

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis

(not in order of priority)



Goal 1 – Provide transportation improvements that address present and future demand for travel to and between I-5 and 99W in the Tualatin/Sherwood/Wilsonville area

| Objectives | Evaluation Criteria (basis of analysis for each objective) | Evaluation Measures (units of measure for each criterion) |
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| <p>Objective 1A – Reduce the growing problem of congestion in the designated Town Centers of Tualatin, Sherwood, Wilsonville and Tigard caused by regional, through and interstate trips conflicting with local access and circulation.</p> | <p>To address Objective 1A, each alternative will be evaluated to determine how much:</p> <ul style="list-style-type: none"> • Congestion will occur on major roadway and intersections in the town centers; • Motor vehicle volume/demand/use will occur within town centers • Truck traffic will occur within the town centers (also relates to Objective 1E). | <ol style="list-style-type: none"> 1. Through, regional and local traffic volumes distinguished between trucks and other vehicle classifications for roadway segments (Plots of study area changes) 2. Roadway segments that are above standard volume/capacity (v/c) ratio in the 2030 PM peak hour (plots of study area major roadway network with v/c ratio) 3. Duration of congestion 4. Demand-to-capacity ratios for roadway segments in the 2030 PM peak hour: <ul style="list-style-type: none"> • 99W south of Brookman Rd • 99W south of Tualatin-Sherwood Rd • 99W north of Tualatin-Sherwood Rd • 99W north of 124th Ave • 99W north of Main/Johnson St • Tualatin-Sherwood Rd east of 99W • Tualatin-Sherwood Rd west of 124th • Tualatin-Sherwood Rd west of Boones Ferry Rd • Roy Rogers Road between 99W and Borchers Road • Wilsonville Road west of Town Center Loop West • Connector east of 99W (where applicable) • Connector west of I-5 (where applicable) 5. Level of service, delay and demand-to-capacity ratios for the 2030 PM peak hour at selected intersections: <ul style="list-style-type: none"> • 99W at Tualatin-Sherwood Rd • 99W at Edy Road/Sherwood Blvd • 99W at Sunset Blvd • OR/99W at 124th Ave • 99W at Durham Rd • Tualatin-Sherwood Rd at Oregon St • Tualatin-Sherwood Rd at Boones Ferry Rd • 65th Avenue at Elligson Road • I-5 at Carmen Dr Ramps • I-5 at Nyberg Rd Ramps • I-5 at Elligsen Rd Ramps • I-5 at Wilsonville Rd Ramps |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)



(not in order of priority)

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| <p>Objective 1B – Improve the “gateway” access for regional and intrastate trips on 99W and I-5 accessing the greater Portland metropolitan area.</p> | <p>To address Objective 1B, each alternative will be evaluated to determine how:</p> <ul style="list-style-type: none"> • I-5 and 99W maintain accessibility to the Portland metropolitan area for regional and through traffic; • Travel times improve/worsen for key origins and destinations • Travel delay improves/worsens for the study area transportation system. | <ol style="list-style-type: none"> 1. Travel times between key origins and destinations: <ul style="list-style-type: none"> • I-5/99W junction to/from 99W south of Brookman via 99W, Durham, Tualatin-Sherwood Road, Tonquin, Connector (where applicable) • I-205/Stafford Rd to/from 99W south of Brookman via Durham, Tualatin-Sherwood Road, Tonquin, Connector (where applicable) • Downtown Sherwood to nearest connector access point (where applicable) 2. Vehicle hours of delay (summarized graphically by transportation analysis zone in study area) 3. Lane miles of delay (study area summation) |
| <p>Objective 1C – Provide transportation improvements that are safe and effectively serve all travel modes including bicycles, pedestrians, transit, and motor-vehicles (including trucks).</p> | <p>To address Objective 1C, each alternative will:</p> <ul style="list-style-type: none"> • Identify by percentage mode use (vehicle, transit, pedestrian, and bike) in the study area; • Estimate the number of potential crashes; • Assess mobility and access for pedestrians, bicycles, transit, and motor vehicles. | <ol style="list-style-type: none"> 1. Transit ridership on key transit routes 2. Number of vehicle trips in study area 3. Number of person trips in study area 4. Safety assessment: <ul style="list-style-type: none"> • Typical crash rates compared with demand on key project area roadways (99W, Tualatin-Sherwood Road, I-5 and Connector, where applicable) • Typical crash rates compared with demand on historically rural roads (Baker Rd, Bell Rd, Tonquin Rd, Grahams Ferry Rd) 5. Qualitative discussion of access management conformity to applicable spacing standards on 99W, Tualatin-Sherwood Rd, I-5 and Connector (where applicable) 6. Qualitative comparison of bicycle/pedestrian network improvements |
| <p>Objective 1D –Provide transportation improvements that will not negatively impact I-5, between the Nyberg/I-5 interchange and the Boone Bridge at the Willamette River, and 99W.</p> | <p>To address Objective 1D, each alternative will be evaluated by determining freeway performance on I-5 and 99W.</p> | <ol style="list-style-type: none"> 1. Analysis of I-5 from Carman Dr to Miley Rd and I-205 from I-5 to Stafford Rd: <ul style="list-style-type: none"> • Identify average speeds, densities, and v/c ratios on freeway segments • Identify substandard weaving and junction sections 2. Analysis of 99W from Durham Rd to Bell Rd: <ul style="list-style-type: none"> • Identify average arterials speeds and v/c ratios on segments and intersections (see Objective 1A for v/c ratio locations) • Identify weaving and junction issues with Connector Interchange (where applicable) |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

(not in order of priority)

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| <p>Objective 1E – Provide for the access and regional and intrastate travel needs of trucks hauling freight into and out of the Tualatin, Sherwood and Wilsonville areas.</p> | <p>To address Objective 1E, each alternative will be evaluated by:</p> <ul style="list-style-type: none"> • Identifying roadways utilized by different classes of trucks to compare truck volumes and access needs. • Identifying truck travel times. | <p>Evaluation for Objective 1B will be used to identify:</p> <ol style="list-style-type: none"> 1. Trucks on major study area roads in 2030 PM peak hour (map plot); 2. Differences in truck volumes compared to 2030 PM peak hour No-Build option (map plot); 3. Travel times for truck and other trips to/from the following industrial points (plot of travel time contours): <ul style="list-style-type: none"> • Tualatin industrial area to/from north I-5, south I-5, I-205 • Wilsonville industrial area to/from north I-5, south I-5, I-205 • Sherwood industrial area to/from north I-5, south I-5, I-205 |
| <p>Objective 1F – Provide multimodal transportation improvements that complement and support local transportation systems planning.</p> | <p>To address Objective 1F, each alternative will be evaluated by:</p> <ul style="list-style-type: none"> • Identifying proposed improvements in transportation systems. • Identifying the differences between the proposed improvements in the alternative and the transportation system plans, identifying potential conflicts. | <p>This analysis will compare each alternative to applicable adopted local, regional and state transportation plans; and applicable planning policies and actions of these entities. Improvements that are not consistent with adopted plans and planning will be discussed to determine if they could be modified to be complement planning, or if the jurisdiction(s) would need to modify their adopted plans to accommodate the proposed action.</p> |
| <p>Objective 1G – Provide for enhanced emergency vehicle response time and access needs, and needs identified from regional and state evacuation route planning.</p> | <p>To address Objective 1G, each alternative will be evaluated by identifying emergency response performance.</p> | <p>Combined with the transportation system travel time analysis in Objective 1B, this evaluation will be done by providing the Tualatin Valley Fire and Rescue District information necessary to complete its own modeling of emergency response times, and utilizing Tualatin Valley Fire & Rescue's response time modeling to evaluate response performance.</p> |
| <p>Objective 1H – Provide expanded transportation facilities capacity within the project area.</p> | <p>No additional evaluation criteria are necessary to evaluate Objective 1H. Information collected for evaluating Objective 1A will be used to address Objective 1H.</p> | <p>The change in transportation system capacity will be analyzed with the congestion analysis under Objective 1A.</p> |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

(not in order of priority)

| Goal 2 – Provide transportation improvements that support state, regional, and local land use planning. | | |
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| Objectives | Evaluation Criteria (basis of analysis for each objective) | Evaluation Measures (units of measure for each criterion) |
| <p>Objective 2A – Fully investigate and consider potential transportation solutions that avoid having to take state land use goal exceptions.</p> | <p>To address Objective 2A, each alternative will be evaluated against performance and feasibility thresholds. If alternatives located inside the Metro Urban Growth Boundary (UGB) meet these thresholds, a new transportation facility located outside the UGB may only be eligible for selection if the UGB is amended.</p> | <p>Determination of each alternative's ability to meet the following Transportation Planning Rule (TPR) performance thresholds:</p> <ul style="list-style-type: none"> • Transportation improvements can serve their intended functions and are consistent with management objectives for the type(s) of facility proposed as described in the Oregon Highway Plan (OHP) or other applicable transportation system plans. • Transportation improvements can meet applicable engineering and design standards for the type(s) of facility proposed. • Transportation improvements do not have an unduly adverse impact on town centers, as measured by their ability to meet town center planning objectives and design standards in Metro's 2040 Plan. • Transportation improvements avoid Section 4(f) resources, including the Tualatin National Wildlife Refuge. • The costs of the transportation improvements not requiring a goal exception do not significantly exceed the costs of alternatives that do require an exception. • The transportation improvements not requiring a goal exception do not significantly impact residential and commercial displacements more than alternatives that do require an exception. <p>Note: Other evaluation criteria will inform these thresholds. The TPR calls for setting thresholds for operational feasibility, cost, and economic dislocation. Local governments may also set thresholds for other relevant factors. Identification of what is "significant" in terms of cost and displacements between non-exception and exception alternatives will be determined when the alternatives analysis is completed and prior to selecting the preferred alternative.</p> |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

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| <p>Objective 2B – Protect the viability of regionally-designated Town Centers by avoiding and minimizing impacts where practicable. Where impacts are unavoidable, provide mitigation as appropriate.</p> | <p>To address Objective 2B, each alternative will be evaluated by:</p> <ul style="list-style-type: none"> • Describing potential traffic-related impacts to town centers (not addressed in Goal 1); • Assessing the potential impacts, in general terms, to parking, access, pedestrian and bicycle facilities and economic viability within the town centers; • Identifying as a range the number of potential accesses that may be closed or modified; • Evaluating the growth inducing potential of the alternatives; and • Identifying potential applicable mitigation strategies. | <ol style="list-style-type: none"> 1. Identify the change in average daily traffic of through /regional traffic that travels through the town centers by alternative. 2. Measure and compare traffic destined for town centers. 3. Qualitative discussion of potential impacts to traffic access, parking, and circulation as it relates to the town centers. 4. Qualitative assessment of the beneficial/adverse impacts of how changes in traffic flow might affect the economic activity within the town centers. 5. 2030 PM peak hour demand, PM peak period traffic composition, number of travel lanes, need for additional right-of-way, and change in access spacing for the following roadway segments: <ul style="list-style-type: none"> • 99W south of Tualatin-Sherwood Rd • 99W north of Tualatin-Sherwood Rd • 99W north of Main/Johnson St • Tualatin-Sherwood Rd east of 99W • Tualatin-Sherwood Rd west of Boones Ferry Rd • Wilsonville Road west of Town Center Loop West 6. Travel times for trips to/from the following town center points (plot of travel time contours): <ul style="list-style-type: none"> • Sherwood (6 corners) • Tualatin (Tualatin-Sherwood–Boones Ferry Road) • Wilsonville (Wilsonville Rd/Town Center Loop West) • Tigard (99W/Main-Johnson) 7. Qualitative discussion of impacts to pedestrian and bicycle travel 8. Qualitative discussion of induced growth pressures. Identify potential mitigation measures to limit induced growth. 9. Qualitative discussion of the developability within town centers 10. Potential buffering between residential and commercial industrial areas for each alternative. 11. Assessment, by alternative, of potentially closed or modified accesses of area businesses reported in a range (number) of accesses affected in the following areas: <ul style="list-style-type: none"> • Sherwood Town Center • Tualatin Town Center • I-5/99W interchange area west of I-5 12. Discussion of potential mitigation measures <p>Notes: Relevant information from evaluation under Objectives 1A , 1B and 1E will inform this evaluation. Specific impacts such as impacts to individual businesses will not be identified at this level of corridor planning</p> |
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Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

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| <p>Objective 2C – Protect the livability, quality, and integrity of established residences and communities by avoiding and minimizing impacts where practicable. Where impacts are unavoidable, provide mitigation as appropriate.</p> | <p>To address Objectives 2C, 2D and 2E, each alternative will be evaluated by identifying:</p> <ul style="list-style-type: none"> • A range of residential, commercial and industrial property displacements; • General impacts to vacant land; • General effects upon community connectivity; • General noise and visual-related effects; • Regional and general localized assessment of air quality effects; and • Loss of area or functional value of farm and forest lands, wildlife refuges, parks, and other protected rural land uses. | <ol style="list-style-type: none"> 1. Range (number) of potentially affected residential properties. (measured two ways – number of displacements and cumulative tax assessor value of displacements) 2. Qualitative comparison of residential and community impacts such as noise etc. 3. Estimate of acres (range) of displaced land by Metro identified general land use zone. Impacts will be determined using an estimated cross-section of the roadway improvements and its relation to the surrounding zoning. For improvements along existing roads, the impacts will be estimated only where additional right of way might need to be acquired. 4. Number (range) of businesses potentially affected. (measured two ways – number of displacements and cumulative tax assessor value of displacements). 5. Qualitative assessment how each alternative might affect (in a beneficial or adverse way) the economic vitality of commercial and industrial areas. 6. Assessment of the acres (range) potentially affected land compared to the amount of land remaining within a jurisdiction with the same land use classification. 7. Estimate of acres of displaced vacant land by general land use zone (range) 8. Range (in acres) of land under each resource category not already covered under Goal 3 converted to transportation use. These include: <ul style="list-style-type: none"> • Exclusive Farm Use (EFU) land • Forest land 9. Evaluate if each alternative addresses with the relevant adopted local, county and regional Comprehensive Plan's goals and objectives and statewide planning goals. 10. Evaluating community impacts will be a qualitative discussion in how an alternative affects the connectivity of a community. Impacts such as air, noise etc. are more regionally oriented and will generally correlate with other transportation analysis results. <p>Note: Objectives 2A and 2B will also inform this discussion. Each alternative will address the relevant adopted local, regional and state transportation plans under Objective 1F. Land use protection measures will be addressed under Objective 4C.</p> |
| <p>Objective 2D – Protect the economic viability of established commercial areas by avoiding and minimizing impacts where practicable. Where impacts are unavoidable, provide mitigation as appropriate.</p> | | |
| <p>Objective 2E – Protect by avoiding, or minimizing impacts to designated "Farm and Forest Lands," wildlife refuges, parks, and other protected areas where practicable. Where impacts are unavoidable, provide mitigation as appropriate.</p> | | |
| <p>Objective 2F – Avoid disproportionate impacts to minority and low-income communities.</p> | <p>To address Objective 2F, each alternative will be evaluated by identifying potentially affected low-income and minority communities.</p> | <p>Discussion of potential impacts to minority and low income communities described as having a high/medium/or low potential of affecting low-income and minority populations. Because census data geography does not identify specific residences, a discussion of each alternative's probability (low, medium, or high) to affect low-income and minority residences within block/block group, and census tracts (depending on data availability) areas will be completed.</p> |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

(not in order of priority)

| Goal 3 – Provide transportation improvements that avoid where possible then minimize and effectively mitigate adverse impacts to natural and cultural resources. | | |
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| Objectives | Evaluation Criteria (basis of analysis for each objective) | Evaluation Measures (units of measure for each criterion) |
| <p>Objective 3A – Protect habitat systems including forested uplands, wildlife corridors, streams and water bodies, riparian zones, and wetlands. Where impacts are unavoidable, provide effective mitigation.</p> | <p>To address Objective 3A, each alternative will be evaluated by identifying the approximate area of potential impacts by resource type.</p> | <ol style="list-style-type: none"> 1. Discussion of potential effects to identified habitat systems under each alternative 2. Range (in acres) of potentially impacted: <ul style="list-style-type: none"> • Wetlands • Riparian zones • Upland habitats and wildlife corridors 3. Approximate area (in acres) of mitigation required: <ul style="list-style-type: none"> • Wetlands • Riparian zones • Upland habitats and wildlife corridors <p>Note: Stream crossings over non-ESA inhabited streams and ESA species inhabited streams will be evaluated.</p> |
| <p>Objective 3B – Avoid impacting cultural sites and resources where practicable. Where impacts are unavoidable, provide recordation, salvage, and/or mitigation as appropriate.</p> | <p>To address Objective 3B, each alternative will be evaluated by identifying cultural resources, the potential for project effects on the resources and applicable mitigation.</p> | <p>Number (range) of potentially affected sites for each alternative for the following categories (based on existing records search and site visits):</p> <ul style="list-style-type: none"> • National Register historic within corridors • National Register Eligible sites within corridors • Goal 5 historic areas within corridor • Archaeological sites within corridor |
| <p>Objective 3C – Avoid impacting the functional wildlife values of lands within the Tualatin National Wildlife Refuge, including those lands authorized by Congress for future acquisition.</p> | <p>To address Objective 3C, each alternative will be evaluated by addressing connectivity within and between portions of the Refuge and could also include a discussion of the evaluation of Objectives 3A and 3D.</p> | <ol style="list-style-type: none"> 1. Qualitative discussion of each alternative's effects on functional values of the Tualatin National Wildlife Refuge and its association with the wildlife corridor south to the Willamette River. 2. Acres (range) of actual refuge and acquisition area that could be affected. |
| <p>Objective 3D – Minimize and mitigate adverse impacts to surface and groundwater resources within the project-influence area.</p> | <p>To address Objective 3D, each alternative will be evaluated by:</p> <ul style="list-style-type: none"> • Calculating the additional impervious surface using an assumed road cross section; and • Identifying the potential water quality treatment system options appropriate to the type and location of the improvements. | <ol style="list-style-type: none"> 1. Estimated amount of impervious surface created (acres) 2. Significant or unique groundwater impacts for each alternative 3. Number of stream crossings 4. Acres of water quality treatment facility required |

Adopted Goals and Objectives, and Evaluation Criteria and Measures for Alternatives Analysis (cont'd)

(not in order of priority)

| Goal 4 – Provide a timely and cost-effective project solution that performs as designed throughout its expected design-life. | | |
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| Objectives | Evaluation Criteria (basis of analysis for each objective) | Evaluation Measures (units of measure for each criterion) |
| Objective 4A – Develop a project solution that can be implemented, all or in part, within the next ten years. | <ul style="list-style-type: none"> • To address Objective 4A, each alternative will be evaluated by its generalized cost estimate and potential phasing options. • To address Objective 4B, each alternative will be evaluated by identifying potential funding from various applicable sources. • To address Objective 4C, each alternative will be evaluated by identifying potential applicable protective measures. • To address Objective 4D, each alternative will be evaluated by identifying any critical issues that may arise in the Alternatives Analysis that could be considered “fatal flaws.” | <ol style="list-style-type: none"> 1. Planning level cost estimates for each alternative using standard per foot construction cost for the type of facility proposed (road, structures etc.). 2. Planning-level project cost per vehicle miles traveled and per vehicle hours of delay. 3. General discussion of phasing potential for each alternative. |
| Objective 4B – Consider project affordability, sources of funding, and the role of tolling in judging the cost-effectiveness of the project solution. | | General information about how various types of projects might be funded. |
| Objective 4C – Develop measures to protect the operational integrity of the project solution from unintended land use impacts. | | This could include land use protection measures such as interchange area management plans, etc. |
| Objective 4D —As soon as practicable, eliminate potential solutions, including corridors and interchanges, that are clearly infeasible so that project efforts can be focused on the most promising locations and that residents and businesses in the areas that are not suitable for an I-5 to Highway 99W connector can be assured that such a connector will not be further considered. | | All other evaluation criteria will inform the evaluation to address Objective 4D. |