

EVALUATION MATRIX - SR 51 TO DEER VALLEY ROAD

Criteria	Brief Description	Performance Measures	Importance Factor	ALT 1 (original 1999 AECOM concept)	ALT 1a (original concept with 30-40 mph northbound and 45 mph southbound radii and considers traffic calming)	ALT 2 (resembles a half-diamond traffic interchange and considers traffic calming)	ALT 3 (west of Pinnacle High School and incorporating 32 nd Street alignment)	ALT 4 (no SR 51 ramp connections to BMB)
TOTAL SCORE				+19	+26	+25	-18	-2
Recommendations:				Considered but eliminated from further study	Considered for further study	Considered for further study	Considered but eliminated from further study	Considered for further study
Purpose and Need	The purpose of this project would be to provide direct access to and from SR 51 and the areas of existing and future development within the study area, increase efficiency of the transportation network, reduce congestion and travel times for motorists, and to provide greater regional mobility with improved access to SR 51. The need for the project is based upon the existing populations within the study area and the corresponding demands that are placed on the transportation network that generate congestion and excessive trip times for motorists. Projected population and employment growth will place even greater demands on the transportation network and conditions will worsen without the continued development of the arterial street network in the study area and improved access to the Regional Freeway System.	The proposed action addresses the existing deficiencies in the transportation system and would meet the future needs.	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access to the Regional Freeway System by providing direct access to SR 51, and continues the development of the arterial street network within the study area to serve areas of new development and growth. Would also reduce congestion and result in lower trip times; thus, increasing the efficiency of the transportation system.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access to the Regional Freeway System by providing direct access to SR 51, and continues the development of the arterial street network within the study area to serve areas of new development and growth. Would also reduce congestion and result in lower trip times; thus, increasing the efficiency of the transportation system.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access to the Regional Freeway System by providing direct access to SR 51, and continues the development of the arterial street network within the study area to serve areas of new development and growth. Would also reduce congestion and result in lower trip times; thus, increasing the efficiency of the transportation system.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Improves access to the Regional Freeway System by providing direct access to SR 51, and continues the development of the arterial street network within the study area to serve areas of new development and growth. Would be less effective at lowering trip times due to less direct and circuitous travel to reach SR 51 from/to the study area.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Would not address need for access to SR 51 or address needs for improved regional mobility. Would not reduce traffic congestion or reduce trip times.

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

More Important	Important
2x	1x

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Pedestrian Safety	Potential conflicts between the existing or future development of motorized and non-motorized facilities	Recognizes high pedestrian use areas throughout corridor and provides opportunity for the construction of dedicated pedestrian facilities or the enhancement of existing pedestrian facilities, and the opportunity for traffic speed-reduction features, signage, and signalization	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Opportunity for new or enhancement of existing pedestrian facilities near location where most pedestrians are currently present. Posted speed is expected to be 40 mph with 35 mph advisory signs to lower speeds near PHS.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Opportunity for new or enhancement of existing pedestrian facilities near location where most pedestrians are currently present. Traffic calming, if implemented, would reduce speeds in conjunction with advisory signs near PHS.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Opportunity for new or enhancement of existing pedestrian facilities near location where most pedestrians are currently present. Geometry of ramps requires reduced speeds, and traffic calming, if implemented, would reduce speeds in conjunction with advisory signs near PHS.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Moves vehicle traffic away from majority of current and future pedestrian area. Does not preclude opportunity for new pedestrian facilities. Removes majority of pass through traffic from being immediately adjacent to PHS.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Maintains current alignment and existing pedestrian features. No federal funding opportunity associated with this particular effort would be available for the construction of new or enhanced pedestrian facilities. No thru traffic would occur on BMB adjacent to PHS.
Motorist Safety	Roadway features, configurations, and geometries and/or traffic control that may present potentially increased motorist hazards or traffic conflicts	Provides opportunity for roadway configurations and geometries that reduce traffic speeds while maintain free-flow conditions, and minimization of intersections that create potential conflicts between mainline traffic and traffic making turning movements	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Provides direct and free-flowing access. Would require right-in, right-out for PHS traffic entering/exiting BMB. Traffic exiting PHS to go northbound on BMB would be required to use indirect lefts or Texas u-turns. May require reconfiguration of PHS traffic pattern to utilize access to/from Mayo Blvd via student lot.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Provides direct and free flowing access. Traffic calming could be implemented to transition northbound traffic from a freeway off-ramp to an arterial road. Would require right-in, right-out for PHS traffic entering/exiting BMB. Traffic exiting PHS to go northbound on BMB would be required to use the traffic calming, if implemented, to turn around. Could also benefit from reconfigured PHS traffic pattern as required in Alt 1.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Provides ramp geometry that slows traffic but is free-flowing. Traffic calming could be implemented to transition northbound traffic from a freeway off-ramp to an arterial road. Would require right-in, right-out for PHS traffic entering/exiting BMB. Traffic exiting PHS to go northbound on BMB would be required to use the traffic calming, if implemented, to turn around. Could also benefit from reconfigured PHS traffic pattern as required in Alt 1.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Requires BMB traffic to navigate an additional major arterial intersection at Deer Valley Road and 32 nd St. and northbound BMB traffic would be forced to perform a left turn at the BMB-Deer Valley Road intersection.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Continues to direct motorists to points of congestion at Cave Creek Road and Tatum Boulevard and increases distances and number of intersections motorists must navigate to reach SR 51.

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

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Public Input	Feedback received from the public solicited through the stakeholder and public meetings, or received as written comments	Generally meets public expectations and addresses concerns expressed through the gathered public comments received to-date; public input will continue and the application of this criterion is subject to change pending future public input	2x	<p>Base score: 0 Factor: 2x Score: 0 x 2 = 0</p> <p>Equally satisfactory for those desiring improved freeway access, regional mobility, and reduced congestion as it is undesirable for those wishing to isolate their neighborhood from increased traffic.</p>	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>Equally satisfactory for those desiring improved freeway access, regional mobility, and reduced congestion as it is undesirable for those wishing to isolate their neighborhood from increased traffic. Better addresses public input on pedestrian and motorist enhancements/features.</p>	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>Equally satisfactory for those desiring improved freeway access, regional mobility, and reduced congestion as it is undesirable for those wishing to isolate their neighborhood from increased traffic. Better addresses public input on pedestrian and motorist enhancements/features.</p>	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>Would satisfy public demand for relocating the BMB alignment away from the east entrances to PHS and the existing neighborhoods of Wildcat Ridge, Desert Ridge, and portions of Aviano.</p>	<p>Base score: 0 Factor: 2x Score: 0 x 2 = 0</p> <p>Would satisfy a modest percentage of the public based on comments received.</p>
Agency Input	Feedback received from government agencies solicited through the stakeholder meetings, the agency scoping meeting, or received as written comments	Generally meets the stakeholder governments' expectations and addresses input expressed through gathered comments; agency input will continue and the application of this criterion is subject to change pending future agency input	2x	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>City of Phoenix supports this alternative because it is consistent with future parks/recreation development in Reach 11 and their arterial streets plan, and can be funded within the programmed amount. Reclamation and CAWCD supports this alternative because it is consistent with the area set aside within Reach 11 for transportation and does not represent a lateral encroachment. PHS supports this alternative because it does not interfere with the future</p>	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>City of Phoenix supports this alternative because it is consistent with future parks/recreation development in Reach 11 and their arterial streets plan, and can be funded within the programmed amount. Reclamation and CAWCD supports this alternative because it is consistent with the area set aside within Reach 11 for transportation and does not represent a lateral encroachment. PHS supports this alternative because it does not interfere with the future</p>	<p>Base score: +1 Factor: 2x Score: +1 x 2 = +2</p> <p>City of Phoenix supports this alternative because it is consistent with future parks/recreation development in Reach 11 and their arterial streets plan, and can be funded within the programmed amount. Reclamation and CAWCD supports this alternative because it is consistent with the area set aside within Reach 11 for transportation and does not represent a lateral encroachment. PHS supports this alternative because it does not interfere with the future</p>	<p>Base score: -1 Factor: 2x Score: -1 x 2 = -2</p> <p>City of Phoenix does not support this alternative due to impacts to future recreation development within Reach 11 and inconsistency with their arterial street plan. Reclamation and CAWCD do not support this alternative because it is a lateral encroachment to their facilities.</p>	<p>Base score: -1 Factor: 2x Score: -1 x 2 = -2</p> <p>The City of Phoenix does not support this alternative because it is inconsistent with their arterial street plan and does not provide access to the Regional Freeway System as envisioned in their General Plan.</p>

LEGEND:

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-1	0	+1

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				expansion of their parking facilities and allows for improvements to their campus traffic circulation pattern. ASLD supports this alternative because it does not interfere with the implementation of Desert Ridge or Tatum East-West future development and land sale plans.	expansion of their parking facilities and allows for improvements to their campus traffic circulation pattern. ASLD supports this alternative because it does not interfere with the implementation of Desert Ridge or Tatum East-West future development and land sale plans.	expansion of their parking facilities and allows for improvements to their campus traffic circulation pattern. ASLD supports this alternative because it does not interfere with the implementation of Desert Ridge or Tatum East-West future development and land sale plans. ADOT does not support the implementation of this alternative due to issues with driver expectancy and roadway geometry.		
Regional Mobility and Linkage to the Arterial and Freeway Roadway Systems	Facilitates intraregional movement of people, goods, and services throughout the Phoenix metropolitan area, and provides connectivity to the freeways and major arterial streets	Provides access to/from primary routes connecting adjacent subregions of the Phoenix metropolitan area	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access and connectivity with the larger regional transportation network, reduces congestion, and increases efficiency allowing motorists greater mobility within the Phoenix metropolitan area	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access and connectivity with the larger regional transportation network, reduces congestion, and increases efficiency allowing motorists greater mobility within the Phoenix metropolitan area	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Improves access and connectivity with the larger regional transportation network, reduces congestion, and increases efficiency allowing motorists greater mobility within the Phoenix metropolitan area	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Improvement of access and connectivity with the larger regional transportation network, but less effective in reducing congestion and increasing efficiency.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Does not improve regional mobility or facilitate enhanced movement of people, goods, and services by connecting BMB with the regional freeway system.

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Local Access	Connection with access points to existing and planned residential and commercial developments, and public facilities	Allows for the connections to secondary streets and driveways that provide access to existing and future planned neighborhoods, commercial developments, schools, and parks	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Allows for existing access to remain as-is and for future local access to develop as land development takes place adjacent to BMB. Provides limited opportunity for improved access to Reach 11 Recreation Area and for improved access and traffic circulation for PHS.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Allows for existing access to remain as-is and for future local access to develop as land development takes place adjacent to BMB. Provides greater opportunity for improved access to Reach 11 Recreation Area and for improved access and circulation for PHS with the incorporation of the traffic calming.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Allows for existing access to remain as-is and for future local access to develop as land development takes place adjacent to BMB. Provides greater opportunity for improved access to Reach 11 Recreation Area and for improved access and circulation for PHS with the incorporation of the traffic calming.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Allows for existing access to remain as-is but impacts the opportunity for improvements to access to PHS and Reach 11 Recreation Area; requires changes to future local access that must be relocated from its originally planned locations due to changes in the arterial network and changes to the location/size/orientation of developable land parcels	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Allows for existing access to remain as-is and for future local access to develop as land development takes place adjacent to BMB
City of Phoenix General Plan Consistency	The relationship to the City of Phoenix General Plan (2002) as amended including consistency with existing and future land use, zoning, recreation and open space, and existing and future transportation facilities	Compatibility with the planned roadway alignments and their relationship to the existing and future planned land uses	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Compatible with General Plan and provides mobility to future development as planned.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Compatible with General Plan and provides mobility to future development as planned.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Compatible with General Plan and provides mobility to future development as planned.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Compatible with aspects of General Plan by providing access to/from SR 51 but changes to arterial grid potentially require amendments to future land-use plans and zoning.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Incompatible with the City's plan to provide SR 51 access to/from BMB; would create unplanned redistribution of traffic due to lack of SR 51 connectivity and may require changes to land development due to decreased mobility and traffic congestion within the subregion.

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Reach 11 Recreation Master Plan Consistency	The relationship to and potential conflicts with the Reach 11 Recreation Master Plan	Compatibility with the existing and future planned recreation functions of Reach 11	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Limits disturbances to portions of Reach 11 Area set aside for transportation facilities.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Limits disturbances to portions of Reach 11 Area set aside for transportation facilities.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Limits disturbances to portions of Reach 11 Area set aside for transportation facilities.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Impacts due to construction of approximately 3,000 linear feet of roadway in conflict with planned recreation facilities.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Would not impact Reach 11 Area but has no opportunity to improve access to planned recreation areas of Reach 11.
Arizona State Land Department (ASLD) Development Plans Consistency	The relationship to Desert Ridge and Azara (Tatum East-West), and other ASLD future land-use plans and associated permits	Compatibility with the planned roadway alignments and their relationship to the future planned land uses and existing permits	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Alignment is consistent with existing CWA permits issued by USACOE and does not impact mitigation corridors outside of permitted crossings.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Alignment is consistent with existing CWA permits issued by USACOE and does not impact mitigation corridors outside of permitted crossings.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Alignment is consistent with existing CWA permits issued by USACOE and does not impact mitigation corridors outside of permitted crossings.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Does not impact CWA permitted areas but redirects traffic between Ridgeview and Super Block 12 planning areas.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Alignment is consistent with existing CWA permits issued by USACOE and does not impact mitigation corridors outside of permitted crossings.
Section 4(f) Resources	Public park and recreation lands, wildlife and waterfowl refuges, and historic sites protected under Section 4(f) of the Department of Transportation Act	Acres of Section 4(f) property impacted; any impact to a Section 4(f) property other than <i>de minimis</i> is a fatal flaw	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Would only directly impact 0.04 acres of Reach 11 that is not set aside for transportation use. May potentially cause constructive use impacts to Reach 11 Recreation facilities.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Would only directly impact 0.04 acres of Reach 11 that is not set aside for transportation use. May potentially cause constructive use impacts to Reach 11 Recreation facilities. Opportunity for improved access with traffic calming concept may result in positive impacts relative to the intended purpose of the Section 4(f) statute.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Would only directly impact 0.37 acres of Reach 11 that is not set aside for transportation use. May potentially cause constructive use impacts to Reach 11 Recreation facilities. Opportunity for improved access with traffic calming concept may result in positive impacts relative to the intended purpose of the Section 4(f) statute.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Directly impacts 6.54 acres of the Reach 11 Recreation Area that is designated for planned recreation facilities.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Would not directly impact or create constructive use of any Section 4(f) property.

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-1	0	+1

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Traffic Noise	Potential increases in the traffic noise experienced at outdoor-use areas associated with sensitive receivers including residences, parks, and schools	Number of residences, parks, and schools that are potentially impacted	2x	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Approximately 120 existing first and second row residences, PHS, and recreation facilities associated with Reach 11 potentially impacted.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Approximately the same number of potentially impacted existing residences, park, and school locations as Alt 1, but with lower traffic speeds. Lower traffic speeds may be partially offset due to vehicles decelerating and accelerating.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Approximately the same number of potentially impacted existing residences, park, and school locations as Alt 1, but with lower traffic speeds. Lower traffic speeds may be partially offset due to vehicles decelerating and accelerating.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Fewest numbers of residences along alignment compared to Alts 1 and 2. However, due to location of alignment through Reach 11 Recreation Area, noise impacts could impact planned or existing recreation uses.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Traffic volumes would be the least on BMB of any alternative and roadway would not be brought in closer proximity to the residences of Wildcat Ridge or the Reach 11 Recreation Area.
Air Quality	Potential increases in the generation of Clean Air Act criteria pollutants that would result in regional exceedances or interfere with the implementation of transportation control measures, or result in increases of pollutants that do not have NAAQS standards such as mobile source air toxics	Impacts to regional air quality	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Reduction in congestion and reduced distances/trip times to reach SR 51, and overall improvements to the efficiency of the transportation network would reduce vehicle emissions.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Reduction in congestion and reduced distances/trip times to reach SR 51, and overall improvements to the efficiency of the transportation network would reduce vehicle emissions.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Reduction in congestion and reduced distances/trip times to reach SR 51, and overall improvements to the efficiency of the transportation network would reduce vehicle emissions.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Reduction in congestion and reduced distances/trip times to reach SR 51, and overall improvements to the efficiency of the transportation network would reduce vehicle emissions.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Benefits in the form of overall improvements to the transportation network efficiency would not be realized without direct access to and from SR 51, and corresponding increases in vehicle emissions would occur as motorists remain trapped in congestion and are required to travel greater distances along circuitous routes.

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-1	0	+1

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Visual Resources	Potential impacts to the landscape and/or the blocking or alteration of landscape views from the study area	Linear feet of roadway (overall disturbance to natural landscape) and linear feet of elevated roadway (potentially blocking views)	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Noticeable changes to the landscape would occur. Ramps would touch down to ground elevation immediately north of SR 101 and associated drainage channel and roadway would be constructed in a straight alignment to connect with existing segments of BMB with minimum disturbance to landscape. New flyover ramps would partially block views.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Noticeable changes to the landscape would occur. Ramps would touch down to ground elevation immediately north of SR 101 and associated drainage channel and roadway would be constructed in a straight alignment to connect with existing segments of BMB. Increased area would be disturbed if traffic calming is implemented. New flyover ramps would partially block views.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Noticeable changes to the landscape would occur. Ramps would touch down to ground elevation immediately north of SR 101 and associated drainage channel and roadway would be constructed in a straight alignment to connect with existing segments of BMB. Increased area would be disturbed if traffic calming is implemented. New flyover ramps would partially block views but would be constructed at the same elevation as the existing flyover ramps at the SR 51/SR 101L TI.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Noticeable changes to the landscape would occur. More disturbance to landscape would occur compared to Alts 1 and 2 due to greater length of roadway constructed between SR 51 and the 32 nd Street alignment, and views within Reach 11 would be impacted by elevated bridge structure.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Visual resources would not be impacted
Construction and Right-of-Way Costs	The total costs associated with implementation of the alternative including the construction and land acquisition	Compares the costs to the programmed amount	2x	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Can be constructed with the programmed amount.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Can be constructed with the programmed amount.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Can be constructed with the programmed amount.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Would require greater than double the programmed amount.	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Would require no funding to used as this time with this project.

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-1	0	+1

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Geometry	Relationships to the other existing and planned roadway alignments at termini and major arterial intersections	Compatibility with the existing and future planned roadway alignments that results in minimally skewed intersections and/or less complex roadway geometry	2x	Base score: +1 Factor: 2x Score: +1 x 2 = +2 Provides direct ramps and meets intersecting roads and driveways at or near perpendicular.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Provides direct ramps and meets intersecting roads and driveways at or near perpendicular. Traffic calming, if implemented, could introduce slightly more complex roadway geometry.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Meets intersecting roads and driveways at or near perpendicular. Ramp design and traffic calming, if implemented, introduces slightly more complex roadway geometry.	Base score: -1 Factor: 2x Score: -1 x 2 = -2 Provides direct ramps and meets Deer Valley at or near perpendicular. Does not align with existing BMB segment north of Deer Valley Road.	Base score: 0 Factor: 2x Score: 0 x 2 = 0 Maintains existing conditions
Traffic operations of existing ramps of the SR 51/SR 101L TI	Relationship to the traffic conditions on the existing ramps	Potential conflicts or benefits that would worsen or alleviate traffic slowing or backups on the TI ramps	1x	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Traffic modeling demonstrates that no disruption to the NB SR 51 to WB SR 101L ramp traffic would occur as the result of NB BMB traffic queuing.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Traffic modeling demonstrates that no disruption to the NB SR 51 to WB SR 101L ramp traffic would occur as the result of NB BMB traffic queuing.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Traffic modeling demonstrates that no disruption to the NB SR 51 to WB SR 101L ramp traffic would occur as the result of NB BMB traffic queuing.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Traffic modeling demonstrates that no disruption to the NB SR 51 to WB SR 101L ramp traffic would occur as the result of NB BMB traffic queuing.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Would not provide potential relief of traffic on the NB SR 51 to WB SR 101L or NB SR 51 to EB SR 101L ramps by creating an alternate route other than Cave Creek Road or Tatum Boulevard to access the study area.
Drainage (outside of the Reach 11 area)	The natural and human-made features within the study area that convey stormwater including flood-control systems that retain/detain stormwater	Number of crossings that must be bridged, culverted, or diverted to maintain flows, and impacts to existing and planned stormwater retention/detention facilities	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Alignment would cross 3 drainages; 1 of the 3 would require a new structure to convey flows.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Alignment would cross 3 drainages; 1 of the 3 would require a new structure to convey flows.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Alignment would cross 3 drainages; 1 of the 3 would require a new structure to convey flows.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Alignment would cross approximately 2 washes that would require new structures to convey flows, and would also potentially require the expansion of 2 or more drainage structures along Deer Valley Rd.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No impacted washes or stormwater facilities

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Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

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2x	1x

EVALUATION MATRIX - SR 51 TO DEER VALLEY ROAD

Criteria	Brief Description	Performance Measures	Importance Factor	ALT 1 (original 1999 AECOM concept)	ALT 1a (original concept with 30-40 mph northbound and 45 mph southbound radii and considers traffic calming)	ALT 2 (resembles a half-diamond traffic interchange and considers traffic calming)	ALT 3 (west of Pinnacle High School and incorporating 32 nd Street alignment)	ALT 4 (no SR 51 ramp connections to BMB)
Drainage (within the Reach 11 Area)	The impoundment (flood pool) created by the dike protecting Reach 11 of the CAP Canal	The quantity of fill and excavated material that must be balanced to maintain the capacity of the flood pool	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Approximately equal amount of fill required/ flood pool capacity considerations compared to Alts 1a, 2, and 2a.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Approximately equal amount of fill required/ flood pool capacity considerations compared to Alts 1, 2, and 2a.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Approximately equal amount of fill required/ flood pool capacity considerations compared to Alts 1, 1a, and 2.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Greatest potential for issues when evaluating flood pool/capacity considerations due to length of roadway segment within Reach 11. Would parallel dike protecting CAP which CAWCD has indicated would be a lateral encroachment.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No excavation or fill would be placed in the Reach 11 flood pool.
Utility Conflicts	Potential conflicts between existing and planned utilities	The number of conflicts that require utilities to be relocated	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Relocations or improvements to some existing utilities would likely be required.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Relocations or improvements to some existing utilities would likely be required.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Relocations or improvements to some existing utilities would likely be required.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Relocations or improvements to some existing utilities would likely be required.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No potential to impact existing or planned utilities
Opportunity for Additional Parking at PHS	Potential for the compatibility with and access to proposed additional parking at PHS	The proposed action allows for potential co-development of additional parking at PHS and access to/from BMB is feasible	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Would not preclude the addition of parking at PHS but would also not provide access opportunities to future parking from BMB	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Would not preclude the addition of parking at PHS and would provide access opportunity to/from BMB via traffic calming.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Would not preclude the addition of parking at PHS and would provide access opportunity to/from BMB via traffic calming.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Would not be in direct conflict with the location of future parking at PHS, but would eliminate any potential for access to/from BMB	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Would not preclude the addition of parking at PHS but would also not provide access opportunities to future parking from BMB

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

More Important	Important
2x	1x

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Water Resources (floodplains and jurisdictional Waters of the US)	Areas that are designated by floodplain authorities as 100-year floodplains and drainages or water bodies that are under the jurisdiction of the US Army Corps of Engineers and regulated under Section 404 of the Clean Water Act	Encroachment into floodplains; number of jurisdictional washes crossed and/or area of existing permitted mitigation corridors impacted	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Compatible with existing CWA permits and impacts 3 potentially jurisdictional washes of which one is designated as a mitigation corridor upstream but this designation has not been assigned within this alignment.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Compatible with existing CWA permits and impacts 3 potentially jurisdictional washes of which one is designated as a mitigation corridor upstream but this designation has not been assigned within this alignment.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Compatible with existing CWA permits and impacts 1 potentially jurisdictional wash which is designated as a mitigation corridor upstream but this designation has not been assigned within this alignment.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Compatible with existing CWA permits and impacts 3 potentially jurisdictional washes of which one is a designated mitigation corridor. Mitigation corridors, per their existing CWA permit are identified to be protected in perpetuity.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Existing conditions maintained; would not impact water resources
Biological Resources	Habitat and its constituent floral and faunal components including species regulated under the Endangered Species Act, Migratory Bird Treaty Act, Arizona Native Plant Law, or as Wildlife of Special Concern in Arizona	Acres of undisturbed land impacted	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 A similar number of acres would be disturbed with the adoption of Alts 1, 1a, 2, and 2a.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 A similar number of acres would be disturbed with the adoption of Alts 1, 1a, 2, and 2a.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 A similar number of acres would be disturbed with the adoption of Alts 1, 1a, 2, and 2a.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Impacts the most acres of existing desert due to length of alternative.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No habitat would be impacted
Cultural Resources	Archaeological sites, buildings, or objects that are, or may be eligible for, listing on the Arizona Register of Historic Places (ARHP) and/or the National Register of Historic Places (NRHP)	Number of potentially eligible or eligible for the ARHP/NRHP impacted	1x	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No known cultural resources would be impacted.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No known cultural resources would be impacted.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No known cultural resources would be impacted.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No known cultural resources would be impacted.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 No known cultural resources would be impacted.
Hazardous Materials	Known or potential sites that encompass the generation, storage, or contamination from substances regulated as hazardous by the Arizona Department of Environmental Quality and/or the Environmental Protection Agency	Number of sites impacted	1x	Base score: 0 Factor: 1x Score: 0 x 1 = 0 No known hazardous material sites would be displaced.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 No known hazardous material sites would be displaced.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 No known hazardous material sites would be displaced.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 No known hazardous material sites would be displaced.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 No known hazardous material sites would be displaced.

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

More Important	Important
2x	1x

EVALUATION MATRIX - SR 51 TO DEER VALLEY ROAD

Criteria	Brief Description	Performance Measures	Importance Factor	ALT 1 (original 1999 AECOM concept)	ALT 1a (original concept with 30-40 mph northbound and 45 mph southbound radii and considers traffic calming)	ALT 2 (resembles a half-diamond traffic interchange and considers traffic calming)	ALT 3 (west of Pinnacle High School and incorporating 32 nd Street alignment)	ALT 4 (no SR 51 ramp connections to BMB)
Neighborhood Continuity and Community Cohesion	The unimpeded movement of people within neighborhoods and their ability to reach important community locations such as schools, parks, and civic centers that are important to maintaining a healthy and functional society	Provides transportation connections and allows for efficient travel between neighborhoods and public spaces/facilities that are important to the community	1x	<p>Base score: +1 Factor: 1x Score: +1 x 1 = +1</p> <p>Connection with SR 51 would increase traffic on BMB but the resulting redistribution of traffic on the arterial grid would improve mobility and efficiency of the transportation system within the subregion. The movement of people would benefit from decreased congestion and better route options to move between neighborhoods and locations important to the community.</p>	<p>Base score: +1 Factor: 1x Score: +1 x 1 = +1</p> <p>Connection with SR 51 would increase traffic on BMB but the resulting redistribution of traffic on the arterial grid would improve mobility and efficiency of the transportation system within the subregion. The movement of people would benefit from decreased congestion and better route options to move between neighborhoods and locations important to the community.</p>	<p>Base score: +1 Factor: 1x Score: +1 x 1 = +1</p> <p>Connection with SR 51 would increase traffic on BMB but the resulting redistribution of traffic on the arterial grid would improve mobility and efficiency of the transportation system within the subregion. The movement of people would benefit from decreased congestion and better route options to move between neighborhoods and locations important to the community.</p>	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Would also provide improvements in mobility and efficiency of the transportation system, but would create more circuitous travel for motorists and would introduce less efficiency into the transportation network than Alternatives 1, 1a, 2, and 2a.</p>	<p>Base score: -1 Factor: 1x Score: -1 x 1 = -1</p> <p>Would have the least benefit to mobility and efficiency of the transportation system resulting in more pockets of congestion that would be barriers requiring traveling greater distances on more circuitous routes for members of the community to travel between neighborhoods and reach destinations important to the community.</p>
Civil Rights: Title VI and Environmental Justice	The potential for disproportionate impacts to protected populations including racial minorities, elderly, female head-of-household, and disabled peoples	Any instance of disproportionate impact due to alignment affecting protected populations versus adjacent non-protected populations	1x	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Members of protected populations are not anticipated to be disproportionately impacted by this alternative.</p>	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Members of protected populations are not anticipated to be disproportionately impacted by this alternative.</p>	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Members of protected populations are not anticipated to be disproportionately impacted by this alternative.</p>	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Members of protected populations are not anticipated to be disproportionately impacted by this alternative.</p>	<p>Base score: 0 Factor: 1x Score: 0 x 1 = 0</p> <p>Members of protected populations are not anticipated to be disproportionately impacted by this alternative.</p>

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

More Important	Important
2x	1x

EVALUATION MATRIX - SR 51 TO DEER VALLEY ROAD

Criteria	Brief Description	Performance Measures	Importance Factor	ALT 1 (original 1999 AECOM concept)	ALT 1a (original concept with 30-40 mph northbound and 45 mph southbound radii and considers traffic calming)	ALT 2 (resembles a half-diamond traffic interchange and considers traffic calming)	ALT 3 (west of Pinnacle High School and incorporating 32 nd Street alignment)	ALT 4 (no SR 51 ramp connections to BMB)
Connectivity to existing or future employment centers	The transportation connections between areas of residential development and areas of employment located within and beyond the local subregion	Compatibility with the existing and planned transportation network and allows access to employment nodes such as downtown Phoenix	1x	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Provides direct access to/from SR 51, the freeway connecting commuters with employment centers such as downtown Phoenix.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Provides direct access to/from SR 51, the freeway connecting commuters with employment centers such as downtown Phoenix.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Provides direct access to/from SR 51, the freeway connecting commuters with employment centers such as downtown Phoenix.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Creates access to/from SR 51 and employment centers to the south, but requires motorists to travel a less direct and efficient route due to changes in arterial grid network.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Does not provide BMB direct access to/from SR 51, the freeway connecting commuters with employment centers such as downtown Phoenix.
Public Transit	Public transit facilities and/or accommodation/co-development of transit facilities and public roads	Compatibility with the planned park-and-ride facility to be constructed on Deer Valley Road between 40 th Street and Tatum Boulevard and the planned express/rapid transit bus lines between the future park-and-ride and downtown Phoenix	1x	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Connects SR 51 with Deer Valley Road and would allow express/rapid transit buses to reach the future Deer Valley Road park-and-ride without requiring routes utilizing SR 101L and either Cave Creek Road or Tatum Boulevard.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Connects SR 51 with Deer Valley Road and would allow express/rapid transit buses to reach the future Deer Valley Road park-and-ride without requiring routes utilizing SR 101L and either Cave Creek Road or Tatum Boulevard.	Base score: 0 Factor: 1x Score: 0 x 1 = 0 Connects SR 51 with Deer Valley Road and would allow express/rapid transit buses to reach the future Deer Valley Road park-and-ride without requiring routes utilizing SR 101L and either Cave Creek Road or Tatum Boulevard.	Base score: +1 Factor: 1x Score: +1 x 1 = +1 Connects SR 51 with Deer Valley Road and would allow express/rapid transit buses to reach the future Deer Valley Road park-and-ride without requiring routes utilizing SR 101L and either Cave Creek Road or Tatum Boulevard.	Base score: -1 Factor: 1x Score: -1 x 1 = -1 Would not connect SR 51 with Deer Valley Road and would require express/rapid transit buses to reach the future Deer Valley Road park-and-ride by indirect routes utilizing SR 101L and either Cave Creek Road or Tatum Boulevard.
TOTAL SCORE				+19	+26	+25	-18	-2
Recommendations:				Considered but eliminated from further study	Considered for further study	Considered for further study	Considered but eliminated from further study	Considered for further study

LEGEND:

Relative Performance to Evaluation Criteria

Poor	Neutral	Good
-1	0	+1

Weighting Factor for Each Criteria

More Important	Important
2x	1x