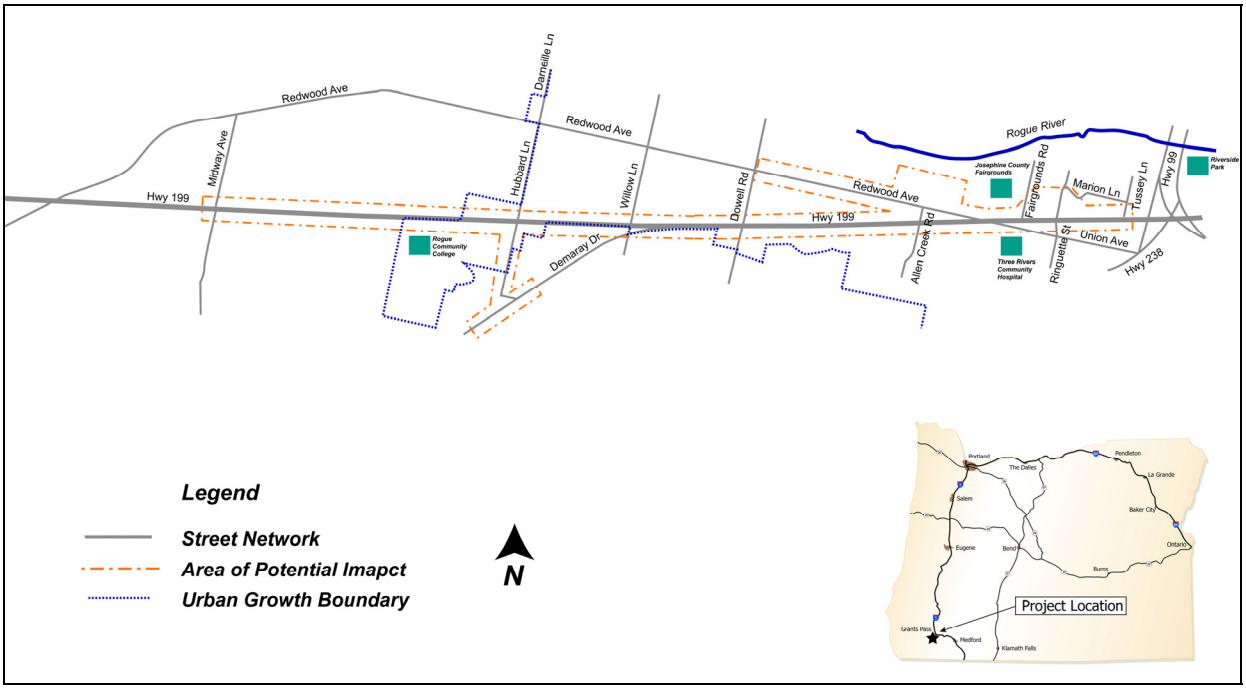
Executive Summary

This Supplemental Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA), as implemented by Council on Environmental Quality and Federal Highway Administration (FHWA) regulations (40 CFR 1500 and 23 CFR 771). The Supplemental EA discloses the potential environmental effects of a new alternative, the Working Group Alternative, for the Highway 199 Expressway Upgrade project in Grants Pass and Josephine County, Oregon (Exhibit 1). This Supplemental EA serves as a key source of information for public and agency review and input into the project.

Detailed descriptions of the No Build Alternative, Alternative A and Alternative C and associated effects on the environment are documented in the EA (2006).

EXHIBIT 1. PROJECT LOCATION



Organization of the Document

Organization of the Environmental Assessment

Chapter 1 – Project Introduction

Chapter 2 – Project Alternatives

Chapter 3 – Affected Environment and Environmental Consequences

Chapter 4 – Mitigation and Conservation Measures

Chapter 5 – Project Coordination and Public Involvement

Chapter 6 – References

Chapter 7 – Glossary

Chapter 1 describes the purpose and need of the project and establishes the fundamental reasons for the project's development and evaluation. Chapter 1 also contains the goals and objectives of the project that were created to assist with development of conceptual alternatives and to help determine which alternatives would best meet the needs of the community. Chapter 2 describes the process undertaken to develop the Working Group Alternative and provides a detailed description of that alternative. Chapter 3 describes the potential long-term effects that the Working Group Alternative could have on environmental resources in the area of potential impact (API). Chapter 4 provides a description of potential mitigation measures that could be implemented to reduce or eliminate effects in the API. Chapter 5 describes the public involvement and agency coordination that occurred from the time the EA was released for public comment in January 2007 through August 2007. Chapter 6 identifies references cited in the EA, and Chapter 7 is a glossary of terms.

Purpose and Need for the Project

For more information, please visit the project website:

http://egov.oregon.gov/ODOT/HWY/REGION3/h199e_index.shtml

The purpose of the project is to address vehicular and pedestrian safety, and current and future congestion and operational deficiencies along Highway 199 between Midway Avenue and Tussey Lane. The need for the project is based on the crash history, congestion, access, growth of surrounding area, and system efficiency of Highway 199.

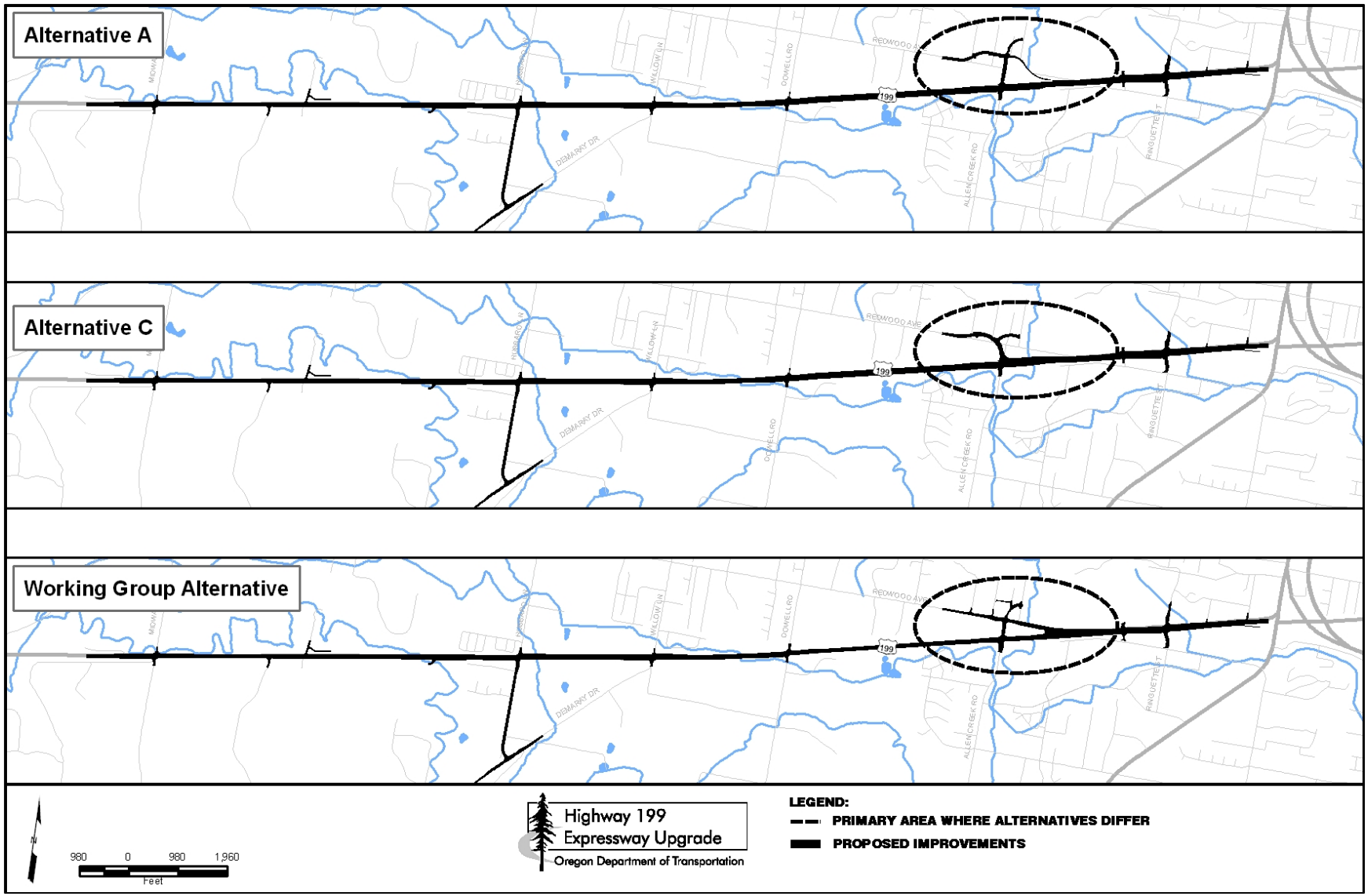
Summary of Alternatives

Exhibit 2 shows the general alignments of each build alternative:

- Alternative A
- Alternative C
- Working Group Alternative.

The primary area where the three alternatives differ is in the area bounded by Highway 199, Allen Creek Road, and Redwood Avenue. There are also minor differences in other locations.

EXHIBIT 2. ALTERNATIVE A, ALTERNATIVE C AND THE WORKING GROUP ALTERNATIVE



Alternatives A and C

Descriptions of Alternatives A and C are provided in the EA (December 2006). The only change made to these two alternatives relates to Phase 2 improvements. In the EA, Phase 1 included all improvements to Highway 199, the extension of Hubbard Lane south to Demaray Drive, the realignment of the Redwood Avenue intersection with Allen Creek Road, and the extension of Allen Creek Road north to Pansy Lane. Phase 2 included a possible new road connection between Pansy Lane and Tussey Lane north and roughly parallel to Highway 199.

Phase 2 was presented in the EA as a concept with no specific alignment defined. This concept could not be given more detail or determined necessary until the South Y Interchange project had defined a project purpose and need statement and subsequent alternatives were developed and analyzed to address that project's needs. Furthermore without a specific alignment, environmental impacts could not be adequately analyzed. As it became evident that Phase 2, a possible new road connection between Pansy Lane and Tussey Lane, would be dependent on the need for the South Y Interchange project, this phase was no longer considered a part of the Highway 199 Expressway Upgrade project. Alternatives A and C are redefined to include only the elements described as Phase 1 improvements.

Working Group Alternative

The Working Group Alternative would add a median barrier (Midway Avenue to Rogue Community College) and then a raised curb median (Rogue Community College to Tussey Lane) to separate four travel lanes from Midway Avenue to Allen Creek Road and six travel lanes from Allen Creek Road to Tussey Lane. Improvements would occur at several Highway 199 intersections, including: Midway Avenue, Arbor Ridge Drive, Dawn Drive, Rogue Community College entrance, Hubbard Lane, Dowell Road, Allen Creek Road, Redwood Avenue, Fairgrounds Road, and Ringuette Street. A new access road connecting Allen Creek Road to Pansy Lane would be constructed north of Redwood Avenue. The new access road would provide access to the Young Men's Christian Association (YMCA), fairgrounds, and residential properties on Pansy and Flower Lanes.

The median barrier, raised curb median, and other access control measures would restrict turning movements to and from Highway 199 at multiple intersections and driveways. Pedestrian and bicycle improvements would include a shared use path separated by a gravel shoulder from Highway 199 between Rogue Community College and Nebraska Avenue, bicycle lanes on Highway 199, and sidewalks along Highway 199 and Hubbard Lane separated from the travel lanes by a landscape strip. Two types of bicycle facilities would be provided to accommodate various bicycling experiences. Bicycle lanes on the highway would likely be used by experienced bicyclists who seek faster routes for commuting or biking long distances; the shared use path would likely be used by less experienced bicyclists or those pursuing slower paced recreation. New or improved connections to other existing and proposed pedestrian and bicycle facilities would also be constructed.

Summary of Potential Long-Term Effects and Mitigation Measures

The potential long-term effects to resources analyzed for the project are summarized in Exhibit 3. The exhibit also summarizes mitigation measures for construction plans and specifications and select general mitigation measures that could be implemented to minimize effects on resources.

Effects and mitigation are differentiated by alternative if an alternative has distinct effects. Otherwise, a common description of effects and mitigation is provided in Exhibit 3.

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EXHIBIT 3. SUMMARY OF POTENTIAL LONG-TERM EFFECTS AND MITIGATION MEASURES

Resource Element	No Build Alternative	Alternative A	Alternative C	Working Group Alternative
Air Quality				
Potential Effects	• Increased congestion, causing air pollution	• Regional conformity with the State Implementation Plan has not been established at this time; regional conformity shall be established prior to the FHWA's NEPA decision. It is the responsibility of the Rogue Valley Council of Governments to complete the regional conformity determination. • Project would not cause or contribute to a new violation of the PM_{10} (particulate matter less than 10 microns in diameter) National Ambient Air Quality Standards, or increase the frequency or severity of violation		
Mitigation Measures	• No mitigation identified	• None required		
Archaeology				
Potential Effects	• No effects identified	• There would be no long-term adverse effects to archaeological resources since there are no significant resources in the area of potential effect (APE)		
Mitigation Measures	• No mitigation identified	• Should previously unidentified archaeological resources or human remains be encountered, work should immediately cease in the vicinity of the discovery to avoid further damages to the resource. Oregon Department of Transportation (ODOT), FHWA, State Historic Preservation Office (SHPO), and the Oregon State Museum of Anthropology would be notified so the significance of the discovery can be evaluated and the appropriate course of action implemented		
Biology				
Potential Effects	• No effects identified	*Fisheries Resources/Water Quality* • No effect to water quality or geomorphology from net increase of impervious surface area *Wildlife Resources* • Wildlife passage restricted by median barrier • Wildlife-vehicle incidents may increase • Tree removal may result in slight decrease in habitat for Migratory Bird Treaty Act protected nesting birds *Botanical Resources* • Minimal effects to non-Endangered Species Act (ESA) botanical species • No effects to ESA protected plant species • Trees would be removed		
Mitigation Measures	• No mitigation identified	• Implement a Pollution Control Plan (PCP) • Prepare an Erosion and Sediment Control Plan (ESCP) • Construct stormwater treatment facilities, including water quality swales and detention ponds • Remove trees outside bird nesting season (March 1 – September 1) • Fully span the active channel width of the Sand Creek and avoid in-water work during construction of the pedestrian bridge • Develop and implement a riparian planting plan • Comply with all permit conditions of approval and/or mitigation measures • Follow the requirements of the applicable federal, state, and local regulations		
Hazardous Materials				
Potential Effects	• No negative effects would be realized	• 28 sites (12 identified and 16 possible) have recognized and potential environmental conditions • Public health hazards from possible changes in the amount of hazardous materials located above and below ground • Increased effects to the environment through exposure of hazardous materials • Increased project costs • Knowing where hazardous materials may exist could be a positive benefit to public health and safety • Removal of hazardous materials would be a positive benefit to public health and safety		
Mitigation Measures	• No mitigation identified	• Investigate recognized and potential environmental conditions sites (i.e. subsurface sampling) to eliminate or minimize effects that sites could have on project activities and vice versa • Prepare Level 2 Preliminary Site Investigation report document the presence or absence of potential contamination identified in the Hazardous Materials Corridor Study for the project.		
Historic Resources				
Potential Effects	• No effects identified	• No long-term effects to any significant historic-period buildings • 3 canals (Main, South Main, and South Highline) are historic resources eligible for listing on the National Register of Historic Places • Effects to the 3 historically significant canals would involve placing sections of the waterways in culverts • No adverse effect on canals which are part of an eligible historic resource		
Mitigation Measures	• No mitigation identified	• Mitigation and conservation measures could be necessary if project design plans change and project effects to the three canals would be greater than stated in the Final Historic Resources Technical Report		

Resource Element	No Build Alternative	Alternative A	Alternative C	Working Group Alternative
Land Use				
Potential Effects	• Increased congestion and difficult access may deter new development and make retaining existing development more difficult • Noncompliance: Oregon Statewide Planning Goal 12, City of Grants Pass Master Transportation Plan (MTP), Josephine County's Rural Transportation System Plan (TSP)	• 120 parcels affected by acquisition • Acquisitions: 2 full, 118 partial • No land use plan amendments of zone changes • Compliance: Oregon Bicycle and Pedestrian Plan, ORS 366.514, Oregon's Statewide Planning Goal 12, the City of Grants Pass MTP, and the Josephine County Rural TSP	• 116 parcels affected by acquisition • Acquisitions: 2 full, 114 partial • No land use plan amendments of zone changes • Compliance: Oregon Bicycle and Pedestrian Plan, ORS 366.514, Oregon's Statewide Planning Goal 12, the City of Grants Pass MTP, and the Josephine County Rural TSP	• 124 parcels affected by acquisition • Acquisitions: 0 full, 124 partial • No land use plan amendments of zone changes • Compliance: Oregon Bicycle and Pedestrian Plan, ORS 366.514, Oregon's Statewide Planning Goal 12, the City of Grants Pass MTP, and the Josephine County Rural TSP
Mitigation Measures	• No mitigation identified	• Work with property and business owners in the API to minimize conflicts and inconveniences from construction-related activities • Provide property and business owners in the API with advanced notice of potential access or utility disruptions resulting from construction activities • Schedule the most disruptive construction activities during off-peak hours to minimize the effect to traffic • Comply with all permit conditions of approval and/or mitigation measures • Follow the requirements of the applicable federal, state, and local land use and zoning regulations • Coordinate with Josephine County and the Fair Board on alternative access to the fairgrounds.		
Noise				
Potential Effects	• 54 residences, 10 commercial sites, and the YMCA outdoor basketball courts would experience noise levels that approach or exceed the noise abatement criteria	• 51 residences, seven commercial sites, and the YMCA outdoor basketball courts would experience noise levels that approach or exceed the noise abatement criteria	• 58 residences, six commercial sites, and the outdoor basketball courts at the YMCA would experience noise levels that approach or exceed the noise abatement criteria	• 50 residences, nine commercial sites, and the outdoor basketball courts at the YMCA would experience noise levels that approach or exceed the noise abatement criteria
Mitigation Measures	• No mitigation identified	• None proposed		
Right of Way Acquisition and Relocation				
Potential Effects	• No effects identified	• 120 parcels affected • Estimated total area required (not including temporary easements): 12.4 acres • 5 residential relocations • 8 commercial relocations • 2 full acquisitions • Cost: $17.1 million (2010 dollars)	• 116 parcels affected • Estimated total area required (not including temporary easements): 11.5 acres • 3 residential relocations • 9 commercial relocations • 2 full acquisitions Cost: $17.3 million (2010 dollars)	• 104 parcels affected • Estimated total area required (not including temporary easements): 9.5 acres • 3 residential relocations • 4 commercial relocations • 0 full acquisitions • Cost: $13.6 million (2010 dollars)
Mitigation Measures	• No mitigation identified	• Implement provisions as required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, for all residential and commercial displacements and real property acquisitions. All property owners would be compensated at fair market value and relocation assistance would be provided in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970		
Section 4(f) and 6(f)				
Potential Effects	• No effects identified	• Sections of canals placed in culverts • Canals: *de minimis* use • Recreation field at Rogue Community College (RCC): Access changes to RCC but no impacts to the recreation field, and no use of Section 4(f) resource • Picnic area, playground, and equestrian arena at fairgrounds: Access changes to fairgrounds, but no impacts to picnic area, playground, or equestrian area, and no use of Section 4(f) resource		
Mitigation Measures	• No mitigation identified	• Provide advanced public notice of planned temporary road closures and detours, and changes in access routes that would affect Section 4(f) resources and the River City Trail • Implement dust and noise mitigation during work hours		

Resource Element	No Build Alternative	Alternative A	Alternative C	Working Group Alternative
Socioeconomics and Environmental Justice				
Potential Effects	• Continued unsafe, and potentially worsened, conditions for motorists, bicyclists, and pedestrians	• 5 residential relocations • 8 commercial relocations • Bicycle motocross (BMX) course relocated • Conversion of private parcels to public: parcels paid $2,638 in taxes (2005) • Improved safety and decreased congestion • Access more limited along Highway 199 • Some access changes from full access to right in/right out only • No disproportionate or adverse effects to EJ populations	• 3 residential relocations • 9 commercial relocations • BMX course relocated • Relocation of health retailer (medical supplies) • Conversion of private parcels to public: parcels paid $554 in taxes (2005) • Improved safety and decreased congestion • Access more limited along Highway 199 • Some access changes from full access to right in/right out only • No disproportionate or adverse effects to EJ populations	• 2 residential relocations • 6 commercial relocations • BMX course relocated • Improved safety and decreased congestion • Access more limited along Highway 199 • Some access changes from full access to right in/right out only • No disproportionate or adverse effects to EJ populations
Mitigation Measures	• No mitigation identified	• Provide notices of planned construction activities, planned temporary road closures and detours, and changes in other access routes • Provide advance notice for major utility shut-offs and schedule during low use times • Distribute periodic press releases, newsletters, or notices to residents in the API to advise them of changes in pedestrian, bicycle, or transit routes during construction. These should be prepared in English and for languages that meet or exceed the U.S. Department of Justice's 5 percent threshold • Implement dust and noise mitigation during work hours • Plan construction activities to allow reasonable access to private residential and commercial properties, and community and social services		
Traffic and Transportation				
Potential Effects	• 10 intersections on Highway 199 and Highway 238 fail to meet the volume to capacity (v/c) ratio mobility standards in year 2025 • 3 local street intersections fail to meet mobility standards in year 2025 • Safety on Highway 199 would not improve; 140 conflict points would exist between Allen Creek Road and Tussey Lane • Wide paved median on west end of Highway 199 would be a safety concern • Depressed unpaved median on east end of Highway 199 would be a safety concern • Decrease in crash rates would not be expected • Fails to minimize traffic flow interruptions • Fails to provide safe, convenient bicycle and pedestrian travel • Fails to improve bicycle and pedestrian facilities connectivity • Fails to reduce conflicts between vehicle traffic and bicycle and pedestrian users • Causes major queuing along Highway 199 at Redwood Avenue, Fairgrounds Road, Ringuette Street, and South Y Interchange • All measures of effectiveness, except vehicle miles traveled, would be worse than Alternatives A and C and the Working Group Alternative	• 5 intersections on Highway 199 and Highway 238 fail to meet mobility standards in year 2025; however, 4 of the 5 improve the v/c ratio and 1 has an increased v/c ratio as compared to the No Build Alternative • 2 local street intersections fail to meet mobility standards in year 2025 • Safety on Highway 199 would improve; 105 conflict points would exist between Allen Creek Road and Tussey Lane • Median barrier and raised curb median on west end of Highway 199 would be a safety benefit • Raised curb median on east end of Highway 199 would be a safety benefit • Decrease in crash rates would be expected • Reduces traffic flow interruptions at Fairgrounds Road and Redwood Avenue • Provides safe, convenient bicycle and pedestrian travel • Improves bicycle and pedestrian facilities connectivity • Reduces conflicts between vehicle traffic and bicycle and pedestrian users • Decreases overall travel time by 6 and 7 minutes (30% eastbound and 50% westbound reductions) and travel delay by 5.5 and 7 minutes (39% eastbound and 75% westbound reductions) along Highway 199 • Increases average speed by 5 miles per hour (mph) and 16 mph (38% eastbound and 89% westbound increases) along Highway 199 • Decreases number of vehicle stops on Highway 199 by 48% • Eliminates major queuing along Highway 199 except at the South Y Interchange	• 5 intersections on Highway 199 and Highway 238 fail to meet mobility standards in year 2025; however, 4 of the 5 improve the v/c ratio and 1 has an increased v/c ratio as compared to the No Build Alternative • 2 local street intersections fail to meet mobility standards in year 2025 • Safety on Highway 199 would improve; 104 conflict points would exist between Allen Creek Road and Tussey Lane • Median barrier and raised curb median on west end of Highway 199 would be a safety benefit • Raised curb median on east end of Highway 199 would be a safety benefit • Decrease in crash rates would be expected • Reduces traffic flow interruptions at Fairgrounds Road and Redwood Avenue • Provides safe, convenient bicycle and pedestrian travel • Improves bicycle and pedestrian facilities connectivity • Reduces conflicts between vehicle traffic and bicycle and pedestrian users • Decreases overall travel time by 5.5 and 6.5 minutes (28% eastbound and 46% westbound reductions) and travel delay by 5 and 7 minutes (36% eastbound and 75% westbound reductions) along Highway 199 • Increases average speed by 4 mph and 16 mph (31% eastbound and 89% westbound increases) along Highway 199 • Decreases number of vehicle stops on Highway 199 by 50% • Eliminates major queuing along Highway 199 except at the South Y Interchange	• 5 intersections on Highway 199 and Highway 238 fail to meet mobility standards in year 2025; however, 4 of the 5 improve the v/c ratio and 1 has an increased v/c ratio as compared to the No Build Alternative • 2 local street intersections fail to meet mobility standards in year 2025 • Safety on Highway 199 would improve; 114 conflict points would exist between Allen Creek Road and Tussey Lane • Median barrier and raised curb median on west end of Highway 199 would be a safety benefit • Raised curb median on east end of Highway 199 and along Redwood Avenue would be a safety benefit • Decrease in crash rates would be expected • Reduces traffic flow interruptions at Fairgrounds Road • Provides safe, convenient bicycle and pedestrian travel, except when crossing the Redwood Avenue slip ramp • Improves bicycle and pedestrian facilities connectivity • Reduces conflicts between vehicle traffic and bicycle and pedestrian users, except at the Highway 199/Redwood Avenue intersection • Decreases overall travel time by 8 and 6.5 minutes (40% eastbound and 46% westbound reductions) and travel delay by 7.5 and 7 minutes (54% eastbound and 75% westbound reductions) along Highway 199 • Increases average speed by 8 mph and 16 mph (62% eastbound and 89% westbound increases) along Highway 199 • Decreases number of vehicle stops on Highway 199 by 52% • Eliminates major queuing along Highway 199 except at the South Y Interchange

Resource Element	No Build Alternative	Alternative A	Alternative C	Working Group Alternative
Traffic and Transportation continued				
Potential Effects continued		• Decreases travel time and travel delay by 30% and 37% respectively in the transportation study area • Travel distance in the transportations study area increases by 19% • Positive benefits would be realized under all measures of effectiveness, except vehicle miles traveled, over the No Build Alternative • Similar positive safety and operational benefit of adding lane capacity between Tussey Lane and Dowell Road with straightforward and intuitive lane configurations that promote efficient lane utilization and balance as in Alternative C • Similar positive operation and safety benefits as Alternative C, but more positive benefits than the Working Group Alternative • In comparison to the No Build Alternative, Alternative A results in overall improvements to Highway 199 and transportation system	• Decreases travel time and travel delay by 34% and 43% respectively in the transportation study area • Travel distance in the transportations study area increases by 26% • Positive benefits would be realized under all measures of effectiveness, except vehicle miles traveled, over the No Build Alternative • Similar positive safety and operational benefit of adding lane capacity between Tussey Lane and Dowell Road with straightforward and intuitive lane configurations that promote efficient lane utilization and balance as in Alternative A • Similar positive operation and safety benefits as Alternative A, but more positive benefits than the Working Group Alternative • In comparison to the No Build Alternative, Alternative C results in overall improvements to Highway 199 and transportation system	• Decreases travel time and travel delay by 32% and 40% respectively in the transportation study area • Travel distance in the transportations study area increases by 24% • Positive benefits would be realized under all measures of effectiveness, except vehicle miles traveled, over the No Build Alternative • Increases safety hazards and operational challenges between Fairgrounds Road and just west of Allen Creek Road on Highway 199 with additional weaving and merging within a one-half mile distance; driver confusion with added, dropped and trap lanes; poor lane utilization by through traffic; substandard signal spacing; and lack of one left turn movement at the signalized intersection of Highway 199 and Allen Creek Road • Less positive benefits than Alternatives A and C • In comparison to the No Build Alternative, the Working Group Alternative results in overall improvements to Highway 199 and transportation system
Mitigation Measures	• No mitigation identified	• Implement a Mobility Plan and Traffic Control Plan • Implement a Transportation Management Plan	• Implement a Mobility Plan and Traffic Control Plan • Implement a Transportation Management Plan	• Implement a Mobility Plan and Traffic Control Plan • Implement a Transportation Management Plan
Visual				
Potential Effects	• Visually distracting traffic congestion in the API would worsen over time • Increased light and glare from cars and trucks • Increased visual disorder	• Some vegetation removal, minor terrain modification, and increased pavement for widened and new roads • Decreased congestion and a more visually ordered roadway • Visual quality would remain the same between Midway Avenue and Fairgrounds Road, and would improve slightly between Fairgrounds Road and Tussey Lane		
Mitigation Measures	• No mitigation identified	• Restore construction staging areas that are not needed once the project is completed to pre-project existing conditions to the extent practicable • Minimize to the extent practicable the amount of vegetation removal in clear and grub areas • Shield and/or focus construction lighting on work areas to minimize ambient spillover of light into adjacent areas • Implement a boulevard treatment (landscaping, decorative lighting, etc) along Highway 199 between Allen Creek Road and Tussey Lane to improve visual quality • Use colored concrete and/or stamped patterns for barrier and median areas to blend into the natural environment		
Water				
Potential Effects	• With a gradual but steady increase in traffic volumes over time, there would be a potential that highway runoff pollution would exceed the levels currently generated • Increases in sediment, suspended solids, and petroleum contaminants, primarily in Allen Creek, and to a lesser extent in Sand Creek • Negative effects on water quality would be greater than Alternatives A and C since water quality treatment facilities would not be constructed	• 12.4 acres of new right of way, with 5.5 acres associated with expanding the Highway 199 and 6.9 acres associated with the modifications to the local street network • 7.0 acres of net new impervious for the Highway 199 and 4.2 acres of net new impervious for the local street network. The total amount of net new impervious is 11.2 • Mitigation provided by the stormwater treatment facilities would ensure that the 3-year, in-stream concentrations of copper and zinc remain below acute water quality criteria • Mitigation provided by the stormwater treatment components would decrease the pollutant loads to levels less than baseline conditions	• 11.4 acres of new right of way, with 6 acres associated with expanding the Highway 199 and 5.4 acres associated with the modifications to the local street network • 8.6 acres of net new impervious for the Highway 199 and 2.8 acres of net new impervious for the local street network. The total amount of net new impervious is 11.4 acres • Mitigation provided by the stormwater treatment facilities would ensure that the 3-year, in-stream concentrations of copper and zinc remain below acute water quality criteria • Mitigation provided by the stormwater treatment components would decrease the pollutant loads to levels less than baseline conditions	• 9.4 acres of new right of way, with 6 acres associated with expanding the Highway 199 and 7 acres associated with the modifications to the local street network • 4.1 acres of net new impervious for the Highway 199 and 4.1 acres of net new impervious for the local street network. The total amount of net new impervious is 8.2 acres • Mitigation provided by the stormwater treatment facilities would ensure that the 3-year, in-stream concentrations of copper and zinc remain below acute water quality criteria • Mitigation provided by the stormwater treatment components would decrease the pollutant loads to levels less than baseline conditions
Mitigation Measures	• No mitigation identified	• Route runoff from 10.3 acres of impervious surface through new stormwater treatment facilities	• Route runoff from 10.7 acres of impervious surface through new stormwater treatment facilities	• Route runoff from 10.5 acres of impervious surface through new stormwater treatment facilities

Resource Element	No Build Alternative	Alternative A	Alternative C	Working Group Alternative
Wetlands				
Potential Effects	• No effects identified	• 0.55 acres of effect to palustrine forested wetlands • No effects to palustrine scrub-shrub • 0.63 acres of effect to palustrine emergent wetlands • 0.68 acres of effect to Sand Creek critical habitat • 0.01 acres of effect to riverine, upper perennial, aquatic bed • 0.07 acres of effect to palustrine open water/aquatic bed	• 0.55 acres of effect to palustrine forested wetlands • 0.03 acres of effect to palustrine scrub-shrub • 0.63 acres of effect to palustrine emergent wetlands • 0.68 acres of effect to Sand Creek critical habitat • 0.01 acres of effect to riverine, upper perennial, aquatic bed • 0.07 acres of effect to palustrine open water/aquatic bed	• 0.49 acres of effect to palustrine forested wetlands • No effects to palustrine scrub-shrub • 0.63 acres of effect to palustrine emergent wetlands • 0.68 acres of effect to Sand Creek critical habitat • 0.01 acres of effect to riverine, upper perennial, aquatic bed • 0.07 acres of effect to palustrine open water/aquatic bed
Mitigation Measures	• No mitigation identified	• Identify wetlands and waters as “no work zones” or “restricted work zones” on plans and in the field • Implement best management practices • Prepare an erosion and sedimentation control plan and a pollution control plan • Develop and implement a wetland restoration plan and site restoration plans • Add guardrail to the design where appropriate to avoid effects to wetlands by increasing roadway fill slope steepness • Construct the pedestrian bridge over Sand Creek to fully span the ordinary high water mark (OHWM) • Develop stormwater management plans to avoid direct effects to wetlands to the extent practicable • Develop a compensatory wetland mitigation plan to replace functions lost as a result of permanent effects to wetlands		