I-10 AND OAK VALLEY PARKWAY INTERCHANGE PROJECT - CONCEPTUAL OPTIONS EVALUATION AND SCREENING MATRIX

Final Revision - February 25th, 2025

			No Build		Partial Cloverleaf Interchange (Option 2)		Conventional Diamond Interchange (Option 3)		Diverging Diamond Interchange (Option 4)		Single Point Interchange (Option 5)	
Category	**Criteria**	**Weighting Factor**	**Design Team Notes**	**Score**	**Design Team Notes**	**Score**	**Design Team Notes**	**Score**	**Design Team Notes**	**Score**	**Design Team Notes**	**Score**
Traffic Flow, Traffic Congestion/Delay, Access	**Freeway Ramp Operations**											
	I-10 EB Oak Valley Parkway Off-Ramp (Diverge)	1.0	1 lane off. DY peak hour demand >1500	-3.0	1 off-ramp with 2 lanes w/deceleration lane. Necessary to accommodate future demand.	3.0	1 off-ramp with 2 lanes w/deceleration lane. Necessary to accommodate future demand.	3.0	1 off-ramp with 2 lanes w/deceleration lane. Necessary to accommodate future demand.	3.0	1 off-ramp with 2 lanes w/deceleration lane. Necessary to accommodate future demand.	3.0
	I-10 EB Oak Valley Parkway On-Ramp (Merge)	1.0	1 lane on. DY peak hour demand <1500	0.0	2 on-ramps with 1 lane each w/acceleration lane. 2 on-ramps reduce impacts of merging.	2.0	1 on-ramp with 1 lane w/ acceleration lane.	1.0	1 on-ramp with 1 lane w/ acceleration lane.	1.0	1 on-ramp with 1 lane w/ acceleration lane.	1.0
	I-10 WB Oak Valley Parkway Off-Ramp (Diverge)	1.0	1 lane off. DY peak hour demand <1500	0.0	1 off-ramp with 1 lanes w/o deceleration lane	1.0	1 off-ramp with 1 lane w/o deceleration lane	1.0	1 off-ramp with 1 lane w/o deceleration lane	1.0	1 off-ramp with 1 lane w/o deceleration lane	1.0
	I-10 WB Oak Valley Parkway On-Ramp (Merge)	1.0	1 lane on. DY peak hour demand < 1500	0.0	2 on-ramps with 1 lane each w/acceleration lane to accommodate future demand. 2 on-ramps reduce impacts of merging.	2.0	1 on-ramp with 1 lane w/acceleration lane to accommodate future demand. Demand is concentrated at single merge point	1.0	1 on-ramp with 1 lane w/acceleration lane to accommodate future demand. Demand is concentrated at single merge point	1.0	1 on-ramp with 1 lane w/acceleration lane to accommodate future demand. Demand is concentrated at single merge point	1.0
	Intersection Operations											
	Oak Valley Parkway and I-10 Eastbound Ramps	1.0	Overcapacity	-3.0	Can achieve acceptable operations while accommodating high volume turns. Shorter intersection spacing with Desert Lawn.	2.0	Can achieve acceptable operations while accommodating high volume turns.	2.0	Can achieve acceptable operations while accommodating high volume turns. Can be difficult to coordinate bidirectionally.	2.0	Acceptable operations requires triple right and triple left-turns for off-ramp movement; not desirable. Alternative would result in better intersection spacing w/ Desert Lawn.	1.0
	Oak Valley Parkway and I-10 Westbound Ramps	1.0	Overcapacity	-3.0	Can achieve acceptable operations while accommodating high volume turns. Multilane right-turns needed if on-ramp movements are signalized.	3.0	Can achieve acceptable operations while accommodating high volume turns. Multilane right-turns needed if on-ramp movements are signalized.	2.0	Can achieve acceptable operations while accommodating high volume turns. Can be difficult to coordinate bidirectionally. Multilane right-turns needed if on-ramp movements are signalized.	2.0	Can achieve acceptable operations while accommodating high volume turns; requires double left and double right for on-ramp movement.	2.0
	Pedestrian Access Improvements	**3.0**	No pedestrian access improvements.	0.0	Improvements to pedestrian access to subareas and developments, including curb ramps and 6' sidewalks. Increased crosswalk lengths compared to other interchange options. Additional right-turn yield pedestrian conflict at loop ramp entrance.	1.5	Improvements to pedestrian access to subareas and developments, including curb ramps and 6' sidewalks.	2.0	Improvements to pedestrian access to subareas and developments, including curb ramps and 6' sidewalks. Pedestrians cross fewer traffic lanes at a time compared to a conventional interchange.	2.0	Improvements to pedestrian access to subareas and developments, including curb ramps and 6' sidewalks. Pedestrians cross fewer traffic lanes at a time compared to a conventional interchange.	2.0
	Bike Access Improvements	**3.0**	No bike access improvements.	0.0	Improvements to bicycle access to subareas and developments, including Class II Bikeways. Additional right-turn yield bicycle conflict at loop ramp entrance.	1.5	Improvements to bicycle access to subareas and developments, including Class II Bikeways.	2.0	Improvements to bicycle access to subareas and developments, including Class II Bikeways. Cyclists are to the right of vehicular traffic throughout the interchange. Cyclists may also be directed to protected median.	3.0	Improvements to bicycle access to subareas and developments, including Class II Bikeways.	2.0
	Truck Access Improvements	**2.0**	STAA Design Vehicle can make movements at all on ramps and off ramps in existing conditions.	3.0	20ft wide lanes required at loop ramps to accommodate STAA Design Vehicle. Increased curb return radii at right turns of on and off ramps.	1.0	STAA Design Vehicle can make turning movements with standard 12' lanes.	2.0	20ft lanes at off ramps, 15-16ft lanes and 14-16ft hatched areas at on ramps to accommodate STAA Design Vehicle.	1.5	18ft lane at WB on ramp, 18ft lane at EB on ramp, 16ft lane at EB off ramp, 16ft Lane at WB off ramp to accommodate STAA Design Vehicle. 14-17ft lanes on the bridge for crossing movements.	1.0
	Conflict Points	**3.0**	- 18 Vehicle Conflict Points (3 merge, 3 diverge, 3 crossing at each intersection) - 8 Ped/Bike Crossing Conflict Points (No increase in vehicle, pedestrian, or cyclist conflict points.)	0.0	- 12 Vehicle Conflict Points (2 merge, 3 diverge, 1 crossing at each intersection) - 8 Pedestrian/Bike Crossing Conflict Points	2.5	- 18 Vehicle Conflict Points (3 merge, 3 diverge, 3 crossing at each intersection) - 8 Ped/Bike Crossing Conflict Points (No increase from No Build)	0.0	- 14 Vehicle Conflict Points (3 merge, 3 diverge, 1 crossing at each intersection) - 8 Pedestrian/Bike Crossing Conflict Points	2.0	- 20 Vehicle Conflict Points (6 diverge, 6 merge, 8 crossing) - 8 Pedestrian/Bike Crossing Conflict Points	-1.0
	Subtotal of Weighted Averages			-3.0		31.5		26.0		34.0		20.0
Environmental	**Community Impacts (Social, Business, Public Amenities)**	**2.0**	Maintains existing interchange configuration, No community impacts	-3.0	Maintains existing interchange configuration, minimal community impacts	0.0	Maintains existing interchange configuration, minimal community impacts	0.0	New interchange configuration, may result in public opposition	-1.0	New interchange configuration, may result in public opposition	-1.0
	Noise Impacts	1.0	No impacts	0.0	Adds new lane to ramp and lanes to Oak Valley Parkway, potential impacts to existing Holiday Inn and planned Beaumont Landing.	-2.0	Adds new lane to ramp and lanes to Oak Valley Parkway, potential impacts to existing Holiday Inn and planned Beaumont Landing.	-2.0	Adds new lane to ramp and lanes to Oak Valley Parkway, potential impacts to existing Holiday Inn and planned Beaumont Landing.	-2.0	Moves on-ramp away from existing Holiday Inn and planned Beaumont Landing site; however, ramps are elevated with additional lanes on ramp and Oak Valley Pkwy	-3.0
	Visual/Aesthetics	1.0	No impacts	0.0	Adds new loop on-ramps to interchange and widens on-ramps	-1.0	Maintains existing aesthetics and widens on-ramps	-1.0	Maintains existing aesthetics with differing lane configurations	-1.0	Interchange reconstruction with new configuration. Ramps are elevated with retaining walls	-2.0
	Air Quality/Green House Gases	1.0	Increased delay, resulting in AQ emissions increase	-2.0	Increased capacity/ADT, results in AQ emissions increase	-1.0	Increased capacity/ADT, results in AQ emissions increase	-1.0	Increased capacity/ADT, results in AQ emissions increase	-1.0	Increased capacity/ADT, results in AQ emissions increase	-1.0
	Subtotal of Weighted Traffic Criteria			-8.0		-4.0		-4.0		-6.0		-8.0

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Design	**Deviations from Standard**											
	Caltrans HDM, CA MUTCD, applicable guidelines	1.0	Not applicable	0.0	Additional design exception features expected for loop on-ramps when compared to other build options.	1.0	Minimal, low risk bold face and underlined design exceptions anticipated.	2.0	Minimal, low risk bold face and underlined design exceptions anticipated.	2.0	Minimal, low risk bold face and underlined design exceptions anticipated.	2.0
	Utility Impacts	**2.0**	No utility impacts	0.0	Multiple utility relocations anticipated along EB Oak Valley Parkway for roadway widening.	-2.0	Multiple utility relocations anticipated along EB Oak Valley Parkway for roadway widening.	-1.0	Multiple utility relocations anticipated along EB Oak Valley Parkway for roadway widening.	-1.0	Multiple Utility Relocations along EB Oak Valley Parkway for roadway widening. Higher risk of impacting electrical equipment at SW corner of Desert Lawn Dr and Oak Valley Pkwy	-3.0
	Compatibility with I-10 TCR 2040 Concept and "Buildout"	**2.0**	No widening for "Buildout" width	-3.0	Loop ramps will require additional reconstruction within gore areas for 2040 concept and buildout condition.	1.0	Ramp reconstruction accounts for I-10 "Buildout" width, minimal reconstruction needed for ultimate condition.	2.0	Ramp reconstruction accounts for I-10 "Buildout" width, minimal reconstruction needed for ultimate condition.	2.0	Ramp reconstruction and retaining walls account for I-10 "Buildout" width. Abiliity to incoporate mainline widening, BMPs, or MVPs within ramp "inflield" areas would be limitied in	1.0
	Subtotal of Weighted Design Criteria			-6.0		-1.0		4.0		4.0		-2.0
Right of Way and Constructability	**Right-of-Way Acquisitions**											
	Permanent Acquisitions	**2.0**	No right of way impacts	1.0	Increased right of way impacts for ultimate loop ramps.	-2.0	Minor to no right of way impacts.	-1.0	Minor to no right of way impacts.	-1.0	Increased right of way impacts due to additional turning lanes and ramp geometry.	-2.0
	Temporary Construction Easements	1.0	No right of way impacts	1.0	Increased temporary construction easements to account for ultimate loop ramps.	-2.0	Minimal Temporary Construction Easements	-1.0	Minimal Temporary Construction Easements	-1.0	Increased area of temporary construction easements due to additional turning lanes.	-2.0
	Construction Staging and Duration	1.0	Not applicable	0.0	Additional construction phases to construct loop ramps. No on ramp closures since loop ramps can be used to maintain freeway access at all times during construction.	2.0	Minimal additional construction phases compared to other alternatives. This option will require on ramp closures.	1.5	Additional construction phasing bridge. More complex phasing for traffic due to traffic through diverging diamond.	1.0	Additional construction phasing for on/off ramp bridges and walls. More complex phasing for traffic due to traffic traveling through a single point.	-1.0
	Subtotal of Weighted R/W & Constructability Criteria			3.0		-4.0		-1.5		-2.0		-7.0
Cost/Funding	**Total Construction Cost (Capital Only)**	**2.0**		3.0	$70M - 80M Mid range score for mid range cost/benefit.	1.0	$60M-$70M Higher score for higher cost/benefit.	2.0	$65M - 75M Higher score for higher cost/benefit.	1.5	$85M - 95M Lower score for lower cost/benefit.	0.5
	Subtotal of Weighted Cost/Funding Criteria			6.0		2.0		4.0		3.0		1.0
	Weighted Total Score			-8.0		24.5		28.5		36.0		4.0

The following criteria were evaluated, but the scores for all Build Options were identical. Therefore, those criteria were not included in this Screening Matrix**:**
-Creek Impacts,
-VMT
-Cultural Impacts/NA Consultation
-Natural Environment/Biological Impacts
-VMT Mitigation Requirements
-Compatibility with Beaumont General Plan
-Strategic Elements for Discretionary Grants
-Emergency Access Improvements

Legend:

Weighting Criteria Multipliers

1= Important Multiplier
2= High Importance Multiplier
3= Greatest Importance Multiplier

Criteria Scoring Scale

-3 Scores lowest when compared to other I.C. options (notable drawbacks or significant impact)
-2 Used to distinguish an option that has moderate drawbacks or has between moderate and potentially significant impact
-1 Scores marginally when compared to other I.C.options (Slight drawbacks or moderate but mitigatable/ avoidable impact)
1= Used to distinguish an I.C. option that has moderate improvement or minimal impact when compared to other options
2= Used to distinguish an I.C. option that has measurable improvement or minimal impact when compared to other options
3= Scores highest when compared to other I.C. options (Clear net benefit or no impact)