STATE OF OREGON **INTEROFFICE MEMO**

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File Code:

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TO: **Fern Valley Interchange CAC**
Fern Valley Interchange PDT

FROM: **Christina Fera-Thomas, Transportation Analyst**
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Transportation Planning Analysis Unit

SUBJECT: **Fern Valley Interchange Options**
Sensitivity Analysis

The following sensitivity analysis was done to address concerns about growth beyond that included in the Build 2030 Future Volumes. In order to test the sensitivity of the alternatives, a uniform growth rate was added to the entire system. An additional 20% was added to the Build 2030 Future Volumes. The comments below are based on the analysis of the Build 2030 volumes with additional growth.

INTERCHANGE

8-lane/6-lane loop

- Will exceed mobility standards in 2027
- More delay and stops than SPUI options
- Moderate increase in queue lengths with respect to Build 2030

SPUI

- Does not exceed mobility standards until 2034 (or 2042 if right turn intersections at ramps are signalized)
- Significantly less delay and stops than diamond options
- Queuing is relatively unaffected by the additional growth

WESTSIDE

PBA

- Operates better with a SPUI than a diamond interchange
- Westbound queuing is continuous from OR 99 to east of the SB ramp terminal. This is only an issue with this option and would require a design refinement. Lengthening the westbound right turn bay on Fern Valley Road at OR 99 would improve queues
- Fern Valley Road/OR99intersection is at capacity

TPAU

- Queue lengths are typical for amount of growth
- Fern ValleyRoad/OR99 intersection is at capacity
- Bolz Road/OR 99 v/c exceeds mobility standards

EB/WB Couplet

- Long Queues on OR 99
- Queuing on Fern Valley Road is relatively unaffected by the additional growth
- Fern Valley Road/OR99intersection is at capacity
- Bolz Road/OR 99 v/c is within mobility standards

TPAU w/Luman Undercrossing

- Queuing on Fern Valley Road is typical based on the additional growth
- Fern Valley Road/OR99intersection is at capacity
- Bolz Road/OR 99 v/c is within mobility standards

Lowry-Original

- Queuing on Fern Valley Road is typical based on the additional growth
- Worst option at handling additional growth
- Excessively long queues that extend through the couplet
- Cheryl Lane/OR99 v/c is within mobility standards
- Bolz Road/OR 99 is near capacity

Table 1-Original

- Handles additional growth best out of all of the options
- Queuing on Fern Valley Road AND OR 99 is relatively unaffected by the additional growth
- Cheryl Lane/OR99 v/c is within mobility standards
- Bolz Road/OR 99 is near capacity

EASTSIDE
For all eastside options the v/c ratios are within mobility standards.

N Phoenix Thru
- Minimal increase on queue length at S Phoenix Road
- Handles additional growth best out of all of the options

Lowry/TPAU
- Long queues on S Phoenix Road
- Queue on S Phoenix Road grows half as fast as it does for the PBA option
- Less sensitive to additional growth than PBA option

PBA
- Long queues on S Phoenix Road
- Queue on S Phoenix Road grows twice as fast as it does for the TPAU option
- More sensitive to additional growth than TPAU option

If there are any questions or comments, please contact me at 503-986-4119.

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cc: Dorothy Upton, Transportation Planning Analysis Unit
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