

**St. Francis - St. Michaels Interchange Alternatives — Detailed Evaluation Matrix**

Detailed Alternatives	Comparative Evaluation							Benefits / Disadvantages
	Physical & Geometric Deficiencies	Traffic Operations	Safety Considerations	Multi-Modal Facilities	Environmental Considerations	Constructability & Maintenance of Traffic	Project Cost	
No-Build Alternative	<ul style="list-style-type: none"> <li>→ Does not address any physical/geometric deficiencies</li> <li>→ Existing bridge age, condition, and diminished load carrying capacity poses long term concerns</li> </ul>	<ul style="list-style-type: none"> <li>→ Intersection delay expected to increase over time</li> <li>→ No improvement to existing deficiencies in queue storage at turning lanes</li> </ul>	<ul style="list-style-type: none"> <li>→ 35 predicted annual crash rate</li> <li>→ No improvement at crash hot spots</li> </ul>	<ul style="list-style-type: none"> <li>→ No improvements made to multi-modal facilities</li> <li>→ Lack of a north-south and east-west connectivity for pedestrians and bicyclists remains</li> </ul>	<ul style="list-style-type: none"> <li>→ No natural, cultural or community impacts</li> <li>→ No Visual Impacts</li> <li>→ Noise levels expected to increase over time with higher traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>→ No construction required</li> <li>→ No impact to traffic</li> </ul>	\$0	<ul style="list-style-type: none"> <li>- Does not meet established purpose &amp; need</li> </ul>
Alternative 1: Signalized Intersection	<ul style="list-style-type: none"> <li>✓ Merge and weave deficiencies corrected</li> <li>✓ Existing bridge removed, long term concerns no longer at issue</li> <li>✓ Paving and drainage improvements included</li> </ul> <p><u>Construction Impacts:</u></p> <ul style="list-style-type: none"> <li>✗ Extensive utility relocations</li> <li>✗ Relocation of drainage pond &amp; outlet structure required</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved traffic operations resulting from correction of all merge &amp; weave deficiencies</li> <li>✓ Acceptable LOS provided at all outlying intersections</li> <li>✓ Less overall Intersection delay Vs. No Build</li> <li>✓ Improved Queueing Vs. No Build</li> <li>* Requires wide/multi-lane intersection to provide acceptable LOS at St. Francis/St. Michaels</li> </ul>	<ul style="list-style-type: none"> <li>✗ Highest predicted Annual Crash Rate among Alternatives. 34% Higher than No Build</li> <li>✗ Highest number of Predicted Fatal / Injury crashes</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved pedestrian sidewalk areas provided, connectivity established along St. Francis and St. Michaels</li> <li>✓ Buffered bicycle lanes provided on St. Michaels</li> <li>✓ Least number of east-west Ped/Bike crossings on St. Michaels Vs. Other alternatives</li> <li>✗ Peds/Bikes must cross a very wide intersection and contend with higher traffic volumes</li> <li>✓ Improved Ped/Bike access at cross street intersections on St. Francis and St. Michaels</li> <li>✓ Additional opportunities to provide enhanced Ped/Bike facilities in areas of abandoned ramps</li> </ul>	<ul style="list-style-type: none"> <li>✓ No impact to Natural, Cultural resources</li> <li>✓ No Community or Economic impacts</li> <li>* Visual Impacts - Lower mainline on St. Francis would change existing east/west viewshed from St. Michaels. Open/reclaimed areas provide opportunity for aesthetic treatments</li> <li>* Noise impacts - Noise levels expected to increase over time with higher traffic volumes. Noise mitigation measures not currently anticipated</li> </ul>	<ul style="list-style-type: none"> <li>✓ Maintains traffic on existing St. Francis bridge during early phases of construction, no temporary detours/traffic signals required</li> <li>✓ Existing SB on/off ramps remain functional as needed, then removed</li> <li>✗ NB on-ramps closed during majority of project, alternate route from St. Michaels required</li> <li>✓ Less impact to traffic Vs. Diamond and Ramp Reconfiguration Alternatives</li> </ul>	\$ 32,885,200	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+</li> Addresses project needs <li>+</li> Improved traffic operation <li>+</li> Improved bicycle / pedestrian access <li>+</li> Less traffic impacts during construction Vs. Alternatives 2 &amp; 3 </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>-</li> Extensive utility impacts <li>-</li> Relocation of drainage pond &amp; outlet structure <li>-</li> Highest predicted crash rates </ul>
Alternative 2: Diamond Interchange	<ul style="list-style-type: none"> <li>✓ Merge deficiencies corrected</li> <li>✓ Weave condition on St. Michaels EB to NB turn approaching Galisteo corrected</li> <li>✓ New bridge mitigates concerns with existing structure</li> <li>✗ Short weave distance NB to WB approaching San Mateo/ requires wider San Mateo Intersection</li> <li>✓ Paving and drainage improvements included</li> </ul> <p><u>Construction Impacts:</u></p> <ul style="list-style-type: none"> <li>✗ Utility relocations</li> <li>✗ Minor modifications to drainage pond &amp; outlet structure needed</li> <li>✗ Potential impacts to driveway access at W. San Mateo</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved traffic operations resulting from correction of merge &amp; some weave deficiencies</li> <li>✓ Acceptable LOS provided at all outlying intersections</li> <li>* Similar overall Intersection delay Vs. No Build</li> <li>✓ Improved Queueing Vs. No Build</li> </ul>	<ul style="list-style-type: none"> <li>✓ Predicted Annual Crash Rate slightly lower than the No Build</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved pedestrian sidewalk areas provided, connectivity established along St. Francis and St. Michaels</li> <li>✓ Buffered bicycle lanes provided on St. Michaels</li> <li>✗ Requires more east-west Ped/Bike crossings on St. Michaels Vs. Alternatives 1 and 3</li> <li>✓ Improved Ped/Bike access at cross street intersections on St. Francis and St. Michaels</li> </ul>	<ul style="list-style-type: none"> <li>✓ No impact to Natural, Cultural resources</li> <li>✓ No Community or Economic impacts</li> <li>* Visual Impacts - Little change to existing viewshed. New bridge provides opportunity for aesthetic treatments</li> <li>* Noise impacts - Noise levels expected to increase over time with higher traffic volumes. Noise mitigation measures not currently anticipated</li> </ul>	<ul style="list-style-type: none"> <li>✗ St. Francis traffic moved to temporary detours during early phases of construction, temporary signals/intersections on St. Michaels significantly impact traffic</li> <li>✗ NB on-ramps closed during construction of NB detour, alternate route from St. Michaels required</li> <li>✗ Greater impact to traffic Vs. Other Alternatives</li> </ul>	\$ 45,928,700	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+</li> Addresses project needs <li>+</li> Improved traffic operations <li>+</li> Improved bicycle / pedestrian access <li>+</li> Reduced utility impacts </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>-</li> Less desirable placement of NB on-ramp Vs. Alternative 3 <li>-</li> Minor modifications to drainage pond &amp; outlet structure <li>-</li> Greater traffic impacts during construction Vs. Other Alternatives </ul>

Symbols Legend	
→	No Build Base Condition
✓	Positive Improvement
✗	Negative Condition or Impact
*	Other Notable Factor
+	Overall Benefit
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Detailed Alternatives	Comparative Evaluation							Benefits / Disadvantages	
	Physical & Geometric Deficiencies	Traffic Operations	Safety Considerations	Multi-Modal Facilities	Environmental Considerations	Constructability & Maintenance of Traffic	Project Cost		
Alternative 3: Ramp Reconfiguration	<ul style="list-style-type: none"> <li>✓ Merge deficiencies corrected</li> <li>✓ Weave condition on St. Michaels approaching Galisteo and on St. Francis approaching San Mateo corrected</li> <li>✓ Wider bridge required, new bridge mitigates concerns with existing structure</li> <li>✓ Paving and drainage improvements included</li> </ul> <p><u>Construction Impacts:</u></p> <ul style="list-style-type: none"> <li>✗ Utility relocations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved traffic operations resulting from correction of all merge &amp; weave deficiencies</li> <li>✓ Acceptable LOS provided at all outlying intersections</li> <li>✓ Less overall Intersection delay Vs. No Build</li> <li>✓ Improved Queueing Vs. No Build</li> </ul>	<ul style="list-style-type: none"> <li>* Predicted Annual Crash Rate similar to the No Build</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved pedestrian sidewalk areas provided, connectivity established along St. Francis and St. Michaels</li> <li>✓ Buffered bicycle lanes provided on St. Michaels</li> <li>✓ Requires fewest east-west Ped/Bike crossings on St. Michaels among Interchange Alternatives</li> <li>✓ Improved Ped/Bike access at cross street intersections on St. Francis and St. Michaels</li> <li>✓ Additional opportunities to provide enhanced Ped/Bike facilities along abandoned NB on-ramp alignment</li> </ul>	<ul style="list-style-type: none"> <li>✓ No impact to Natural, Cultural resources</li> <li>✓ No Community or Economic impacts</li> <li>* Visual Impacts - Little change to existing viewshed. New bridge and open/reclaimed areas provide opportunities for aesthetic treatments</li> <li>* Noise impacts - Noise levels expected to increase over time with higher traffic volumes. Noise mitigation measures not currently anticipated</li> </ul>	<ul style="list-style-type: none"> <li>✓ Phased bridge construction allows staging of detours, significantly reduces traffic impacts versus Alternative 2</li> <li>✗ NB on-ramps closed during construction of NB detour, alternate route from St. Michaels required</li> <li>✗ Greater impact to traffic Vs. Signalized Intersection and Split Bridge Alternatives</li> </ul>	\$ 47,865,600	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+ Addresses project needs</li> <li>+ Improved traffic operations</li> <li>+ Improved bicycle / pedestrian access</li> <li>+ Reduced utility impacts</li> <li>+ Placement of NB on-ramp improves function Vs. Alternatives 2 &amp; 4</li> <li>+ Less extensive impacts to traffic Vs. Alternative 2</li> </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>- Greater traffic impacts during construction Vs. Alternatives 1 &amp; 4.</li> </ul>	
Alternative 4: Split Bridge - NB/SB Left-On Access	<ul style="list-style-type: none"> <li>✓ Merge deficiencies corrected</li> <li>✓ Weave condition on St. Michaels EB to NB turn approaching Galisteo corrected</li> <li>✓ Two bridges required, new bridges mitigate concerns with existing structure</li> <li>✗ Short weave distance NB to EB approaching San Mateo requires / wider San Mateo Intersection</li> <li>✓ Paving and drainage improvements included</li> </ul> <p><u>Construction Impacts:</u></p> <ul style="list-style-type: none"> <li>✗ Extensive utility relocations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved traffic operations resulting from correction of merge &amp; some weave deficiencies</li> <li>✓ Acceptable LOS provided at all outlying intersections</li> <li>✓ Less overall Intersection delay Vs. No Build</li> <li>✓ Improved Queueing Vs. No Build</li> </ul>	<ul style="list-style-type: none"> <li>✗ Predicted Annual Crash Rate slightly higher than the No Build</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved pedestrian sidewalk areas provided, connectivity established along St. Francis and St. Michaels</li> <li>✓ Buffered bicycle lanes provided on St. Michaels</li> <li>✗ Requires more east-west Ped/Bike crossings on St. Michaels Vs. Alternatives 1 and 3</li> <li>✓ Improved Ped/Bike access at cross street intersections on St. Francis and St. Michaels</li> <li>✓ Additional opportunities to provide enhanced Ped/Bike facilities along abandoned NB and SB on-ramp alignments</li> </ul>	<ul style="list-style-type: none"> <li>✓ No impact to Natural, Cultural resources</li> <li>✓ No Community or Economic impacts</li> <li>* Visual Impacts - Moderate change to existing viewshed with wider footprint along portion of St. Francis. New bridges and open/reclaimed areas provide opportunities for aesthetic treatments</li> <li>* Noise impacts - Noise levels expected to increase over time with higher traffic volumes. Noise mitigation measures not currently anticipated</li> </ul>	<ul style="list-style-type: none"> <li>✓ Maintains traffic on St. Francis throughout construction, no temporary detours/traffic signals required</li> <li>✓ Existing SB on/off ramps remain functional as needed, then removed</li> <li>✗ NB on-ramps closed during majority of project, alternate route from St. Michaels required</li> <li>✓ Less impact to traffic Vs. Other Alternatives</li> </ul>	\$ 49,683,000	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+ Addresses project needs</li> <li>+ Improved traffic operations</li> <li>+ Improved bicycle / pedestrian access</li> <li>+ Greatly reduces</li> <li>+ Impacts to traffic during construction</li> </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>- Extensive utility impacts</li> <li>- Unconventional left-on access at on-ramps</li> <li>- Less desirable placement of NB on-ramp Vs. Alternative 3</li> </ul>	
Four Lane St. Michaels Option	<ul style="list-style-type: none"> <li>■ Interchange Alternatives 2, 3 &amp; 4</li> </ul>	<ul style="list-style-type: none"> <li>✓ Provides acceptable LOS on St. Michaels</li> <li>✓ Provides similar delay &amp; Queueing benefits</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternatives 2, 3 &amp; 4</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternatives 2, 3 &amp; 4</li> <li>✓ Slightly shorter north / south pedestrian crossing distance at ramp intersections</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternatives 2, 3 &amp; 4</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternatives 2, 3 &amp; 4</li> </ul>	<ul style="list-style-type: none"> <li>Alt. 2: \$ 42,040,600</li> <li>Alt. 3: \$ 43,424,500</li> <li>Alt. 4: \$ 45,493,400</li> </ul>	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+ Supports regional goals &amp; future planning efforts</li> <li>+ Provides similar benefits as under the base alternatives</li> </ul>	
	<ul style="list-style-type: none"> <li>■ Signalized Intersection: Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>✗ Increased delay at St. Francis Intersection Vs. 6- Lane</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternative 1</li> <li>✓ Reduced north / south pedestrian crossing distance at intersections</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>■ See Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>Alt. 1: \$ 29,610,900</li> </ul>	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+ Reduced North / South pedestrian crossing distance at intersection</li> </ul> <p><b>Disadvantages:</b></p> <ul style="list-style-type: none"> <li>- Increased delay at intersection</li> </ul>	
Optional Intersection Configuration	<ul style="list-style-type: none"> <li>■ Siringo Rd. &amp; St. Francis</li> </ul>	<ul style="list-style-type: none"> <li>✓ Better accommodation of NB to WB movement</li> <li>✓ Improved Queueing</li> <li>✓ Acceptable LOS</li> </ul>	<ul style="list-style-type: none"> <li>✓ Improved safety provided by Protected NB dual-left turn movement</li> </ul>	No Change	No Change	No Change	Included	<p><b>Benefits:</b></p> <ul style="list-style-type: none"> <li>+ Improved NB to WB movement</li> <li>+ Improved Queueing</li> </ul>	
	<ul style="list-style-type: none"> <li>■ W. San Mateo &amp; St. Francis</li> </ul>	<ul style="list-style-type: none"> <li>✗ No operational benefit</li> <li>✗ Additional ROW required</li> </ul>	<b>Eliminated from Further Consideration</b>						
	<ul style="list-style-type: none"> <li>■ SB off-ramp &amp; St. Michaels</li> </ul>	<ul style="list-style-type: none"> <li>✗ No operational benefit</li> </ul>							

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