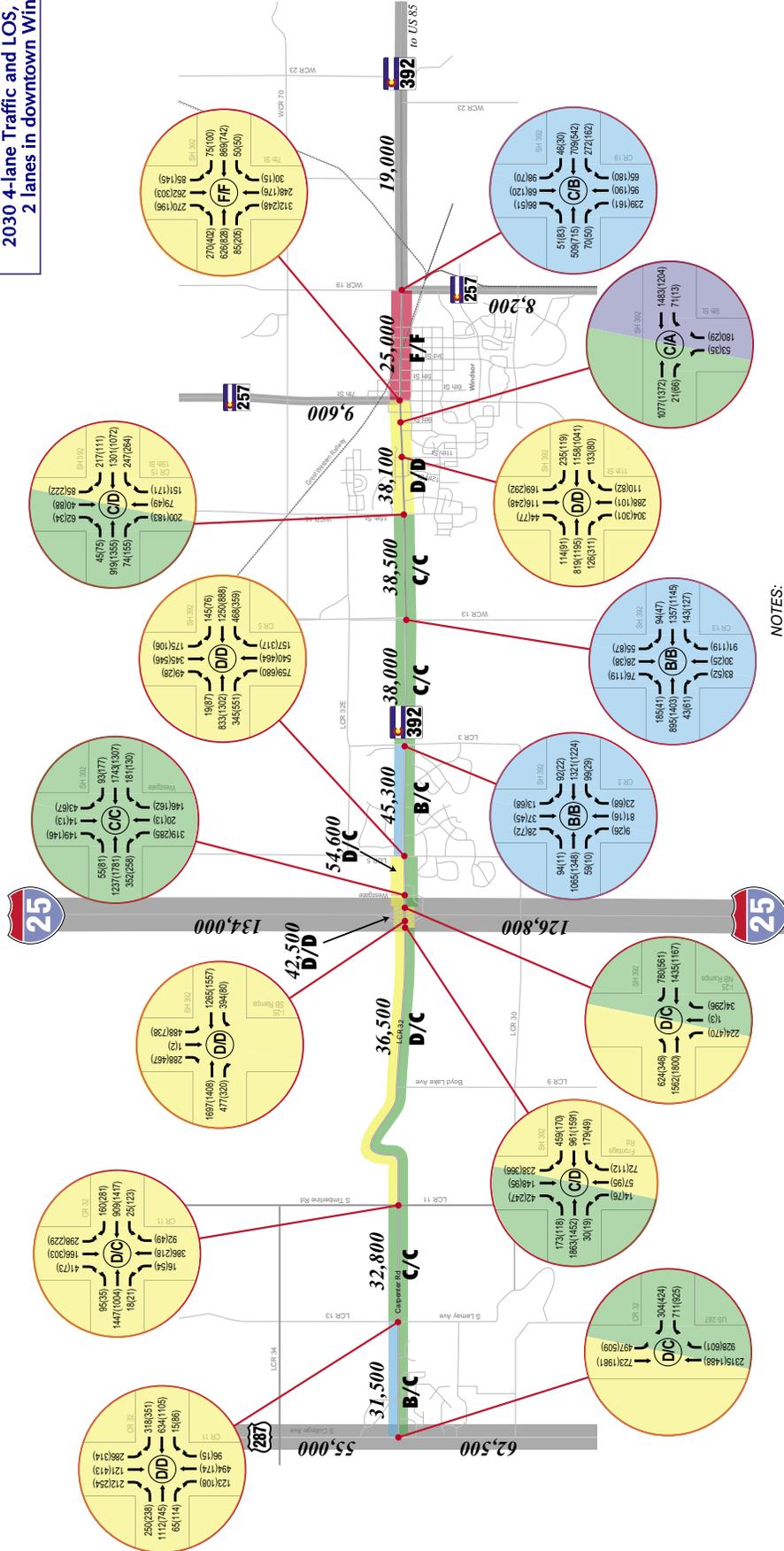
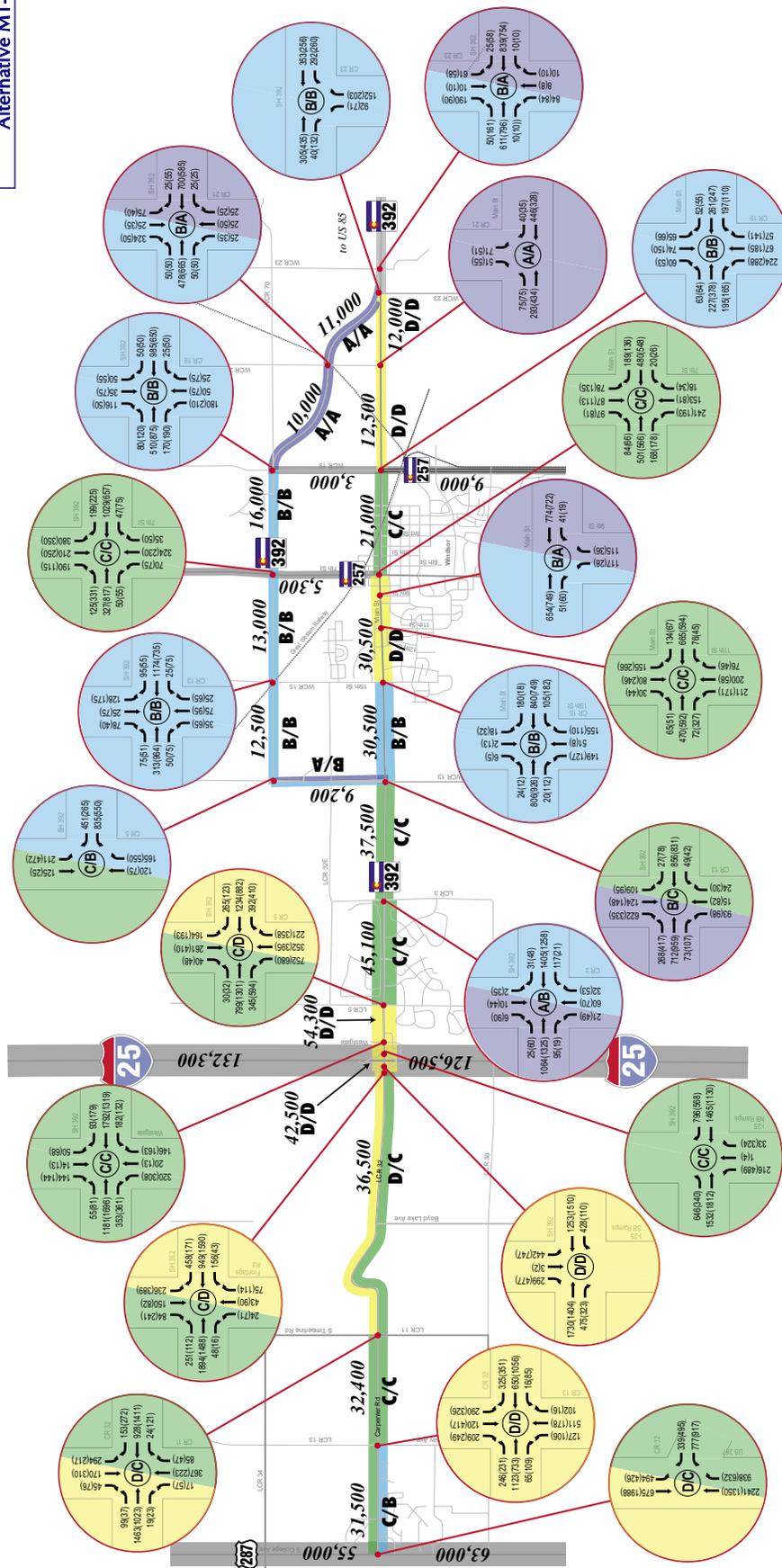




Figure 4.11
2030 Traffic and LOS,
Alternative M1-R

(Improvement is 4 Lanes Except Existing Alignment WCR 13 To WCR 23 which remains 2 lanes)



Legend

(XX) = AMPM Signalized Intersection Level of Service
 XXXXXX = AMPM Turning movement counts
 (XXX) = Date of Traffic Counts

XX,XXX = Average Daily Traffic Volumes
 X/X = AMPM Arterial Level of Service
 XXX = AMPM Arterial Level of Service

● = Level of Service A
 ● = Level of Service B
 ● = Level of Service C
 ● = Level of Service D
 ● = Level of Service E
 ● = Level of Service F

Arterial Average Daily Traffic Volumes

- Less than 20,000
- 20,000 to 30,000
- 30,000 to 50,000
- 50,000 to 70,000
- Greater than 70,000

North
 Not to Scale

NOTES:

- Levels of service shown for the EOS are composite ratings based on several shorter segments of roadway, and may therefore vary nominally from the more detailed information presented by the ACP study
- Intersections that do not show Level of Service are unsignalized
- Forecasted volumes were generated from the NFR MPO 2030 Travel Demand Model
- Assumes I-25 interchange will be improved by North I-25 EIS



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4.3.4 Typical Sections

The six typical sections considered at this level were evaluated based on public and agency comment. Figure 4.12 presents the considered typical sections and also illustrates where each of the two typical sections are recommended to be applied throughout the corridor. Two sections are recommended: a rural section and a non-rural section. The rural section was selected for the majority of the corridor because it contains a shoulder and roadside ditch, a much more cost effective solution than the non-rural section which includes curb and gutter and a closed storm sewer system. The non-rural section has applications though, in areas which are likely to have a higher intensity of development and pedestrians. In these areas, the curb and gutter aids in access control, and the sidewalk provides enhanced pedestrian movement and safety.

The separated bike path was eliminated from consideration because of the additional ROW required and the additional environmental effects that would result. As has been noted in other sections of this report, there are numerous parks, open spaces, and natural areas that are traversed by SH 392. In these areas, the separated bike path only served to increase the potential effects to these resources. The study team was well aware that subsequent planning, NEPA, and design efforts would seek to avoid or minimize those effects, and so concluded that it would only be prudent to minimize the “footprint” by eliminating the separated path. In lieu of the separate bike path, it was decided that bicycle traffic would use on-street bike lanes in the non-rural typical section, and use the paved shoulder on the rural section. The City of Fort Collins recommended marking shoulders with special pavement markings that indicated such a shared-use facility, and suggested a marking concept that they have implemented on a test basis within the City.

4.4 Environmental Consequences

The potential effects of the alternatives in the Quantitative Screening phase are summarized in this section. Figure 4.13 compares the potential effects of the alternatives and shows how each alternative fared against the screening criteria. For more detailed information on the effects to each resource, refer to the *SH 392 EOS Affected Environment Technical Memoranda*. The results of the Quantitative Screening essentially became the EOS recommendations, and are discussed in *Section 6.0, Recommendations*.

In the following sections, the No-Action Alternative is that alternative which consists of no-action on any part of the corridor. This is in contrast to the “sections” of no-action discussed earlier in this report, which were previously eliminated from further consideration (from Timberline Road to I-25 and between SH 257 North and South).

For ease of reference, the action alternatives were split into two groups: those west of WCR 13 and those east of WCR 13 – which allow “mixing and matching” of the subset alternatives around Duck Lake and around Windsor. The West Alignment Group consists of Alternatives A, C, and E around Duck Lake. The East Alignment Group consists of the Existing Alignment (existing SH 392) and Alternative M1-R around downtown Windsor. In this way, any of the alternatives around Duck Lake could be combined with either of the alternatives around Windsor to create a contiguous roadway through the entire study area.



4.4.1 Compatibility with Land Use Plans

No-Action Alternative

The No-Action Alternative is compatible with current land use plans. However, without the proper balance between transportation and planned development, the No-Action Alternative may inhibit the planned growth in the corridor.

West Alignment Group

Alternative A of the West Alignment Group is compatible with all current land use plans.

Alternative C and E are not compatible with current land use plans as both alternatives impact the planned open space areas of Fossil Creek Reservoir Regional Open Space and the Everitt Conservation Easement. Both alternatives would affect the current operations of the South Fort Collins Sanitation's district sludge operation of application to property owned east of Duck Lake. Additionally, Alternative E severely impacts the planned Autumn Creek Development located between Lemay Avenue and Timberline Road.

East Alignment Group

The Existing Alignment of the East Alignment Group is compatible with current land use plans.

Alternative M1-R is moderately compatible with current land use plans, as it impacts the platted developments of Windshire Park Subdivision, Avery Meadows Annexation, Tacincala/Greenwald Farm, Greenspire Subdivision, Winter Farm Subdivision, and the Eastbrook Annexation.

4.4.2 Geology

No-Action Alternative

The No-Action Alternative would not have any direct or indirect effects associated with the geology, geologic hazards, soil or mineral resources identified within the project area.

West Alignment Group

There is no clear distinction between direct effects due to geology, geologic hazards, soils, or mineral resources associated with the SH 392 corridor, West Alignment Group, under any of the proposed action alternative packages. Any action alternative package will require crossing surficial and bedrock geology units that may require standard mitigation for erosion during construction.

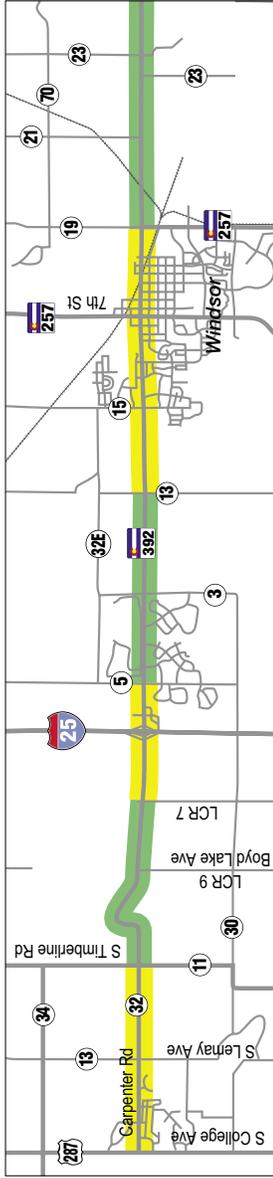
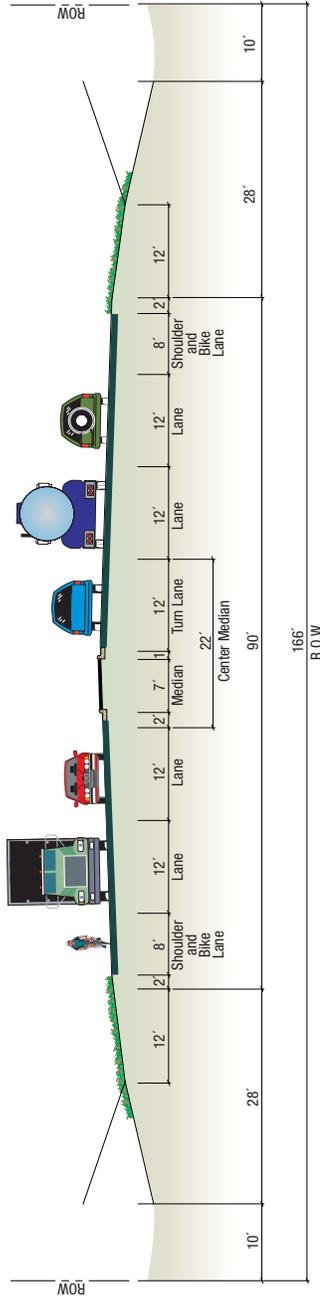


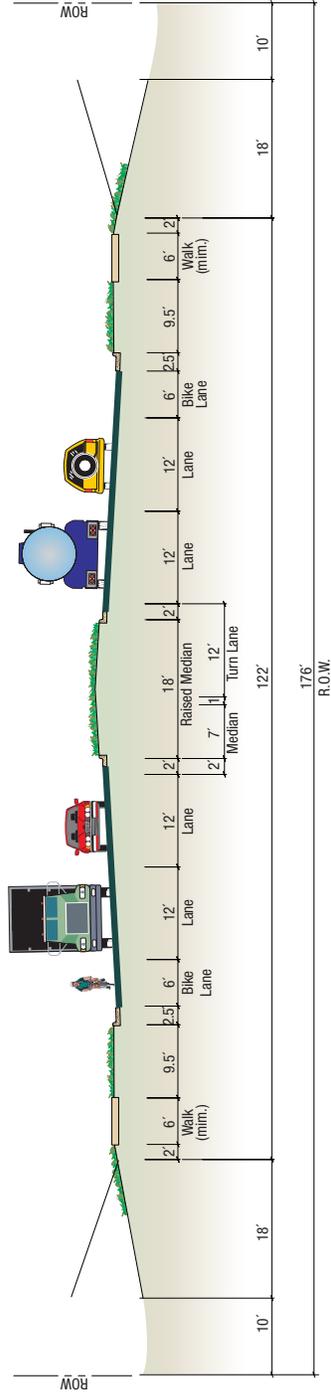
Figure 4.12
Typical Sections

Application of Typical Sections throughout the Corridor

Rural
4-lane with Raised Median



Non Rural
4-lane Arterial with Raised Median



Note:
Section assumes 6 foot fill height over existing ground



Figure 4.13
Quantitative Screening Results

Goals	Objectives	Quantitative Screening Criteria	Thresholds	West Alignment Group - US 287 to WCR 13					East Alignment Group - WCR 13 to US 257 S				
				No Action	Alignment A	Alignment C	Alignment E	No Action	Existing Alignment ¹ 4 Lanes Through Downtown Windsor	Alignment M1-R No Action Through Downtown Windsor			
<p>Mobility: To investigate possible strategies to meet 2030 mobility needs for SH 392 for the purpose of corridor analysis and to study potential alternative alignments to address spatial concern</p> <p>Provide adequate connectivity to regional transportation network</p> <p>Maintain an appropriate balance between accessibility and mobility (enhalms)</p> <p>Provides adequate vehicular capacity</p> <p>Potential Low Income and Minority communities</p> <p>Compatibility of transportation solution with land use plans</p> <p>Right of Way</p> <p>Minimize Socio-Economic Effects</p> <p>Noise</p> <p>Hazardous Waste sites</p> <p>Archaeology/Paleontologic Resources</p> <p>Historic Resources?</p> <p>Section 4(f)(1)(D) resources</p>	Degree of east-west mobility and connectivity to other regional routes	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	
	Arterial LOS	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	<ul style="list-style-type: none"> LOS C or better LOS D LOS E or F 	
	Number and type of population impacted by census block group	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence 	<ul style="list-style-type: none"> More Desirable Some Presence Difficult Presence
	Is a roadway compatible with local land use plans?	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable
	Acres of new ROW required	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres 	<ul style="list-style-type: none"> < 25 Acres 25 to 75 Acres > 75 Acres
	Number of residential and commercial displacements	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements 	<ul style="list-style-type: none"> < 5 Displacements 5 to 10 Displacements > 10 Displacements
	Affect on accessibility and business operations	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable 	<ul style="list-style-type: none"> More Desirable Moderately Desirable Less Desirable
	Number of receptors within the 660 feet setback and/or a 10 dBA increase	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites 	<ul style="list-style-type: none"> < 10 Sites 10 to 20 Sites > 20 Sites
	Number of historic sites impacted, priority	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites 	<ul style="list-style-type: none"> 1 to 2 Sites 2 to 4 Sites > 4 Sites
	Number of sites impacted	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites 	<ul style="list-style-type: none"> < 5 Sites 5 to 10 Sites > 10 Sites
Number of sites impacted	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	<ul style="list-style-type: none"> < 1 or 2 Sites 3 or 4 Sites > 5 Sites 	

Indicates criteria was a differentiator between alternatives in a group.

Less Desirable Moderate Desirable More Desirable

West to US 287 East to SH 257S

WCR 13



Figure 4.13
Quantitative Screening Results
(Continued)

West to US 287 ← | → East to SH 257S

Goals	Objectives	Quantitative Screening Criteria	Thresholds	West Alignment Group - US 287 to WCR 13				East Alignment Group - WCR 13 to US 257 S	
				No Action	Alignment A	Alignment C	Alignment E	No Action	Existing Alignment ¹ 4 Lanes Through Downtown Windsor
Environmental Effects: Provide transportation solutions that minimize impacts to the natural, cultural, and social environment of the surrounding communities	Conservation Easements	Acres impacted	○ < 1 Acre ● 1 to 5 Acres ○ > 5 Acres	○	○	●	○	○	○
	Potential T or E Species and Habitat	Acres of Threatened or Endangered Species or Colorado Species of Special Concern habitat impacted, number of raptor nests impacted	○ Low ● Medium ○ High	○	○	○	○	○	○
	Migratory Bird Sensitive Areas	Acres impacted	○ Low ● Medium ○ High	○	○	○	○	○	○
	Reptile Areas	Acres impacted	○ < 1 Acres ● 1 to 5 Acres ○ > 5 Acres	○	○	○	○	○	○
	Wetlands and Waters of the US	Acres impacted	○ < 1 Acres ● 1 to 5 Acres ○ > 5 Acres	○	○	○	○	○	○
Safety: Provide for the safe movement of people and goods	Floodplain	Acres impacted	○ < 10 Acres ● 10 to 20 Acres ○ > 20 Acres	○	○	○	○	○	○
	Provides a preferred design that addresses identified safety and design deficiencies	Does the alternative meet all project design criteria?	○ Yes ● No	○	○	○	○	○	○
Corridor Planning: Make full use of EIS flexibility opportunities to address the needs of SH 392	Minimum Construction Cost	Construction Cost Impact to existing traffic, number of new structures, and large changes to the vertical profile	○ < 20 Million Dollars ● 20 to 60 Million Dollars ○ > 60 Million Dollars	○	○	○	○	○	○
	Summary of Alternative				- Does not meet mobility needs - No opportunity for safety improvements	- Meets mobility needs - Greater encroachment upon potential 4(0) sites - Lesser encroachment into conservation easements - Moderate amount of ROW acquisition	- Meets mobility needs - Greater encroachment upon potential 4(0) sites - Greater encroachment into conservation easements - Greater amount of ROW acquisition	- Meets mobility needs - Moderate encroachment upon potential 4(0) sites - Greater encroachment into conservation easements - Greater amount of ROW acquisition	- Does not meet mobility needs - Lesser encroachment into floodplains

1. Other configurations of the existing alignment between SH 257 N and SH 257 S are shown on the Transportation Systems Management Table.
 2. Number of Eligible sites for the State or National Register and Listed sites on the State or National Register.



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Geologic conditions that have been identified along the corridor that directly impact the alternatives include expansive soils and bedrock, soil erosion, collapsible soils and shallow groundwater. None of these geologic conditions will have a detrimental affect that should alter the location of any of the proposed build alternatives.

The existing SH 392 alignment cuts through a sandstone outcrop approximately one mile east of I-25 at LCR 3. The outcrop consists of a buff colored thinly bedded sandstone. Also visible in the cut slope is a visible unconformity, or a geologic surface that separates older from younger rock types or deposits. Alternatives A, C, and E will likely require excavations through this formation. Cut slopes in this area should be excavated no steeper than 1.5 horizontal: 1 vertical to facilitate revegetation of the slopes.

East Alignment Group

The Existing Alignment Alternatives would not have any direct or indirect effects associated with the geology, geologic hazards, soils or mineral resources identified within the project area.

The M1-R Alternative primarily follows the existing alignments of county and local roads. The topography along the alignment is relatively flat and it is not anticipated that significant cuts or fills will be required for the construction of the roadway profile. Between WCR 19 and WCR 21 the proposed alignment deviates from the existing roadways. There are several active oil extraction wells and associated pits in this area. The permitted oil/gas wells that are located in this section are identified in Table 4.2. Based on a visual review of the proposed alternative, it appears that the Bonanza Creek Operating Company, Well #1 is located within the proposed M1-R Alternative. Mitigation alternatives may be feasible to minimize the loss of production including: avoidance by realigning the proposed M1-R roadway to the south, abandoning the existing well and relocating it outside of the roadway template or abandoning the well and purchasing the associated mineral rights. Further investigation will be required to evaluate the status of the well and potential effects to loss of production.

Table 4.2
Oil/Gas Wells

Alternative	Loss of Production	Well No.	Field Name	Operator
M1-R	Potential impact	WELL# 1	SEVERANCE	Bonanza Creek Operating Company, LLC
M1-R	No impact	WELL# 15-32	WATTENBERG	Prima Oil & Gas Company
M1-R	No impact	WELL# 15-31	WATTENBERG	Prima Oil & Gas Company
M1-R	No impact	WELL# 15-23	WATTENBERG	Prima Oil & Gas Company
M1-R	No impact	WELL# 15-32	WATTENBERG	Prima Oil & Gas Company
M1-R	No impact	WELL# 15-24	WATTENBERG	Prima Oil & Gas Company



4.4.3 Prime and Unique Farmlands

No-Action Alternative

There are no effects to prime and unique farmlands under the No-Action Alternative.

West Alignment Group

There are no effects to prime and unique farmlands in the West Alignment Group.

East Alignment Group

There are no effects to prime and unique farmlands with improvements to the Existing Alignment of the East Alignment Group.

A total of seven parcels located along Alternative M1-R are considered to be potential prime and unique farmlands. The total amount of acreage required from these parcels to accommodate the proposed roadway template for Alternative M1-R is 44.51 acres as compared to zero acres if SH 392 were to remain on the Existing Alignment.

4.4.4 Section 4(f)/Section 6(f) Resources

Assessment of effects to Section 4(f)/6(f) resources was essentially limited to identification of potential effects rather than total avoidance. This is because in each case there are Section 4(f) properties on both sides of the roadway, so avoidance was not simply a matter of shifting the alignment away from one resource. Although avoidance may be possible with more detailed design of the alternatives, that work was beyond the scope of this EOS. Therefore, potential Section 4(f)/6(f) effects are noted in this EOS and avoidance/minimization will need to be completed in a subsequent environmental/NEPA study.

No-Action Alternative

There are no effects to Section 4(f)/Section 6(f) resources under the No-Action Alternative.

West Alignment Group

Alternative A has the potential to impact the following six Section 4(f) properties: Pelican Marsh Natural Area, Fossil Creek Wetlands Natural Area, Fossil Creek Reservoir Open Space, Fossil Creek Reservoir Natural Area, River Bluffs Open Space, and the Frank State Wildlife Area.

Alternative C has the potential to impact the following six Section 4(f) properties: Pelican Marsh Natural Area, Fossil Creek Reservoir Open Space, Fossil Creek Reservoir Natural Area, Fossil Creek Wetlands Natural Area, River Bluffs Open Space, and the Frank State Wildlife Area.

Alternative E affects fewer Section 4(f) properties because of the new alignment to the south of Duck Lake. Alternative E affects the following four Section 4(f) properties: Pelican Marsh Natural Area, Fossil Creek Reservoir Open Space, River Bluff Open Space, and the Frank State Wildlife Area.



Alternatives A, C, and E would all impact the proposed Poudre River Trail where it is planned to cross SH 392 west of the Poudre River. As discussed in *Section 3.0, Project Context*, it is assumed for the purposes of this EOS that Sections 4(f)/6(f) apply, and that there would be impacts. However, final determination of applicability needs to be made in a subsequent environmental/NEPA study.

East Alignment Group

The Existing Alignment has no effects to Section 4(f) resources.

Alternative M1-R could impact the Frank State Wildlife Area with intersection improvements at WCR 13. There are no effects to Section 6(f) properties by Alternative M1-R.

4.4.5 Socioeconomic Factors

Projected rates of population growth within the two counties of the study area are expected to occur regardless of the proposed SH 392 project. Although the action alternatives may accommodate such population growth by improving access and mobility within the area, improving access for future development, and relieving traffic congestion in the area, the action alternatives would not affect such population growth. Furthermore, since the action alternatives would not affect population growth, it follows that there would be no difference between the alternatives in the effect on population growth in the two counties.

No-Action Alternative

During the short-term, no economic benefits related to project construction would occur. Therefore, study area communities would not benefit from a boost in employment, economic output, income and tax collections that would result from construction activity.

During the long-term, urbanization is expected to continue within the study area at a rapid rate. There are several large parcels within both the western and eastern corridor areas which are expected to be developed without the proposed project. However, some of the parcels that would become more attractive for development under Alternative M1-R may be slightly less attractive for development under the No-Action Alternative.

Under the No-Action Alternative, during the long-term, traffic volume would continue to increase and level of service would continue to decrease along the existing SH-392, especially in the downtown Windsor area. The increase in traffic congestion in downtown Windsor may have an adverse affect on the attractiveness of the downtown area for redevelopment investment. The high volume of traffic along SH 392 has the effect of dividing the downtown area. These negative effects within the downtown area may make it more difficult for the Town of Windsor to achieve its goals (stated in the *Town of Windsor, Colorado Comprehensive Plan, 2002*) of preserving "...Old Town, history, heritage and identity." Under the No-Action Alternative, if the Town of Windsor is less successful at preserving and redeveloping its downtown area into an area attractive for visitors and with a greater sense of community, then downtown businesses and the Town of Windsor economy may not achieve their full potential.



West Alignment Group

Any of the action alternatives, if implemented, would cause short-term beneficial effects to the Larimer and Weld County economies through an infusion of construction dollars. These effects are explained in the *SH 392 EOS Affected Environment Technical Memoranda*. For the Western Alignment Group, the greatest short-term economic benefit would be related to Alternative E and the least short-term economic benefit would be related to Alternative A as a result of the estimated construction cost of the alignments.

In the long-term, if the project were to be built and open to traffic, each of the western alignments (A, C, and E) would likely have very similar long-term economic effects on the local economy. Mobility and LOS would be improved within the western portion of the corridor with all of these alternatives. Most of the parcels along the western corridor that are developable are either already proposed for development, or preliminary plans have been made for development. Development among these parcels is expected to occur regardless of which alternative is chosen. However, there are conservation/open-space preservation restrictions on many of the parcels in this area. All of the western alignments would have the effect of accommodating higher traffic volumes along this corridor in the future.

East Alignment Group

For the Eastern Alignment Group, the greatest short-term economic benefit would be related to Alternative M1-R and the least economic benefit would be related to the Existing Alignment due to relative construction costs.

Within the eastern portion of the corridor, differences could be expected in long-term economic effects associated with Alternative M1-R and the Existing Alignment. If Alternative M1-R is built, and open to traffic, better access would be provided to several large parcels north of the downtown Windsor area. The improved access to these parcels may make development more attractive, and may also affect the type of development that would occur in this area. The improved access may make commercial development more feasible in this area. Alternative M1-R would relieve approximately 7,600 to 9,000 vpd by the year 2030 along the existing SH 392 through downtown Windsor. Although the traffic volume through the downtown would be less than that of the No-Action Alternative, most of the vehicle trips that would take the M1-R route would likely be through-traffic that would not stop in the downtown area anyway. By diverting traffic to the M1-R alternative, the Town of Windsor would likely have an improved opportunity to preserve and redevelop its downtown area. Therefore, the M1-R alternative would likely allow the Town of Windsor to benefit economically from new development occurring north of downtown, and from an improved downtown business district that is more attractive to visitors (destination drivers) and residents.

In the long-term, if the Existing Alignment is improved, the Town of Windsor would be able to better accommodate the projected increase in traffic volume. The Existing Alignment would re-stripe the typical section along SH 392, and would cause a loss of all of the downtown parking on the existing SH 392 corridor. Widening the existing pavement is not necessary to produce a 4-lane typical section. The re-striping of the existing area would be utilized to accommodate a



four-lane template with possibly a center turn lane and limited turn lanes. The loss of parking in the downtown area could impact the number of customers at downtown businesses unless alternative parking options are found. Also, the increased traffic volume, and changed typical section may make pedestrian movement across the roadway in the downtown area more challenging.

4.4.6 Conservation Easements

No-Action Alternative

There are no effects to conservation easements under the No-Action Alternative.

West Alignment Group

Alternative A would require 0.58 acres be acquired from the Everitt Conservation Easement to accommodate the improvements necessary for projected traffic volumes along the existing alignment.

Alternative C requires that 8.11 acres be acquired from the Everitt Conservation Easement for the construction of a new roadway alignment south of Duck Lake to correct current design deficiencies and accommodate projected traffic volumes.

Alternative E requires that 10.53 acres be acquired from the Everitt Conservation Easement for the construction of a new roadway alignment on the southern edge of the Everitt property to accommodate projected traffic volumes and avoid wetland areas.

East Alignment Group

There are no effects to conservation easements in the East Alignment Group.

4.4.6.1 Community Cohesion

As defined in *FHWA Technical Advisory T6640.8A*, changes in community cohesion as a result of highway construction and improvements may be beneficial or adverse and may include dividing neighborhoods, isolating a part of a neighborhood or ethnic group, generating new development, changing property values, and separating residents from community facilities. Direct effects to community cohesion may result from improvements to an existing facility as well as from the construction of a new highway.

Generally, none of the proposed alternatives would divide neighborhoods, isolate part of a neighborhood or ethnic group, or separate residents from community facilities. There are some differences between the proposed alternatives, related to community cohesion, and these are discussed below.

No-Action Alternative

Under the No-Action Alternative, no beneficial or adverse effects related to community cohesion would occur.



West Alignment Group

Alternatives A, C, and E would all require acquisition of some property prior to construction. In terms of effects to property, Alternative E would have the greatest impact, while Alternative A would have the least impact.

East Alignment Group

The Existing Alignment option would require roadway widening along a one-mile stretch of the existing SH 392 that is between WCR 13 and 15th Street, and would require lane re-striping and removal of angled parking between 3rd and 7th Streets in downtown Windsor. Generally, the Existing Alignment would allow for continued traffic movement along the existing route through downtown Windsor. The Existing Alignment may have an adverse effect on community cohesion by increasing the volume of traffic that travels through the downtown Windsor area. This increase in the volume of traffic within the downtown Windsor area generally discourages other forms of transportation in the downtown area, such as walking and bicycling, and may generally degrade (or stifle the potential for) the attractiveness of the downtown area as a community focal point.

The M1-R Alternative would route traffic to the north of the Town of Windsor. The M1-R Alternative may be a benefit to community cohesion by routing traffic around the Town of Windsor, and removing much of the traffic that is currently funneled through the downtown area. The M1-R Alternative would likely provide better access to new development north of the Town of Windsor by providing highway access to many large vacant parcels making them more attractive for development.

4.4.6.2 Low-Income and Minority Communities

Assessment of low-income or minority populations in the study corridor concluded that there is not a presence of these populations in concentrations above the county-wide average. Verification of this conclusion will be required at such time that a future NEPA study is conducted.

4.4.7 Right of Way

No-Action Alternative

The No-Action Alternative would require no additional ROW.

West Alignment Group

Alternative A requires the least amount of additional ROW of the three action alternatives. Alternative A requires 68.58 acres of ROW acquisition, including the total take of four parcels.

Alternative C requires an additional 77.75 acres of ROW acquisition, including the total take of four parcels.



Alternative E requires the greatest amount of additional ROW in the West Alignment Group, with 108.26 acres of ROW acquisition, including the total take of 14 parcels because of recently platted developments along the corridor, namely at Autumn Creek.

East Alignment Group

The existing alignment alternative requires 31.31 acres of additional ROW acquisition, including the total take of one parcel. This is for the new construction required east of WCR 13 east to approximately 15th Street.

Alternative M1-R requires the greatest amount of ROW acquisition, needing 131.68 additional acres along existing roads, including the total take of six parcels.

4.4.8 Utilities

Potential utility conflicts were identified by comparing the alignment of each alternative with the locations of major utilities. The likelihood of a conflict was evaluated by assessing the profile of the roadway, depth/elevation of the utility, its type of protection, and potential for the presence of manholes and valves in relation to the proposed improvements in that location. This evaluation resulted in one of three determinations:

- Relocation: Utility would need to be moved horizontally and/or vertically to maintain adequate clearance and avoid conflict
- Adjustment: Utility would be affected by proposed improvement but no relocation is required. Actions considered adjustments include:
 - Lengthening pipe or culvert
 - Raising, lowering or moving manholes or valves
 - Moving inlets and associated piping
 - Extending or adding protective casing
 - Moving fire hydrants that would need to be moved
- No-Action Alternative: Utility will not be affected by proposed improvements

Both relocations and adjustments were evaluated because it is possible that disruption in service or endangerment to human health and the environment from rupture would result during either action.

Some or all effects may be minimized or eliminated during the design phase of the project. The potential effects to utilities are described in Table 4.3.

No-Action Alternative

There are no effects to utilities under the No-Action Alternative.



West Alignment Group

The alternatives of the West Alignment Group will impact the PRPA 230 kV overhead electric transmission line and the AT&T transcontinental fiber optic conduit.

Alternative E would affect the sludge application operations on property owned by the SFCSD. It would essentially bisect the property at LCR 32/LCR9, requiring a complete change in the application process, and removing a substantial portion of the property from available use. No analysis was conducted to determine the effect that the change in operations and reduced area would have on the sludge disposal rate and volume, as this analysis was considered to be beyond the scope of this EOS. However, discussions with SFCSD indicated that they believed Alternative E would be unacceptable from an operations standpoint. Further analysis of the effects would be necessary at such time that Alternative E is considered for implementation. It should be noted that SFCSD indicated a preference for Alternative C over both A and E based on the perceived lesser impacts from that alternative to their operations. The effects from Alternative E have already been discussed. SFCSD believed that widening the existing alignment (Alternative A) would have undesirable ROW impacts to their existing and proposed plant expansion site, and they further believed that the roadway geometry of Alternative C would be preferable to Alternative A.

East Alignment Group

The alternatives in the East Alignment Group will impact the City of Greeley 60" steel water line and the Xcel Energy 230 kV overhead electric transmission line.



**Table 4.3
Summary of Potential Utility Effects**

Major Utilities	West Alignment Group			East Alignment Group	
	A	C	E	Existing Alignment	M1-R
PRPA 230 kV overhead electric transmission line	Relocation: Perpendicular crossing at LCR-32 midway between Lemay and Timberline Ave. One or more towers may need to be relocated depending on the location of the new/widened roadway.		Relocation: Crossing ½ mile south of LCR 32. One or more towers may need to be relocated depending on the location of the new/widened roadway.	Does not affect this utility	Does not affect this utility
AT&T transcontinental fiber optic conduit	Adjustment: Perpendicular crossing on SH-392 at LCR-3. The conduit may need to be encased under new roadway.			Does not affect this utility	Does not affect this utility
City of Greeley 60" steel water line	Does not affect this utility	Does not affect this utility	Does not affect this utility	Adjustment: Crossing at WCR-19. Pipeline is approximately five feet deep. The waterline may need to be encased under the new roadway.	Adjustment: Crossing west of SH-257 North. Pipeline is approximately five feet deep. The waterline may need to be encased under the new roadway.
Xcel Energy 230 kV overhead electric transmission line	Does not affect this utility	Does not affect this utility	Does not affect this utility	No-Action Alternative: No impact identified at this time.	Relocation: Crossing at WCR-21. One or more towers may need to be relocated depending on the location of the widened or new roadway

Source: SH 392 EOS Utilities Technical Memorandum



4.4.9 Air Quality

The following six topics were analyzed as part of the air quality analysis:

1. Criteria Pollutants
2. Attainment/Maintenance status of the project area
3. Ozone Early Action Compact
4. Regional Conformity
5. Project level conformity
6. Mobile Source Air Toxics (MSAT)

There are four important points that must be made: 1) the project area is in a “Maintenance” phase for CO, 2) the project area is currently contained within the area covered by the Ozone Early Action Compact, 3) project improvements must be included in a RTP and Transportation Improvement Program before a NEPA decision document can be signed by FHWA in order to meet conformity requirements (Section 176(c) of the Clean Air Act), and 4) if the project progresses to the NEPA phase, intersections that are predicted to operate at LOS D or worse will most likely require a CO hot-spot analysis using the CAL3QHC air dispersion model.

Even though reliable quantitative methods do not exist to accurately estimate the health effects of MSATs, it is possible to qualitatively assess future MSAT emissions under the project alternatives. Based on this approach, it is likely that either of the Action alternatives will result in lower MSAT emissions over the No-Action Alternative and that future emissions under both the Action and No-Action scenarios will be lower than present day emissions.

For each alternative, the amount of MSATs emitted would be proportional to the vehicle miles traveled and congestion, assuming that other variables such as fleet mix are the same for each alternative. Because the congestion estimated for the No-Action Alternative is higher than for any of the action alternatives, increased effects to regional air quality related to MSATs are not expected from any of the Action Alternatives. In addition, because the estimated vehicle miles traveled (VMT) under each of the action alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions between the two alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA’s national control programs that are projected to reduce MSAT emissions from vehicles by 67 to 90 percent. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, projected reductions are so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future as well.

In sum, under all action alternatives in the design year it is expected there would be reduced MSAT emissions in the project area, relative to the No-Action Alternative, due to reduced congestion and due to EPA’s MSAT reduction programs. There could be slightly elevated but unquantifiable increases in MSATs to residents and others in a few localized areas where VMT increase, which may be important particularly to any members of sensitive populations. However, there will likely be decreases in MSAT emissions in locations where VMT are



reduced. In general, MSAT levels are likely to decrease over time due to nationally-mandated cleaner vehicles and fuels.

No-Action Alternative

The No-Action Alternative will have no effect on MSAT levels; however, these levels are likely to decrease over time due to nationally-mandated cleaner vehicles and fuels.

West Alignment Group

There are no unquantifiable increases in MSATs generated by any alternative in the West Alignment Group.

East Alignment Group

There are no unquantifiable increases in MSATs generated by any alternative in the East Alignment Group.

4.4.10 Noise

A noise analysis was conducted to identify the potential noise effects generated by the action alternatives in 2030. This analysis is available in the *SH 392 EOS Noise Technical Memorandum* within the *SH 392 EOS Affected Environment Technical Memoranda*.

Noise impacts can result from one or more of three different phenomena: predicted noise levels of 66 dBA or more increase (CDOT NAC Land Use Category B), a “substantial increase” of ten dBA over existing noise levels, or predicted noise levels of 75 dBA or more, which constitute a “severe impact.”

4.4.10.1 Predicted Noise Levels

The distance to the 66 dBA noise contour was modeled in FHWA’s Traffic Noise Model (TNM) Version 2.5 for each proposed alternative using the 2030 volume condition which produces the “worst case.” The “worst case” noise scenario is that which has lighter traffic volumes and higher speeds. To estimate this, volumes for either the LOS C/D condition or the actual demand traffic volumes are used, whichever is less. The contour does not consider any shielding of noise provided by structures or topographic features between the receiver and the roadway.

Additionally, the noise contour does not account for traffic noise from roadways other than the proposed alignments (i.e., no intersecting or adjacent streets). The distance between the highway centerline and 66 dBA contour and the number of impacted receivers for each section is shown in Table 4.4. For comparison purposes, the existing and no action conditions are shown.



**Table 4.4
66 dBA Contour Distances and NAC B Effects by Section**

	66 dBA Contour Distance (ft) from Centerline					66 dBA Contour Number of Impacted Receivers				
	West Alignment Group			East Alignment Group		West Alignment Group			East Alignment Group	
	Sections									
	1	2	3	4	5	1	2	3	4	5
Existing	94	98	130	67	67	19	1	10	55	1
2030 No-Action	102	130	130	89	110	20	1	10	55	6
A	155	158	179	N/A	N/A	24	1	22	N/A	N/A
C	155	158	179	N/A	N/A	24	1	22	N/A	N/A
E	155	158	179	N/A	N/A	23	1	22	N/A	N/A
Existing Alignment	155	158	179	168/*100	142	24	1	22	55	6
**M1-R	155	158	179	121/*100	100	NA	NA	NA	4	5

Source: SH 392 EOS Noise Technical Memorandum

*Noise contour through downtown Windsor with a 30 mph speed limit.

**The noise contour on SH 392 east and west of downtown Windsor under the M1-R alternative is predicted to be 152 feet.

4.4.10.2 Substantial Increases and Severe Effects

Based on CDOT guidelines, noise sensitive sites are also impacted if they receive a substantial increase or severe impact. Substantial is defined as a noise increase of 10 dBA over existing conditions. Severe effects occur when, “a noise sensitive receiver is exposed to absolute exterior noise levels of 75 dBA or greater, or a projected increase of 10 dBA or more over the existing noise levels” (CDOT, 2002). Severe situations are rare, but when they occur they are indicative of noise effects that must be given serious consideration. For this reason, CDOT has developed special provisions that apply to mitigation consideration for severe effects.

Both substantial increases and severe impacts can occur when “new alignment” alternatives are considered for a roadway project. These new alignments are sometimes constructed in areas that may not currently have roads, or along roads that currently have very low traffic volumes. Both are true for Alternative M1-R.

The proximity of noise sensitive sites (existing and proposed) to M1-R is very crucial to determining substantial increases and severe impacts. Noise readings in areas where new alignments are proposed are also important. The existing noise level in the area along the M1-R



alignment is 41 dBA. This is a very low level and reflects an area devoid of roads, airports and other substantial noise sources. Because the baseline modeling was performed in such an area and the existing noise levels are so low, the TNM model predicted that all noise sensitive receivers within 558 feet of the centerline of M1-R would experience a ten dBA increase over existing “ambient” levels, and would therefore have “substantial increases.” This result should be considered with caution. Due to the very preliminary nature of this EOS, the calibration of the noise model was conducted using only one noise reading. It is believed that this one point may have established the baseline noise level unrealistically low, and therefore may overstate the impacts. A detailed and thorough noise analysis should be performed in a subsequent environmental or NEPA study that would seek to clear any of these alternatives.

Severe impacts were calculated by determining the location of the 75 dBA contour. The TNM model predicts that those noise sensitive sites located 35 feet from the proposed centerline of M1-R would be within the 75 dBA contour. However, since the proposed ROW is wider than this distance, it is not expected that any noise receptors would be within this contour line.

No-Action Alternative

There would be no noise effects under the No-Action Alternative.

West Alignment Group

A review of Table 4.4 indicates that Alternative A would have 16 additional properties with noise levels above 66 dBA (as compared to the No-Action scenario). Alternative C would have an additional 16 properties with noise levels above 66 dBA (as compared to the No-Action scenario). Alternative E would have an additional 15 properties with noise levels above 66 dBA (as compared to the No-Action scenario).

East Alignment Group

Improvements to the Existing Alignment would have no additional noise impacts compared to the No-Action scenario.

Alternative M1-R would have 52 fewer properties with noise levels above 66 dBA as compared to the No-Action scenario. However, as a result of introducing a new road in this area as discussed above, it would cause 102 properties (existing homes and proposed platted developments) to experience a “substantial increase” of ten dBA or more over existing conditions. As qualified above, these effects need to be carefully considered. It is believed that the calibration of the noise model with only one reading for the entire corridor may have set the baseline noise level unreasonably low. A more detailed noise analysis in a subsequent environmental/NEPA study may have very different results.

4.4.11 Hazardous Waste Sites

No-Action Alternative

There are no effects to the hazardous materials sites under the No-Action Alternative.



West Alignment Group

Along Alternative A of the West Alignment Group, four hazardous material sites with potential for concern were identified and include:

- UST – Schraders Country Store (Intersection of US 287 and Carpenter Road)
- UST – South Fort Collins Sanitation District
- LUST – South Fort Collins Sanitation District
- UST – Schraders Country Store (East of I-25 Interchange)

East Alignment Group

For alternatives in the East Alignment Group, numerous hazardous material sites were identified within the Town of Windsor. Twenty-eight UST sites with no history of previous releases were identified. Five LUST sites were identified and all had undergone site remediation overseen by the CDPHE or the Office of Oil Inspection. If no heavy construction or excavation is required, none of the identified LUST sites should have an impact on the project. One potential impact not identified in the database search is the area where the Burlington Northern Railroad line intersects SH 392. Due to the long history of rail use in the area, contaminated ballast, soil and groundwater may be present. Lead-based paint may also be present on traffic signals, light poles and bridge railings. No other effects were noted along the M1-R Alternative of the East Alignment Group. Additional information regarding this subject can be found in the *SH 392 EOS Hazardous Materials Technical Memorandum* located in the *SH 392 EOS Affected Environment Technical Memoranda*.

4.4.12 Cultural Resources

Cultural resources consist of archeological, paleontological, and historic resources, and are discussed in the following sections.

4.4.12.1 Archeological/Paleontological

There are known significant, eligible resources in the vicinity of the current project area, indicating that some potential exists for additional eligible resources to occur within the selected alternative. These known eligible resources are outside of the Area of Potential Effect from the alternatives considered in this EOS. For the protection of the resources, the nature and location of cultural resources is protected from public access and exempted from the Freedom of Information Act.

There are three known, documented cultural resources (one site, 5LR1800, and two isolated finds, 5LR1798 and 5LR1799) identified within the proposed alternatives. The resources have been officially determined to be not eligible for listing in the NRHP. Isolated finds are considered not eligible by definition, as they generally represent locations of very limited human activities. Once an agency and The State Historic Preservation Officer (SHPO) make an official determination that a resource is not eligible for listing in the NRHP, no further work is required and the project can proceed with no further consideration for the resource. Since there are no



known eligible resources within the alternatives under consideration, there is no difference between the alternatives regarding potential effects to known cultural resources.

There are no effects to archeological or paleontological resources under the No-Action Alternative, nor any of the action alternatives being considered.

4.4.12.2 Historic Resources

The results from data collection and the windshield survey found 21 identified historic resources (National Register, State Register, Local Landmark or eligible under NRHP guidelines) and 32 potentially historic resources in the study area. An intensive level survey and formal determinations from the SHPO are necessary before proceeding with improvements. Further research is necessary to determine integrity of the UPRR segments in West Alignment Group. For additional information, refer to the *SH 392 EOS Historical Reconnaissance Survey Report* located in the *SH 392 EOS Affected Environment Technical Memoranda*. It should also be noted that any property meeting the requirements of Section 106 of the National Historic Preservation Act (NHPA) is also considered to be a Section 4(f) resource and is subject to the protection afforded by that regulation as well.

No-Action Alternative

There are no effects to historic resources under the No-Action Alternative.

West Alignment Group

Alternatives A and C have no effects to historic resources. The UPRR segment at Timberline and SH 257 appears to have been impacted by earlier construction. Nevertheless, further research and consultation with the SHPO is necessary before proceeding.

Alternative E would impact the UPRR. This segment of the UPRR has not been surveyed and submitted to SHPO for formal determination of eligibility. Further research is necessary to determine whether this alignment would be a direct or indirect impact to the historic resource.

East Alignment Group

Assessment of potential effects to historic resources from widening the Existing Alignment to four lanes indicates that there is a high potential for adverse effects. The findings from the data collection and the windshield survey conclude historic and potential historic resources are predominantly found in the Town of Windsor. Forty-six historic and potentially historic resources were found in the immediate town limits. The Great Western Railroad Bruce Siding (a proposed *Rails to Trails* site), and the John Law Ditch are on the immediate boundary to the town bringing the total to 48. An intensive level survey, which may increase the number of resources, and formal determinations of eligibility are strongly recommended before proceeding with improvements. Due to the number of historic and potentially historic resources in the Town of Windsor, any number of resources could be directly or indirectly impacted by increasing the through lanes from two to four lanes. In an assessment of the relative effects between the proposed alignments, considering the implications to intangible characteristics of the resources,



it is possible this alignment could impact the historical identity of the Town of Windsor, which was historically planned to accommodate traffic and to allow patron parking in front of commercial enterprises. This alignment could significantly impact the numerous historic resources found in the Town of Windsor.

Alternative M1-R could impact three identified historical resources: Greeley Canal No. 2, the John Law Ditch, and the Great Western Railroad, as discussed below.

- Greeley Canal No. 2 has been officially determined eligible to the NRHP. On the west, a segment of the Greeley Canal No. 2 crosses under WCR 13 and would entail a new/improved crossing in this alignment thereby possibly impacting the historic resource. Further research is necessary to determine when the canal crossing was constructed, if this section is historically significant, and whether this alignment would be a direct or indirect impact to the historic resource.
- The John Law Ditch is located at the eastern end of this alternative near WCR 21. A new/improved crossing at the John Law Ditch would be necessary if this alternative was chosen. Although portions of this ditch may be piped under this county road, it was more than likely enclosed in the 1930's when roads were improved to accommodate increased automobile traffic. Further research on the John Law Ditch is needed. This potentially historic resource would be impacted by this alternative.
- Also on the eastern end, the Great Western Railroad (Bruce Siding) has been officially determined eligible to the NRHP. This alternative would impact this historic resource, because a new/improved crossing would be necessary. Further research is necessary to determine whether this alternative would be a direct or indirect impact to the historic resource.

Despite the identification of these three linear resources, Alternative M1-R affects fewer resources than the Existing Alignment through downtown Windsor, thereby making it a more attractive choice of the eastern alignments from a historical resources perspective.

4.4.13 Railroads

No-Action Alternative

There are no effects to railroads under the No-Action Alternative.

West Alignment Group

The UPRR railroad crossing just west of the Carpenter Road/Timberline Road intersection will need to be grade separated for Alternatives A, C, and E.

Alternative E will require a grade separation due to its close location to the proposed intersection with Timberline Road and the UPRR. Of additional concern, is that this alternative crosses the railroad in a curve with a slight embankment on the east side, which may impede sight distance for motorists.



East Alignment Group

Alternative M1-R would intersect the Great Western Railway west of 15th Street northwest of Windsor. It is recommended that this crossing be grade separated.

4.4.14 Wildlife

Wildlife effects investigated as part of the study fall into two categories: general wildlife and special status species, and Threatened and Endangered Species.

4.4.14.1 Wildlife

Effects to wildlife and special status species can be classified as either short-term or long-term. Short-term effects include temporary habitat loss and noise disturbance. These effects usually last two years or less and can be mitigated if proper management is applied. Long-term effects are associated with habitat fragmentation, loss of habitat, disturbance of a movement corridor, and road mortality.

No-Action Alternative

There are no effects to wildlife under the No-Action Alternative.

West Alignment Group

A wildlife movement corridor for deer is present from approximately 1,500 feet east of LCR 5 to approximately 1,500 feet west of WCR 13. Highway widening could result in an increased potential for deer/vehicle collisions.

Loss of riparian areas, particularly along the Poudre River, could potentially result in adverse effects to several species. Many species, such as deer, use riparian areas as movement corridors. Additionally, special status species such as the common garter snake and Preble's meadow jumping mouse use riparian corridors for habitat and forage.

East Alignment Group

Based on comments received from the public, a great horned owl is believed to nest adjacent to the proposed M1-R Alternative. The nest is said to be located approximately 300 feet south of the M1-R Alternative, midway between WCR 19 and WCR 21 in the Winter Farms Subdivision. This information is based on a comment received from a local resident and has not been confirmed by a field ecologist or the CDOW. Avoidance and mitigation measures should be followed to prevent effects to nesting owls if this alternative is chosen.

Potential effects to wildlife and special status species would be minimal in the eastern portion of the alignment where habitat fragmentation and loss due to urban expansion and agricultural development has dispersed wildlife from the area over the years.



4.4.14.2 Threatened and Endangered Species

No-Action Alternative

There are no effects to threatened, endangered, and special status-species under the No-Action Alternative.

West Alignment Group

A bald eagle nesting area is located approximately 800 feet north of Alternatives A, C, and E west of WCR 13. Construction should be avoided during the nesting period, which lasts from January to March in the mountain west region (American, 2006).

The Preble's meadow jumping mouse, a Federally listed threatened species, favors riparian areas, such as those found along the Poudre River, as habitat and foraging areas. Preble's meadow jumping mouse surveys conducted within the study area between 1997 and 2002 have found no evidence of the species along the Poudre River and along various irrigation ditches (USFWS, 2002). Additionally, there have been no Preble's meadow jumping mouse sightings confirmed within the study area from 2003-2005).

East Alignment Group

Potential effects to threatened, endangered, and special status species would be minimal in the eastern portion of the alignment where habitat fragmentation and loss due to urban expansion and agricultural development has dispersed wildlife from the area over the years.

4.4.15 Water Resources

The only two FEMA regulated floodplains crossed are floodplains for the Poudre River and the John Law Ditch. The 100-year floodplain overtops the roadway to the east of the bridge at a low point in the road, with most of the flow going under the bridge. The flooding of the low point in SH 392 inundates approximately 1,300 lineal feet of the highway. The entire floodplain of the Poudre River is over one mile wide at SH 392.

There is no information on the John Law Ditch in the FEMA Flood Insurance Study. The John Law Ditch has a Zone A floodplain, meaning it has no detailed study. Fossil Creek Reservoir, Duck Lake, and Windsor Lake do not have FEMA regulated-floodplains, therefore the criteria for spanning any or all of these water bodies will fall to the different ownership entities.

There will need to be further evaluation of the floodplain crossings in later studies and preliminary design. If the effects to the floodplain consist of less than a foot of rise of the water surface elevation in the 100-year storm event, then the floodplain administrator for the county or state could be contacted to determine whether a Conditional Letter of Map Revision would be necessary.

Alternative A passes close to what appears to be the high water mark for Duck Lake. The fill from the roadway may encroach on Duck Lake and decrease the available volume of the lake without proper mitigation. A potential solution would be using a retaining wall to limiting the



encroachment of the fill into the lake or dredging the lake to maintain the appropriate storage volume. In either situation, coordination with the lake's governing agency(s) will be required.

No-Action Alternative

No FEMA floodplains would be impacted by the No-Action Alternative.

West Alignment Group

All alternatives in the West Alignment Group will impact 6,500 lineal feet of roadway within the Poudre River floodplain.

East Alignment Group

Improvements to the Existing Alignment will impact 750 lineal feet of roadway within the Poudre River floodplain.

Alternative Alignment M1-R impacts 7,000 lineal feet of roadway within the Poudre River floodplain and 800 lineal feet of roadway within the John Law Ditch floodplain.

4.4.16 Water Quality

The widening of the roadway will cause an increase in impervious area and result in a higher amount of runoff from the roadway. The runoff from the roadway will happen quickly in a storm event and will not noticeably affect the runoff from large offsite basins. The additional amount of runoff will not have a noticeable affect on the peak flow in the streams that cross the alignments. However, the effect this increased impervious area has on water quality must be considered, in accordance with the Municipal Separate Storm Sewer System (MS4) requirements of the Federal Water Pollution Control Act and the Colorado Water Quality Control Act. To comply with these requirements and to identify preliminary ROW needs for water quality ponds to meet these requirements, water quality ponds were conceptually analyzed in this study. The conceptual design has identified the location and size of water quality ponds. The water quality ponds required for mitigation of the impervious area of the roadway are shown in the ROW drawings included in *SH 392 EOS Recommended Alternatives Concept Plan Sheets*. However, the proposed ROW shown on these plans do not include the ROW necessary for the ponds. Planners will need to use judgment to acquire ROW to the best of their ability to meet the space requirements of these ponds as close as possible to the locations shown in the ROW plans. CDOT will work with the local agencies to determine the most appropriate location for ponds as they become necessary.

No-Action Alternative

The No-Action Alternative will not increase the impervious area nor create additional runoff. This alternative will not provide an opportunity to improve the water quality of the existing highway runoff.



West Alignment Group

Seven ponds will need to be designed and built properly to remove suspended particles and contaminants from the roadway runoff for improvements considered under Alternative Alignment A.

East Alignment Group

Improvements to the Existing Alignment of the East Alignment group would increase the impervious surface area between WCR 13 and 15th Street. This increase is minimal and does not require a water quality pond location.

Four ponds will need to be designed and built properly to remove suspended particles and contaminants from the roadway runoff for the construction of Alternative Alignment M1-R.

4.4.17 Wetlands and Riparian Resources

Wetlands and Waters of the U.S.

The following wetland effects are preliminary, based on very conceptual designs. In compliance with Section 404 of the Clean Water Act (CWA), future studies or design efforts must embark upon detailed analyses to determine ways to avoid, minimize and mitigate effects to wetlands and Waters of the U.S. Any effects to jurisdictional wetlands or Waters of the U.S. will require a permit from the USACE.

Waters of the U.S. that will be crossed by the various alignments are an un-named tributary of Fossil Creek, Fossil Creek, Greeley Number 2 Canal, and the Poudre River. This planning-level EOS did not evaluate any effects to Waters of the U.S., as it was judged to be beyond the scope of this study. These effects will need to be evaluated at a later time in a NEPA study or during permitting, as the case may be.

No-Action Alternative

There are no effects to wetlands under the No-Action Alternative.

West Alignment Group

Alternative A would impact 6.44 acres of wetlands, Alternative C would impact 11.03 acres, and Alternative E would impact 5.67 acres.

East Alignment Group

Improvements to the Existing Alignment would have no impact to wetlands.

Alternative M1-R would impact 1.29 acres of wetlands.

4.4.18 Visual Character

Several key visual resources are traversed by the proposed alternatives as discussed in *Section 3.0, Project Context*. Views of the foothills and mountains to the west are available from nearly



all east-west alternatives and are not significantly obstructed or enhanced by the roadway. Compared to these land-based resources, the roadway character has been found to be relatively inconsequential though still influential in user's aesthetic experiences along roadways. Thus, the future streetscape and roadway cross-section (identified in the EOS as schematic, prototypical cross-sections only) is assessed as a secondary consideration in overall aesthetic effects. The level of traffic volume, congestion, and noise that traverse or occur in close proximity to these resources are judged to constitute an impact.

No-Action Alternative

Under the No-Action Alternative, there will be continued indirect negative effects to the aesthetic resources and recreational experiences adjacent to the SH 392 roadway that results from increased congestion and noise.

West Alignment Group

A large portion of Alternatives A, C, and E share a common location from WCR 13 to I-25. The additional ROW width will encroach on both developed and undeveloped areas and change the visual character. In addition to the specific effects described below by alternative, expanding the ROW would potentially encroach on the user experience and management of the following open space properties with high scenic quality: Pelican Marsh Natural Area (Fort Collins), River Bluffs Open Space (Larimer County), and Frank State Wildlife Area (CDOW). Where ROW expansion is needed at the Poudre River crossing, design criteria for structures and landscape should be carefully integrated into the character of the riparian river corridor to minimize visual effects on the riparian habitat and river.

An opportunity exists to create a significant visual gateway to downtown Windsor where the existing alignment crosses the Poudre River. The grade change at this location creates distant views into the town and beyond. Enhancements to the roadway corridor in this location should complement the natural character of the Poudre River. This will help achieve the goals identified in the Windsor Comprehensive Plan to "develop and landscape Town entryways to provide a positive, aesthetically-appealing image to visitors and residents."

The location of Alternative A traverses the Fossil Creek Community Separator and several existing and planned open spaces. Buffer distances from aesthetic resources are compromised in some locations, particularly north of Duck Lake where the alignment abuts the shoreline. The alignment can successfully coexist in this area as long as design criteria for the ROW is compatible with and enhances the natural landscape character. This alignment also visually separates Duck Lake from Fossil Creek Reservoir and Natural Area. Topography provides a general separation between developed user facilities at Fossil Creek Reservoir Open Space and Natural Area and the roadway, which minimizes visual effects to visitors.

The location of Alternative C traverses the Fossil Creek Community Separator and several existing and planned open spaces. The alignment can successfully coexist in this area as long as the design criteria for the ROW is compatible with and enhances the natural landscape character. Highest visual effects will be to the wetlands south of Duck Lake, especially if the alignment



requires substantial fill slopes to be raised out of the wetland areas, which will be divided by the alignment. By relocating the existing roadway south of Duck Lake, this alternative enhances the visual connectivity between Duck Lake and Fossil Creek Reservoir. However, this alignment bisects the Everitt Conservation Easement, disrupting the visual continuity of the agricultural character.

The location of Alternative E traverses the Fossil Creek Community Separator and several existing and planned open spaces. Buffer distances are compromised in some locations. The alignment can successfully coexist in this area as long as the design criteria for the ROW is compatible with and enhances the natural landscape character. Moving a large portion of the roadway from its existing alignment adjacent to Fossil Creek Reservoir nearly one-half mile south and reclaiming the existing roadway will lessen visual effects to this regional open space resource. The intersection with Timberline Road, moving southward, will lessen the visual effects to Fossil Creek Reservoir Natural Area. The alignment also bisects the Everitt Conservation Easement, disrupting the visual continuity of the agricultural character.

East Alignment Group

Improvements to the Existing Alignment would entail converting Main Street through downtown Windsor from two lanes to four. As identified in the *Town of Windsor, Colorado Comprehensive Plan* (Town of Windsor, 2002), goals include “Preserve and promote the Community’s historic resources including, but not limited to the Windsor Flour Mill, Great Western Sugar Factory Chimney, the Pioneer Village and Museum and the historic ‘Old Town.’” Indirect visual effects of the widened road cross-section through downtown Windsor may modify the historic character and feeling of the area. The pedestrian experience will be different, as the roadway will create a narrower pedestrian corridor, causing pedestrians to be closer to vehicular traffic. The streetscape and landscape design of the alignment through downtown Windsor should be carefully evaluated to be compatible with historic context of the downtown and current economic development goals, and provide a safe and pleasant pedestrian experience.

Alternative M1-R places a four-lane roadway through land that has been used for agricultural and residential uses in the past, but which is planned for development in the future. Potential visual effects of this alignment will be mostly dependent on the ability of the right of way design to fit into the context of existing and planned land uses. Although designs may need to vary slightly for each different land use, fencing, walls or other barriers, along with landscape and pedestrian features should maintain a consistent or complementary character throughout the corridor. The portion of the roadway that runs north-south along WCR 13 will be visible from the existing alignment as drivers are coming down the bluff towards the Poudre River. Design criteria for this portion of the roadway should be carefully evaluated to fit within the context of the Poudre River corridor.