

Fern Valley Interchange: Westside Design Options.

	Design Features	Traffic Operations	Pros	Cons
Westside Options				
PBA	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Meets capacity standards at all key locations for the 20-year design period (using current comprehensive plan projections). • Does not allow future growth beyond 20 years – due to the v/c at the OR 99/Fern Valley Road intersection. (If future projects improve operations on OR 99, there would be an opportunity for future growth. The amount of growth would depend on the interchange capacity). • Queuing does not interfere with the interchange or Phoenix downtown couplet operations in the 20-year planning period. 	<ul style="list-style-type: none"> • Least right-of-way acquisition • Good business access • Good access for Bear Lake/Coleman Creek Estates • Minimal environmental impacts (only one Bear Creek crossing) • Least out-of-direction travel • Stays on existing alignment 	<ul style="list-style-type: none"> • Acute southbound left turn from OR 99 to Bolz Rd. • Poor signal spacing between interchange and Mullen • Reduced bike/pedestrian facilities (OR 99) • Long vehicle queues on OR99 and Fern Valley Road • Does NOT allow for future growth beyond 20 years
TPAU	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Same as PBA Westside Option. 	<ul style="list-style-type: none"> • Good business access • Good access for Bear Lake/Coleman Creek Estates • Improved Bolz connection • Shorter queues 	<ul style="list-style-type: none"> • Poor signal spacing between interchange and Mullen • Reduced bike/pedestrian facilities (OR 99) • Does NOT allow for future growth beyond 20 years • More out-of-direction travel • Increased environmental impacts (2 Bear Creek crossings)
EB/WB Couplet	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Same as PBA Westside Option. 	<ul style="list-style-type: none"> • Reduces number of signals on Fern Valley Road • Allows for more vehicle queuing between OR 99 and Fern Valley Road • Safer Fern Valley Road crossing with Luman undercrossing. • Improves Bolz connection 	<ul style="list-style-type: none"> • Reduced bike/pedestrian facilities (OR99) • Right-in/right-out • Not pedestrian-friendly • Does NOT allow for future growth beyond 20 years • Indirect access for Stores @ 24 and Coleman Creek Estates. Potential driver confusion. • Out-of-direction travel • Increased environmental impacts (2 Bear Creek crossings)
TPAU w/Luman Undercrossing	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Same as PBA Westside Option. 	<ul style="list-style-type: none"> • Good access for commercial stores • Good access for Bear Lake Estates 	<ul style="list-style-type: none"> • Moderate R/W acquisitions • Poor signal spacing between interchange and Mullen • Reduced bike/pedestrian facilities (OR 99) • Does NOT allow future growth beyond 20 years • Increased environmental impacts (2 Bear Creek crossings)

<p>Original Table 1 Westside</p>	<ul style="list-style-type: none"> • 	<p>Same as PBA Westside Option, except:</p> <ul style="list-style-type: none"> • Allows for future growth beyond 20 years. 	<ul style="list-style-type: none"> • Shortest queues • Lowest v/c ratios • Allows for future growth beyond 20 years • Increased signal spacing • Full bike lanes 	<ul style="list-style-type: none"> • Original Fern Valley Road is dead end • Requires new bridge over Coleman Creek • Most right of way impacts on OR 99 • Out of direction travel for businesses and residents on west side • Increased environmental impacts
<p>Original Lowry Westside</p>	<ul style="list-style-type: none"> • 	<p>Same as PBA Westside Option, except:</p> <ul style="list-style-type: none"> • Allows for future growth beyond 20 years. 	<ul style="list-style-type: none"> • Shortest queues • Lowest v/c ratios • Allows for future growth beyond 20 years • Increased signal spacing • Full bike lanes • Full signal at Cheryl and Bolz 	<ul style="list-style-type: none"> • Requires new bridge over Coleman Creek • Most right of way impacts on OR 99 • Out-of-direction travel for businesses and residents on west side • Increased environmental impacts

Fern Valley Interchange: Interchange Design Options.

	Design Features	Traffic Operations	Pros	Cons
Interchange Options				
6-Lane Diamond with SE Loop	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Meets capacity standards at all key locations for the 20-year design period (using current comprehensive plan projections). • Allows for future growth beyond 20 years. • Queuing does not interfere with the interchange or Phoenix downtown couplet operations in the 20-year planning period. • Interchange would handle projected traffic until 2038. 	<ul style="list-style-type: none"> • Removes northbound on movement from intersection • Easier to phase construction than other options • Allows for growth beyond the 20-year comp plan (but less than other interchange options) 	<ul style="list-style-type: none"> • Northbound on/off ramps don't line up • Possible bike/pedestrian conflict with loop ramp • Increased right of way due to construction of loop ramp
8-Lane Diamond	<ul style="list-style-type: none"> • 	<p>Same as 6-Lane Diamond with SE Loop, except:</p> <ul style="list-style-type: none"> • Interchange would handle projected traffic until 2040. 	<ul style="list-style-type: none"> • Same configuration as existing interchange • Allows for slightly more growth than other diamond options 	<ul style="list-style-type: none"> • Size is out-of-context for the area (large cross-section) • Difficult for pedestrians/bikes • Large structure that provides little benefit (cost vs. benefit) • Difficult to phase construction • Expensive compared to 6-Lane Diamond
SPUI (Single Point Urban Interchange)	<ul style="list-style-type: none"> • <ul style="list-style-type: none"> • SPUI north of existing bridge or • SPUI south of existing bridge 	<p>Same as 6-Lane Diamond with SE Loop, except:</p> <ul style="list-style-type: none"> • Interchange would handle projected traffic until 2048 (plus an additional 8 years if the southbound/northbound off-ramp, right-turn intersections were signalized). 	<ul style="list-style-type: none"> • Lowest v/c ratios • Will last longer than other interchange options • Only 1 signal required - improves traffic flow • Better signal spacing • Allows for future growth beyond the 20-year comprehensive plan • Small footprint • Reduced right of way requirements 	<ul style="list-style-type: none"> • Expensive • Difficult to phase construction

Fern Valley Interchange: Eastside Design Options.

	Design Features	Traffic Operations	Pros	Cons
Eastside Options				
PBA	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Meets capacity standards at all key locations for the 20-year design period (using current comprehensive plan projections). • Allows for future growth beyond 20 years. • Queuing does not interfere with the interchange or Phoenix downtown couplet operations in the 20-year planning period. 	<ul style="list-style-type: none"> • Keeps existing Fern Valley alignment • Minimal right of way acquisition • Minimal out-of-direction travel 	<ul style="list-style-type: none"> • Access issues with truck traffic • Wider cross-section on Fern Valley Road • Least efficient option for N. Phoenix Rd/Fern Valley Rd intersection (heavy northbound movement) • Large intersection in close proximity to neighborhood • All traffic goes through N. Phoenix/Fern Valley Intersection • Mixes truck and local traffic • Not bicycle/pedestrian friendly
Lowry/TPAU	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Same as PBA Eastside Option. 	<ul style="list-style-type: none"> • Separates truck stop and local traffic • Better traffic flow (less truck/local traffic conflicts) • Pulls large intersection away from neighborhood • Unrestricted truck access • Small cross-section on Fern Valley Road 	<ul style="list-style-type: none"> • Least efficient option for N. Phoenix Rd/Fern Valley Rd intersection (heavy northbound movement) • All traffic goes through N. Phoenix/Fern Valley Intersection • Old Fern Valley Road dead ends. • Not bicycle/pedestrian friendly
North Phoenix Thru	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Same as PBA Eastside Option. 	<ul style="list-style-type: none"> • Small cross-section on Fern Valley Road • Best handles heavy northbound movement on N. Phoenix Road • Best signal/interchange spacing • Major intersection moved far from neighborhood • Separates through traffic from local/business traffic • N Phoenix Rd/Fern Valley Rd intersection is unsignalized, minimizing truck queuing and noise • Unrestricted truck access 	<ul style="list-style-type: none"> • Out-of-direction travel for eastside businesses and residents • Old Fern Valley Road dead ends • Out of direction bicycle and pedestrian facilities