

October 12, 2016

TO: Salem Area Local Officials

FROM: Robert Cortright, West Salem

RE: PROPOSED UGB AMENDMENT FOR THE SALEM RIVER CROSSING

I was a member of the Salem River Crossing Task Force. In addition, for 25 years, I served as the lead staff person for transportation planning issues at the Oregon Department of Land Conservation and Development. I've spent much of the last three weeks reviewing the consultant reports and proposed findings. A careful review shows that the proposed UGB amendment does not – and almost certainly cannot - meet state or local planning requirements because improving the existing Marion and Center Street bridges (Alternative 2A) and other actions will reasonably meet our area's identified transportation needs. My detailed comments are attached.

Improving the existing Marion and Center Street Bridges (Alternative 2A) in combination with other actions identified in Salem's Transportation Plan and bridge studies can reasonably meet the region's transportation needs for the following reasons:

- **It's reasonable because it meets the three factors that the region is required to address under land use rules.** Land use rules require that you base your decision about whether an alternative solution is reasonable considering three factors: cost, economic dislocation and operational feasibility. Improving the existing bridges (Alternative 2A) meets each of these tests: it costs significantly less, it impacts fewer homes and businesses, and, it performs essentially as well in reducing traffic congestion.
- **It's reasonable because we can afford it and because we can't afford a new bridge.** A new bridge would cost at least \$425 million. That's roughly three times as much as improving the existing bridges. The cost estimate for a new bridge is almost certainly too low because it is based on a very generalized cost analysis. The cost estimates do not clearly address earthquake risks or design standards, nor do they reflect the fact that the bridge would be built across a 50 foot deep, half-mile wide gravel pit. In addition, ODOT has a record of cost overruns on big projects. For example, between the time it was planned and built, the cost of the Woodburn interchange more than doubled from \$40 to 80 million dollars.

It's important to put \$425 million in perspective: that's as much money as the region expects to be available for all road expansion from all sources for the next 20 years. The suggestion that federal or state governments will pay for most or all of a new bridge is seriously misguided for several reasons: First, our long-term budget for road improvements already includes an estimate of how much money the region will get from state and federal sources. Second, Congress ended the practice of earmarks for transportation projects more than five years ago. Third, as for state funding, ODOT says the state highway fund has no money for new roads projects. Finally, even if ODOT had more money, it rates this part of Highway 22 as a "third tier" priority- out of four- for state spending.

- **It's reasonable because the predictions of future traffic volumes are wrong.** Studies cited in the consultant reports say that traffic models, like the one used in Salem, overestimate how bad

congestion will get if we do nothing and they over-estimate congestion relief from a new bridge. The flaw in the model is that it doesn't accurately predict how traffic volumes will change in response to congestion or a new bridge. We already have proof they're wrong: current bridge volumes are 20-25% below what the models predicted a decade ago.

- **It's reasonable because it meets state and local policies that require use of low-cost and cost effective actions before we build new roads and bridges.** The Oregon Highway Plan Major Improvements policy (Policy 1G) set priorities on how we meet transportation needs. Salem's Transportation System Plan (TSP) and bridge studies identify more than 20 low and moderate costs actions that can make the existing bridges work better but that are not currently planned. These include ramp and signal improvements, staggering state employee work hours, incident response, expanding transit service and other actions. As an example, 25% of bridge congestion is caused by crashes. Special equipment and procedures to clear crashes quickly can significantly reduce congestion, and at low cost.
- **It's reasonable because fixing existing bridges so that they withstand the coming Cascadia earthquake is a higher priority.** Without a doubt the biggest threat we face is the next Cascadia Subduction zone earthquake. The latest science tells us there is a 20% chance of a magnitude 8+ earthquake in the next 50 years. When it happens, ODOT studies say the Marion and Center Street bridges are likely to collapse. The good news is they can be fixed. In 2014, ODOT provided a rough estimate that an earthquake retrofits to both bridges would cost \$36 million.
- **It's reasonable because it's the best way to make the bridges safer in emergencies.** A new bridge is an expensive and inefficient way to improve community safety, especially since it is unlikely to be build for 20 years. Fortunately, there are a series of proven actions we can take to effectively deal with bridge closures or emergencies at much lower cost. These include developing a comprehensive emergency response plan that provides for two-way operation on the existing bridges, modifying the Union Street rail bridge so it can be used by emergency vehicles, and expanding emergency response and emergency medical services in West Salem.
- **It's reasonable because it's what other nearby cities have done.** Faced with similar choices Eugene, Albany, and Corvallis have each set aside plans for building a new bridge across the Willamette in favor of other actions including ramp improvements, promoting other modes to make existing bridges work better. The experience of these other communities shows we can reasonably meet transportation needs without a new bridge.

In summary, we have a reasonable alternative to a new bridge: widening the existing bridges and implementing other low-cost and cost effective actions will make the existing bridges safer and work better. It's not only a reasonable alternative, it's a better choice. It's better because we can afford it, because it's a better return on our investment and because it can be implemented sooner rather than later. The financial reality is a new bridge is unlikely to be built in the next 20 years. Consequently, if we are serious about reducing traffic congestion and making our community safer and more resilient from emergencies, the wisest course is to do the things we can afford to do to now and in the next 5-10 years to make the bridges safer and work better.

Attachment: SALEM RIVER CROSSING DOESN'T MEET LAND USE REQUIREMENTS

SALEM RIVER CROSSING DOESN'T MEET LAND USE REQUIREMENTS

1. The proposed Salem River Crossing doesn't meet state goal and rule requirements for a UGB amendments and goal exceptions because Alternative 2a – widening the existing bridges and other actions – can reasonably meet identified transportation needs.

The proposed Salem River Crossing proposes a UGB amendment and an exception to the Willamette River Greenway Goal. A UGB amendment is guided by Statewide Planning Goal 14 (urbanization), which incorporates the requirements of ORS 197.298. Once a need is established, the goal says:

“Prior to expanding an urban growth boundary, local governments shall demonstrate that needs cannot reasonably be accommodated on land already inside the urban growth boundary”.

OAR 660-012-0070 describes in detail how a local government should evaluate whether there a non-exception alternative reasonably meets identified transportation needs. OAR 660-012-0070 (6) lists three factors that must be considered in evaluating whether an non-exception option reasonably meets transportation needs: “cost, operational feasibility and economic dislocation.

Consultant reports show that Alternative 2A performs nearly as well or better than the preferred alternative in meeting these three required factors:

- it costs less than the preferred alternative - \$148 million compared to at least \$425 million.
- it results in less economic dislocation of homes and businesses alternative
- it's feasible and operates just about as well as the preferred alternative

2. The factors and “thresholds” that are proposed to decide whether Alternative 2A is reasonable are not "relevant" or "justified"

The consultant reports and findings proposes several factors 'and thresholds to be decide whether alternatives reasonably meet transportation needs. Factors other than cost, economic dislocation and operational feasibility must be justified: i.e. local governments explain why or how the factor is relevant to determining whether transportation needs are reasonably met. In 2010, as part of its Urban Reserve rulemaking, DLCD provided guidance on how thresholds should be identified and justified.²

The consultant-prepared Land Use Technical Report (LUTR) proposes seven factors to be used to evaluate whether non-expansion or non-exception alternatives can reasonably meet transportation needs in the study area. The staff proposed findings list of six largely similar but slightly different factors. The comments provide a combined response to the two sets of factors.

As explained below most of the proposed “other “ factors are either not “relevant” or the proposed

1 OAR 660-012-0070(6) allows local governments to address “other relevant factors” to evaluate whether a non-exception alternative would be a reasonable way to meet identified transportation needs.

2 See Attachment 1 DLCD Guidance for Evaluating “Reasonableness” of Non-exception Alternatives

thresholds for assessing reasonableness are not “justified” or supported by substantial evidence .

***Threshold #1: Does the Build alternative reduce congestion levels at the existing bridgeheads (measured by v/c ratios at Tier 1 intersections), when compared with the No Build Alternative in 2035? (LUTR)
Reducing congestion in downtown (Findings)***

The proposed factor and threshold is not relevant or justified for the following reasons:

- The preferred alternative, which is implicitly considered to “reasonably” meet needs does not meet this threshold at other intersections in the study area. Table 5.1-1 in the Traffic and Transportation Technical Report (TTR, page 5-2 through 5-4) shows intersection performance for the preferred alternative. (Table 5.1-1 2040 Preferred Alternative Intersection Analysis for AM and PM Peak Hours and Control Types) The traffic analysis provides 68 intersection measures - 34 intersection x two peak hours. For 16 of the 68 of the intersections measured -24% of the total - the Preferred Alternative performed worse than the no- build. For 14 other intersection, the Preferred Alternative performs worse than the no-build but meets the applicable mobility standard. ³ See Attachment 2 Intersection Performance, Induced Travel and Tolls.
- No basis is provided for selection of “Tier 1” intersections . The selection appears to have been arbitrary⁴ and biased⁵ in favor of counting intersections where the Preferred Alternative performs better. For example, minor intersection at Wallace/Taggart, which measures traffic at a collector street intersection, is considered an important “Tier 1” intersection, while the adjacent minor arterial street intersection at Wallace/Glen Creek – which is the highest volume city street intersection in West Salem - is not considered Tier 1. (This is significant because performance at Taggart is affected by capacity at Glen Creek: if Glen Creek is congested, it functions as a bottleneck, which meters flow at Taggart. In short, Taggart performs well because traffic entering or exiting Wallace at Taggart is a small volume of local traffic, and because Wallace Road traffic is limited by the capacity of the Glen Creek intersection.
- The traffic analysis which provides the basis for comparing alternatives is flawed because regional models have consistently overestimated growth in bridge volumes and do not properly account for induced travel or tolling.
 - In 2002, SKATS, the regional transportation agency, forecast that bridge traffic in 2015 would increase by 40% to 106,500 ADT.⁶ ODOT traffic volume data since that date show bridge volumes have been essentially flat: ADT in 2011 was 84,000, 25% below the traffic levels forecast for 2015.⁷ The technical reports neither review past forecasts nor provide updated forecasts of future bridge volumes. Lack of forecasts suggests planners have little confidence the analysis.

³ Table 5.1-1 “ 2040 Preferred Alternative Intersection Analysis for AM and PM Peak Hours and Control Types” Traffic and Transportation Technical Report (TTTR, page 5-2 through 5-4)

⁴ The list of “Tier 1” intersections was not part of the DEIS document or supporting reports and appears first in the updated Traffic and Transportation Technical Report dated July 2016: In order to understand traffic mobility effects at the existing bridgeheads, the traffic analysis associated with the UGB amendment (conducted for the Traffic and Transportation Technical Report Addendum (CH2M HILL, 2016)) focused on a total of twelve study intersections within the area of influence of bridge traffic.” LUTR, page 4-49)

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⁶ Willamette River Crossing Capacity Study, 2002, ES-5

⁷ “New Bridge Defies Old Rules”, Salem Weekly, November 29, 2012

- While technical reports acknowledge the concept of “induced travel” neither the travel model nor the traffic analysis explicitly account for “induced travel” . Failure to account for induced travel means that the analysis is inaccurate and significantly over-estimates travel volumes and congestion in the no-build and under-estimates traffic volumes and congestion from a new bridge.
- The traffic analysis is also flawed because it does not consider the effect of tolling which is part of the proposed financing strategy and which would significantly reduce future volumes and congestion. (See Attachment 2 Traffic Analysis, Induced Travel and Tolls.)

Together these three defects mean that the traffic analysis used to compare alternatives is inaccurate and inadequate to provide a basis for comparing outcomes of different alternatives.

- Local plans acknowledge that significant increases in congestion are essentially unavoidable. The Salem TSP shows that the city anticipates significant congestion on large portions of the street system in 2030 and that the amount of congested streets will grow by about 700% between 2000 and 2030:

In 2000, the total amount of streets either capacity deficient(12.0 miles) or approaching capacity deficient (11.8 miles) during the P.M. peak travel period was 21.8 miles (see Table 3-3 and Map 3-3). It is forecast that if those projects included in the Build Alternative were constructed by year 2030, the amount of congested streets would increase to 83.1 miles during the P.M. peak travel period (see Map 3-4). (, Map 3-4 Street Congestion 2030 PM Peak Build) Salem TSP, July 2014, page 3-16-18.

It is important to note that even if the Salem-Keizer region is able to build all of the projects contained in the Regional Plan and many from the Salem Plan, we will still experience nearly a fourfold increase in the mileage of congested streets during the P.M. peak travel period by 2030 compared to 2000. Thus, we will be unable to build enough capacity into the system to handle all the peak hour traffic demand expected in the coming years. While it is important that these projects be built to reduce congestion, we cannot completely build our way out of congestion! Over the long term our community will need to find other means of accommodating peak hour travel demand in addition to constructing street capacity. (Salem TSP, July 2014, page 3-19. July 2014)

- It violates the OHP Major Improvements Policy (Policy 1G) which calls for implementation of “cost effective” actions and improvements before new facilities are constructed. Alternative 2A is a higher priority action which is more effective in reducing expected congestion per dollar spent than the proposed alternative. A threshold that would reject cost-effective higher priority actions called for by the Major Improvements Policy is inconsistent with the policy.
- Use of v/c ratios to define an acceptable solution is inappropriate, because the Oregon Highway Plan makes it clear that mobility standards expressed as v/c ratios are to be used for identifying problems, not for selecting solutions:

While ODOT measures vehicular highway mobility performance through volume to capacity (v/c) ratios (see Tables 6 and 7) when making initial determinations of facility needs necessary to maintain acceptable and reliable levels of mobility on the state highway system, achieving v/c targets will not necessarily be the determinant of the transportation solution(s). Policy 1F recognizes and emphasizes opportunities for developing alternative mobility targets (including measures that are not v/c-based) that provide a more effective tool to identify transportation needs and solutions and better balance state and local

community needs and objectives. Through this policy, the state acknowledges that achieving important community goals may impact mobility performance and that higher levels of congestion may result in certain areas.⁸

The Highway Mobility Policy applies primarily to transportation and land use planning decisions. By defining targeted levels of highway system mobility, the policy provides direction for identifying (vehicular) highway system deficiencies. The policy does not, however, determine what actions should be taken to address the deficiencies.⁹

- The proposed preferred alternative does not meet mobility standards at a number of intersections in the study area:

In adopting this Preferred Alternative, the City recognizes that some intersections located within the project area will not meet the City's adopted Level of Service standards as included in Street System Element, Policy 2.5. Some of the intersections on the State roadway system will also not meet the State mobility targets, for which the State proposes to adopt Alternate Mobility Targets into the Oregon Highway Plan. The City supports a greater level of peak hour congestion in order to reduce the physical impact to the surrounding neighborhoods and business districts. The following City intersections will likely experience congestion greater than the City standards in either the AM or PM peak travel period.

- Marion Street NE at Liberty Street NE
 - Market Street NE at Broadway Street NE
 - Broadway Street NE at Pine Street NE
 - Broadway Street NE at Hickory Street NE¹⁰
- To the extent this factor and threshold are relevant or justified, Alternative 2A can be revised to include other measures or actions to meet this threshold, including expanded TDM measures to reduce peak hour commuting by state employees and employees of other large employers, and improvements at specific intersections. See discussion of revisions to 2A below.

Threshold #2: Does the Build alternative reduce vehicle hours of delay (VHD) on the surrounding state and local street system, when compared with the No Build Alternative in 2035? (LUTR)

The LUTR report concludes that Alternative 2A determined to meet this threshold. This factor and threshold are reasonable and appropriate measure of "operational feasibility.". The bridge crossing and roadways in the bridge area are part of an overall transportation system serving the entire metropolitan area. The region is properly concerned with how the whole system, rather than just one part of the system, will operate to meet transportation needs. Expanding capacity in the bridge crossing area is not reasonable or worthwhile, given the cost of the improvement (equal to the amount the metropolitan expects to be available for all capacity improvements over the next 20 years) and the fact that it is proposed to be funded in part by region-wide increases in gas taxes and vehicle registration fees.

This threshold demonstrates that Alternative 2A reasonably meets the region's transportation needs as it relates to reducing delay and congestion.

8 1999 Oregon Highway Plan,(2015), page 69

9 1999 Oregon Highway Plan (2015) page 71

10 Draft amendments to the Salem TSP Supporting the Preferred Alternative, page 5

Threshold #3: No bridge crossing of the Willamette River shall exceed a total of 4 travel lanes in a single direction. (LUTR)

The proposed factor (number of travel lanes on single bridge) is not relevant and the proposed threshold (four lanes) is not justified or relevant to whether transportation needs are reasonably met for the following reasons:

- The factor and threshold are based on a city TSP policy on “Arterial Street Width ”that applies only to city streets and specifically excludes state highways from its terms:

The City shall limit its arterial streets to a total cross section of no more than five lanes wide. Some intersections may need to exceed the five-lane standard. State facilities and those roads classified as Freeways and Parkways may also need to exceed this standard. (Salem TSP, July 2007, page 16-3)

Alternative 2A would widen a state facility, so the city policy does not apply. In addition, the proposed TSP amendment would classify much of Highway 22 as a “freeway”.

- The proposed factor and threshold conflicts with other city policies that apply specifically to planning for the Willamette River Crossing and planning for major improvements, and the Oregon Highway Plan Major Improvements Policy. The Salem TSP includes the following policy for “Willamette River Crossings”:

The City shall work with the Oregon Department of Transportation to first identify what types of capacity and seismic improvements can and should be made to the existing Center Street and Marion Street Bridges. Secondly, the City shall work with the State and other regional jurisdictions to identify the need for additional river crossings over the next 20-40 years. If such a need is justified, the location of additional river crossings should be identified. The type of crossing method should then be determined. Finally, the method of construction and operation should be identified and pursued. (Salem TSP, July 2007, page 16-3)

By its terms, this policy, which applies specifically to the Willamette River Crossings and specifically mentions the Center and Marion Street bridges directs that the city “shall ...identify ... capacity improvements that can and should be made ...” to the two bridges. Adopting a threshold that says that a bridge of more than four lanes does not reasonably meet transportation needs, is inconsistent with this policy. The two bridges are currently four lanes in width. Addition of “capacity” ...”to” the existing bridges logically involves adding one or more lanes to the bridge.

- The factor and threshold are not justified because other communities have or have considered building bridges that have more than four lanes. The three newest major state highway bridges in the Portland metropolitan area are all more than four lanes (Glenn Jackson, Marquam and Fremont). In addition, in 1994, the City of Eugene considered widening the Ferry Street Bridge to six lanes.¹¹ DLCDS guidance indicates consideration of experience in other communities is relevant to determining “reasonableness:

In evaluating what measures are reasonable as options, the city/county should consult with ODOT about experience with similar roadway or highway improvement projects in communities around Oregon. Other built projects effectively provide on-the-ground evidence of what constitutes a reasonable practice in terms of acceptable cost, community

11 Oakway Road to East Broadway (Ferry Street Bridge) Draft EIS, August 1993, page 2-4.

dislocation, or compromises to optimal transportation access or mobility¹².

- The factor and threshold are not justified because at least one other roadway in Salem has been widened to more than four lanes. The Mission Street between Interstate-5 and Airport Road, including the Mission Street overpass on I-5 has been widened to six travel lanes.
- The preferred alternative is inconsistent with the proposed threshold because the proposed bridge would be wide enough to accommodate restriping for six travel lanes.¹³ And the city is not proposing to adopt plan or zoning restrictions that would limit the UGB expansion and exception to the proposed 4 lane bridge.¹⁴

Threshold #4: Does the Build alternative result in a “net” increase in the number of connections (for all modes) across the Willamette River? (LUTR)

Enhancing multimodal connectivity (Draft Findings)

Distributing traffic within the transportation system (Draft Findings)

Connections Generally

The factor is not relevant and the proposed threshold is not justified for the following reasons:

- The underlying objective is to meet transportation needs by providing a system of transportation facilities and improvements that meets needs to move people and goods within the planning area consistent with Goal 12 and TPR 0030. The consultant reports and findings do not show that the number of connections that are provided across the river makes a significant difference in whether transportation needs are met. It oversimplifies by saying that more connections are better than fewer connections. The real question is not the number of cross-river connections, but rather whether the transportation system and planned facilities adequately provide for safe and convenient access across the river. The analysis supporting this proposed factor and threshold does not explain how an additional bridge, by itself, is necessary to reasonably meet transportation needs, or demonstrate that transportation needs cannot reasonably be met with fewer connections that have additional lanes or additional facilities for transit, or bicycle or pedestrian access across the river.
- The number of bridge crossings the currently exist in other Willamette Valley cities is does not a reasonable basis for determining whether transportation needs are reasonably met. The number of bridges that each community has are a reflection of unique geographic setting, development patterns and past investment decisions. As the city's findings indicate: “Every community is unique and it is not possible to apply a “one size fits all” approach to the issue of the magnitude of a major new bridge crossing.”¹⁵
- The experience of communities in considering adding new bridges to address transportation needs is a relevant factor that should be considered in deciding whether an entirely new crossing is a necessary action to reasonably meet transportation needs. In four situations in

12 Memo from Richard Whitman, DLCDC Director to LCDC, August 20, 2010, September 1-2, 2010 LCDC Meeting, Agenda Item 9 - Attachment G

13 The Traffic and Transportation Technical Report indicates that the cross-section of the preferred alternative would include 8 and 10 foot shoulders, which could easily be reconfigured to provide three 12-foot wide travel lanes in each direction. (TTTR, pages 1-2, 1-6) For comparison, the existing bridges have shoulders that are 2 to 4 feet wide.

14 The city proposes a Park and Open Space zone which does not limit transportation facilities. Findings, page 108.

15 Draft Findings, page 90

the last 40 years, Willamette Valley communities, including Salem, have considered adding new bridges and decided either not to add a new bridge or to instead expand capacity of existing bridges or take other actions to address transportation needs.

- In the late 1970s, Salem studied bridge crossing options and instead decided to replace Center Street Bridge and expand Marion Street Bridge and make other improvements rather than construct an additional bridge.¹⁶
- In 1994, Eugene considered options for a new or expanded bridge across the Willamette River in downtown Eugene to supplement or replace the Ferry Street Bridge. Among the options considered was a new four lane bridge at Moss Street.¹⁷ The city rejected the proposal for a new bridge and instead implemented improvements at ramps and approaches to the Ferry Street bridge to maximize its capacity to move traffic.
- In 2007-2008, Albany proposed a new Willamette River bridge that would be located outside the city's UGB as it prepared its transportation system plan for the year 2030. Like Salem, Albany currently has two bridges that cross the Willamette River in the downtown area that are experiencing peak-hour congestion. The city decided not to include a new bridge in its plan and instead decided to pursue other improvements to improve traffic operations. (Albany 2030 Transportation System Plan, February 2010, page 47)
- In 2015, the Corvallis Area MPO reprogrammed money for environmental studies for a planned new bridge that would replace or supplement the Van Buren Bridge and instead used the funds to make improvements to existing roadways to improve traffic flows in the bridge area. City plans have identified the need to replace or supplement the Van Buren Bridge since 1996.

Each of the four cases cited above also demonstrates that transportation needs can be met without an additional bridge or route to “distribute” traffic across other routes. Benefits of an additional route to distributing traffic are likely to be overwhelmed by the fact that new routes will induce additional traffic, which is not accounted for by the SKATS model.

Bicycle and Pedestrian Connections

The LUTR and draft findings argue that Alternative 2A would not meet this threshold, in part, because the widening of the Marion and Center Street bridges in Alternative 2A would reduce the number of bicycle and pedestrian crossings of the river.

Alternative 2A would ... would eliminate two bicycle and pedestrian connections across the river relative to existing conditions. Therefore, Alternative 2A would result in a “net” decrease in the number of connections (for all modes) across the Willamette River and would not meet Threshold #4. By comparison, the preferred alternative would retain the bicycle and pedestrian facilities on the existing bridges and would add bicycle and

16 A 1974 study considered six options including one at Pine Street and concluded “... no new crossing alternative was satisfactory. Each had its trade-offs. All had extensive impacts and costs ...” The report stated: “No alternative emerged as a majority choice. Estimated costs for a new corridor also proved far in excess of available funds. Hence, the proposal for building a new bridge in a new corridor was abandoned...”

• A 1982 study concluded: “It should be noted that the issue of bridge capacities is more complex than totaling the number of crossings. Actually, it is not the bridges per se but the capacity limitations of the abutting signalized intersections ...”

17 Oakway Road to East Broadway (Ferry Street Bridge) Draft EIS, August 1993, page 2-4.

pedestrian facilities at the new bridge crossing location. Therefore, the preferred alternative would result in a “net” increase in the number of connections (for all modes) across the river and would meet Threshold #4. (LUTR, page 4-3)

The proposed factor and threshold are not justified or appropriate for the following reasons:

- As described above, the threshold measures only the number of connections provided and not whether the connections provided adequately accommodate the needs pedestrians and cyclists crossing the river. The Union Street Rail bridge is in close proximity to the existing Center and Marion Street bridges and may reasonably accommodate bike and pedestrian travel between West Salem and downtown without significant out-of-direction travel.
- The existing bicycle and pedestrian facilities on the Marion and Center Street Bridges as “minimally adequate” and “substandard” and do not meet the Highway Design Manual standards (DEIS, Chpt 3, Traffic and Transportation, 3-17) Therefore, eliminating or improving them is a wise safety move.
- To the extent that this factor or threshold are reasonable, the deficiency in Alternative 2A could easily be remedied by adding bike and pedestrian facilities to the Marion and Center Street bridges when they are widened. In fact, compliance with the state “Bike Bill” requires that facilities needed to accommodate bike and pedestrians be provided whenever a road or highway is constructed or reconstructed.¹⁸
- By contrast, the preferred alternative would provide an additional connection but one with very little benefit to pedestrians or cyclists, because the bridge would be long and not connect to significant destinations. For pedestrians and cyclists the new crossing would be a mile long “bridge to nowhere” - providing a long, unpleasant, out of direction route across the river that does not provide a convenient connection between likely destinations. As the findings note: cyclists are sensitive to out of direction travel and likely to use existing bridges.¹⁹

Threshold #5: Is the Build alternative consistent with objectives outlined in adopted urban renewal plans for the Downtown and Edgewater/Second Street areas? Would it support and reinforce substantial public investments that have already been made to enhance the viability and livability of these urban renewal areas? (LUTR) Supporting planned land uses in Downtown Salem/Edgewater area. (Findings)

The proposed factor and threshold are not relevant or justified for the following reasons:

- There is little or no direct analysis or evidence to justify this factor. Instead, the consultant report acknowledges that the factor is “qualitative”.
- Analysis to support this factor is based on the assumption that differences in traffic volumes will have significant effects on the implementation of adopted plans. The consultant reports provide no expert studies or literature or other analysis to support this assertion.
- The difference in traffic volumes between the proposed alternatives is slight. In essence, the LUTR argues that alternative 2A does not perform reasonably because there would be a slight increase in traffic across the Marion and Center Street Bridges in the AM/PM peak hours, of 600 to 800 vehicles during either the AM or PM peak hour. (LUTR at page 4-6) The LUTR does nothing to explain how this minor difference in estimated traffic volumes makes alternative 2A unreasonable, or would have specific adverse effects on implementing adopted

18 ORS 366.514 <http://www.oregonlaws.org/ors/366.514>

19 Draft Findings, page 101

urban renewal plans or reinforce existing investments.

- As noted elsewhere, the traffic analysis developed to compare alternatives is flawed, and underestimates traffic volumes and congestion from the preferred alternative because analysis does not properly account for induced travel that would result from construction of additional road capacity. Consequently, to the extent traffic volumes or congestion are a reasonable test for supporting implementation of existing plans, the analysis does not provide evidence to support the conclusion that traffic congestion would be significantly improved in preferred alternative.
- City plans adopted since bridge crossing planning began in 2006 which express support²⁰ for a new bridge are not relevant because other plan policies make it clear that the city had not made a land use decision to authorize a new bridge, that this SRC process would be used to inform the decision, and that subsequent plan amendments would be needed to authorize the bridge. The city's TSP and regional transportation plan make it clear that the SRC is a proposal, not a planned transportation facility and identify the need for a goal exception and plan amendments to allow the proposed improvements.

There are good reasons to believe that the preferred alternative will work *against* achieving adopted plans for downtown and Edgewater areas:

- The construction of the preferred alternative is likely to increase accessibility between West Salem, Keizer and Interstate 5. This improved accessibility is likely to allow and encourage additional trips to shopping, services and employment areas along I-5 and in Keizer rather than downtown or West Salem. Easy access to other areas will reduce the likelihood of businesses locating or expanding in downtown or West Salem.
- A significant impact of the Preferred alternative is elimination of the Rosemont exit, westbound on Highway 22. As a result, more drivers will exit to Edgewater, drive through the Edgewater/Second street area, to get to Eola Drive and up into the hills. The alternative is to turn onto Wallace Road, and then head west up Glen Creek or Orchard Heights. The Preferred Alternative will increase drive through traffic in these areas. In addition, as noted above, the traffic analysis in the TTTR is not reliable because it does not address the factor of induced travel. The expert study cited in the TTTR concludes that traffic analysis, like those used in this study, that fail to properly account for induced travel are likely to overestimate traffic volumes and congestion in the no-build and under-estimate traffic volumes and congestion of build alternatives.
- Preferred alternative will work against implementing adopted plans because, if it is funded, it will use up most of the region's available transportation funding for a single project— bridge is estimated to cost \$425 million and region estimates available funding for capacity expansion projects for the next 20 years at \$450 million. Funding committed to construct a new bridge will reduce money available for other important transportation improvements which are also important to implementing plans for downtown, West Salem and the rest of the metropolitan area.
- Part of the funding plan for the preferred alternative is charging a \$1.50 toll for vehicle trips across the river. Imposition of a toll will hurt downtown businesses and West Salem businesses that serve customers or clients on the east side of the river.

20 For example, the LUTR says the city's plans "... presume the need for a third bridge not widening of the existing bridges, based largely on the identification of the Tryon/Pine corridor as the priority corridor in the SKATS RTSP and the Salem TSP." (LUTR at 4-6)

- The preferred alternative will also undermine efforts to support development in downtown and West Salem because local state and federal funding constraints make it unlikely that the bridge and supporting improvements will be constructed in the next 10-20 years or more. The decision to build a third bridge means that the region will have decided to defer or not to implement other cost-effective actions that could expand traffic capacity of the existing bridges or reduce congestion. Not implementing these other actions will result in more traffic congestion in the bridge areas which will, if the LUTR analysis is correct, frustrate implementation of the adopted plans for downtown and West Salem.

Threshold #6: Is the Build alternative consistent with Policy 1.8 of the Salem TSP? (LUTR) Providing alternate routes for emergency responders and regional trips (Findings)

Policy 1.8 Transportation System Redundancy

The City’s street system shall be planned and constructed to provide multiple routes between locations, including making reasonable efforts to eliminate existing, and prevent creation of new, transportation chokepoints, both natural and man-made.

The proposed factor and threshold are not relevant or justified for the following reasons:

- The underlying proposed factor is to “accommodate emergency response vehicles in the event of restricted access to and or closure of the existing bridges because of an emergency or other incident...” (LUTR at 4-6) The LUTR then proposes that Policy 1.8 “Transportation System Redundancy” be used as a threshold for determining whether the need for “emergency response” is adequately addressed.
- Policy 1.8 is too general to justify or explain why redundancy (i.e. additional bridge) is a relevant threshold for in determining whether or not transportation needs are reasonably met. Redundancy, in this case, the provision of more than one route, is a method or means of providing adequate emergency response. As a local observer commented on this argument:

“I just don't see how adding to the numerical count of bridge crossings at all substantively addresses the core question whether the transportation need can be met inside the UGB with additional lanes and other mobility. The "transportation need" is about moving people, not about counting bridges.

Even our MPO recognizes this:

A performance measure that focuses solely on the reliability of vehicular travel time in such a setting is potentially directing investment that could damage the urban fabric of the area and diminish the livability along the corridor.

“... the "transportation need" is about moving people, not about adding redundancy. I'm not sure this is a substantive argument either. And it doesn't address the cost/benefit of redundancy. Cheap redundancy is a terrific thing; tremendously expensive redundancy might just be redundant and superfluous.”²¹

- Policy 1.8 itself does not justify a strict redundancy standard as a threshold because it requires only that “reasonable efforts” should be made to eliminate or prevent so-called chokepoints.

Policy 1.8 Transportation System Redundancy

21 Salem Breakfast on Bikes, <http://breakfastonbikes.blogspot.com/2016/09/can-widening-existing-bridges-meet-transportation-need-avoid-ugb-expansion.html#more>

The City's street system shall be planned and constructed to provide multiple routes between locations, including making reasonable efforts to eliminate existing, and prevent creation of new, transportation chokepoints, both natural and man-made. (LUTR, page 4-7)

- Policy 1.8 does not provide a clear justification for the redundancy standard because it is a general direction to the city in the planning of its street system and does not specify or justify any particular amount of “redundancy”. Redundancy simply means more than one option. To the extent there is a need for more than a single option, there are currently two bridges – the Marion and Center Street bridges – which provide “redundancy”.
- Redundancy is not justified because other cities and urban areas that span major rivers are able to meet transportation needs, including the need for emergency response, without providing redundant bridges. Examples include: Albany, Wilsonville, Newport, Waldport, Florence, Lincoln City.
- As detailed above, other cities, including Eugene, Corvallis, Albany, as well as Salem, itself have over the last 20-30 years decided to implement solutions other than new bridges to meet growing transportation needs, including the need for emergency response.
- The primary purpose or benefit of redundancy / of an additional Willamette River bridge crossing would be to “reduce vulnerability in the event of an emergency or disaster” including a Cascadia Subduction Zone earthquake. Various actions and improvements that are affordable and cost-effective can achieve the benefits of redundancy to respond to an emergency or disaster. These include:
 - seismic improvements to the Marion and Center Street bridges to reduce or avoid the likelihood of a bridge closure
 - development of an updated and expanded emergency traffic plan to provide for temporary two-way operation of each of the existing Marion and Center Street bridges²²
 - modification to the Union Street Rail bridge to allow for emergency vehicle access²³
- The argument that temporarily converting the existing Marion and Center Street bridges to two-way operation is overly complex is not convincing. As the findings note, the city has an emergency response plan that can convert the bridges to two-way operation within three hours. The city does not explain why a more rapid implementation is necessary to reasonably meet emergency or temporary closure needs. The argument that the conversion is overly complicated is contradicted by experience in Portland. In 1997, ODOT closed the northbound portion of the I-5 Interstate bridge for five days and implemented a traffic management plan that provided two-way operation on the southbound span. This included a reversible lane, that provided two lanes of travel in the peak direction.²⁴ If Portland can develop a traffic

22 The city's proposed findings indicate that the city and ODOT developed a plan for converting each of the bridges to two-way operation in the event of a bridge closure in 2007. The plan involves use of cones, signs, barriers, flaggers and reader boards to redirect traffic and would take three hours to implement. (Findings, p 19-20) This existing plan is modest and 9 years old. A more ambitious plan could include installation or modification of traffic signals and pre-positioning of signs and equipment to speed up conversion.

23 The city's proposed findings indicate that conversion of the Union Street bridge to provide for emergency vehicle access is feasible: “This bridge provides an opportunity to enhance river crossing and emergency vehicle response in the event of a prolonged closure of one of the bridges.” Findings, page 20

24 W.P. Ciz, “I-5 Columbia River Bridge Trunnion Repair Project Traffic Management Plan”, ITE Journal, 1998-99

management plan the reroutes traffic crossing the Interstate bridge, it seems more than reasonable to expect that Salem could develop a similar plan for the Marion and Center Street Bridges. While such plans may be “complicated” the findings do not explain why such plans would not reasonably meet transportation needs in an emergency or bridge closure.

- Providing an alternate route for regional trips is not compelling for several reasons:
 - The need is not significant because only a small percentage of trips are “regional trips” that will benefit from the revised route. The 2002 study indicates:

While traffic originating from areas west of the river outside of West Salem is significant (37 percent of the total traffic) not more than 3.5 percent of these trips are through trips. The overwhelming majority of trips are destined for locations within Salem and Keizer east of the river. Thus, through traffic that would most benefit from a regional bridge directly connecting Highway 99W with I-5 makes up a relatively small portion of the user market for the bridges. Consequently, accommodating the predominant travel pattern of internal trips remains the major criteria for any additional bridge solution and reinforces the need for a local service bridge near the core area. Such a location would maintain accessibility to both the commercial-employment center of Salem as well as the remainder of the Salem-Keizer area ...²⁵
 - Similarly, a 2014 analysis of Census data by SKATS staff shows that only 2% of workers from Dallas/Independence and Monmouth, and 5% of workers from West Salem are regional commuters (i.e. that commute to North Marion County and the Portland metropolitan area.²⁶
 - Because regional trips are longer trips, the proposed “alternate” route is not significantly different than the existing route – basically shifts traffic one mile north to the new bridge. This is a minor change for regional trips of 10 to 50 miles.
 - Transportation needs for regional trips are adequately met outside of peak hours. Nothing in the consultant reports or findings indicates that the new bridge will be a faster route for regional trips in off peak hours than the existing bridges. Much or most regional traffic occurs in off-peak hours, and it is reasonable to expect that discretionary regional trips that are sensitive to congestion can shift to off-peak hours.
 - The preferred alternative will not significantly improve conditions for regional traffic because overall traffic congestion in the Salem-Keizer area will be roughly the same with or without the new bridge: Consultant reports estimate that in the “no-build” congestion will increase by 362% and with a new bridge, congestion will still increase by 342%
- The proposed redundancy threshold violates Oregon Highway Plan Major Improvements Policy because it would implement a lower-priority action (constructing a new bridge) when there are a cost-effective, higher priority actions, including development of an improved emergency traffic plan, and upgrading the existing Marion and Center Street bridges to reduce the likelihood of a bridge closure do to an earthquake or other event. Construction of a new bridge is a high cost solution - \$425 million – to a rare or unlikely event. By comparison, an updated and expanded bridge closure traffic management plan would involve a modest investment.

<https://trid.trb.org/view.aspx?id=541289>

25 Willamette River Crossing Capacity Study, 2002, page ES-6

26 SKATS Memo to ECO Northwest, October 13, 2014

- The preferred alternative is not consistent with Policy 1.8 because it involves an “unreasonable effort” to prevent or remove a chokepoint because it is unreasonably expensive. Alternative 2A is estimated to cost \$148 million. The preferred alternative would cost \$425 million, an amount that roughly equals the amount of funding the metropolitan area expects to have available for capital projects over the next 20 years.²⁷ Even if we consider additional improvements to 2A, the preferred alternative would still be grossly more expensive.
- The preferred alternative will not meet this threshold because, due to funding constraints, it is unlikely to be constructed during the 20-year planning period. Again, the preferred alternative is estimated to cost \$425 million – roughly the same amount that the region expects to have for all roadway expansion projects over the next 20 years. This makes it unlikely that the project will be built in the planning period, and means that emergency response during all or most of the planning period will not be improved. An updated and expanded bridge closure plan would involve a modest investment and could be completed and in operation in two to four years. It would be more cost-effective to invest in redundant emergency response capabilities in West Salem, such as urgent medical care clinics and additional fire stations or equipment so that access to emergency services is less dependent on bridge crossings.

3. To the extent the other proposed factors and thresholds are either relevant or justified, Alternative 2A can be modified to perform reasonably to meet the proposed factor or threshold.

Alternative 2A is a relatively narrowly drawn set of actions for addressing transportation needs within the existing UGB. Bridge studies and adopted plans identify a series of other actions and improvements that can and should be added or to Alternative 2A so that it would reasonably meet transportation needs.

Proposed Refinements/Additions to Alternative 2A

The following table identifies 20+ additional actions or refinements that should be added to Alternative 2A. Each action or refinement will improve its performance in meeting proposed factors” and “thresholds” particularly as it relates to reducing traffic congestion and improving emergency response during bridge closures.

Additional consideration of these refinements and actions is warranted for the following reasons:

- Professional literature and adopted plans indicates that the proposed actions are feasible and effective in improving transportation system performance.
- Most of the proposed actions and refinements are identified or recommended in the Salem Transportation System Plan as ones the city supports, (i.e. considers feasible, desirable and effective) but which have not been adopted as “planned” projects to be implemented in the next 20-25 years.
- Most of the actions are low-cost and cost-effective actions compared to a new bridge. As noted elsewhere, the OHP Major Improvements Policy and the city's plan direct that modest, cost-effective actions and improvements to existing facilities be implemented prior to construction

²⁷ The Regional Transportation System Plan (RTSP) for 2015-2035 indicates that expected 20-year revenue for city, county and state road capital projects is \$425 million. RTSP, Table 4-4, page 4-15.

of major new facilities. Incorporating these additional actions and refinements into Alternative 2A would implement the OHP Major Improvements Policy and the city's plan.

- DLCD guidance indicates that non-exception/non-expansion alternatives should be refined and revised so that they work as well as possible, and that the process for developing and evaluating alternatives should be iterative:

In assessing non-exception alternatives, the city/county should take care to incorporate reasonable design and mitigation measures that would make nonexception alternatives as workable as possible. As a practical matter this is an iterative process: the city/county should outline major alternatives, then identify their apparent deficiencies or shortcomings, and then assess what modifications to design or alignment (or addition of mitigating measures) might lessen or offset the perceived disadvantages while trying to maintain most or all of its fundamental functionality.²⁸

- It is reasonable to significantly expand Alternative 2A because it costs substantially less than the Preferred Alternative (PA). As noted above, Alternative 2A is estimated to cost \$148 million, while the Preferred Alternative is estimated to cost at least \$425 million.
- Several of the proposed additional actions were considered but excluded from Alternative 2A without good reason and/or warrant additional consideration. As noted above, guidance from DLCD indicates that evaluation of non-exception alternatives should be iterative – when an alternative is found deficient, it modifications or refinements should be considered that would make the alternative work as well as possible.

Additional Actions/Modifications to Alternative 2A		
Alternative 2A should be revised and expanded to include the following actions to improve its performance in meeting proposed factors” and “thresholds” particularly as it relates to reducing traffic congestion and improving emergency response during bridge closures. Most are identified in the Salem TSP as ones the city supports, (i.e. considers feasible, desirable and effective) but has not adopted as planned projects to be implemented in the next 20-25 years. The OHP Major Improvements Policy and the city's plan direct that cost-effective actions be implemented prior to construction of major new facilities.		
Action	Plan/Policy Support	Comments
Roadway Improvements		
Improve Center Street Bridge to Northbound Front Avenue ramp	1998 Bridgehead Engineering Study Recommendation	More detailed evaluation and further refinement is warranted – see above
Modify Union Street Rail Bridge to allow emergency vehicle use during bridge closures	(Identified in SRC DEIS)	Improved emergency response.
Seismic retrofit/upgrade to Center and Marion Street Bridges	City application to ODOT for Center Street Bridge study; RTSP	Reduce or eliminate likelihood of a bridge closure due to a Cascadia earthquake
Transportation System Management (TSM) Actions		
Note: City TSP supports actions in Table 4-2 but does not indicate any will be implemented in the next 25 years.*		
Prepare and implement an incident management plan for the West Salem Bridges	Salem TSP, Table 4-2* Salem-Keizer ITS Plan ²⁹	Improved emergency response. Crashes and incidents are responsible

28 Memo from Richard Whitman, DLCD Director to LCDC, August 20, 2010, September 1-2, 2010 LCDC Meeting, Agenda Item 9 - Attachment G

Expand incident response staff and equipment for bridge area		for about 25% of traffic congestion. ³⁰ 2007 plan for bridge closure is minimal, lacks resources
Central signal system upgrade	Salem TSP, Table 4-2* TSM Policy 1.1	Comprehensive signal upgrades can increase traffic flow by up to 25% ³¹
Implement ITS-Adaptive Signal Timing Project	SKATS RTSP, Appendix I ³² TSM Policy 1.1	
Transit signal priority (on Wallace Road, Center and Marion Streets through downtown area)	Salem TSP, Table 4-2* TSM Policy 1.1	
Dynamic routing of emergency vehicles	Salem TSP, Table 4-2*	Improved emergency response. Speeds clearance of crashes and incidents which are responsible for about 25% of traffic congestion ³³
Traffic signal preemption by vehicle ID	Salem TSP, Table 4-2* TSM Policy 1.1	Improved emergency response times
En-route traveler information (Dynamic message signs)	Salem TSP, Table 4-2*	Reduce congestion support use of alternative routes
Add/ modify traffic signals and add variable message signs to allow for rapid conversion of Center and Marion Street bridges to two-way operation		Specific element of incident management plan for the West Salem bridges. Improved emergency response
Transportation Demand Management (TDM) Actions		
Work with state and major employers to stagger work hours, promote flexible schedules and work at home to reduce peak-period commutes	Salem TSP, Policy 2.2 and 2.4 ³⁴	Bridge studies indicate significant potential to reduce peak hour travel ³⁵
Work with major employers to provide free transit passes	Salem TSP Policy 3.1 ³⁶	Extend existing program for state

*"Table 4-2 Additional ITS Projects and Strategies Supported by the City of Salem", Salem TSP, February 2016, page 4-15) "The City also supports implementation of other strategies (See Table 4-2 but does not anticipate programming significant capital funds toward these within the 25-year planning period.

29 "Incident Management Plan for West Salem Bridges" \$1.1 million

30 Salem-Keizer ITS Plan, August 2005, page 4- Estimates a 15% reduction in average incident duration and 35% reduction in vehicle hours of incident delay.

31 Salem TSP, TSM Element, February 2016, page 4-10

32 RTSP Project S277 "ITS – Adaptive Signal Timing Project. Deploy adaptive signal timing on selected corridors with the highest levels of congestion and the most fluctuation in volumes. \$1.4 million. Unfunded. RTSP, June 2016, page I-11

33 Salem-Keizer ITS Plan, August 2005, page 1

34 Policy 2.2 Increase Marketing to Employers. The City shall support the regional TDM programs efforts to provide assistance to employers in designing and implementing trip reduction plans at their work sites. Trip reduction plans will include strategies to encourage employees to use alternative transportation modes and discourage them from commuting in single-occupant vehicles. Alternative work hours and teleworking will also be recommended as a way of reducing peak hour congestion.

Policy 2.4 Encourage State Agencies to Reduce Peak Hour Travel Demand. The City of Salem shall encourage the State of Oregon to implement, through its agencies, significant measures that will reduce peak hour travel demand on Salem's street system.

These measures should include the widespread institution of flexible work schedules, increased carpooling, vanpooling, teleworking and transit ridership. Salem TSP, February 2016, page 10-3

35 Willamette River Crossing Capacity Study, 2002: "Recent work site surveys conducted through the Regional TDM Program indicate that employees are most interested in both compressing work weeks and telecommuting options. Over 40 percent of the surveyed SOV employees indicated that if they had the option, they would work at home at least one day a week. Just over 20 percent of those persons surveyed stated they would try compressed work weeks."

36 Policy 3.1 Transit Ridership Incentives The City shall support efforts of the Salem Area Mass Transit District to increase commuter transit ridership through voluntary employer-based incentives such as subsidized transit passes and guaranteed ride home programs. Salem TSP, February 2016, page 9-4

for commuters		workers to other employers
Work with other government agencies to charge for employee parking	Salem TSP Parking Policy 4.3 ³⁷	
Add a \$1 toll to recover costs for widening Marion and Center Street bridges	Funding Strategy for the Preferred Alternative ³⁸ 2002 Crossing Capacity Study ^{R39i}	Tolls significantly reduce expected traffic volumes ⁴⁰
Change city 10 hour meters to provide reduced rates to arrivals before peak hour		Early bird parking reduces peak hour traffic congestion
Adopt a program for city and county employees to reduce peak hour travel	Salem TSP, Policy 5.2 ⁴¹	
Transit Service Improvements		
Provide /restore fixed route transit service to West Salem neighborhoods (Eola, Glen Creek and Orchard Heights) with 15 minute peak hour service	Salem TSP Policy 2.2 ⁴²	Expanded transit service, in combination with free passes and parking charges can significantly reduce drive alone commuting
Provide park and ride lots at Edgewater, Independence-Monmouth, Dallas		
Add bus queue jump signals on Wallace Road at Orchard Heights, Glen Creek, Taggart, Edgewater	Salem TSP Policy 2.6 ⁴³	Improves speed and reliability of transit service
Expand CART service to provide Express bus service at 15 minute intervals during peak hours and Dallas, Independence & Monmouth	Salem TSP Policy 2.4 ⁴⁴	
Provide Cherriots express service between Park and Rides and Capitol Mall/downtown Salem	Salem TSP Policy 2.4 ⁴⁵	
Bicycle and Pedestrian Improvements		
Include bikeway/walkway connection as part of reconstructed Marion and Center Street Bridges	ORS 366.514	Improved bicycle and pedestrian connectivity between West Salem and Downtown

37 Policy 4.3 Pricing of Other Publicly-owned Parking Facilities The City will encourage other Federal, State, regional, and local government agencies to charge their employees for parking at their facilities in Central Salem and at other locations in the City that are on or near transit routes. Salem TSP, February 2016, 11-5

38 Project Funding Strategy Memorandum, March 6, 2015

39 Willamette River Crossing Capacity Study, 2002, ES-26 “The state may have the authority to ... implement tolls as part of a major reconstruction project for existing federally aided bridges. One strategy would be to apply to the FHWA to allow tolls on the existing Marion and Center Street bridges and/or the Highway 22 and Wallace Road Corridors.

40 ECO Northwest, Salem River Crossing Revenue Projections Memorandum, November 12, 2014

41 “Policy 5.2 Reduce Peak Hour Travel Demand. The City shall implement measures directed at City employees that will reduce peak hour travel demand on Salem's street system. These measures should include the widespread institution of flexible work schedules, increased carpooling, vanpooling, teleworking and transit ridership.” Salem TSP, February 2016, page 10-4

42 Policy 2.2 Increased Frequency and Availability of Services The City shall support attempts made by the Salem Area Mass Transit District to increase the frequency of transit services (shorter headways), extend its hours of operation, and provide weekend service.

43 Policy 2.6 Transit Priority The City shall work with the Salem Area Mass Transit District to implement the latest transit priority technology to facilitate transit service efficiency. Salem TSP, February 2016, 9-4

44 Policy 2.4 Express Transit Service The City shall support the Salem Area Mass Transit District’s express transit services to and from outlying park-and-ride facilities and the central core area of Salem.

45 Policy 2.4 Express Transit Service The City shall support the Salem Area Mass Transit District’s express transit services to and from outlying park-and-ride facilities and the central core area of Salem.

Union Bridge Path Extension Add grade-separated crossing of Wallace Road from Union Street railroad path to 2 nd Avenue	Planned Project in Salem TSP ⁴⁶	Improve bike pedestrian connectivity across Wallace to Edgewater Reduced congestion on Wallace
Other Actions		
Expand emergency services in West Salem including additional fire equipment, expanded urgent medical care capability and emergency medical evacuation		

46 Tier 1 Projects, Salem TSP Pedestrian Element, February 2016, page 8-28, \$1.574 million

Table 4-2 Additional ITS Projects & Strategies Supported by the City of Salem

Project/Strategy Title	Project/Strategy Description
Incident Management Plan for West Salem Bridges	Provide traffic management and traveler information tools (cameras, advisory radio (HAR), moveable barriers, transit vehicles) and specific pin outlining roles, responsibilities and procedures for handling an emergency bridge closure.
Incident Response	Build on current ODOT incident response program to support incident management on state, county and city roadways. Equip incident response vehicles with GPS to enhance dispatch. Provide additional incident response vehicles and personnel.
Detour Route Management	Includes the mapping of detour route plans in GIS, incident signal timing plans, electronic message signs, and congestion monitoring to support incident responders and management of the roadway network during incidents. This includes improving communications to field devices (traffic signals, vehicle detectors, message signs and cameras). High priority will be given to Kuebler Boulevard S/Cordon Road, and Salem Parkway/Commercial Street/Liberty Road corridors.
Arterial Congestion Map	Create a congestion map that shows actual travel speeds on roadways throughout the region.
Advanced Rail Warning System	Deploy railroad crossing detection to determine rail crossing occupation and duration at crossings. This information can be used by emergency service providers and motorists to avoid those crossings and use an alternative route.
Central Signal System Upgrade	Upgrade the central computer control to provide additional functionality including advanced signal control, camera control, automated incident response timing plans and arterial congestion mapping.
Flood Warning System	This project will monitor rising water on roadways and alert transportation managers of high water.
Advanced Vehicle System	Deploy Mayday system information from vehicle to Traffic Control Center (e.g. air bag deployment) and from roadside to vehicle (e.g. transmit traveler information).
Isolated Intersection Safety Warning System	Deploy devices at high crash locations that warn drivers of changing conditions (e.g. tee intersections or sharp curves).
En-route Traveler Information	Dynamic message signs, websites and HAR would notify motorists of incidents, detour routes, construction, and other traveler information.
Cable TV Traveler Information Channel	Provide camera images and other traveler information to cable TV companies to display on a channel.
Broadcast Traveler Information	A dedicated traffic condition radio channel will be provided.
Interactive Traveler Information	Allow the motorist to request specific traveler information, utilize dynamic ridesharing and provide yellow page and reservation services prior to a trip or en-route using wide-area wireless connections
Transit Signal Priority	This project will install transit priority emitters and upgrade traffic signal controllers along selected routes.
Dynamic Routing of Emergency Vehicles	This project would automatically calculate the ideal route between two points based on real-time roadway congestion, construction, and incident information.
Traffic Signal Preemption by Vehicle ID	Implement preemption equipment to provide traffic signal preemption by specific vehicle ID.
Work Zone Safety Systems and Monitoring	This project would provide portable cameras, variable speed limit signs and speed detection devices to monitor and control traffic conditions in work zones. It also would utilize technology within work zones to reduce motor vehicle conflicts with workers by warning workers of vehicles entering work zones.
Maintenance and Construction Coordination System	Deploy a construction activity information site that contains regional and state-wide maintenance and construction activities, including active and planned construction sites, weight and width restrictions, and travel times through work zones.
Work Zone Traveler Information	This project will provide travel time information through work zones using electronic message signs, the internet, and HAR.
Roadway Weather Information System	Install weather stations with roadway temperature, wind speed, humidity, and precipitation sensors.
Maintenance Vehicle Tracking	Track maintenance vehicles to enhance dispatch of personnel and equipment to daily events and for management of the transportation network during events.
Maintenance Event Logging System	Log maintenance requirements through an automated system to record items that require maintenance as personnel identify them daily.

Center Street Bridge to NB Front Avenue Ramp

- Further evaluation of constructing a free-flow ramp from the Center Street Bridge to NB Front Avenue is warranted. The 1998 Bridgehead Engineering Study recommended this action. The purpose of the study was to identify operational or physical improvements for traffic using the Marion Street and Center Street Bridges. The study indicates that additional improvements to roads and ramps in the bridge area could significantly increase bridge capacity. The study recommended eight improvements. If all eight projects were completed, the study concludes the peak hour vehicle capacity westbound would be 6,000 and eastbound would be 5,900. (This is an estimated 50 percent increase over the existing bridge capacity which backs up traffic once it reaches 4,000 vehicles per hour.) However, two of the highest impact projects

have yet to be built. They are removing the stop light from the Center Street Bridge exit to northbound Front Street (#2), Grade separated Bike and Pedestrian crossing of Front Street at Court Street (#5).

The findings imply that a free flow ramp is not workable because of its expense, the need for other improvements and possible disruption from construction⁴⁷. Each of these reasons is not compelling or could be mitigated by more detailed design work.

- Inadequate analysis: findings are based on minimal analysis. ODOT regularly considers and approves “design exceptions” to allow non-standard improvements in constrained environments. There is no evidence that design exceptions were identified or seriously considered as part of this analysis. Given the high cost of this project and the implication that performance at this intersection is a fatal flaw⁴⁸, more detailed analysis is necessary to show that this option is unworkable.
- Cost: The cost of these improvements (\$4.4 million) is modest considering the proposal for a \$425 million new bridge. In addition, modifications or refinements to the design of this connection -suggested below - could make it workable and reduce costs.
- Disruption. The extent of disruption depends on the amount of reconstruction of bridge piers or supports that is needed. The extent of reconstruction is not described and there are design options for the ramps that would significantly reduce or eliminate the need for reconstructing bridge piers. In addition, the Marion Street bridge piers will need to be reinforced or reconstructed to address structural deficiencies and enable the structure to survive a Cascadia earthquake, so some disruption is likely to occur and could be minimized by incorporating ramp improvements with these other needed upgrades.

Options for improving performance of the Center to Front intersection that warrant further consideration include:

- Narrowing NB Front Avenue South of the Center Street bridge ramp from two lanes to one. This would provide additional space to accommodate turn movements and with signal refinements could allow a free flow right turn. This would also reduce or avoid the need to reconstruct Marion Street Bridge piers.
- Realigning Front Avenue to the west. There are three open spans under the Center Street Bridge between northbound Front Street and the train tracks. The southbound lane of Front Street could be moved one or two spans to the west to provide room for the foundation and piers for a new off-ramp from Center Street to Front Street going north.

Benefits of any individual action may be modest, but this in combination with other actions ramp improvements may significantly improve performance of Alternative 2A .

47 “Free flow ramp was not pursued ...” because of cost, need for other improvements and disruption from reconstruction of the Marion Street bridge spans. Draft Findings page 36

48 "The intersection analysis results document that Alternative 2A performs worse than the No Build Alternative in 2035 at the Center Street Off-Ramp to northbound Front Street in both the AM and PM peak. Therefore, Alternative 2A does not meet Threshold #1. " Land Use Technical Report, Page 4-49

4. The proposed UGB amendment is not consistent with the Oregon Highway Plan Major Improvements Policy, which requires that cost effective actions and upgrades be implemented before major new improvements .

The Oregon Highway Plan Policy 1G applies to this decision and requires that cost-effective actions to address transportation needs be implemented before plans include commitments to construct major improvements.

Since road construction is very expensive and funding is very limited, it is unlikely that many new highways will be built in the future. Instead the emphasis will be on maintaining the current system and improving the efficiency of the highways the State already has. The Major Improvements Policy reflects this reality by directing ODOT and local jurisdictions to do everything possible to protect and improve the efficiency of the highway system before adding new highway facilities. These priorities - laid out in Action 1G - take precedence over other actions in this policy."

Action 1G.1 requires that "Plans must document the findings which support using lower priority measures before higher priority measures."

Action 1G.2 requires that The state will support major improvements to state highway facilities only if the improvements ... :

- are part of plan that includes measures to manage the transportation system ...
- The major improvement would be a cost-effective means to achieve the objectives
- Funding for the project can reasonably be expected at the time the project is ready for development and construction (Oregon Highway Plan, page 86-88.)

The proposed preferred alternative does not comply with the Major Improvements Policy for the following reasons:

- Consultant reports and findings do not include findings or analysis which explains why the the higher priority actions included in Alternative 2A – or the additional actions recommended to refine alternative 2A - are not cost-effective or otherwise in compliance with Policy 1G. The findings include a generalized statement that suggests that past efforts are sufficient to demonstrate compliance with Policy 1G:

The adopted 2035 RTSP (SKATS MPO, 2015) and Salem TSP (City of Salem, 2015a) include some projects at the bridgeheads and connecting streets that will improve mobility in the short-term, but a long-term solution is required to meet mobility needs in the corridor. Based on the history of public investments that have been made to protect the existing bridge crossings and to make targeted investments to improve the efficiency and capacity of the existing bridges and connecting road system, a compelling argument can be made that the preferred alternative would be consistent with local, regional, and state priorities for major improvements"⁴⁹

This generalized conclusion is not adequate to show compliance with 1G. Policy 1G does not ask if "some" efforts have been made or are planned, it requires identification and careful consideration of higher priority actions, and an implementation of those that are "cost-effective" before a major improvement is planned. No showing or findings that a new bridge is

49 LUTR, page 4-27

clearly more cost-effective or conforms to the requirements in Action 1G.2⁵⁰

- Consultant Reports and findings show that Alternative 2A and other higher priority actions⁵¹ are cost-effective ways to reduce traffic congestion and improve emergency response^T
- The preferred alternative does not include measures to “manage the transportation system” as required by Action 1G.2 including TDM, improvement traffic operations and alternative modes. As discussed above the city has not completed measures that would improve the existing system before constructing a new facility.
- No evidence or findings are provided which show that third bridge would be cost-effective in achieving key objectives (congestion reduction, emergency response) As noted earlier, a new bridge will cost almost three times more than Alternative 2A and achieve only marginally better reductions in traffic congestion. In addition, emergency response can be significantly improved through a series of lower-cost actions. By definition, these other actions are more cost effective in achieving stated transportation objectives.
- The preferred alternative does not give priority to protect the existing system (existing bridges) from Cascadia earthquake. State plans indicate that the existing Marion and Center Street bridges are identified as “Tier 3” seismic improvements that would not occur for 30-40 years.⁵² Salem is just now seeking funds to study the seismic retrofit of the Center St. Bridge. The OHP policy requires that resources be dedicated to improving the existing structures first.
- No evidence is provided that funding for the project can reasonably be expected at the time the project is ready for development and construction. The Preferred Alternative is estimated to cost \$425 million, an amount roughly equal to the amount of local, state and federal funds that the metropolitan area expects to have available for all roadway expansion projects over the next 20-25 years.

5. The proposed UGB and TSP amendment are not consistent with city TSP policies regarding planning for Willamette River Crossings and the city's policy for System Efficiency.

The Salem TSP includes the following policy for Willamette River Crossings:

The City shall work with the Oregon Department of Transportation to first identify what types of capacity and seismic improvements can and should be made to the existing Center Street and Marion Street Bridges. Secondly, the City shall work with the State and other regional jurisdictions to identify the need for additional river crossings over the next 20-40 years. If such a need is justified, the location of additional river crossings should be identified. The type of crossing method should then be determined. Finally, the method of construction and operation should be identified and pursued. (Guiding Principles of the Long-Range Transportation Strategy, #5, Salem TSP, February 2016, page 16-3)

Policy #5 is mandatory and sets priorities: it requires that capacity and seismic improvements that can and should be made must be identified before the need for additional river crossings and their location is determined. The City has not identified what capacity improvements “should” be made,

50 The LUTR claims to cite Action 1G.2 “in full” but omits a key requirement: “Before ODOT will agree to any improvements on the state highway system, the improvements must conform to the requirements in this Action.” Oregon Highway Plan, page 88. LUTR, page 2-20.

51 Including the Additional Actions and Refinements to Alternative 2A – see above

52 Seismic Lifeline Routes Selection, SRC Website

and has not yet identified what seismic improvements “can” be made or “should” be made to the Marion and Center Street bridges. Until and unless the city and ODOT have completed a study of what “can” be done to address seismic issues and reach some agreement about what sort of improvements “should” be done address capacity and seismic issues, it is premature and inconsistent with the city’s TSP to adopt an amendment to the UGB that decides need for and location of a new river crossing.

The preferred alternative is also inconsistent with Transportation Policy 12 in the city’s comprehensive plan:

Policy 12: The implementation of transportation system and demand management measures, enhanced transit service, and provision for bicycle and pedestrian facilities shall be pursued as a first choice for accommodating travel demand and relieving congestion in a travel corridor, before widening projects are constructed.⁵³

The preferred alternative does not identify, evaluate or adopt specific TSM, TDM, transit service or bike and pedestrian improvements to accommodate traffic congestion. Instead, it simply assumes that such measures might be able to reduce traffic demand. Because the analysis does not identify or evaluate specific actions as a first choice towards meeting transportation needs, it is not consistent with Transportation Policy 12.

6. The TSP amendment for the preferred alternative is not in compliance with the TPR because it would degrade performance of state highways below performance standards in the Oregon Highway Plan Mobility Policy .

The TPR (OAR 660-012-0060(1) and (2)) requires that plan amendments that significantly affect a transportation facility demonstrate that they are consistent with applicable performance standards:

If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP (OAR 660-012-0060(2))“A plan or land use regulation amendment significantly affects a transportation facility if it would: ...

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan. (OAR 660-012-0060(1)(c))

OAR 660 Division 024 allows city to defer the above 0060 analysis to subsequent rezoning of land to urban uses. However, the proposed amendment will also amend the city’s transportation system plan (TSP) to include the proposed third bridge and other transportation facilities as planned improvements. These impacts have been identified in the TTTR and the proposed improvement results in volumes of traffic that exceed the applicable target/ standard in the Oregon Highway Plan.

The Oregon Transportation Commission adopted mobility standards in December 2011, and they are noted in the OHP. The mobility standards in the Traffic and Transportation Tech Report are based on the city’s standards for city streets and state mobility standards for the state highways. The city’s findings acknowledge that the preferred alternative will allow traffic in excess of ODOT mobility

53 Land Use Technical Report, page 2-24

standards:

In adopting this Preferred Alternative, the City recognizes that some intersections located within the project area will not meet the City's adopted Level of Service standards as included in Street System Element, Policy 2.5. Some of the intersections on the State roadway system will also not meet the State mobility targets, for which the State proposes to adopt Alternate Mobility Targets into the Oregon Highway Plan. (Draft TSP Amendments, page 5)

"State proposes to adopt Alternate Mobility Targets into the Oregon Highway Plan following approval of the consolidated plan amendments. The City of Salem and ODOT support a greater level of peak hour congestion in order to reduce the physical impact to surrounding neighborhoods and business districts" (Draft findings, p. 80)

The TPR requires that actions to meet applicable standards, including ODOT mobility standards be put in place as part of the proposed plan amendment. ODOT has a process for authorizing alternative mobility targets, which involves an amendment to Oregon Highway Plan:

Policy 1F: Highway Mobility Policy

* * * *

*"Mobility targets for state highways, as established in this policy or as otherwise adopted by the Oregon Transportation Commission as alternative mobility targets, are considered the highway system performance standards in compliance with the TPR (OAR 660-012), including applicability for actions that fall under Section -0060 of the TPR. Where it is infeasible or impractical to meet the mobility targets, acceptable and reliable levels of mobility for a specific facility, corridor or area will be determined through an efficient, collaborative planning process between ODOT and the local jurisdiction(s) with land use authority. The resulting mobility targets will reflect the balance between relevant objectives related to land use, economic development, social equity, and mobility and safety for all modes of transportation. **Alternative mobility targets for the specific facility shall be adopted by the Oregon Transportation Commission as part of the OHP.**" (OHP p. 75)*

Since the Preferred Alternative will exceed mobility standards, and as currently configured, many of those intersections are on a state highway the OTC must adopt the alternative mobility standards before they can be incorporated in the TSP. That process has not yet happened. Despite the city's findings, ODOT has neither adopted nor initiated an amendment to the Oregon Highway Plan. Until and unless such an amendment is adopted, the proposed TSP amendment would violate both TPR 0060 and the Oregon Highway Plan.

7. The UGB amendment violates Goal 12 and the Transportation Planning Rule (TPR -OAR 660-012) and the UGB Amendment Rules (OAR 660-024) because the cities are not in compliance with TPR requirements to expand transportation alternatives.

OAR 660-012-0035(4) requires that transportation system plans in metropolitan areas include standards to achieve expanded use of alternative modes and reduce reliance on the automobile. Standards and benchmarks are to be used to guide periodic plan updates, in coordination with the federally-required regional transportation plan.

OAR 660-012-0016(1)-(3) require that local governments update TSPs to comply with Division 012 when MPOs adopt updates to federally-required regional transportation plans.

- (1) In metropolitan areas, local governments shall prepare, adopt, amend and update transportation system plans required by this division in coordination with regional transportation plans (RTPs) prepared by MPOs required by federal law.
- (2) When an MPO adopts or amends a regional transportation plan that relates to compliance with this division, the affected local governments shall review the adopted plan or amendment and either:
 - (a) Make a finding that the proposed regional transportation plan amendment or update is consistent with the applicable provisions of adopted regional and local transportation system plan and comprehensive plan and compliant with applicable provisions of this division; or
 - (b) Adopt amendments to the relevant regional or local transportation system plan that make the regional transportation plan and the applicable transportation system plans consistent with one another and compliant with applicable provisions of this division. Necessary plan amendments or updates shall be prepared and adopted in coordination with the federally-required plan update or amendment. Such amendments shall be initiated no later than 30 days from the adoption of the RTP amendment or update and shall be adopted no later than one year from the adoption of the RTP amendment or update or according to a work plan approved by the commission. A plan amendment is "initiated" for purposes of this subsection where the affected local government files a post-acknowledgement plan amendment notice with the department as provided in OAR chapter 660, division 18.

OAR 660-012-0035(4)(e) and (7) require at each plan update, metropolitan cities and counties must report on benchmarks and, if benchmarks are not met, must consider additional actions that would achieve the benchmarks:

- (e) Metropolitan areas shall adopt TSP policies to evaluate progress towards achieving the standard or standards adopted and approved pursuant to this rule. Such evaluation shall occur at regular intervals corresponding with federally-required updates of the regional transportation plan. This shall include monitoring and reporting of VMT per capita.
- (7) Regional and local TSPs shall include benchmarks to assure satisfactory progress towards meeting the approved standard or standards adopted pursuant to this rule at regular intervals over the planning period. MPOs and local governments shall evaluate progress in meeting benchmarks at each update of the regional transportation plan. Where benchmarks are not met, the relevant TSP shall be amended to include new or additional efforts adequate to meet the requirements of this rule.

OAR 660-Division 024 requires that UGB amendments comply with all goals and rules, except for those specifically exempted. Division 024 does not exclude the relevant sections of the TPR: OAR 660-012-0016 and 0035. Consequently, 024 requires that UGB amendments comply with all other portions of Division 012 (TPR)

Salem and Keizer have approved alternative standards and benchmarks under 0035. (LUTR page 4-88) and both Salem and Keizer have adopted benchmarks for the year 2015. (LUTR, page 2-25) Salem's TSP includes a policy requiring monitoring of benchmarks.⁵⁴

54 Transportation Policy 11: Local governments within the Salem Urban Area shall develop multimodal plans, services,

SKATS, the MPO for the Salem-Keizer area, adopted an updated federal RTP in May 2014. Since that time neither Salem nor Keizer have adopted findings addressing compliance with OAR 660-012-0016 nor have they updated TSPs to comply with Division 012 as it relates to 0035: i.e. neither has assessed progress in meeting the adopted 2015 benchmarks or taken other follow-up actions to meet the benchmarks or standards. The consultant reports and draft findings do not address 0016, 0035, or otherwise report region's progress in meeting adopted alternative standards and benchmarks. Therefore, the proposed amendment is not consistent with Goals 12 and 14 and the applicable rules in the TPR and the UGB amendment rules.

8. The proposed plan amendments do not address and do not comply with goal exception requirements of the TPR (OAR 660-012-0070) as required by the UGB Amendment Rules (OAR 660-024-0040).

The TPR (OAR 660-012-0070) requires that goal exceptions be adopted for certain transportation improvements, including a new bridge and highway, across rural lands.

The UGB amendment rules (OAR 660-024-0020) require that all goals and rules be complied with, except for those that are specifically exempted.⁵⁵ OAR 660-012-0070 is not exempted, and, consequently is applicable to the proposed bridge and roadways because they are located on rural lands.

Since the city's public notice and proposed findings do not provide for an exception as required by OAR 660-012-0070, the proposed amendment does not comply with OAR 660-012-0070 and Goal 2.

9. The TSP amendment violates OAR 660-012-0060 because closure of Rosemont off-ramps would result in traffic on Rosewood and College Drives that are inconsistent with their functional classification as local streets.

TPR OAR 660-012-0060(1) and (2) requires that plan amendments which significantly affect a transportation facility demonstrate that they are consistent with the planned function, etc. of planned facilities.

“A plan or land use regulation amendment significantly affects a transportation facility if it would: ... [result in]

- (A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility; (OAR 660-012-0060(1)(c))
- (A)

If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP (OAR 660-012-0060(2))

- The proposed TSP amendment would close the ramps that exit Highway 22 at Rosemont

and programs that decrease reliance on the SOV as the dominant means of travel. Progress toward this objective shall be monitored through benchmarks set forth in Table 1. [Table 1 is reproduced in this report as Table 2.3-1.] LUTR, page 2-24

55 OAR 660-024-0020(1)

Street. The Traffic and Transportation Technical report indicates that this closure would shift traffic that currently uses the Rosemont ramps to other routes, including Wallace Road, Edgewater Street, Doaks Ferry Road and Rosewood and College Drive:

With the closure of the Rosemont Avenue exit-ramp, it is forecasted that former Rosemont Avenue-bound traffic wishing to access West Salem neighborhoods would shift to the Wallace Road exit (either to access Edgewater continue north on Wallace Road) or would continue west on OR 22 to Rosewood Drive, College Drive, or Doaks Ferry Road.⁵⁶

- Rosewood Street and College Drive are designated as local streets in the Salem TSP. The City's TSP indicates that the function of local streets is to “provide access to properties and basic circulation within a neighborhood”. The TSP describes the function of collector streets as to: “Primarily distributes traffic between neighborhoods, activity centers and the arterial street system. Secondly, provides property access.” Capacity, is described in terms of “Ultimate design ADT – (Average Daily Traffic) as “ Residential livability concerns arise at approximately 1,600”⁵⁷
- Closing the Rosemont exit ramp will, according to the TTTR, cause some traffic that currently uses the Rosemont exit to use Rosewood and College Drive to access the surrounding neighborhoods, which would cause them to function as collector streets.

10. The proposed UGB Amendment and Goal exception do not comply with Division 4 (OAR 660-004-0018) and Division 24 (OAR 660-024-0005(6) and (7)) because the city does not apply plan designations that limit uses allowed by the UGB amendment/exception to the "Preferred Alternative" as it is described and justified in the EIS and other supporting documents

Division 4 and Division 24 Requirements

The preferred alternative requires an exception to Statewide Planning Goal 15 (Willamette River Greenway) and an Urban Growth Boundary amendment. The UGB rule and the exceptions rule require that lands be planned and zoned in a manner that limits allowed land uses to match those that are justified in the exception/UGB amendment.

Requirements for exceptions to Goal 15 - and most other goals - are set out in the Exceptions Rule (OAR 660, Division 4). OAR 660-004-0018 makes it clear that, once approved, a goal exception is limited to allowing the use that is proposed and justified in the goal exception:

(4) "Reasons" Exceptions:

(a) When a local government takes an exception under the "Reasons" section of ORS 197.732(1)(c) and OAR 660-004-0020 through 660-004-0022, plan and zone designations must limit the uses, density, public facilities and services, and activities to only those that are justified in the exception.

56 TTTR, July 2016, page 1-8, 1-14

57 Salem TSP, Street Classification System, July 2014, page 3-7

(b) When a local government changes the types or intensities of uses or public facilities and services within an area approved as a "Reasons" exception, a new "Reasons" exception is required.

Similarly, the UGB amendment rule (OAR 660-024-0050(6) and (7)) require that:

- (6) When land is added to the UGB, the local government must assign appropriate urban plan designations to the added land, consistent with the need determination and the requirements of section (7) of this rule, if applicable.
- (7) Lands included within a UGB pursuant to OAR 660-024-0065(3) to provide for a particular industrial use, or a particular public facility, must be planned and zoned for the intended use and must remain planned and zoned for that use unless the city removes the land from the UGB.

As explained below, the proposed UGB amendment violates this requirement because it is for a particular public facility, but the city is not applying plan or zoning designations which limit allowed uses appropriately.

- The proposed Salem River Crossing is premised on the proposal for "a particular public facility" - that is: the "preferred alternative" which includes the construction of a new four lane bridge with connecting ramps and related roadway improvements that are estimated to cost at least \$425 million.⁵⁸ The justification for the UGB amendment is premised on this option, and argues that this option meets transportation needs, while other less expensive options (that do not involve a UGB amendment, in particular Alternative 2A,) do not or cannot "reasonably" meet the needs.
- The city proposes to apply a Parks and Open Space (POS) designation which includes no restrictions that the land added to the UGB only be used for the Preferred Alternative as it is described and justified in the EIS and supporting documents. The proposed findings side-step the requirement to apply a restrictive planning designation by asserting:

Under Oregon's planning framework, local jurisdictions do not typically apply specific plan designations or zones to transportation facilities (including highways, bridges, roads, bicycle and pedestrian paths, etc.). Salem's zoning designations extend to the centerline of the right-of-way and the zoning code does not include a specific "use category" for linear transportation facilities; the use is permitted outright in all zones.
(Findings, page 108)

- The failure to apply restrictive plan and zone designations violates the UGB amendment and goal exception rule requirements. While such plan designations may not be ' typical' they are nonetheless required by the clear language of 0050(6) and (7).

⁵⁸ The city's findings acknowledge that the proposed exception is for a specific facility: "The proposed UGB amendment is based on a specific need for an urban transportation planning facility within the 20-year planning horizon." Findings, page 108.

Nothing prevents the city from developing and applying a new plan designation or modifying an existing plan designation to accomplish compliance with the rule.

ATTACHMENT 1

DLCD Guidance for Evaluating “Reasonableness” of Non-exception Alternatives

In 2010, as part of Metro Urban and Rural Reserves rulemaking, DLCD prepared guidance for applying OAR 660-012-0070 for review of transportation improvements on rural lands. Memo from Richard Whitman, DLCD Director to LCDC, August 20, 2010, September 1-2, 2010 LCDC Meeting, Agenda Item 9 - Attachment G :

To justify a goal exception, the supporting analysis must show that the transportation need cannot reasonably be met by other measures that do not require a goal exception. To justify an exception, the city/county must show that non-exception alternatives to meeting needs are not reasonable based on cost, operational feasibility, economic dislocation or other relevant factors. In considering these factors, the local government must adopt and justify thresholds for determining whether an alternative is reasonable or unreasonable. For example, if a particular non-exception alternative is judged to be too expensive, the exception must include and explain the basis for assessing what level of cost is “unreasonable”.

The Department has the following observations and recommendations for conducting this analysis:

- It should be understood that non-exception alternatives, by their nature, generally do not perform as well as exception alternatives. It is generally less expensive and more expeditious to build a new road across farmland than to either widen an existing roadway or make improvements to the street system within an urban growth boundary. The fact that exception alternatives perform better though, is not the standard for approving goal exceptions. Non-exception alternatives are preferred if they perform reasonably well in meeting the identified need.
- Non-exception alternatives must be described with sufficient specificity to allow a general understanding of where they would be located, how they would operate and what impacts they could create. The evaluation of non-exception alternatives should seek to make each of the alternatives as workable and reasonable as possible. As noted above, making roadway improvements through developed areas involves a degree of impact to affected homes and businesses. A broad-brush analysis of a road widening alternative can create the appearance of potentially significant impacts. However, when road improvements are made in urban areas, they are typically carefully aligned and designed to minimize impacts and complement rather than harm adjoining homes and businesses.
- In assessing non-exception alternatives, the city/county should take care to incorporate reasonable design and mitigation measures that would make nonexception alternatives as workable as possible. As a practical matter this is an iterative process: the city/county should outline major alternatives, then identify their apparent deficiencies or shortcomings, and then assess what modifications to design or alignment (or addition of mitigating measures) might lessen or offset the perceived disadvantages while trying to maintain most or all of its fundamental functionality.
- In evaluating what measures are reasonable as options, the city/county should consult with ODOT about experience with similar roadway or highway improvement projects in communities around Oregon. Other built projects effectively provide on-the-ground evidence of what constitutes a reasonable practice in terms of acceptable cost, community dislocation, or compromises to optimal transportation access or mobility.

September 1-2, 2010 LCDC Meeting, Agenda Item 9 - Attachment G, page 6-7

INTERSECTION PERFORMANCE

The proposed threshold for reducing downtown congestion is not justified because the Preferred alternative results in more congestion than No-Build at 20% of Study Area Intersections

The Land Use Technical Report (LUTR) proposes the following threshold for intersection performance for seven so-called “Tier 1” intersections.

Threshold #1: Does the Build alternative reduce congestion levels at the existing bridgeheads (measured by v/c ratios at Tier 1 intersections), when compared with the No Build Alternative in 2035?

Evaluation of Alternative 2A: In order to understand traffic mobility effects at the existing bridgeheads, the traffic analysis associated with the UGB amendment (conducted for the Traffic and Transportation Technical Report Addendum (CH2M HILL, 2016)) focused on a total of twelve study intersections within the area of influence of bridge traffic. The following seven intersections that are in close proximity to the bridge and/or expected to be impacted by queuing from the bridge were categorized as “1st Tier” intersections.

- Wallace Road/Taggart Road
- Wallace Road/OR 22-Edgewater Street
- Center Street Off-Ramp/Northbound Front Street
- Marion Street/Commercial Street
- Marion Street/Liberty Street
- Center Street/Commercial Street
- Center Street/Liberty Street

The intersection analysis results document that Alternative 2A performs worse than the No Build Alternative in 2035 at the Center Street Off-Ramp to northbound Front Street in both the AM and PM peak. Therefore, Alternative 2A does not meet Threshold #1. By comparison, the preferred alternative performs better than the No Build Alternative in 2035 for all 1st tier intersections in both the AM and PM peak and meets Threshold #1. (LUTR, page 4-49)

Analysis

Intersection performance for Alternative 2A is provided in Appendix A to the Traffic and Transportation Technical Report. There are 14 Tier 1 “intersection measures” (7 intersections x 2 peak hours).

"Tier 1" Intersection Performance (V/C – Volume to Capacity) (From Appendix A, FEIS Traffic and Transportation Technical Report)								
ID	Intersection	Mobility Standard	AM Peak Hour Performance in 2031			PM Peak Hour Performance in 2031		
			No-Build	2A	Difference	No-Build	2A	Difference
6	Wallace/Taggart	0.95	1.34	1.44	-0.11	1.26	1.07	0.19
7	Wallace/22/Edgewater	0.95	1.39	1.18	0.19	1.05	0.8	0.25
11	Center ST off ramp/NB Front	.9 or 1.0	1.44	1.8	-0.36	1.12	1.5	-0.38
12	Center/Commercial	0.85	1.69	1.25	0.44	0.82	0.8	0.02
13	Center/Liberty	.9 or 1.0	0.73	0.97	-0.24	0.9	0.89	0.01
15	Marion/Commercial	0.85	0.81	0.54	0.27	2	1.29	0.72
16	Marion/Liberty	.9 or 1.0	0.69	0.67	0.02	1.17	0.87	0.3

Alternative 2A performs *worse* than No-Build
Alternative 2A *meets* mobility standard
Alternative 2A performs *better* than No-Build
Alternative 2A performs worse than No-Build but *meets* mobility standard

Here's what the table says about Alternative 2A:

- For 10 of 14 intersection measures (70%), Alternative 2A *meets* the proposed threshold – that is, it performs *better* than the No-Build
- For 1 intersection measure 2A performs slightly worse than No-Build, but *meets* the applicable mobility standard
- For only 3 of the 14 intersection measures (21%) does 2A not perform better than No-Build. The three intersections are:
 - Wallace Road and Taggart Road in the AM peak hour
 - Center Street Off-Ramp/ NB Front Street in AM and PM peak hours.

Table 5.1-1 in the Traffic and Transportation Technical Report (TTR, page 5-2 through 5-4) shows intersection performance for the preferred alternative. (Table 5.1-1 2040 Preferred Alternative Intersection Analysis for AM and PM Peak Hours and Control Types) The TTR evaluates performance for 34 intersections in the study area in 2040. Table 5.1-1 shows following results for 68 intersection measures (34 intersections x 2 peak hours) for the Preferred Alternative (PA)

Here's what Table 5.1-1 says about the performance of the preferred alternative:

- For 35 intersection measures (50%) the PA performs *better* than the No-Build Alternative
- For 2 intersection measures, the PA performs the same as the No-Build Alternatives
- For 16 intersection measures (24%), the PA performs *worse* than the No-Build Alternative
- For 14 intersection measures (20%), the PA performs worse than the No-Build, but meets the

- applicable mobility standard.
- 13 of the 16 intersection measures where the PA performs worse than the No-Build are located in NE Salem -
 - 22 Commercial and Pine - AM
 - 23 Liberty and Pine - PM
 - 24 Broadway and Pine - AM/PM
 - 25 Commercial and Hickory – PM
 - 26 Hickory and Liberty – PM
 - 29 Salem Parkway/ Liberty AM/PM
 - 30 Salem Parkway/Broadway AM/PM
 - 31 Salem Parkway Cherry AM/PM

The proposed intersection performance threshold is not justified because the preferred alternative also fails to improve performance over the no-build for 24% of the intersections in the study area. The purpose of the threshold is to draw a bright line that distinguishes a solution that reasonably meets transportation needs from one that doesn't. In this case, the region proposes to set a threshold that is not met by the preferred alternative. In other words, if the region concludes that the preferred alternative reasonably meets transportation needs, in spite of the fact that it fails to perform better than the no build at roughly one-quarter of the study area intersections, it is not reasonable for the region to reject as “unreasonable” Alternative 2A which fails at only 20% of study area intersections.

The analysis of non-expansion alternatives is largely limited to Alternative 2A, as that option was presented in the Draft Environmental Impact Statement (DEIS). The Traffic Technical report table 4.2-3 shows the impact of the Preferred Alternative in 2040 at 33 intersections, for both AM and PM hours, for a total of 66 different measurements. Appendix A to the Traffic tech report shows the impact of Alternative 2A on most of those intersections. Alternative 2A performs as well as or better than the preferred alternative at 43 of those measuring points where both alternatives are measured.

The preferred alternative, in spite of its extraordinarily higher cost, does better at only 20 intersections. Indeed, as the traffic analysis points out for 16 intersection measures, the PA performs worse than the No Build, and for 14 intersections it performs worse than the No Build but does meet mobility standards. Most of the intersections measured where the PA performs worse than the NO Build are located in NE Salem.

Indeed, figures 4.2-5 and 4.26 of the Traffic tech report shows that the preferred alternative merely moves congestion from downtown to north Salem and north on Wallace Road in West Salem. Alternative 2A improves those intersections to a noticeable degree over both the PA and the No Build alternative. The Draft Findings acknowledge this issues :

“Similar changes to functional classifications are included in the package of proposed Salem TSP amendments for short segments of Pine and Hickory to provide consistent functional classifications for roadways in the eastside bridgehead area. The proposed TSP amendments acknowledge that integrating the Preferred Alternative into the existing street system in NE Salem will be a significant issue over the course of the planning period.” Draft Findings, p. 145.

In other measures the preferred alternative does not deliver reduce traffic congestion to the extent worthy of a \$425 million dollar investment. P. 4-30 of the traffic technical report says that region wide, the preferred alternative would reduce congestion by only 1%-3% (except for Vehicle Hour delay in the AM – 12%) over the No Build alternative. There is no comparison with the 2A alternative in this study, but surely, for 1/3 of the cost, it could meet those low benchmarks.

INDUCED TRAVEL

Comparison of traffic volumes and congestion among the various alternatives is based on modeling done by SKATS, the regional transportation planning agency. The model SKATS uses has a serious limitation which affects its ability to accurately estimate future conditions. Specifically, the model does not properly account for the effects of either congestion or expanded capacity on future traffic volumes – what experts term “induced travel”.

Consultant reports cite transportation expert Todd Litman's comprehensive evaluation of available studies and literature on induced travel⁵⁹ but the traffic analysis includes no formal accounting or adjustment of future traffic volumes to account for “induced travel”. A full review of Litman's evaluation shows that induced travel is significant, that it is not properly accounted for by models like that used by SKATS, and the result is that the model overestimates traffic volumes and congestion in the “no-build” and under-estimates traffic volumes for a new bridge.

The SKATS model, like most urban transportation models, does not account for induced travel

- Traffic analysis in the Traffic and Transportation Technical Report TTR is based on SKATS model which is a four step model which is a four step model ⁶⁰.
- Traditional four-step travel demand models do not fully address induced travel or induced growth – Land use allocation methods overlook accessibility effects, trip generation often fails to account for latent trips (potential trips constrained by congestion), many models overlook time-of-day shifts, and static traffic assignment algorithms may not account for queuing impacts on route shifts.⁶¹
- “Travel demand models used by most state departments of transportation and MPOs usually do not account for any effects of highway improvements on the total number of trips made and the shifts in the locations of households, businesses and other activities that might have implications for vehicle miles traveled. (LUTR at 3-3)
- Most current traffic models can predict route and mode shifts, and some can predict changes in scheduling and destination, but few adjust trip frequency and most ignore the effects transport decisions have on land use development patterns (Beimborn, Kennedy and Schaefer 1996; Ramsey 2005; Næss, Nicolaisen and Strand 2012). For example, they do not recognize that highway capacity expansion encourages more automobile-dependent urban fringe development. As a result, current models recognize diverted traffic but do not account for most forms of long term induced vehicle travel, and thus underestimate the amount of traffic likely to be generated when congested roads are expanded.⁶²
- To predict generated traffic, transport models must incorporate “feedback,” which reflects the impacts congestion has on travel behavior, and long-term changes in transport and land use patterns. This recognizes that congestion diverts traffic to other routes, times and modes, and reduces trip length and frequency, while reduced congestion has the opposite effects. Full feedback is necessary to accurately predict future traffic congestion and traffic speeds, and the incremental costs and benefits of alternative projects and policy options.⁶³

59 Land Use Technical Report, page 3-4

60 Traffic and Transportation Technical Report, page 3-1,

61 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 10

62 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 13

63 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 13

Failure to properly account for induced travel means the analysis significantly overstates congestion reduction benefits of roadway expansion

- Litman’s research indicates that generated traffic often fills a significant portion of capacity added to congested urban roads. Litman’s paper concludes with the statement: “Ignoring generated traffic overestimates the magnitude of future traffic congestion problems, overestimates the congestion reduction benefits of increasing roadway capacity, and underestimates the benefits of alternative solutions to transportation problems”⁶⁴
- . . . current travel demand models tend to predict unreasonably bad conditions in the absence of a proposed highway or transit investment. Travel forecasting, as previously discussed, does not contend well with land-use changes or effects on nearby roads or other transportation alternatives that result from transportation improvements or growing congestion. Before conditions get as bad as they are forecasted, people make other changes, such as residence or employment changes to avoid the excessive travel costs. (Government Accountability Office, 2005)⁶⁵
- Models without full feedback tend to overestimate future congestion problems and overestimate the benefits of roadway capacity expansion. In one example, modeling a congested road network without feedback underestimated traffic speeds by more than 20% and overestimated total vehicle travel by more than 10% compared with modeling with feedback (Comsis 1996). Models that fail to consider generated traffic were found to overvalue roadway capacity expansion benefits by 50% or more (Williams and Yamashita 1992).⁶⁶
- The amount of traffic generated by a road project varies depending on conditions. It is not capacity expansion itself that generates travel, it is the reduction in congestion delays and therefore per-mile travel costs. Expanding uncongested roads will generate no traffic, although paving a dirt road or significantly raising roadway design speeds may induce more vehicle travel. In general, the more congested a road, the more traffic is generated by capacity expansion. Increased capacity on highly congested roads often generates considerable traffic (Marshall 2000). Older studies of the elasticity of VMT growth with respect to increased roadway lane-miles performed during the early years of highway building (during the 1950s through 1970s) have little relevance for evaluating current urban highway capacity expansion. In developed countries, where most highway expansion now occurs on congested links, such projects are likely to generate considerable amounts of traffic, providing only temporary congestion reduction benefits. Generated traffic usually accumulates over several years (Goodwin 1998). Under typical urban conditions, more than half of added capacity is filled within five years of project completion by additional vehicle trips that would not otherwise occur, with continued but slower growth in later years.⁶⁷
- Ignoring these factors distorts planning decisions. Experts conclude, “...the economic value of a scheme can be overestimated by the omission of even a small amount of induced traffic. We consider this matter of profound importance to the value-for-money assessment of the road programme” (SACTRA 1994). “...quite small absolute changes in traffic volumes have a significant impact on the benefit measures. Of course, the proportional effect on scheme Net Present Value will be greater still” (Mackie, 1996) and “The induced travel effects of changes in land use and trip distribution may be critical to accurate evaluation of transit and highway

64 LUTR, 3-4

65 Government Accountability Office. (2005). Highway and Transit Investments: Options for Improving Information on Projects' Benefits and Costs and Increasing Accountability for Results (GAO-05- 172). Washington, DC.

66 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 13-14

67 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 12

alternatives” (Johnston, et al. 2001)⁶⁸

Induced travel is most likely to occur when roadway capacity is added in congested urban areas

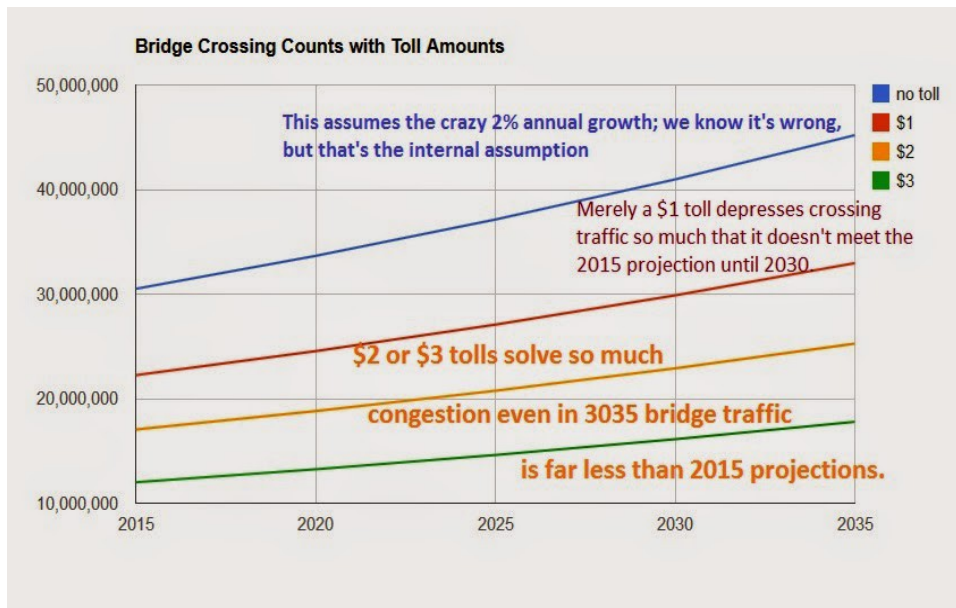
Induced travel effects of 2A will be less than PA because it would provide less capacity and because PA would provide a dramatic improvement in accessibility to currently undeveloped land in NW Salem. Traffic report shows:

- Land use analysis estimates 2% increase in amount residential development in West Salem. Litman cites study indicating that even small changes in development can result in major changes in performance. Increase in amount of residential development doesn't address change in travel behavior of existing residents that would result from proposed bridge. Traffic analysis estimates new bridge would significantly reduce travel times between northwest part of West Salem and northeast Salem and Keizer.

TOLLING

The traffic analysis is flawed because it is inconsistent with the recommended funding strategy that includes tolls.

- Tolling is identified a key element of the proposed transportation funding strategy: The recommended funding strategy for the SRC preferred alternative anticipates that all bridge crossings would be charged \$1.50.⁶⁹ Tolling would be the single largest source of funding and would raise \$175 million.



- Professional literature and studies show that tolling can significantly reduce travel. Using SRC's own studies, Salem Breakfast on Bikes shows that tolling would significantly reduce future bridge volumes⁷⁰:

68 Litman, Generated Traffic, Implications for Transport Planning, August 2016, page 2

69 SRC Funding Strategy Memo, March 6, 2015, page 6

70 Salem Breakfast on Bikes, <http://breakfastonbikes.blogspot.com/2016/08/new-land-use-memo-salem-river-crossing-shows-how-deeply-unserious-we-are.html>, and <http://breakfastonbikes.blogspot.com/2014/12/third-bridge-is-self->

- The traffic analysis does not consider the effect that tolls would have on projected traffic volumes.⁷¹ Consideration of adding tolls to either the Preferred alternative or Alternative 2A would significantly change expected traffic volumes and congestion levels.
- Experience with toll projects in Washington State and the evaluation of the proposed Columbia River Crossing shows that imposition of tolls reduces traffic volumes by as much as 30%.⁷²

[negating-tolls-reduce-traffic-below-congested-levels.html](#) based on a November 2014 Memo from ECO Northwest
“Salem River Crossing – Revenue Projections”

71 Mike Jaffe, SKATS Director, September 14, 2016

72 Sightline Institute, SR-520: A CASE OF BAD FORECASTING? Early predictions overstated growth, underestimated diversion.
September 10,20