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File Code:

Date: January 24, 2007

TO: Fern Valley Interchange CAC
Fern Valley Interchange PDT

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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

6-Lane with SE 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

CDI

- Stops and delays similar to SPUI except that the CDI only has four lanes instead of six, so the CDI is actually functioning better than the SPUI.
- Exceeds mobility standards in 2030.
- Overall operation falls halfway between the 6-lane loop and the SPUI alternatives.

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/OR99 intersection is at capacity

Bolz West (modified Table 1)

- Operates better than PBA West in terms of stops, delays, and queues

EASTSIDE

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

N Phoenix Through

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

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.

cc: Dorothy Upton, Transportation Planning Analysis Unit
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