2 ALTERNATIVES

This chapter describes the process used to identify and screen a range of reasonable alternatives. It presents the rationale used to eliminate alternatives from further consideration or to forward them for detailed analysis in the DEIS and FEIS. It also compares the alternatives evaluated in the DEIS and FEIS.

2.1 Regulatory Framework and Policies

The development and screening of alternatives under the NEPA are governed by the following:

- 40 CFR 1500-1508 - NEPA regulation of Council on Environmental Quality (CEQ)
- 40 CFR 230-Section 404(b)(1) - Guidelines for Specification of Disposal Sites for Dredged or Fill Material
- 33 CFR 325 Appendix B - NEPA Implementation Procedures for the Regulatory Program
- 23 CFR 771 - FHWA Environmental Impact and Related Procedures
- FHWA TA 6640.8A - NEPA Implementation-Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- FHWA Environmental Guidebook

23 CFR 771.125(a) states the FEIS shall identify the Preferred Alternative and evaluate all reasonable alternatives considered.

2.2 Methodology

ITD and FHWA began the scoping process following the publication of the NOI on November 13, 2003. Public and agency input were used to develop a range of reasonable alternatives for consideration. The alternatives were developed and screened in two phases:

Level One involved identifying the logical termini, project purpose and need and evaluating broad transportation concepts and elements.

Level Two involved identifying a range of reasonable alternatives, analyzing alternative benefits and effects and completing a screening process. As a result of the screening process, four alternatives were forwarded for detailed analysis in the DEIS:

- No Action Alternative
- W-4 Alternative
- C-3 Alternative
- E-2 Alternative (Preferred Alternative)

The No Action Alternative is described in Section 2.4, Level One Screening and the three Action Alternatives (W-4, C-3 and E-2) are described in Section 2.5, Level Two Screening.

Public involvement has been a key factor for the identification and screening of the alternatives since the beginning of the project. Key public involvement activities and scoping efforts are summarized in Chapter 7, Public Involvement and Agency Coordination and the Screening of Alternatives Technical Report.

After the DEIS publication the W-4 Alternative was modified to avoid impacts to a historic farmstead/Section 4(f) resource. A detailed analysis of the Modified W-4 Alternative is presented in this FEIS.

2.3 Logical Termini

The logical termini are the rational end points for a transportation improvement project and its resulting environmental effects [23 CFR 771.111(f)].

The US-95 Thorncreek Road to Moscow project is located along US-95 south of Moscow, in Latah County, Idaho. The logical termini established for the project begins at Thorncreek Road (MP 337.67) and runs north to the South Fork Palouse River Bridge (MP 344.00). See Exhibit 1. Project Location Map. These logical termini will not restrict consideration of other reasonably foreseeable improvements.

The logical termini for the project were determined by the US District Court of Idaho's (Court) decision on the Environmental Assessment (EA) for the US-95 Lewiston Hill to Moscow project. The Court in the judgment for Civil Case number 03-0156-S-BLW found that an EIS would be required for the northern 4.6-mile segment between Thorncreek Road and Moscow to allow full consideration of the impacts by the public and agencies. The southern 15.8 miles was allowed to proceed and construction was completed in October 2007. This southernmost project began at the Top of Lewiston Hill (MP 323.2) and ended at Thorncreek Road (MP 337.2).

The US-95 Thorncreek Road to Moscow project abuts the northern terminus of the constructed four-lane divided highway between the Top of Lewiston Hill and Thorncreek Road (MP 337.67) and the southern terminus of the South Fork Palouse River Bridge project (MP 344.00).

The segment of US-95 between Thorncreek Road and Moscow generates approximately 14 percent more traffic than US-95 between Genesee and Thorncreek Road. The change in traffic reflects the transition from agricultural to a higher density of commercial and residential use.

There were four times the number of injury and fatality crashes between Thorncreek Road and Moscow when compared to US-95 between the top of Lewiston Hill and Thorncreek Road (MP 323.36 to 337.67) between October 2007 and December 2011. During this time, thirty-one injury and fatality crashes occurred on the newly constructed four-lane divided highway between the top of Lewiston Hill and Thorncreek Road. This is 2.17 injuries and fatalities per centerline mile. During the same time period, 68 injury and fatality crashes have occurred between Thorncreek Road and Moscow (MP 337.67 to 344.00). This is 10.7 injuries and fatalities per centerline mile.

The Thorncreek Road to Moscow segment represents a change in topography from rolling hills to more mountainous terrain, which contributes to the deficiencies in curvature and grade through the corridor.

2.4 Level One Screening

2.4.1 Transportation Concepts

The following transportation concepts were considered among the range of reasonable alternatives. The level one screening process is displayed in Table 6. Level One Screening Results and described below.

Table 6. Level One Screening Results

Alternative	Screening Results	Summary of Rationale for Eliminating or Forwarding Alternatives
No Action	Forwarded for detailed analysis	Required by NEPA to be evaluated with other alternatives. Minimal environmental effect.
TSM, TDM and Mass Transit	Eliminated	Rural area with less than 200,000 population density. Would not address safety deficiencies and would not meet purpose and need.
Action Alternatives-follow existing alignment or with short realignments	Forwarded for detailed analysis	Alternatives would be designed to meet purpose and need.
Action Alternatives on a new location	Forwarded for detailed analysis	Alternatives would be designed to meet purpose and need.

No Action Alternative. The No Action Alternative would include short-term minor restoration activities (safety and maintenance improvements, etc.) that maintain operation of the existing roadway. It would include projects such as turn lanes at public road approaches within the existing right-of-way, pavement overlays and seal coats to maintain the continuing operation of the existing roadway. The No Action Alternative serves as a baseline and is required by FHWA NEPA regulations to be considered in the DEIS. Therefore, this alternative was forwarded for further consideration.

Transportation System Management (TSM), Transportation Demand Management (TDM) and Mass Transit Alternatives. These alternatives could improve the efficiency of the existing system. TSM may include ridesharing, high-occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization. TDM may provide travelers choices such as work location, route, time, and mode.

TSM and mass transit are required to be considered for major projects proposed in urbanized areas with populations over 200,000 (FHWA 1987). The area surrounding the US-95 Thorncreek Road to Moscow project is rural and does not meet the 200,000 population threshold even when considering the surrounding towns and cities.

The existing corridor between Thorncreek Road and Moscow does not have existing signalization that could be optimized. HOV lanes would not be effective as the primary issues related to the facility are related to safety and additional HOV lanes would not address the existing safety deficiencies. There are existing vanpool and rideshare systems in place in Moscow and Lewiston. Mass transit in the form of shuttle buses have been implemented in the corridor in the past, but were discontinued due to low ridership and lack of funding. Mass transit would also not address the safety deficiencies within the project limits. Reconstruction of the existing facility under the TSM, TDM and Mass Transit Alternatives would not address safety deficiencies and would not meet the project purpose and need; therefore, these alternatives were eliminated from further consideration.

Action Alternatives. These include both improvements along the existing highway and alternatives in new locations that meet the project purpose and need. An alternative that follows the existing highway and alternatives with short sections of realignment were developed and forwarded for detailed analysis.

Action Alternatives were developed at a concept level for the US-95 Genesee to Moscow segment which was later divided into separate projects. Criteria used to evaluate the concept level alternatives included; safety/crash rates, highway capacity, level of service, public and agency input, functional classification of the roadway, and access control. Design elements that addressed the project purpose and need and met AASHTO standards were identified and incorporated into the typical section. See 2.5.1 Develop Alignment Alternatives for a description of the initial alternatives.

2.4.2 Design Elements and Typical Section for Action Alternatives

The proposed action would replace the existing two-lane undivided highway from Thorncreek Road to the South Fork Palouse River Bridge with a four-lane divided highway with a 34-foot

median through the majority of the alignment. See Exhibit 9. Typical Section: Four-Lane Divided Highway. It would transition to a four-lane highway with a center turn lane, curb, gutter and sidewalk in the urban area just south of Moscow. See Exhibit 10. Typical Section: Four-lane Highway with Center Turn Lane, Curb, Gutter, and Sidewalk. These typical sections would match the existing roadways at the northern and southern termini of the proposed project. Safety and maintaining consistency through the corridor were primary factors in determining the design standard and the typical section. The highway would be designed to meet capacity and safety needs for the 2037 design year and would meet AASHTO standards[6]. The primary design elements of the proposed action are summarized below.

Exhibit 9. Typical Section: Four-Lane Divided Highway

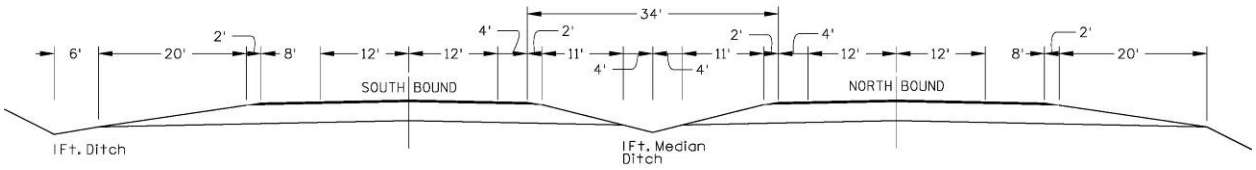
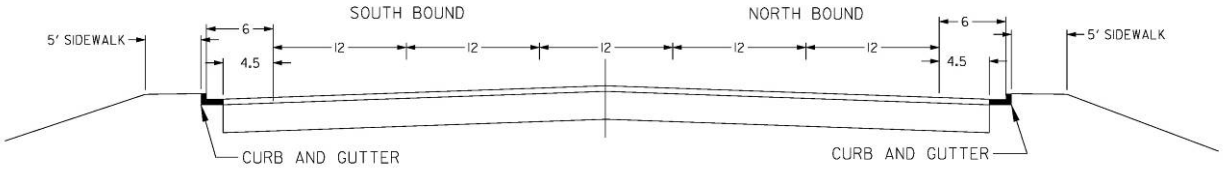


Exhibit 10. Typical Section: Four-lane Highway with Center Turn Lane, Curb, Gutter, and Sidewalk



- *Speed Limit* – The posted speed would be 65 mph for the four-lane divided highway section. It would transition to 35 mph or 45 mph, depending on the alternative, in the section with a four-lane highway with center turn lane, curb, gutter, and sidewalk at the north end of the project. It is possible that the speed limit could be increased in the future; however, this would require a speed limit study be conducted.
- *Lanes* – Four travel lanes with a 34-foot median, four-foot wide shoulders on the left and eight-foot paved shoulder on the right, would transition to four travel lanes with a continuous 12-foot center turn lane and six-foot shoulders, curb, gutter and a five-foot wide sidewalk. This would match the existing US-95 cross sections at the South Fork Palouse River Bridge and south of Thorncreek Road.

[6] FHWA has adopted AASHTO; *A Policy on Geometric Design of Highways and Streets,* which outlines standards for new/reconstruction projects on the National Highway System.

- *Turn lanes* – Left and right turn lanes would be constructed at all county road intersections except where overpass structures are specified.
- *Stormwater* – In the rural sections, a minimum one-foot deep, V-shaped ditch would be located on either side of the roadway in cut sections and in the center median. The urban section would have curbs and gutters and stormwater would be collected and treated in accordance with applicable laws and regulations and designed to meet NPDES stormwater requirements. A SWPPP would be developed that would identify temporary and permanent BMPs such as grassy swales and check-dams to comply with the CGP and TMDLs.
- *Access* – Access control would be based on the facility type, functional classification, highway safety, vehicle operations, and preservation of highway utilities, zoning, and route consistency. The access control for this segment of US-95 is currently Statewide Access Control. The proposed US-95 Action Alternatives were designated as Expressway Access Control through an Idaho Transportation Board action on January 15 & 16, 2014. (See the Safety Analysis Technical Report for the agenda and board minutes). Expressway Access Control is a segment of a highway designated by the Idaho Transportation Board for use as a through highway, with partially controlled access, accessible only at locations specified by ITD, and characterized by medians, limited at-grade intersections, and high speeds. An existing segment of state highway may only be designated as an expressway if payment is made to adjacent property owners for the restriction of existing access rights [IDAPA 39.03.42].
- *Clear zone* – The clear zone would be a minimum of 30 feet for the four-lane divided highway
- *Vertical grade* – The roadway would have a maximum of a five percent vertical grade.
- *Horizontal curve* – The Rural Section would have a 2,910-foot minimum radius at a 5.4 percent super elevation, which is adequate for a design speed of 70 mph. The Urban Section will have a 1,760-foot minimum radius at a three percent super elevation, which is adequate for a design speed of 35 mph and 45 mph, depending on the alternative.
- *Stopping sight distance*[7] – The stopping sight distance would be a minimum of 730 feet, which is adequate for a design speed of 70 mph on level grades. This will increase or decrease depending on the grade.
- *LOS* – The LOS for the 2037 design year would be LOS A for both the rural section with the four-lane divided highway and the urban four-lane section with center turn lane, curb, gutter and sidewalk.

[7] Stopping sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. The design speed for the proposed alternatives is 70 mph for rural sections.

- *Bicycle/pedestrian facilities* – The shoulders on the right side of the highway on the rural and urban sections would be shared use lanes but would not be specifically marked for bicycle use. The five-lane section would have a sidewalk for pedestrian use.

Adding one lane in each direction would alleviate the bottleneck caused by the existing two-lane segment and would match the lanes in the northern and southern roadway segments. This would improve the capacity, traffic flow, and reduce driver frustration with delays. Improving the grades, curves, stopping sight distance, access control and clear zone widths to meet AASHTO standards would improve the safety and capacity of the highway. Any of the proposed Action Alternatives would reduce the projected crashes for this segment of US-95 by more than 50 percent.

2.5 Level Two Screening

2.5.1 Develop Alignment Alternatives

An initial range of alternatives that included the No Action and five Action Alternatives; W 1, W-2, C-1, E-1 and E-2, was developed based on the results of the preliminary engineering, environmental studies and public input. The Action Alternatives were categorized and named based on their locations in the west, central or east corridors. The alternatives were presented to the public during alternative workshops on January 19-20, 2005 and April 13, 2005. The purpose of the workshops was to present a range of possible alternatives to the public and to solicit public input. As a result of the alternative workshops, five additional alternatives were developed: W-3, W-4, C-2, C-3, and E-3. The No Action and 10 Action Alternatives were presented in subsequent public meetings on January 18 and 19, 2006.

The Action Alternatives would share the same design elements described above under 2.4.2 Design Elements and Typical Section for Action Alternatives. They would all construct a four-lane highway with Expressway Access Control, improve horizontal curves and vertical grades, and be designed to meet the ITD Design Manual and AASHTO standards. Each alternative would transition from the four-lane divided highway to a four-lane highway with center turn lane, curb, gutter and sidewalk where they reconnect with existing US-95 at the northern end of the project. At the transition the posted speed limit would be reduced from 65 mph to 45 mph. The C-3 Alternative would be have a design speed and posted speed limit of 45 mph in the urban section and the W-4 and E-2 Alternatives would have a design speed and posted speed limit of 35 mph in the urban section. With the exception of Alternative C 1, which uses most of the existing highway alignment, the abandoned sections of existing US-95 may be turned over to the NLHD. It should be noted that the lengths of the W-4, C-3 and E-2 alternatives early in the screening process differ from the lengths analyzed in the DEIS due to a modification of the project limits. As a result, and due to the conceptual level of detail at the time, the lengths and

calculations presented during the screening process may differ from those presented in the DEIS and FEIS for the W-4, C-3 and E-2 alternatives. In addition, the assumptions made when determining residential and business impacts were also different resulting in different numbers. The initial 10 Action Alternatives are shown in Exhibit 11. Initial Alternatives, and described below.

Western Corridor

W-1 would be approximately 8.2 miles long. It would begin just south of Thorncreek Road and would be aligned east of Broenneke Road on its southern end. As the alignment continues north it would then shift west of Jacksha Road. W-1 would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road, an unnamed private road, and Snow Road approximately 1,000 feet east of the Idaho/Washington State line.

W-2 would be approximately 7.3 miles long. It would begin just south of Thorncreek Road and would be aligned just east of Broenneke and Jacksha roads. W-2 would reconnect to existing US-95 on the north end of the project near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road and Snow Road approximately three quarters of a mile west of the existing junction of US-95 and Snow Road.

W-3 would be approximately 7.8 miles long. It would begin just south of Thorncreek Road and would be aligned east of Broenneke Road and west of Jacksha Road. This alignment would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road, an unnamed private road and Snow Road.

W-4 would be approximately 7.5 miles long. It would begin at Thorncreek Road and would closely follow the existing US-95 alignment to approximately three quarters of a mile south of Zeitler Road. The alignment would then shift west of existing US-95. W-4 would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. An overpass structure would be constructed over Snow Road.

Central Corridor

C-1 would be approximately 7.3 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment with minor realignments to flatten the horizontal curves and vertical grades. C-1 would reconnect with existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. No overpass structures would be constructed. C-1 would transition from a four-lane divided highway to a four-lane highway with center turn lane, curb,

gutter and sidewalk at the south entrance to Clyde Road. Since this alignment primarily follows the existing US-95, no section of road would be turned over to the NLHD.

C-2 would be approximately 7.4 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment to Zeitler Road. The alignment would then shift west of existing US-95 and continue north. C-2 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. An overpass structure would be constructed over Snow Road.

C-3 would be approximately 6.8 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment to approximately a quarter mile north of Eid Road. It would continue north running east of existing US-95. C-3 would reconnect with existing US-95 at Cameron Road to just south of the South Fork of the Palouse River. An overpass structure would be constructed at Zeitler Road.

Eastern Corridor

E-1 would be approximately 6.6 miles long. It would begin at Thorncreek Road and would closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill, it would run north to the power lines approximately one half mile from Cameron Road. E-1 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. E-1 would be further west than E-2 and E-3. An overpass structure would be constructed at Eid Road.

E-2 would be approximately 6.7 miles long. It would begin at Thorncreek Road and closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill it would run north continuing to the power lines approximately one half mile from Cameron Road. E-2 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. E-2 would be located approximately one half mile east of the E-1 Alternative, closer to Paradise Ridge. An overpass structure would be constructed at Eid Road.

E-3 would be approximately 6.6 miles long. It would closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill, it would run northwest to the power lines approximately one half mile from Cameron Road. E-3 would connect to existing US-95 just south of the South Fork Palouse River Bridge. E-3 would be located between the E-1 and E-2 Alternatives. An overpass structure would be constructed at Eid Road.

2.5.2 Screen Alternatives

The initial alternatives were evaluated and screened based on environmental and engineering factors. An alternative screening matrix was prepared that displayed the key benefits and environmental resources that could be affected in the project area as a result of the No Action and the 10 Action Alternatives. The criteria that were considered during the screening of the initial alternatives are listed below.

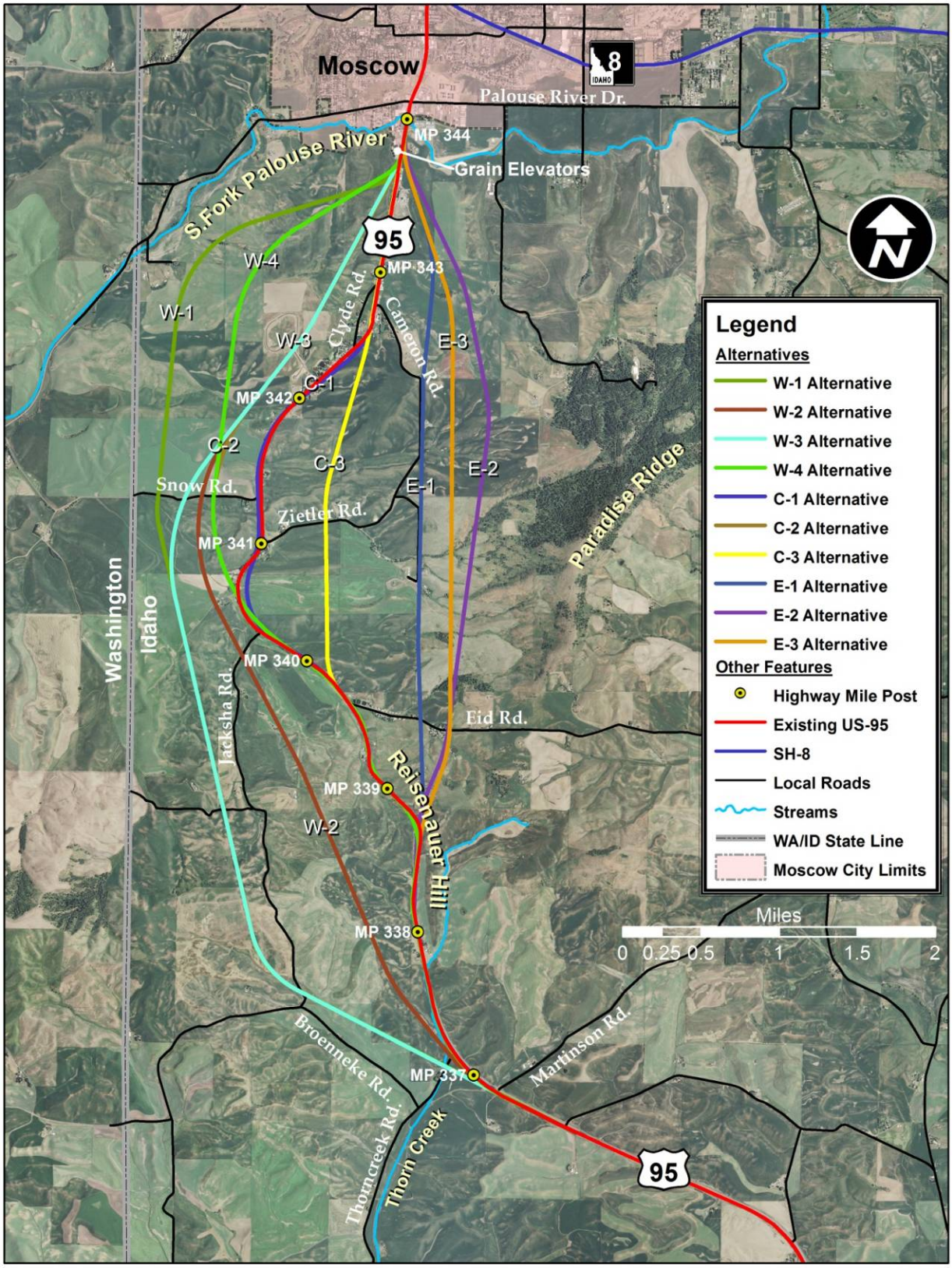
- Air Quality
- Archaeological Sites
- Design Standards
- Displacements
- Environmental Justice
- Hazardous Materials
- Noise
- Prime Farmland
- Right-of-Way Acres
- Socio-Economic
- Ungulates
- Water Quality
- Wetlands and Tributaries
- Estimated Construction Cost
- Historic Sites
- Plant Species and Communities of Concern
- Regulatory Floodways and Floodplains
- Safety
- State Sensitive Species
- Threatened and Endangered Species
- Visual Analysis
- Weather

As a result of the screening process, four alternatives were forwarded for detailed analysis in the DEIS; the No Action Alternative plus one alternative from the western, central and eastern corridors: W-4, C-3 and E-2. Maintaining a representative alternative from each corridor ensured the evaluation of a full range of reasonable alternatives. The remaining Action Alternatives were eliminated from further review. The results of the Level Two Screening were presented in a public meeting on January 18 and 19, 2006. The resource effects were based on a conceptual level of information and design, available at the time. The rationale for eliminating alternatives from further consideration or forwarding them for detailed analysis is summarized in Table 7. Level Two Screening Results. The details of the benefits and effects that were considered are described in the Screening of Alternatives Technical Report.

Table 7. Level Two Screening Results

Alternative	Screening Results	Summary of Rationale for Eliminating or Forwarding Alternatives
No Action	Forwarded for detailed analysis	Minimal environmental effect. Required to be evaluated in an EIS per NEPA regulations
W-1	Eliminated	Highest effects to floodplains and prime farmland of all alignment alternatives. Highest anticipated crash rate for the western corridor alternatives. Higher effects to ungulate habitat, cultural resources, a historic resource and rare plant communities than other alternatives in the western corridor. Other alternatives would have less environmental effects.
W-2	Eliminated	High effects to floodplains, visual resources and prime farmlands. Adverse effects to one historic resource. Other western corridor alternatives had less effect to historic/cultural resources.
W-3	Eliminated	High effects to visual resources, prime farmlands, rare plant communities and floodplains. This alignment also crossed an area known to support ungulate populations.
W-4	Forwarded for detailed analysis	Least cultural resource (based on preliminary information), floodplain and visual quality effects compared to the other western corridor alternatives. No direct effects to ungulate habitat or rare plant communities.
C-1	Eliminated	High effects to historic resources Highest predicted number of crashes. High effects to cultural resources, residential displacement and wetlands.
C-2	Eliminated	High effects to cultural resources. High effects to floodplains, wetlands and visual resources.
C-3	Forwarded for detailed analysis	Least floodplain, visual and wetland effects in the central corridor. No effects to cultural resources.
E-1	Eliminates	Only alternative in the eastern corridor that affects a historic resource. High direct effects to wetlands and rare plant communities.
E-2	Forwarded for detailed analysis	Less effect to wetlands and tributaries compared to other corridor alternatives. Avoided cultural resources. Greater safety benefit compared to alternatives in other corridors
E-3	Eliminated	Similar to E-2 but with slightly higher effects to wetlands. Directly affected two rare plant communities that E-2 avoided.

Exhibit 11. Initial Alternatives



2.6 Comparison of Initial Alternatives

Western Corridor

The four western corridor alternatives have relatively similar effects. All of the alternatives would affect wetlands, floodplains, noise, prime farmlands, visual quality and/or cultural resources. The W-4 Alternative was forwarded for detailed analysis due to its low effects to floodplains, visual quality, ungulate habitat, rare plant communities and a lower crash rate. Based on preliminary information the W-4 Alternative was believed to have less effects to historic resources compared to the other western alternatives. During the more detailed analysis of W-4 it was determined to affect a historic farmstead; however, due to the other factors involved, W-4 would still have been forwarded. The W-1 and W-3 alternatives were eliminated from further consideration due to their higher effects to ungulate habitat, prime farmlands and direct effects to two rare plant communities. In addition, W-1 had the highest crash rate in the western corridor, which does not meet the purpose and need to the same extent as the other alternatives.

Central Corridor

The three central corridor alternatives would all affect cultural resources, wetlands, floodplains, prime farmlands and impact businesses and residences. The C-1 Alternative was eliminated from further consideration because it had the highest crash rate of the three alternatives. It affected two historic resources and had the greatest number of displacements. In addition to these effects the C-1 Alternative also affected 2.9 more acres of wetland than the C-3 Alternative.

While the central corridor alternatives resulted in similar crash rates, C-2 was eliminated due to its higher impacts to wetlands, floodplains and visual effects. The C-3 Alternative was forwarded for detailed analysis because it had no adverse effects to historic resources and had the least wetland, cultural and visual effects compared to the other central corridor alternatives.

Eastern Corridor

The alternatives in the eastern corridor resulted in very similar effects. All of the alternatives in this corridor had effects to wetlands, residences and/or businesses, noise, visual, and prime farmlands. The E-1 Alternative was eliminated from further consideration because it affected one historic resource while the other two alternatives avoided historical resources. In addition, the E-1 Alternative had the highest effects to wetlands and visual quality in the corridor.

The E-2 Alternative was forwarded for further consideration because it had the least effect to wetlands, cultural resources and was the only alternative to not directly affect rare plant communities. The E-3 Alternative effects were very similar to the E-2 Alternative but E-3 resulted in three more residential impacts and twice as many business impacts than E-2. While the residential and business impact assumptions and numbers have been modified since the screening report was prepared, the E-2 Alternative still resulted in overall less impact. The E-3

Alternative directly affected two rare plant communities and resulted in slightly higher effects to prime farmlands compared to E-2. While the differences were small they were higher and more adverse. The E-2 Alternative was forwarded for detailed analysis because it had the least overall effects compared to the other alternatives in the eastern corridor. The Action Alternatives alignments that were forwarded are shown in Exhibit 12. Alternatives Forwarded for Detailed Analysis and detailed in Exhibits 13 -18 Alignment Alternatives Maps.

Exhibit 12. Alternatives Forwarded for Detailed Analysis

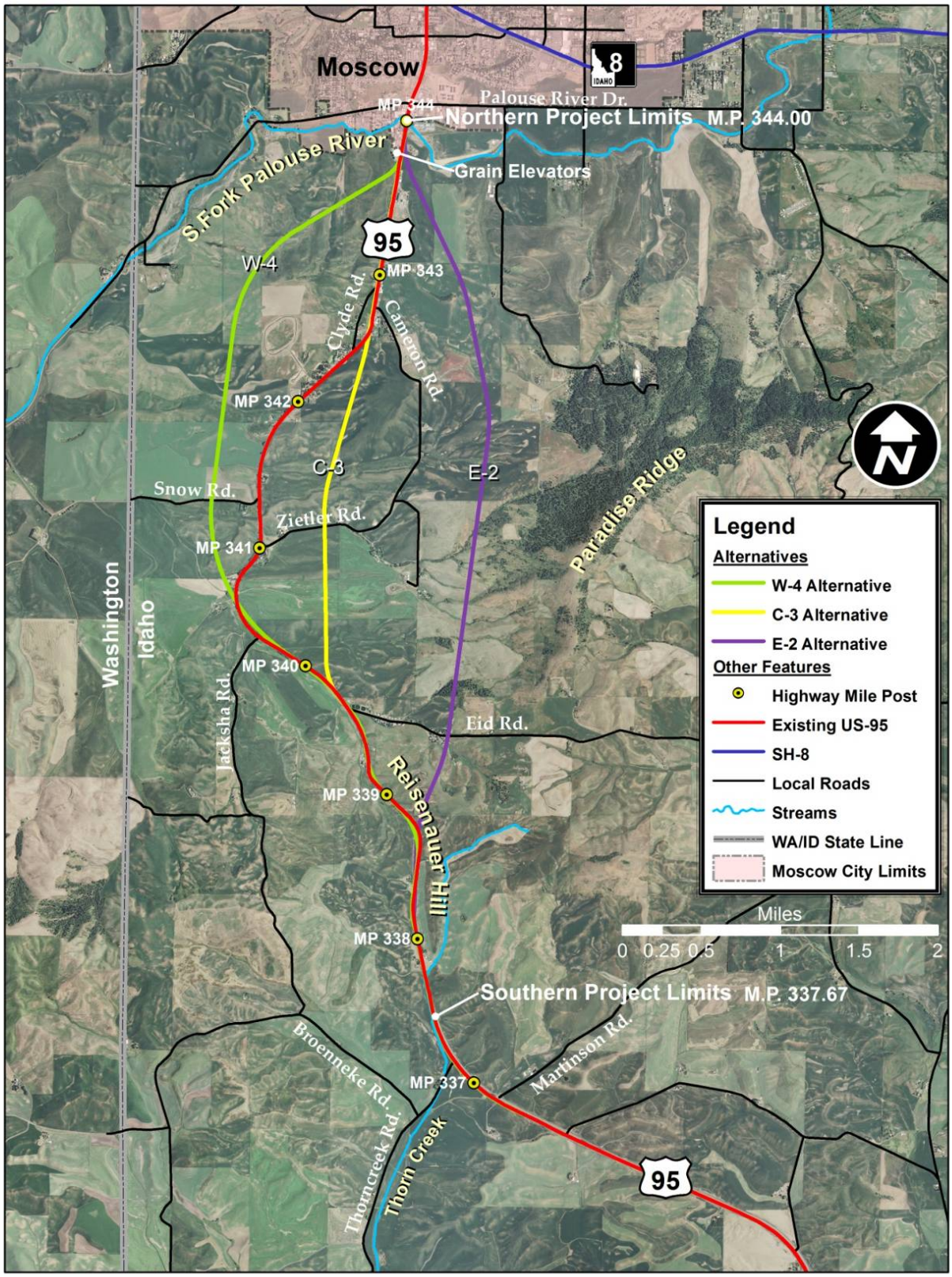


Exhibit 13. Alignment Alternatives

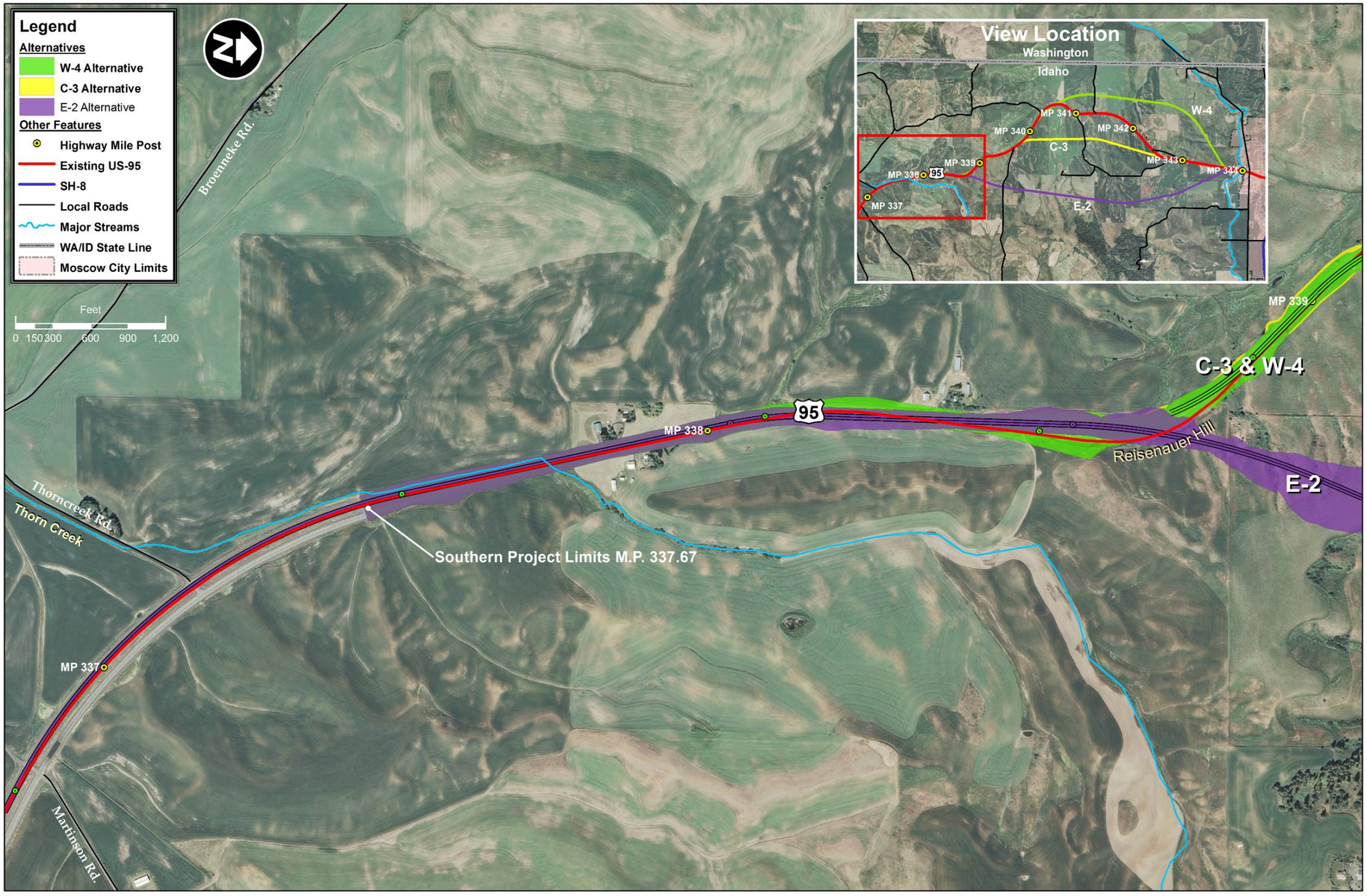


Exhibit 14. Alignment Alternatives

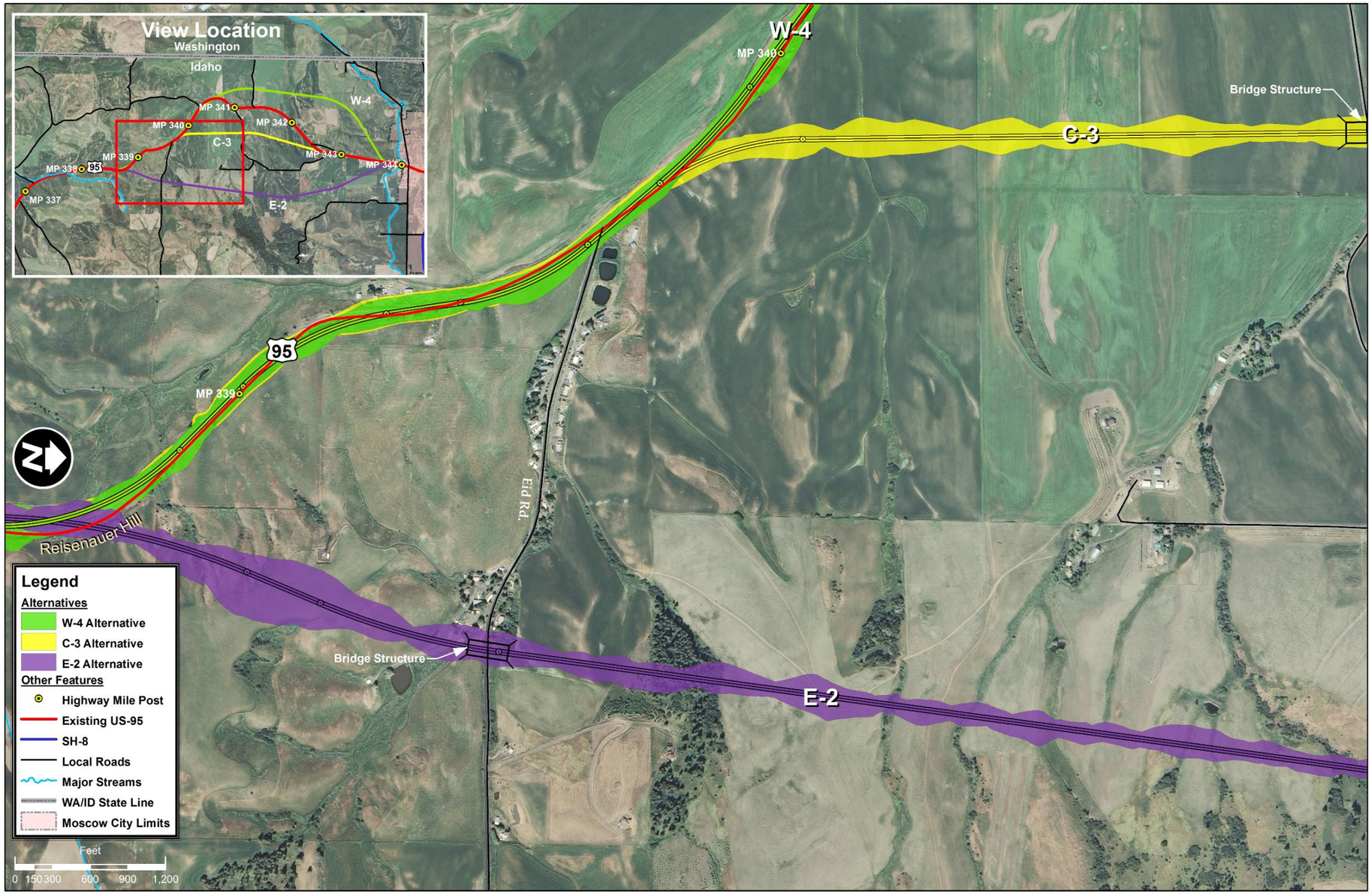


Exhibit 15. Alignment Alternatives

Exhibit 16. Alignment Alternatives

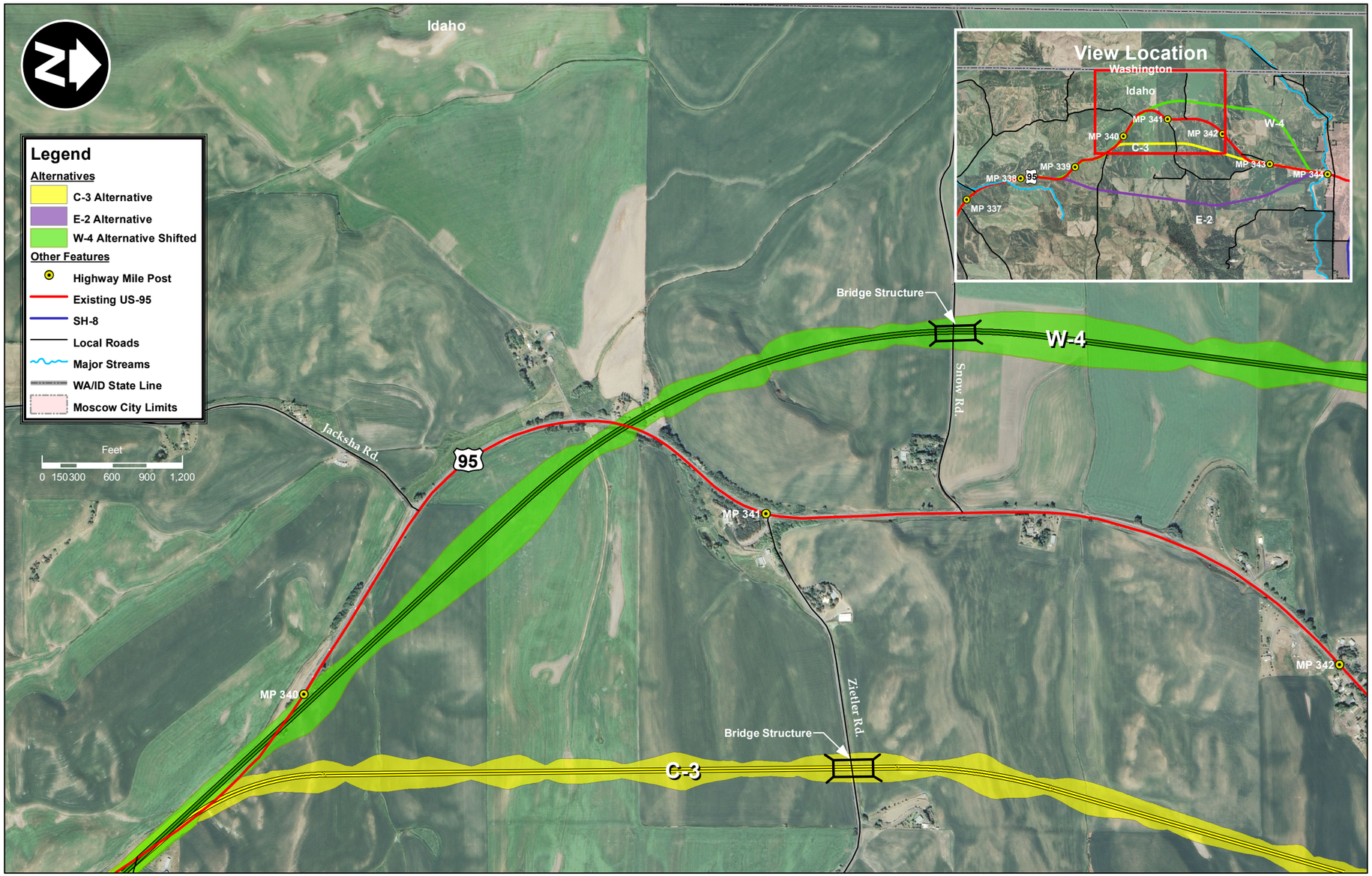


Exhibit 17. Alternatives Alignment

Exhibit 18. Alternatives Alignment

2.7 Comparison of Alternatives

Each of the four alternatives was analyzed for a full spectrum of environmental effects. The major differences between alternatives are described below and summarized in Table 8. Summary of Alternatives' Benefits and Effects. See Chapters 3, Affected Environment and Chapter 4, Environmental Consequences for details regarding specific resources and environmental effects by alternative. Additional detail may also be found in the resource technical reports.

Table 8. Summary of Alternatives' Benefits and Effects

Resources	Alternatives*			
	No Action	Modified W-4	C-3	E-2
Access Points	66	36	47	22
Residential Impacts	0	3	2	7
Additional Potential Residential Impacts	0	2	5	6
Business Impacts	0	0	0	0
Additional Potential Business Impacts	0	0	8	0
Environmental Justice	No disproportionate impact	No disproportionate impact	No disproportionate impact	No disproportionate impact
Right-of-Way new/existing/total (acres)	0	206/45/251	154/55/209	207/22/229
Prime Farmland (acres)	0	49.7	25	50.8
Cultural/Section 4(f) Resource Use	0/0	0/0	0/0	0/0
Air Quality	Attainment Area	Attainment Area	Attainment Area	Attainment Area
Wetlands (acres)	0	1.85	0.99	3.61
Tributaries Number of Crossings/(Linear Feet)	0	10/3,592	5/7,808	5/2,592
Impervious Surface (acres) New alignment/New alignment plus remaining Old US-95 Loop	0/21	58/68	49/58	55/72
Floodplains (acres)	0	1.6	1.8	0
Pine Stand (acres)	0	0	0	3.9
Ungulate - (Deer, Elk & Moose) Population/ Effects to identified Ungulate Impact Area** (acres)	No Population Effect / none	No Population Effect / none	No Population Effect / none	No Population Effect / 4.4

Resources	Alternatives*			
	No Action	Modified W-4	C-3	E-2
Palouse remnants within 1 km (3280 ft.)	0	12	14	24 including Paradise Ridge
Threatened and Endangered Species Effects	No Effect	Not Likely to Adversely Affect	Not Likely to Adversely Affect	Not Likely to Adversely Affect
Hazardous Material Sites	0	4	13 (1 potential cleanup)	4
Noise impacted receptors***	9	No noise impacted receptors would remain after construction	No noise impacted receptors would remain after construction	1 noise impacted receptor would remain after construction
Visual Quality	No Impact	Low = 11% Mod = 58% Mod high = 23% High = 8% MH + H = 31%	Low = 9% Mod = 68% Mod high = 15% High = 8% MH + H = 23%	Low = 3% Mod= 47% Mod high = 25% High = 25% MH + H = 50%
Construction/Total Cost (million $) ****	Minimal	52/62	43/58	46/55

* The lengths of the W-4, C-3 and E-2 alternatives early in the screening process differ from the lengths analyzed in the DEIS due to a modification of the project limits following the level two screening and the conceptual level of detail. As a result the calculations presented during the screening process may differ from the calculations presented in the EIS for the W-4, C-3 and E-2 alternatives.

** Identified Ungulate Impact Area which contains agricultural fields with nearby draws, small drainages, ponds, and cover as described in Melquist 2005a.

***Noise impacted receptors that would be removed due to right-of-way acquisition are not included in these numbers.

****The estimated construction costs includes excavation, rock ballast, plant mix, structures, traffic control and illumination. It excludes engineering, construction engineering, mitigation and right-of-way.

After the Level Two Screening was completed, additional studies were completed and a more detailed level of analysis was used; therefore the project effects may differ slightly from those calculated during the initial screening of alternatives. However, the differences were not substantial and would not result in different screening results.

No Action

The No Action Alternative includes short-term minor restoration activities (safety and maintenance improvements, etc.) that maintain operation of the existing roadway. It would include projects such as turn lanes at public road approaches within the existing right-of-way. It would also include pavement overlays and seal coats to maintain the continuing operation of the existing roadway. The No Action Alternative would serve as a baseline and is required by FHWA NEPA regulations to be considered in the DEIS.

The No Action Alternative would not involve major construction or new right-of-way acquisition. It would continue to have stormwater and air quality effects, but would have the

least overall environmental effect. However, the narrow roadway, roadway curvature and steep grades would still not meet AASHTO standards. It would ascend Reisenauer Hill at an approximately 4.3 percent grade and descend at an approximately six percent grade. With the projected increase in traffic volume the total crashes for the No Action Alternative is estimated to be 27.4 accidents in the year 2017 and 642.5 total crashes from 2017 through 2036. The No Action Alternative would have a LOS D by 2037 and would be substantially more congested than existing conditions. The No Action Alternative would have the worst safety and LOS compared to any of the alternatives and would not meet the project purpose and need.

Modified W-4

After the DEIS was published, the W-4 Alternative centerline was shifted approximately 120 ft east to avoid a historic farmstead and Section 4(f) resource and is now presented in this FEIS as the Modified W-4 Alternative. It would be aligned west of existing US-95. This alternative is 6.65 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 0.3 miles at the northern end of the project. 2.91 miles of the existing US-95 may be turned over to the NLHD. The Modified W-4 would ascend Reisenauer Hill at an approximately 3.5 percent grade and descend at an approximately 4.9 percent grade. It would impact fewer residences than the E-2 Alternative and would avoid business impacts and potential business impacts. It would impact the same number of hazardous material sites as the E-2 Alternative. It would use the greatest amount of total right-of-way and would result in the greatest number of tributary crossings. Modified W-4 would not affect potential long-eared myotis, northern alligator lizard and pygmy nuthatch habitat associated with ponderosa pine stands near the base of Paradise Ridge.

C-3

The C-3 alignment would run closest to the current highway near the center of the corridor. This alternative is 5.94 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 1.42 miles at the northern end of the project. 2.71 miles of the existing US-95 may be turned over to the NLHD. C-3 would ascend Reisenauer Hill at an approximately 3.4 percent grade and descend at an approximately 4.8 percent grade. It would have the highest crash rate of the Action Alternatives. It would require the least amount of new right-of-way compared to Modified W-4 and E-2 because it would utilize more of the existing roadway. C-3 would potentially impact up to eight businesses, would encroach on the greatest number of hazardous material sites, and have the greatest impacts to floodplains. It would have the longest urban section but would still operate at a LOS A; however, C-3 would have the least wetland and wildlife species effects. Similar to E-2, C-3 would have the fewest tributary crossings but would affect three times more linear feet of tributary channel compared to the E-2 Alternative.

E-2 (Preferred Alternative)

E-2 would be aligned east of existing US-95 near the base of Paradise Ridge. This alternative is 5.85 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 0.24 miles at the northern end of the project. Approximately 5.43 miles of the existing US-95 may be turned over to the NLHD. E-2 would ascend Reisenauer Hill at an approximately 4.1 percent grade and descend at an approximately 4.4 percent grade. The evaluation of effects during the screening process and the detailed analyses presented in the DEIS resulted in the lead agencies, FHWA and ITD, identifying the E-2 Alternative as the Preferred Alternative for the following reasons:

- It would have the greatest safety improvement even considering weather and the safety of the existing US-95 loop.
- It would have the fewest access points
- It would have the shortest length of five-lane section, the shortest travel time, and the lowest road user cost
- It would have the least effect to streams
- It would avoid floodplains effects, business impacts and potential business impacts
- It would best meet the project purpose and need

The primary disadvantages of E-2 compared to the other alternatives are that it would be located closer to the base of Paradise Ridge, which provides moderate ungulate habitat. E 2 would also affect pine stands that are pygmy nuthatch habitat and potential habitat for long-eared myotis and northern alligator lizard. It would have the greatest number of residential impacts. The E-2 Alternative would also have the greatest indirect effects to Palouse remnants, planned and ongoing Palouse restoration projects, and a key conservation area for Spalding's catchfly because it could result in more weed establishment and habitat degradation compared to the other alternatives due to its proximity to those sites.

While the difference between the total length of the C-3 and E-2 alternatives is just 0.09 miles, over a 20-year period the travel times and road user costs are substantial. The E-2 Alternative would save 800 hours of travel time and is estimated to cost $19 million less than the C-3 Alternative. This is explained in the US-95 Thorncreek Road to Moscow; Mobility and Road User Cost Study on Alternatives Carried Forward (ITD 2014a), which is summarized in Sections 3.10 and 4.10.

An important difference as it relates to safety is the length of the five-lane sections (four-lane section with a center turn lane) between alternatives. The five-lane section has approximately three times more predicted crashes than the divided four-lane rural section because the travel lanes are closer together and the turning movements from the center lane and approaches are

predicted to generate more crashes. Other factors also contribute to the differences in safety including intersections and approaches. The E-2 Alternative would have the fewest country road intersections and the fewest residential and commercial approaches.

An alternative will not be selected until the alternatives' effects and comments on the DEIS and the FEIS have been fully evaluated.