Vilas Interchange Area Management Plan

Technical Advisory Committee (TAC) Meeting

July 17, 2018 at 10:00 am – 12:00 pm

ODOT, District 8 Offices

Attendees

Thomas Guevara Jr. - ODOT, Virginia Elandt - ODOT, Peter Schuytema – ODOT, Katie Brown - ODOT, Art Anderson - ODOT, Jayne Randleman - ODOT, Michael Morris – ODOT, Ron Hughes – ODOT, Dan Dorrell – ODOT, Jennifer Boardman – ODOT, Doug Sharp – ODOT, Jerry Brienza - Jackson County, Brian Gebhard - Jackson County, Charles Bennett – Jackson County, Craig Anderson – Jackson County, Mike Kuntz – Jackson County, Karl Welzenbach – RVMPO, Karl McNair – City of Medford, Carla Palodino – City of Medford, Jerry Brienza - Medford Airport, Jay Harland – Craig Stone and Associates.

Meeting Objectives and Purpose

The purpose of the TAC meeting is to review ODOT Transportation Planning Analysis Unit (TPAU) alternatives analysis of 19 scenarios for the proposed tight diamond interchange on the OR 62 Expressway at Vilas Road, as identified in the OR 62: I-5 to Dutton Road Final Environmental Impact Statement (FEIS). TPAU's traffic analysis requires a comprehensive review and discussion by the TAC in order to move toward selecting a preferred alternative for the Vilas Interchange Area Management Plan (IAMP).

Overview

Katie Brown presented TPAU's analysis of scenarios which focuses exclusively on the feasibility and potential implications of the proposed Vilas interchange with traffic signals or roundabouts at the ramp terminals, and 2 or 4 lanes on East Vilas Road for both the OR 62 Expressway JTA project and Full Expressway project.

In 2009, HB 2001 appropriated the Jobs and Transportation Act (JTA) funds to build the OR 62 Expressway. There were only enough funds to build the OR 62 Expressway from the Poplar Drive/Crater Lake Highway/Bullock Road intersection in the City of Medford to the Corey Road/Crater Lake Highway intersection in Jackson County. This project is referred to as the JTA project. The Full Expressway project to extend the OR 62 Expressway north to the Dutton Road/Crater Lake Highway intersection in Jackson County is currently unfunded.

Scenario Definitions

The following scenarios include a No-Build/No-Mitigation (NBNM) scenario, which includes the funded OR 62 Expressway JTA project that is expected to be complete in December 2018.

NBNM: JTA project (no interchange) with 2 lanes on East Vilas Road plus construction of the Medford TSP Tier 1 (funded) projects.

S0T1: NBNM plus construction of additional mitigations.

S0T2: NBNM with construction of additional mitigation plus construction of the Medford TSP Tier 2 (unfunded) projects.

Additional Mitigations

1. **Realignment of Peace Lane to intersect with East Vilas Road at Airway Drive**
   Signalization of either Peace Lane or Airway Drive is not feasible. TPAU prepared a functional area analysis and determined signalization does not meet the geometric adequacy calculation performed according to the APM v2 4.8. The current 400 feet between these intersections is not sufficient to accommodate necessary deceleration, reaction and storage distance. Additional mitigation measures suggested include:

   - Median channelization or RI/RO at Airway Drive

   (**Note:** This project may become a condition of the Vilas IAMP to comply with the TPR)

2. **Realign Crater Lake Avenue 1,000 feet to the east**
   This is a Medford TSP Tier 2 (unfunded) project (I39) that is necessary to allow the intersections of Crater Lake Avenue and Crater Lake Highway to function. These intersections are currently 140 feet apart and cease to function under the all the NBNM (without interchange) scenarios and Build (with interchange) scenarios at this close proximity.

3. **Lane Geometry and Bike/Pedestrian facility modifications**
   Modifications were made to attempt to meet v/c, LOS and MMLOS standards. Signals were added where preliminary signal warrants were met.

Rogue Valley Airport

A portion of East Vilas Road is located within the Medford Airport Runway Protection Zone (RPZ). Right-of-Way (R/W) for East Vilas Road is available for up to four travel lanes within the RPZ. The existing pavement width on East Vilas Road is adequate to accommodate all of the NBNM and Build scenarios. East Vilas Road cannot be widened within the RPZ without FAA approval, but it can be restriped to accommodate four travel lanes. There likely is no additional room for a separated bike path or sidewalks within existing R/W without having to widen and acquire more R/W within the RPZ. FFA approval for additional work on East Vilas Road will

require a “Notice of Proposed Construction” permit. The RPZ roughly includes East Vilas Road from Rainbow Drive to the Upton Slough. The slope is 50:1 and 1,000 feet out.

JTA Project and Full Expressway Project

2 of the 4 lanes on East Vilas Road would become turn lanes. The proposed Vilas interchange would require 7 lanes on East Vilas Road near the ramp terminals, and a wider cross section than the tight diamond design to alleviate queuing and storage issues on East Vilas Road beyond the ramp terminals. There is no additional room for driveways under the OR 62 Expressway’s overpass bridge at East Vilas Road.

Roundabout Analysis

A roundabout at the interchange ramp terminals will require a165 foot diameter and travel lanes up to 215 feet. The roundabout footprint is bigger than the tight diamond interchange footprint. All of the roundabout scenarios for both the JTA project and Full Expressway project are over capacity of the HDM performance standards. The roundabouts will meet their carrying capacity sooner than the interchange ramps.

Travel Demand Model

Both Year 2015 and Year 2040 Design Hour Volumes (DHV) are high at Hamrick Road/Biddle Road and Table Rock Road/East Vilas Road intersections for both the JTA project and Full Expressway project. Plans to improve the Hamrick Road/Biddle Road intersection are listed in IAMP 33. The City of Central Point would like to keep Hamrick Road to a two lane roadway. Traffic volumes will remain high on Hamrick Road even after construction to widen Table Rock Road is complete.

Current traffic volumes northbound on Hamrick Road are thought to have increased from 800 Average Daily Trips (ADT) to approximately 6,000 ADT with the addition of Costco. Jackson County is taking new tube counts at the Hamrick Road/Biddle Road intersection to verify current traffic volumes, which will be available by the end of summer.

Traffic analysis shows that the Biddle Road/Table Rock Road intersection will need grade separation with the proposed Vilas interchange for both the JTA project and Full Expressway project. Property located at the intersection was recently rezoned from Aggregate to Commercial. The Central Point TSP identifies extending Gebhard Road from Beebe Road to East Pine Street. Additional developments along East Pine Street will generate more traffic demand at the Biddle Road/Table Rock Road intersection.

Alternatives Analysis Results

Standard/Targets for v/c by Intersection

Intersection	Standard/Target			
	ODOT (V/C Ratio)		Local	
	OHP	HDM	V/C Ratio	LOS
OR62	0.85	0.75	NA	NA
Vilas Rd & Table Rock Rd	NA	NA	0.90/0.95	D
Vilas Rd & Airway Dr/Peace Ln	NA	NA	0.95	D
Vilas Rd & Lear Wy	NA	NA	0.95	D
Vilas Rd & Crater Lake Hwy	0.85	0.75	NA	D
Vilas Rd & Crater Lake Ave	NA	NA	0.95	D
Table Rock Rd & Biddle Rd	NA	NA	0.90/0.95	D
Biddle Rd & Hamrick Rd	NA	NA	0.90	D

It was noted that the City of Central Point does not use v/c performance standard for non-state facilities within its City Limits and Urban Growth Boundaries. The City uses LOS D as the performance standard for non-state facilities. LOS D applies to the Biddle Road/Hamrick Road intersection and to the west leg of the Biddle Road/Table Rock Road intersection. Jackson County's 0.95 v/c performance standard applies to the other three legs of this intersection located outside of Central Point's Urban Growth Boundary.

Capacity Analysis

All mainline segments on the OR 62 Expressway meet the OHP performance target, except for the JTA project (no interchange) with 2 and 4 lanes on East Vilas Road and construction of the Medford TSP Tier 1 (funded) projects.

The Hamrick Road/Biddle Road and Table Rock Road/Biddle Road intersections meet the performance standards in all scenarios for the JTA project and Full Expressway project, except for: NBNM (no Vilas interchange) scenario with Tier 1 (funded) projects; NBNM scenario with both Tier 1 and Tier 2 (unfunded) projects; and JTA Build (with Vilas interchange) scenario with 4 lanes on East Vilas Road and both Tier 1 and Tier 2 projects. Also, Table Rock Road/Biddle Road intersection does not meet the performance standard in the Full Expressway project Build (with Vilas interchange) scenario with 4 lanes on East Vilas Road and Tier 1 projects.

The Vilas interchange attracts increased traffic volumes to East Vilas Road. The FEIS identified that construction of the OR 62 Expressway will redistribute approximately 40% of the existing traffic volumes on Crater Lake Highway to the OR 62 Expressway.

A number of new intersection and models were used in the OR 62 Expressway's JTA and Full Expressway scenarios outside of the FEIS analysis. Any increased change in traffic volumes or new developments will require additional traffic analysis.

The proposed Vilas interchange doubles the traffic volumes on East Vilas Road. It diverts approximately 20% of existing traffic volumes from Crater Lake Highway to the Vilas interchange via the OR 62 Expressway. All intersections within the study area have performance problems with and without construction of the Vilas interchange. Construction of the Vilas interchange will worsen performance standards at the study area intersections.

Queuing Analysis

All interchange Build (with interchange) scenarios show significant traffic queuing issues at various intersections. Intersections are completely blocked under all scenarios, except for the NBNM (no Vilas interchange) with construction of additional mitigation, 2 lanes on East Vilas Road and both Medford TSP Tier 1 and Tier 2 projects.

Crash Frequency Analysis

The NBNM scenario has the highest crash frequency of all no-build (without Vilas interchange) scenarios. The Full Expressway project Build (with Vilas interchange) scenario with construction of 2-lanes on East Vilas Road, Medford TSP Tier 2 projects, and a roundabout at interchange ramp terminals has the lowest crash frequency of all interchange Build scenarios.

Multimodal Level of Service (MMLOS) Analysis

Sidewalks improve pedestrian LOS to C or better everywhere, EXCEPT at:

- Pine Street/Biddle Road
- Table Rock Road
- Crater Lake Highway
- East Vilas Road (in Build scenarios)

(**Note:** Separated Multi-Use Paths are recommended).

Summary of Results

Without additional traffic mitigation, there is extensive traffic queuing and congestion throughout the study area. Upon completion of the OR 62 Expressway's JTA project, the local transportation network improvements would have to be built first to support the traffic demand at the Vilas interchange. The top four performing scenarios are identified below:

1. JTA project (no Vilas interchange) with 2 lanes on East Vilas Road plus construction of both the Medford TSP Tier 1 (funded) and Tier 2 (unfunded) projects.
2. Full Expressway project (with Vilas interchange) with 4 lanes on East Vilas plus construction of both the Medford TSP Tier 1 (funded) and Tier 2 (unfunded) projects.

3. JTA project (no Vilas interchange) with 2 lanes on East Vilas Road plus construction of the Medford TSP Tier 1 (funded) projects.
4. Full Expressway project (with Vilas Interchange) with 4 lanes on East Vilas Road plus construction of the Medford TSP Tier 1 (funded) projects.

Final Comments, Next Steps

It is necessary to understand the redistribution of traffic volumes that the Vilas interchange would create on the local transportation network. Additional analysis is needed to compare the percent increase at study area intersections with and without the Vilas interchange. Additionally, a summary of funding and jurisdictional requirements are needed for the top performing scenarios to inform future decision makers.

The TAC expressed interest is pursing the JTA project Build (with Vilas interchange) scenario to garner local government support, recognizing that the Full Expressway project is unfunded. TPAU will refine and present their traffic analysis for the JTA project Build scenario to show cumulative costs/benefits when: (1) additional mitigation and Tier 1 (funded) improvements are added; (2) when Tier 2 (unfunded) improvements are added; and (3) when the Full Expressway (unfunded) is added over the 20 year planning horizon.

The Vilas IAMP is legally required to identify traffic impacts within ½ mile of the proposed interchange ramp terminals, and access management strategies within ¼ mile of the proposed interchange ramp terminals. A scenario that meets these basic requirements will need to be performed.

All proposed solutions need to be consistent with the FEIS and comply with the TPR. The Medford TSP Update is expected to be adopted in fall 2018. Additional scenarios will be run at that time with identified Medford TSP Update Tier 1 and Tier 2 projects. The TAC will reconvene to review the results of this analysis.

Adjourn