KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: May 22, 2019

Project #: 21418

To: Li Alligood, Otak

From: Nick Gross and Susan Wright, PE

Project: Keizer Revitalization Plan

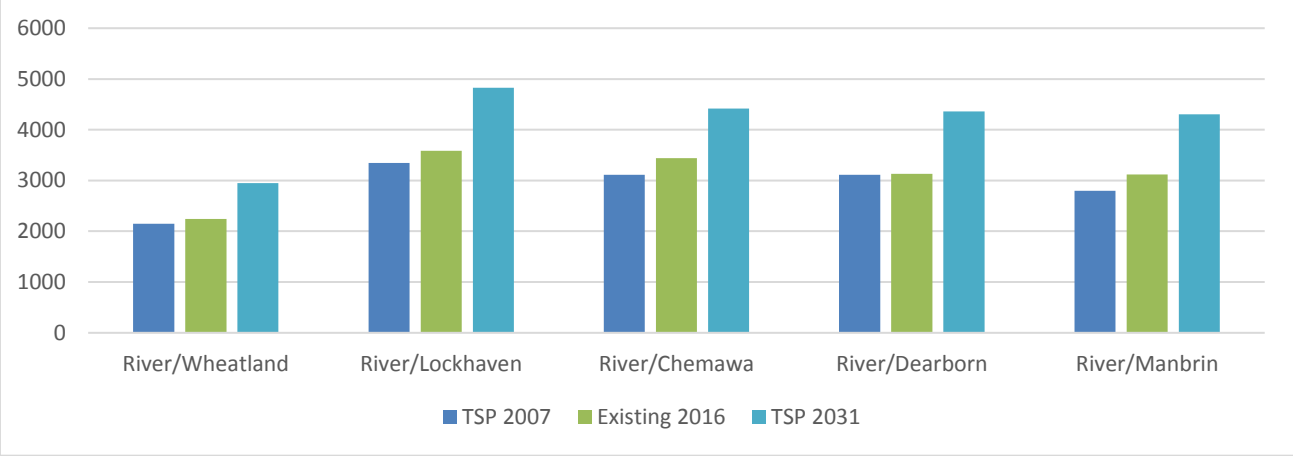
Subject: Memorandum #7: Mobility Impact Assessment

This memorandum describes the potential transportation impacts of the proposed Keizer Revitalization Plan zoning changes and code amendments based on the City of Keizer's 2031 Transportation System Plan (TSP). The TSP forecast year 2031 volumes at five study area intersections were compared to 1) the Salem-Keizer Area Transportation Study (SKATS) 2035 travel demand forecasting model and 2) the 2035 Proposed scenario travel demand model that is representative of the proposed zoning changes associated with the Keizer Revitalization Plan (Plan). Based on the model volume comparison, the impacts of the proposed changes were found to be less than significant as defined by the Oregon Administrative Rules Section 660-012-0060.

Traffic Data Comparison –Total Entering Volume (TEV)

Traffic data was collected at several intersections along River Road within the Plan study area in April 2016. The City's TSP includes traffic data at the same intersections under 2007 baseline traffic conditions and 2031 forecast no-build traffic conditions. A comparison of TEV between TSP baseline conditions (2007), existing conditions (2016), and TSP forecast no-build conditions (2031) is illustrated in Exhibit 1.

Exhibit 1: Total Entering Volume (TEV) Comparison



Appendix "A" includes the TSP 2031 SKATS Population and Employment Forecasts.

As illustrated in Exhibit 1, the River Road/Chemawa Road and River Road/Lockhaven Drive intersections have experienced low to moderate growth whereas the River Road/Wheatland Road and River Road/Dearborn Avenue intersections have experienced low to no growth over the nine-year period. The TSP baseline condition (2007) TEV was compared to the existing condition (2016) TEV to achieve a nine-year and annual growth linear percentage for each of the Plan study intersections. Table 1 illustrates each intersection's nine-year and annual growth percentage based on a comparison of TSP baseline condition (2007) and existing condition (2016) TEV.

Table 1: Intersection Peak Hour Traffic Volume Comparison

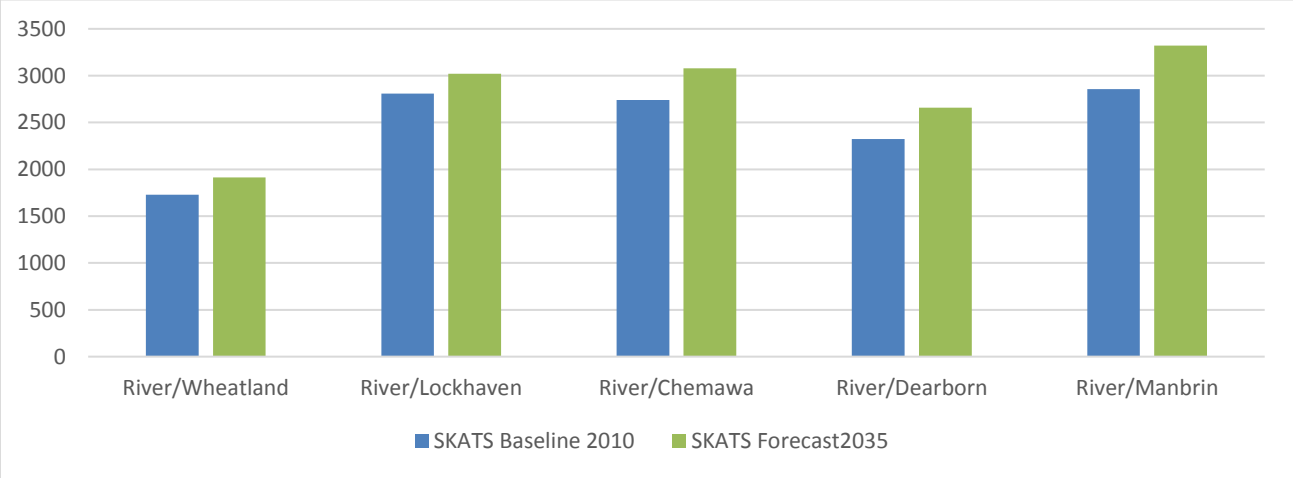
Intersection	2007 TEV	2016 TEV	TEV Annual Growth %
River Road/Wheatland Road	2,145	2,245	**0.5%**
River Road/Lockhaven Drive	3,345	3,585	**0.8%**
River Road/Chemawa Road	3,115	3,440	**1.1%**
River Road/Dearborn Avenue	3,110	3,130	**0.1%**

Total Entering Volume (TEV)

SKATS Travel Demand Model Baseline Conditions (2010) and Future Conditions (2035)

SKATS is the designated Metropolitan Planning Organization (MPO) for the Salem-Keizer area. The SKATS MPO operates under the direction of the Mid-Willamette Valley Council of Governments (MWVCOG) staff and participates in all the planning studies undertaken in the area that are regional in nature. SKATS maintains the regional travel demand model to assist policymakers in making informed decisions regarding future transportation needs. The SKATS travel demand forecasting model provides link volumes for baseline year 2010 traffic conditions and forecast year 2035 traffic conditions. Exhibit 2 illustrates the TEV for the SKATS baseline conditions (2010) and forecast condition (2035) near the study intersections.

Exhibit 2: SKATS Travel Demand Forecasting Model Peak Hour Total Entering Volume (TEV)



As shown in Exhibit 2, baseline volumes are consistently lower than projected future year 2035 volumes.

SKATS Travel Demand Model Proposed Scenario Conditions (2035)

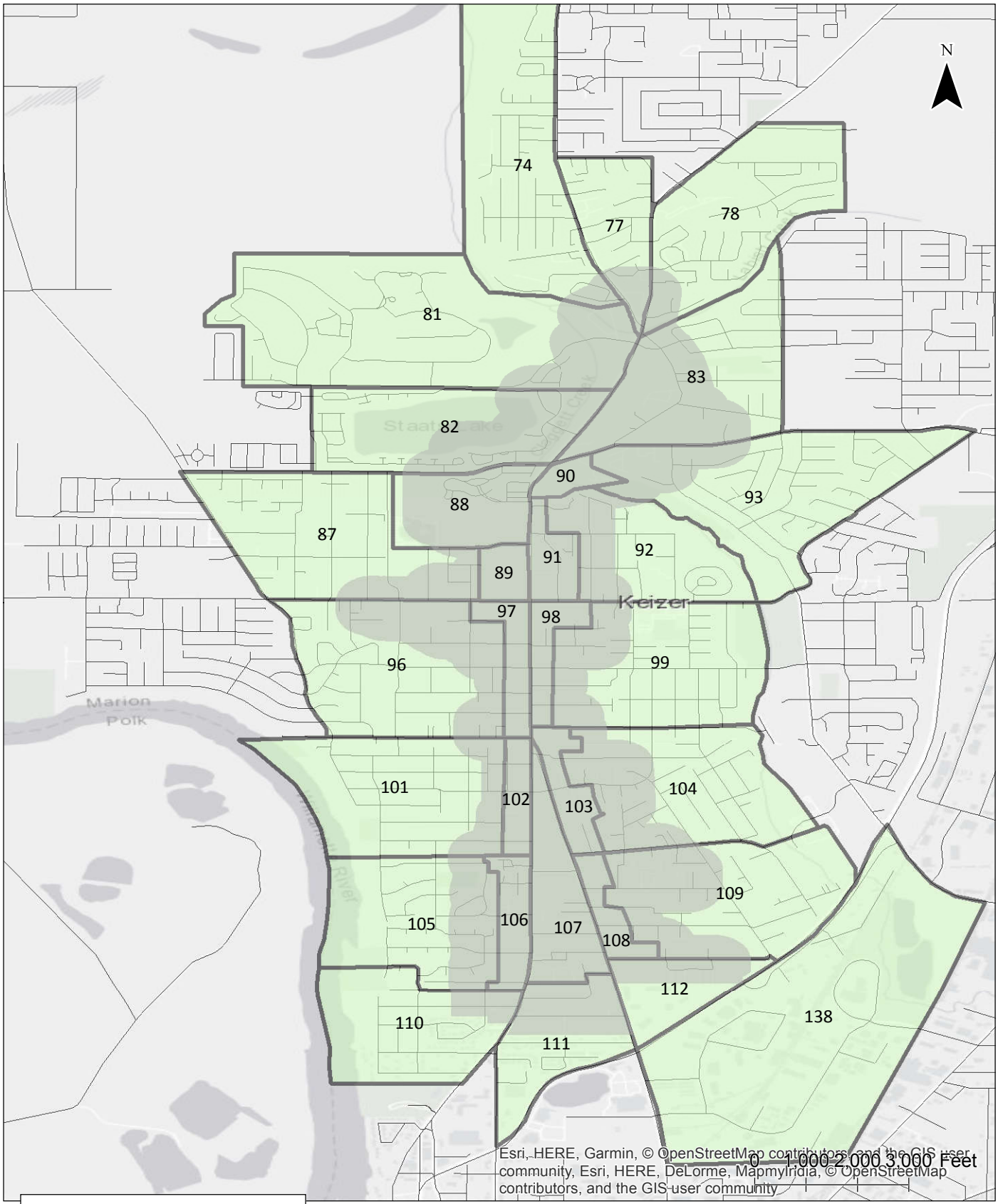
A travel demand forecasting model run was requested for the proposed scenario through the MWVCOG. The proposed scenario assumed increases to household and employment based on the higher density up-zoning described as part of the Plan. In order to accommodate increases in projected household types, higher densities of multifamily units were assumed[1]. Table 2 summarizes the comparison of baseline household and employment to the proposed scenario household and employment by transportation analysis zone (TAZ). Figure 1 illustrates the locations of TAZs within the study area.

Table 2: SKATS Proposed Scenario Future Condition Assumptions by TAZ

TAZ	2035 Household Base	2035 Household Proposed Scenario	Difference in 2035 Household Proposed Scenario	2035 Employment Base	2035 Employment Proposed Scenario	Difference in 2035 Employment Proposed Scenario
74	834	1196	362	138	276	138
77	331	331	0	N/A[2]	N/A[2]	N/A[2]
78	973	1766	793	102	204	102
81	649	1141	492	146	366	220
82	327	544	217	293	652	359
83	812	1204	392	99	615	516
87	705	987	282	42	84	42
88	254	227	-27	331	663	332
89	47	80	33	132	280	148
90	64	66	2	105	234	129
91	3	6	3	211	494	283
92	483	471	-12	109	230	121
93	668	1225	557	42	91	49
96	716	1230	514	66	145	79
97	67	87	20	219	518	299
98	42	105	63	382	825	443
99	541	966	425	111	232	121
101	424	770	346	56	112	56
102	124	124	0	111	226	115
103	161	232	71	157	496	339
104	653	1039	386	149	301	152
105	393	680	287	N/A[2]	N/A[2]	N/A[2]
106	252	282	30	262	579	317
107	238	394	156	567	1268	701
108	123	161	38	93	305	212
109	827	1106	279	145	306	161
110	335	360	25	58	116	58
111	522	461	-61	N/A[2]	N/A[2]	N/A[2]
112	130	138	8	350	753	403
138	21	21	0	N/A[2]	N/A[2]	N/A[2]

[1] Increases in households assumed an 85/15 split of multifamily/single-family dwellings, respectively.

[2] Employment less than 25 has been redacted per Oregon Employment Department (OED) agreement.



Study Area TAZs
Keizer, Oregon

Figure
1

Coordinate System: GCS WGS 1984
Data Source: Delete if there isn't one.

KITTELSON & ASSOCIATES

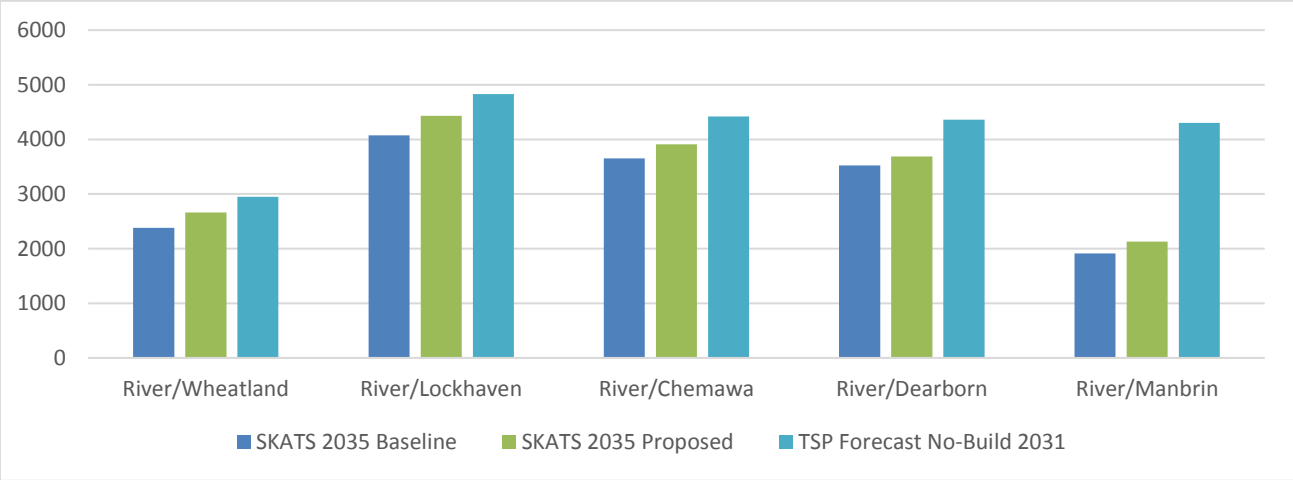
H:\21\21418 - Keizer Revitalization Area Plan\gis\Task 5\Study Area TAZs.mxd - ngross - 1:42 PM 5/6/2019

National Cooperative Highway Research Program Report 255

Forecast intersection TEVs were prepared using procedures outlined in the National Cooperative Highway Research Program (NCHRP) Report 255 for developing intersection turn movement volumes. As described previously and illustrated in Exhibit 2, the SKATS travel demand forecasting model provides base year 2010 and forecast year 2035 traffic volume projections that reflect anticipated land use changes and planned transportation improvements within the study area. The increases in household and employment by TAZ, summarized in Table 2 were shared with MWVCOG staff to produce a travel demand forecast model for the proposed scenario. The 2035 Proposed scenario forecast traffic volumes were developed by applying the post-processing methodology presented in the NCHRP Report 255 *Highway Traffic Data for Urbanized Area Project Planning and Design*, in conjunction with engineering judgment and knowledge of the study area[3].

Exhibit 3 illustrates the TEV comparison of TSP forecast no-build 2031 traffic volumes, SKATS 2035 Baseline traffic volumes, and SKATS 2035 Proposed scenario traffic volumes reflective of the increase of household and employment as part of the Plan.

Exhibit 3: Forecast Peak Hour Total Entering Volume (TEV) Comparison



As illustrated in Exhibit 3, the SKATS 2035 Proposed scenario projects higher traffic volumes than the SKATS 2035 Baseline (reflecting the increased trips associated with the rezone); however, both the 2035 Baseline and 2035 Proposed scenarios result in lower study intersection volumes than were assumed in the TSP forecast no-build 2031 for the same locations. Given the long-term transportation system performance was satisfied in the TSP with higher intersection traffic volumes, it is reasonable to conclude that the proposed revitalization plan trips can be accommodated when the resultant 2035 intersection volumes will be lower than those in the TSP.

[3] Post-processed volumes were developed based on 2010 existing volumes developed by averaging 2007 counts from the TSP and counts collected in 2016 to create a consistent 2010 traffic condition baseline to the SKATS baseline model.

SKATS 2031 and 2035 Travel Demand Model Comparison

As described previously, the SKATS transportation planning model was used to develop the 2031 weekday PM peak hour forest traffic volumes utilized as the horizon year as part of the City of Keizer Transportation System Plan[4]. The travel forecasting model assigns future traffic to the transportation system based on the level of household and employment growth in each TAZ. As part of the Keizer Revitalization Plan, a quantitative review of the household and employment by TAZ was conducted between the Future Year 2031 TSP volumes and the 2035 Baseline volumes. The following summarizes the key changes in study area TAZ assumptions.

- Households increased by approximately 1,557 between 2031 TSP and 2035 Baseline.
  - Notable increases include TAZ 78 ~315 and TAZ 83~181
- Employment decreased by approximately 1,689 between 2031 TSP and 2035 Baseline.
  - Notable decreases include TAZ 112 ~-459, TAZ 111 ~-299, and TAZ 83~-212

Aside from the fact that both model years reflect different population/employment/household forecasts – the 2035 model contains updated projects as found in the 2015 version of the 2035 Regional Transportation System Plan (RTSP) update.

In summary, key differences between 2031 and 2035 models includes model refinements, network coding error corrections, and the change in external growth rate calculation methodology are the main factors for the reduction in demand between 2031 and 2035. This reduction in demand overall is less than 5% across the entire SKATS model area. A historical background of the key differences between the 2031 and 2035 SKATS travel demand model provided by MWVCOG staff is included in Appendix B.

[4] City of Keizer Transportation System Plan. April 2009.

Summary of Applicable Oregon Administrative Rule Criteria

OAR Section 660-12-0060 of the TPR sets forth the relative criteria for evaluating plan and land use regulation amendments. Table 3 summarizes the criteria in Section 660-012-0060 and the applicability to the proposed zoning designation change application.

Table 3. Summary of Criteria in OAR 660-012-0060

Section	Criteria	Applicable?
1	Describes how to determine if a proposed land use action results in a significant effect.	Yes
2	Describes measures for complying with Criteria #1 where a significant effect is determined.	No
3	Describes measures for complying with Criteria #1 and #2 without assuring that the allowed land uses are consistent with the function, capacity and performance standards of the facility.	No
4	Determinations under Criteria #1, #2, and #3 are coordinated with other local agencies.	Yes
5	Indicates that the presence of a transportation facility shall not be the basis for an exception to allow development on rural lands.	No
6	Indicates that local agencies should credit developments that provide a reduction in trips.	No
7	Outlines requirements for a local street plan, access management plan, or future street plan.	No
8	Defines a mixed-use, pedestrian-friendly neighborhood.	No
9	A significant effect may not occur if the rezone is identified on the City's Comprehensive Plan and assumed in the adopted Transportation System Plan.	No
10	Agencies may consider measures other than vehicular capacity if within an identified multimodal mixed-use area (MMA).	No
11	Allows agencies to override the finding of a significant effect if the application meets the balancing test.	No

As shown in Table 3, there are eleven criteria that apply to Plan and Land Use Regulation Amendments. Of these, only Criteria #1 and #4 are applicable to the proposed land use action. This criteria is provided below in italics with our response shown in standard font.

> *OAR 660-12-0060(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:*
>
> > *(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);*
> >
> > *(b) Change standards implementing a functional classification system; or*
> >
> > *(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic*

generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(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.

Response: The proposed zoning amendments results in an increase in the overall trip generation potential of the study area on a daily and weekday PM peak hour basis. While a relatively small incremental increase in site trip generation is anticipated, the forecasted volumes associated with the 2035 proposed scenario are less than the 2031 TSP traffic volumes. As a result, the transportation system is capable of supporting the "reasonable worst case" development of the modified land use and zoning. Further, given the reduced volumes compared to the 2031 TSP, the proposed map amendment will not require changes to the functional classification of existing or planned transportation facilities, will not require a change to the standards implementing the comprehensive plan, and will not significantly affect a transportation facility.

OAR 660-12-0060 (4) Determinations under sections (1)–(3) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.

(a) In determining whether an amendment has a significant effect on an existing or planned transportation facility under subsection (1)(c) of this rule, local governments shall rely on existing transportation facilities and services and on the planned transportation facilities, improvements and services set forth in subsections (b) and (c) below.

(b) Outside of interstate interchange areas, the following are considered planned facilities, improvements and services:

(A) Transportation facilities, improvements or services that are funded for construction or implementation in the Statewide Transportation Improvement Program or a locally or regionally adopted transportation improvement program or capital improvement plan or program of a transportation service provider.

(B) Transportation facilities, improvements or services that are authorized in a local transportation system plan and for which a funding plan or mechanism is in place or approved. These include, but are not limited to, transportation facilities, improvements or services for which: transportation systems development charge revenues are being collected; a local improvement district or reimbursement district has been established or will be established prior to development; a

development agreement has been adopted; or conditions of approval to fund the improvement have been adopted.

(C) Transportation facilities, improvements or services in a metropolitan planning organization (MPO) area that are part of the area's federally-approved, financially constrained regional transportation system plan.

(D) Improvements to state highways that are included as planned improvements in a regional or local transportation system plan or comprehensive plan when ODOT provides a written statement that the improvements are reasonably likely to be provided by the end of the planning period.

(E) Improvements to regional and local roads, streets or other transportation facilities or services that are included as planned improvements in a regional or local transportation system plan or comprehensive plan when the local government(s) or transportation service provider(s) responsible for the facility, improvement or service provides a written statement that the facility, improvement or service is reasonably likely to be provided by the end of the planning period.

(c) Within interstate interchange areas, the improvements included in (b)(A)–(C) are considered planned facilities, improvements and services, except where:

(A) ODOT provides a written statement that the proposed funding and timing of mitigation measures are sufficient to avoid a significant adverse impact on the Interstate Highway system, then local governments may also rely on the improvements identified in paragraphs (b)(D) and (E) of this section; or

(B) There is an adopted interchange area management plan, then local governments may also rely on the improvements identified in that plan and which are also identified in paragraphs (b)(D) and (E) of this section.

(d) As used in this section and section (3):

(A) Planned interchange means new interchanges and relocation of existing interchanges that are authorized in an adopted transportation system plan or comprehensive plan;

(B) Interstate highway means Interstates 5, 82, 84, 105, 205 and 405; and

(C) Interstate interchange area means:

(i) Property within one-quarter mile of the ramp terminal intersection of an existing or planned interchange on an Interstate Highway; or
(ii) The interchange area as defined in the Interchange Area Management Plan adopted as an amendment to the Oregon Highway Plan.

(e) For purposes of this section, a written statement provided pursuant to paragraphs (b)(D), (b)(E) or (c)(A) provided by ODOT, a local government or transportation facility

> *provider, as appropriate, shall be conclusive in determining whether a transportation facility, improvement or service is a planned transportation facility, improvement or service. In the absence of a written statement, a local government can only rely upon planned transportation facilities, improvements and services identified in paragraphs (b)(A)-(C) to determine whether there is a significant effect that requires application of the remedies in section (2).*

Response: The TPR analysis for this project has been coordinated with the City of Keizer and ODOT. As discussed in the year 2035 modeling section of this report, assumed transportation improvements are based on projects identified in Keizer's *2007 Transportation System Plan* (TSP).

Alternative TPR Finding

Alternatively, the City could find that it is not required to determine significant effect under OAR 660-012-0060(1). If the City treats this application as a zoning map amendment, then the revitalization plan could be found exempt from that analysis under OAR 660-012-0060(9):

"(9) Notwithstanding section (1) of this rule, a local government may find that an amendment to a zoning map does not significantly affect an existing or planned transportation facility if all of the following requirements are met.

> *(a) The proposed zoning is consistent with the existing comprehensive plan map designation and the amendment does not change the comprehensive plan map;*
>
> *(b) The local government has an acknowledged TSP and the proposed zoning is consistent with the TSP; and*
>
> *(c) The area subject to the zoning map amendment was not exempted from this rule at the time of an urban growth boundary amendment as permitted in OAR 660-024-0020(1)(d), or the area was exempted from this rule but the local government has a subsequently acknowledged TSP amendment that accounted for urbanization of the area."*

The City could find that OAR 660-012-0060(9) is satisfied based on 1) the proposed zoning map designation is consistent with the Comprehensive Plan and 2) the City has an acknowledged TSP.

Appendix A TSP 2031 SKATS Population and Employment Forecast for the City of Keizer

Table 1 SKATS Population and Employment Forecasts for the City of Keizer

TAZ	2005		2031		Growth 2005-2031	
	Total Employment	HH	Total Employment	HH	Total Employment	HH
70	32	83	33	103	1	20
72	83	781	97	974	14	193
74	142	628	155	693	13	65
75	67	776	73	861	6	85
77	26	303	26	304	0	1
78	11	549	21	658	10	109
80	63	225	63	229	0	4
81	188	528	188	529	0	1
82	202	310	392	308	190	-2
83	116	257	311	631	195	374
84	170	403	174	450	4	47
85	17	409	278	431	261	22
86	44	19	2359	19	2315	0
87	10	542	14	604	4	62
88	*	144	165	143	*	-1
89	262	29	262	37	0	8
90	187	57	187	56	0	-1
91	351	0	375	0	24	0
92	10	371	13	419	3	48
93	87	606	140	639	53	33
94	23	376	349	600	326	224
95	69	540	69	538	0	-2
96	55	552	57	599	2	47
97	268	70	348	72	80	2
98	360	35	381	36	21	1
99	88	467	129	490	41	23
100	106	592	109	638	3	46
101	37	369	39	402	2	33
102	127	101	127	103	0	2
103	173	120	179	133	6	13
104	17	565	17	596	0	31
105	12	360	12	361	0	1
106	303	246	372	245	69	-1
107	596	210	667	217	71	7
108	55	82	128	120	73	38
109	137	640	233	805	96	165
110	73	311	121	313	48	2
111	*	485	310	517	*	32
112	502	113	809	113	307	0

Note: HH = households, Total Emp. = Total Employment
* These zones do not display the 2005 Employment estimates due to State regulations covering the confidentiality of data. The regulations state that areas that either have less than three employers or that have one employer representing 80 percent of the aggregation total, may not be displayed on public maps or tables.

Appendix B SKATS 2031 v. 2035 Model Comparison

2031 v. 2035 Model Comparison

This summarizes the differences between the 2031 and 2035 SKATS travel demand models. Aside from the fact that both model years reflect different population/employment/household forecasts – the 2035 model contains updated projects as found in the 2015 version of the 2035 RTSP update.

Historical Background of Both Models

2031 Model

There are two versions of the 2031 model.

Version 1: This version of 2031 was built before PTV made updates to the 2005 base year model and was developed using old modeling procedures and network coding based primarily off of an EMME/2 network.

Version 2: This version uses an PTV-developed 2005 base year model as the framework and uses JEMnR code calibrated and validated by PTV in 2010. The household data, grouped by household-income-age (HIA), and associated population and employment forecasts reflect the forecast for 2031.

2035 Model

The 2035 model network was developed "from scratch" using the 2009 model as a base. It runs using updated 2035 HIA marginals associated with population and employment forecasts using 2010 as the base year.

This model also includes several network coding error corrections (found in 2031), refinements and calibration efforts as part of an update from the 2009 base year to a 2010 base year.

Notably, 2035 uses Akcelik volume-delay functions (2005/2031 used Conical VDF), in addition to refinements to the transit component of the model.

A note about External Trips

In 2014, as part of the review process of the 2031 and 2035 models for work with the Salem River Crossing Project, SKATS staff collaborated with transportation peers at ODOT to develop new external growth rates for each of the external stations.

This was done because staff noted a significant reduction in demand on the bridges between 2031 and 2035, and there needed to be justification for why this was the case.

It was observed that the primary cause in the reduction was the differences in external trips produced.

Prior to 2014, the external trips were calculated using the same external processes developed for the 2005 SKATS model by PTV. This external trip process used a compounding growth method for calculating trips. The external growth rates also reflected negative growth in many of the stations, and this was the direct result of the change in ADT volume in 2010 due to the economic downturn.

The 2031 model used 2000 ADT station data to forecast rates and future year ADT volumes.

As a result, in 2014, SKATS adopted a linear-growth rate method to supplant the existing compound-growth rate method.

This linear-growth rate is a hybrid growth rate that is the equivalent of the aggregated average of 10-year and 20-year Oregon Economic Analysis/Portland Research Center population growth rates with 20-year traffic growth rates for each external station in the model area.

The new growth rates still reflect an overall reduction of demand, although not as drastic as previously observed.

Summary

In summary, model refinements, network coding error corrections, and the change in external growth rate calculation methodology are the main factors for the reduction in demand between 2031 and 2035. This reduction in demand overall is less than 5% across the entire SKATS model area.