

**APPENDIX B: ALTERNATIVES ANALYSES EVALUATION MATRICES**

**Appendix B: S1-A1 Alternatives (LAUS to I-605/I-10 – Subsection 1)**

Evaluation Measure			Alternatives									
Category	Criteria	Measurement	I-10 via North above-grade approach (A1.1) (Carried Forward)	I-10 via North below-grade approach (A1.2.1) (Carried Forward)	I-10 via North below-grade approach (A1.2.2) (Carried Forward)	I-10 via Mission Road above-grade approach (A1.3) (Carried Forward)	I-10 via Mission Road below-grade approach (A1.4) (Carried Forward)	I-10 via I-5/First Street above-grade approach (A1.5) (Carried Forward)	I-10 via I-5/First Street below-grade approach (A1.6) (Carried Forward)	I-10 via I-5/Sixth Street above-grade approach (A1.7) (Carried Forward)	I-10 via I-5/Sixth Street below-grade approach (A1.8) (Carried Forward)	
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	9:40	9:38	9:38	10:58	10:58	11:33	11:33	14:09	14:09	
		Route length (within option) - Miles	14.1	14.6	14.3	14.8	14.8	15.0	15.0	15.4	15.3	
	Maximize connectivity and accessibility	Intermodal connections	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus. Potential connection at El Monte Transit Center with other local bus routes.
			Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	1.31	1.81	1.69	1.22	1.67	1.16	1.78	1.20

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Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Generally compatible with the transportation intent of the General Plans for the City of Los Angeles, Alhambra, San Gabriel, El Monte, Rosemead, S. El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  Conflicts with planned land uses outlined in the Los Angeles State Historic Park General Plan (during construction).  Conflicts with Caltrans planned improvements along I-10 including HOT Demonstration Lanes from I-605 to I-710, direct HOV connectors; I-10/I-605 interchange improvements; and I-10 HOV Lanes from I-605 to Citrus Ave.	Generally compatible with the transportation intent of the General Plans for the City of Los Angeles, Alhambra, San Gabriel, El Monte, Rosemead, S. El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  No conflicts with the Los Angeles State Historic Park General Plan since the alignment is located in a tunnel through this area.  Conflicts with Caltrans planned improvements along I-10 including HOT Demonstration Lanes from I-605 to I-710, direct HOV connectors; I-10/I-605 interchange improvements; and I-10 HOV Lanes from I-605 to Citrus Ave.	Generally compatible with the transportation intent of the General Plans for the City of Los Angeles, Alhambra, San Gabriel, El Monte, Rosemead, S. El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  No conflicts with the Los Angeles State Historic Park General Plan since the alignment is located in a tunnel through this area.  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El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  Conflicts with Caltrans planned improvements along I-10 including HOT Demonstration Lanes from I-605 to I-710, direct HOV connectors; I-10/I-605 interchange improvements; and I-10 HOV Lanes from I-605 to Citrus Ave.	Generally compatible with the transportation intent of the General Plans for the City of Los Angeles, Alhambra, San Gabriel, El Monte, Rosemead, S. El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  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El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  Conflicts with Caltrans planned improvements along I-10 including HOT Demonstration Lanes from I-605 to I-710, direct HOV connectors; I-10/I-605 interchange improvements; and I-10 HOV Lanes from I-605 to Citrus Ave.	Generally compatible with the transportation intent of the General Plans for the City of Los Angeles, Alhambra, San Gabriel, El Monte, Rosemead, S. El Monte, and Monterey Park.  Compatible with the Goods Movement Action Plan. Also consistent with the revitalization goals for the Los Angeles River as a regional recreational destination as outlined in the Los Angeles River Revitalization Plan.  Conflicts with Caltrans planned improvements along I-10 including HOT Demonstration Lanes from I-605 to I-710, direct HOV connectors; I-10/I-605 interchange improvements; and I-10 HOV Lanes from I-605 to Citrus Ave.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.

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Constructability	Constructability/Complexity	Construction complexity	Aerial crossing of Los Angeles River. Aerial guideway construction along Main Street, Valley Blvd, and I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Tunnel crossing of Los Angeles River. Tunnel portal in urban area. Aerial guideway construction along I-10. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Tunnel crossing of Los Angeles River. Tunnel portal in urban area. Aerial guideway construction along I-10. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Curved aerial crossing of Los Angeles River at First Street. Aerial guideway construction along Mission Road, Valley Blvd, and I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Curved aerial crossing of Los Angeles River at First Street. Tunnel portals in urban area. Aerial guideway construction along Valley Blvd and I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Skewed aerial crossing of Los Angeles River at First Street. Aerial guideway construction along I-5 and I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Skewed aerial crossing of Los Angeles River at First Street. Tunnel portals in urban area. Aerial guideway construction along I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Curved aerial crossing of Los Angeles River near Seventh Street. Aerial guideway construction along I-5 and I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	Tunnel crossing of Los Angeles River near Seventh Street. Tunnel through I-5/US 101 interchange complex. Tunnel along I-5. Tunnel portals in urban area. Aerial guideway construction along I-10. Aerial crossing of I-710. Skewed aerial crossings of I-10 in El Monte. Aerial crossing of San Gabriel River and I-605.	
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Aerial crossing of rail lines on both banks of Los Angeles River. Aerial crossing of UPRR along Valley Blvd. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Tunnel portal adjacent to UPRR Alhambra subdivision on Valley Blvd. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Tunnel portal adjacent to UPRR Alhambra subdivision on Valley Blvd. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Aerial crossing of rail lines on both banks of Los Angeles River. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Tunnel portal adjacent to UPRR Alhambra subdivision on Valley Blvd. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Aerial crossing of rail lines on both banks of Los Angeles River. Conflict with existing Metrolink line along I-10 and in median of I-10. Aerial crossing of UPRR in El Monte.	Tunnel portal adjacent to Metrolink line along I-10. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	Aerial crossing of rail lines on both banks of Los Angeles River. Conflict with existing Metrolink line along I-10 and in median of I-10. Aerial crossing of UPRR in El Monte.	Tunnel portal adjacent to Metrolink line along I-10. Conflict with existing Metrolink line in median of I-10. Aerial crossing of UPRR in El Monte.	
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>b</sup>	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along San Gabriel River and in Rosemead.	Major power transmission lines along San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.	Major power transmission lines along Los Angeles River and San Gabriel River and in Rosemead.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>c</sup>	9	9	9	13	13	13	13	13	13	
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>d</sup>	33	31	31	34	33	49	31	48	44	
		Acres of commercial	12	6	6	7	7	8	5	6	5	
		Acres of industrial	43	35	29	43	43	18	18	15	9	
		Acres of other (public ROW, open space, schools, etc.)	194	174	179	204	181	205	183	160	200	

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Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	6 new bridge crossings 1,495 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.	5 new bridge crossings 1,287 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.	5 new bridge crossings 1,287 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.	6 new bridge crossings 1,500 linear feet of waterways  The LAUS design approaches would be at-grade above the Los Angeles River floodplain. Other waterway crossings include Rio Hondo River and San Gabriel River.	6 new bridge crossings 1,500 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.	6 new bridge crossings 1,851 linear feet of waterways  The LAUS design approaches would be elevated above the Los Angeles River floodplain. Other waterway crossings include Rio Hondo River and San Gabriel River.	6 new bridge crossings 1,851 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.	7 new bridge crossings 2,648 linear feet of waterways  The LAUS design approaches would be at-grade or elevated above the Los Angeles River floodplain. Other waterway crossings include Rio Hondo River and San Gabriel River.	5 new bridge crossings 1,287 linear feet of waterways  The LAUS design approaches would either be located below the flood level of Los Angeles River or elevated above the Los Angeles River floodplain. Flooding risks would be avoided by flood-proofing techniques designed to protect ventilation and portal structures. Other waterway crossings include Rio Hondo River and San Gabriel River.
		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres)	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 6 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 6 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.	T/E: 0 acres Wetlands: 7 acres HCPs: 0 acres NWR: 0 acres  There are no sensitive habitat areas within the LAUS area.
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>e</sup>	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Aerial structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Tunnel structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Tunnel structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Aerial structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Tunnel structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Aerial structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Tunnel structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Aerial structure avoids direct impact to historic bridges.	Historic bridges in the vicinity of the LAUS design connections include: Main Street Bridge, First Street, and Sixth Street. Tunnel structure avoids direct impact to historic bridges.
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>f</sup>	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.

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	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	7 In proximity to Los Angeles State Historic Park.	3 In proximity to Los Angeles State Historic Park. Tunnel structure would avoid direct impact to park.	3 In proximity to Los Angeles State Historic Park. Tunnel structure would avoid direct impact to park.	3	3	6	4	9	5
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources	No agricultural resources
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>9</sup>	Number of churches, hospitals, schools, libraries and park properties within 500 feet of the centerline of the proposed ROW	19 potential sensitive receptor sites.	15 potential sensitive receptor sites.	15 potential sensitive receptor sites.	19 potential sensitive receptor sites.	20 potential sensitive receptor sites.	28 potential sensitive receptor sites. Results in the second highest number of potential operational noise and vibration impacts on sensitive receptors.	16 potential sensitive receptor sites.	30 potential sensitive receptor sites. Results in the highest number of potential operational noise and vibration impacts on sensitive receptors.	23 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas.
	Change in Visual/Scenic Resources <sup>h</sup>	High, medium, and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW	High level of visual change. Aerial structure highly visible from adjacent residential areas.	Medium level of visual change, except where aerial structure extends through residential areas.	Medium level of visual change, except where aerial structure extends through residential areas.	High level of visual change. Aerial structure highly visible from adjacent residential areas.	Medium level of visual change, except where aerial structure extends through residential areas.	High level of visual change. Aerial structure highly visible from adjacent residential areas.	Medium level of visual change, except where aerial structure extends through residential areas.	High level of visual change. Aerial structure highly visible from adjacent residential areas.	Medium level of visual change, except where aerial structure extends through residential areas.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)	1 fault (East Montebello Hills fault)
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>i</sup>	226 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	205 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	190 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	228 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	184 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	230 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	195 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	235 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.	207 sites including extensive underground plume in the Rosemead/EI Monte/Baldwin Park/West Covina area.

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Agency and Public Input	No specific criteria	No specific measurement	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Lincoln Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The San Gabriel Valley Council of Governments (SGVCOG) opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Lincoln Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Lincoln Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights, Lincoln Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights, Lincoln Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>	<p>Significant concerns exist among the adjacent communities along the I-10 corridor from LAUS to I-605 regarding potential impacts on adjacent residential, industrial and commercial properties along this alternative.</p> <p>For the City of Los Angeles portion (Boyle Heights and El Sereno), the City of Los Angeles and elected officials representing this area express significant concern with an aerial alternative going through dense local neighborhoods.</p> <p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p>

Evaluation Measure			Alternatives								
Category	Criteria	Measurement	I-10 via North above-grade approach (A1.1) (Carried Forward)	I-10 via North below-grade approach (A1.2.1) (Carried Forward)	I-10 via North below-grade approach (A1.2.2) (Carried Forward)	I-10 via Mission Road above-grade approach (A1.3) (Carried Forward)	I-10 via Mission Road below-grade approach (A1.4) (Carried Forward)	I-10 via I-5/First Street above-grade approach (A1.5) (Carried Forward)	I-10 via I-5/First Street below-grade approach (A1.6) (Carried Forward)	I-10 via I-5/Sixth Street above-grade approach (A1.7) (Carried Forward)	I-10 via I-5/Sixth Street below-grade approach (A1.8) (Carried Forward)
			The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.	The City of Alhambra opposes any rail alignment along the I-10 freeway that would directly impede on the properties of Alhambra residents and significantly affect the quality of life of the community. Specifically, the City of Alhambra opposes an aerial structure and requests a re-examination of the below-grade trench option as a potential alternative.
			The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.	The City of Rosemead opposes any alignment along the I-10 freeway that would directly or indirectly impede on properties in Rosemead, which would include aerial, north side and/or south side of the I-10 Freeway. The City recommends a below-grade option.

<sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.  
<sup>b</sup> Research into below-ground utilities has not yet been performed.  
<sup>c</sup> Crossings of multilevel interchanges and major railroad crossings.  
<sup>d</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.  
<sup>e</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future Alternatives Analysis phase.  
<sup>f</sup> High/Med/Low ranking based on resources identified in Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.  
<sup>g</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet either side of centerline).  
<sup>h</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.  
<sup>i</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within 1/2 mile of either side of centerline), following Caltrans standards.  
 Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.

Appendix B: S1-A2, S1-A3 and S1-A4 Alternatives (LAUS to I-605/I-10 – Subsection 1)

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	9:54	9:54	11:56	23:54 (combined with S1-A7)	23:54 (combined with S1-A7)	12:39	12:39
		Route length (within option) - Miles	15.7	15.7	14.4	14.5	14.6	16.7	16.8
	Maximize connectivity and accessibility	Intermodal connections	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.	Connection at LAUS with Metro Rail Lines, Metrolink, Amtrak, and local bus.
	Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	1.06	1.63	1.74	1.40	1.00	1.67	1.27
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Land use inconsistencies where alignment is located outside of existing transportation ROWs in land designated for residential, commercial, park, industrial, or other uses.	Land use inconsistencies where alignment is located outside of existing transportation ROWs in land designated for residential, commercial, park, industrial, or other uses.	Land use inconsistencies where alignment is located outside of existing transportation ROWs in land designated for residential, commercial, park, industrial, or other uses.	Land use inconsistencies where alignment is located outside of existing rail corridor in land designated for residential, commercial, park, industrial, or other uses.	Land use inconsistencies where alignment is located outside of existing transportation ROWs in land designated for residential, commercial, park, industrial, or other uses.	Highest land use inconsistency where alignment is located outside of the existing rail ROW in land designated for residential, commercial, park, industrial, or other uses.	Highest land use inconsistency where alignment is located outside of the existing rail ROW in land designated for residential, commercial, park, industrial, or other uses.
			Generally consistent with the transportation intent of the General Plans for the City of Los Angeles, Monterey Park, Montebello, Industry, South El Monte, and Diamond Bar.	Generally consistent with the transportation intent of the General Plans for the City of Los Angeles, Monterey Park, Montebello, Industry, South El Monte, and Diamond Bar.	Generally consistent with the transportation intent of the General Plans for the City of Los Angeles, Monterey Park, Montebello, Industry, South El Monte, and Diamond Bar.	Conflicts with planned and existing land uses associated with UPRR freight operations.	Conflicts with planned and existing land uses associated with UPRR freight operations.	Conflicts with planned and existing land uses associated with UPRR freight operations.	Conflicts with planned and existing land uses associated with UPRR freight operations.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
Constructability	Constructability/Complexity	Construction complexity	Skewed aerial crossing of Los Angeles River. Aerial guideway construction across I-5/SR 60 interchange complex. Aerial guideway construction along SR 60 freeway. High (approximately 75 feet) viaduct crossing of SR 60/I-710 interchange.	Skewed aerial crossing of Los Angeles River. Tunnel construction through I-5/SR 60 interchange complex. Tunnel portal in urban area west of I-710. Aerial guideway construction along SR 60 freeway. High (approximately 75 feet) viaduct crossing of SR 60/I-710 interchange.	Tunnel crossing of Los Angeles River. Tunnel construction through I-5/SR 60 interchange complex. Tunnel portal in urban area west of I-710. Aerial guideway construction along SR 60 freeway. High (approximately 75 feet) viaduct crossing of SR 60/I-710 interchange.	Tunnel crossing of Los Angeles River. Tunnel portal in urban area. Aerial guideway construction in UPRR ROW. High (approximately 75 feet) aerial crossing of I-710.	Skewed aerial crossing of Los Angeles River. Aerial guideway construction in UPRR ROW. High (approximately 75 feet) aerial crossing of I-710.	Tunnel crossing of Los Angeles River. Tunnel portal in urban area. Aerial guideway construction alongside UPRR ROW. High (approximately 75 feet) aerial crossing of I-710.	Skewed aerial crossing of Los Angeles River. Aerial guideway construction alongside UPRR ROW. High (approximately 75 feet) aerial crossing of I-710.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Aerial crossings of rail operations on both banks of Los Angeles River.	Aerial crossings of rail operations on both banks of Los Angeles River.	Impacts on rail operations on the west bank of the Los Angeles River.	Impacts on UPRR freight operations in this critical corridor out of the Ports of Los Angeles and Long Beach.  Impacts on existing Metrolink operations.	Impacts on UPRR freight operations in this critical corridor out of the Ports of Los Angeles and Long Beach.  Impacts on existing Metrolink operations.	Impacts on UPRR freight operations in this critical corridor out of the Ports of Los Angeles and Long Beach.  Impacts on existing Metrolink operations.	Impacts on UPRR freight operations in this critical corridor out of the Ports of Los Angeles and Long Beach.  Impacts on existing Metrolink operations.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>b</sup>	Major power transmission lines along Los Angeles River and San Gabriel River and in Monterey Park.	Major power transmission lines along Los Angeles River and San Gabriel River and in Monterey Park.	Major power transmission lines along Los Angeles River and San Gabriel River and in Monterey Park.	Major power transmission lines along Los Angeles River and San Gabriel River. Undetermined utilities in UPRR ROW.	Major power transmission lines along Los Angeles River and San Gabriel River.	Major power transmission lines along Los Angeles River and San Gabriel River. Undetermined utilities in UPRR ROW.	Major power transmission lines along Los Angeles River and San Gabriel River. Undetermined utilities in UPRR ROW.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>c</sup>	11	11	9	4	4	9	9
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>d</sup>	61	48	57	53	53	75 Highest disruption of residential uses along this subsection.	75 Highest disruption of residential uses along this subsection.
		Acres of commercial	4	5	5	6	6	3	3
		Acres of industrial	19	14	1	119	126 Second highest disruption of industrial uses along this subsection.	125	132 Highest disruption of industrial uses along this subsection.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
		Acres of other (Public ROW, open space, schools, etc.)	79	77	75	75	95	81	101
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	5 new bridge crossings 2,868 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.	5 new bridge crossings 2,868 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.	4 new bridge crossings 2,281 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.	2 new bridge crossings 453 linear feet of waterways Including impacts on Los Angeles, Rio Hondo and San Gabriel Rivers.	3 new bridge crossings 1,525 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.	5 new bridge crossings 2,132 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.	6 new bridge crossings 3,204 linear feet of waterways Including impacts on Los Angeles, Rio Hondo, and San Gabriel Rivers.
		Critical habitat/threatened, and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres)	T/E: 0 acres Wetlands: 30 acres HCPs: 0 acres NWR: 0 acres Critical habitat for California gnatcatcher located adjacent to alignment.	T/E: 0 acres Wetlands: 30 acres HCPs: 0 acres NWR: 0 acres Critical habitat for California gnatcatcher located adjacent to alignment.	T/E: 0 acres Wetlands: 27 acres HCPs: 0 acres NWR: 0 acres Critical habitat for California gnatcatcher located adjacent to alignment.	T/E: 0 acres Wetlands: 3 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: 6 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: 20 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: 22 acres HCPs: 0 acres NWR: 0 acres
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>e</sup>	Historic bridge structure at Sixth Street.	Historic bridge structure at Sixth Street.	Historic bridge structure at Sixth Street.	Historic bridge structure at Sixth Street.	No historic structures	Historic bridge structure at Sixth Street.	No historic structures
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>f</sup>	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Moderate level of sensitivity for archaeological deposits.	Moderate level of sensitivity for archaeological deposits.	Moderate level of sensitivity for archaeological deposits.	Moderate level of sensitivity for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	22 Including Whittier Narrows Recreational Park	22 Including Whittier Narrows Recreational Park	22 Including Whittier Narrows Recreational Park	1	1	1	1
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.	No agricultural resources affected along this subsection.
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>9</sup>	Number of churches, hospitals, schools, libraries, and park properties within 500 feet of the centerline of the proposed ROW.	13 potential sensitive receptor sites.	9 potential sensitive receptor sites.	9 potential sensitive receptor sites.	2 potential sensitive receptor sites.	2 potential sensitive receptor sites.	2 potential sensitive receptor sites.	2 potential sensitive receptor sites.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
	Change in Visual/Scenic Resources <sup>h</sup>	High, medium, and low based on acres of residential, institutional, and park properties within 100 feet of the centerline of the proposed ROW.	High level of visual change. Aerial structure approximately 25 - 40 feet in height would be visible from residential and park uses.	High level of visual change. Aerial structure approximately 25 - 40 feet in height would be visible from residential and park uses.	High level of visual change. Aerial structure approximately 25 - 40 feet in height would be visible from residential and park uses.	Low level of visual change. No visual or scenic resources along this predominantly industrial and commercial area.	Low level of visual change. No visual or scenic resources along this predominantly industrial and commercial area.	Moderate level of visual change.	Moderate level of visual change.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	1 Holocene active fault	1 Holocene active fault	1 Holocene active fault	0	0	0	0
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>i</sup>	126 sites including Operating Industries, inc. superfund site.	99 sites including Operating Industries, inc. superfund site.	68 sites including Operating Industries, inc. superfund site.	112 sites	152 sites Second highest level of contaminated sites along this subsection.	129 sites	169 sites Highest level of contaminated sites along this subsection.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
Agency and Public Input	No specific criteria	No specific measurement	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of Montebello requests the avoidance of conflicts with the Metro Gold Eastside LRT Project.</p>	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of Montebello requests the avoidance of conflicts with the Metro Gold Eastside LRT Project.</p>	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of Montebello requests the avoidance of conflicts with the Metro Gold Eastside LRT Project.</p>	<p>UPRR will not permit any proposed HST alignment within its ROW.</p> <p>SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The Gateway Cities Council of Governments (GCCOG) expresses significant concern regarding this alternative due to its property and economic impacts on adjacent communities.</p> <p>The City of Vernon does not support this alternative due to negative business impacts already caused by the LA to Anaheim Section and the I-710 Freeway project; it would not be able to tolerate the additional burden.</p>	<p>UPRR will not permit any proposed high-speed rail alignment within its ROW.</p> <p>SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>GCCOG expresses significant concern regarding this alternative due to its property and economic impacts on adjacent communities.</p> <p>The City of Vernon does not support this alternative due to negative business impacts already caused by the LA to Anaheim Section and the I-710 Freeway project; it would not be able to tolerate the additional burden.</p>	<p>SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>GCCOG expresses significant concern regarding this alternative due to its property and economic impacts on adjacent communities.</p> <p>The City of Vernon does not support this alternative due to negative business impacts already caused by the LA to Anaheim Section and the I-710 Freeway project; it would not be able to tolerate the additional burden.</p>	<p>SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical profiles, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>GCCOG expresses significant concern regarding this alternative due to its property and economic impacts on adjacent communities.</p> <p>The City of Vernon does not support this alternative due to negative business impacts already caused by the LA to Anaheim Section and the I-710 Freeway project; it would not be able to tolerate the additional burden.</p>

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	SR-60 via First Street above-grade approach (A2.1) (Carried Forward)	SR-60 via First Street below-grade approach (A2.2) (Carried Forward)	SR-60 via Sixth Street below-grade approach (A2.3) (Carried Forward)	LAUS to east of I-605 via UPRR via Sixth Street below-grade connection to LAUS (A3.1) (Withdrawn)	LAUS to east of I-605 via UPRR via Redondo Junction above-grade connection to LAUS (A3.2) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Sixth Street below-grade connection to LAUS (A4.1) (Withdrawn)	LAUS to I-605 via land adjacent to the UPRR via Redondo Junction above-grade connection to LAUS (A4.2) (Withdrawn)
						<p>The City of Montebello opposes the at-grade or elevated HST along the UPRR corridor due to noise, potential safety problems, aesthetics, and impacts upon residential property and property values. The City may be open to a below-grade system or lowering the existing UPRR and Metrolink tracks at the same time (dual use or cut/ cover).</p> <p>The City of Pico Rivera is concerned about the potential significant impacts from both the LA to Anaheim and LA to San Diego Sections, and does not support a viaduct system.</p>	<p>The City of Montebello opposes the at-grade or elevated HST along the UPRR corridor due to noise, potential safety problems, aesthetics, and impacts upon residential property and property values. The City may be open to a below-grade system or lowering the existing UPRR and Metrolink tracks at the same time (dual use or cut/ cover).</p> <p>The City of Pico Rivera is concerned about the potential significant impacts from both the LA to Anaheim and LA to San Diego Sections, and does not support a viaduct system.</p>	<p>The City of Montebello opposes the at-grade or elevated HST along the UPRR corridor due to noise, potential safety problems, aesthetics, and impacts upon residential property and property values. The City may be open to a below-grade system or lowering the existing UPRR and Metrolink tracks at the same time (dual use or cut/ cover).</p> <p>The City of Pico Rivera is concerned about the potential significant impacts from both the LA to Anaheim and LA to San Diego Sections, and does not support a viaduct system.</p> <p>The City of Pico Rivera urges the Authority to either eliminate this alternative, tunnel the corridor, or construct it within the existing UPRR ROW.</p>	<p>The City of Montebello opposes the at-grade or elevated HST along the UPRR corridor due to noise, potential safety problems, aesthetics, and impacts upon residential property and property values. The City may be open to a below-grade system or lowering the existing UPRR and Metrolink tracks at the same time (dual use or cut/ cover).</p> <p>The City of Pico Rivera is concerned about the potential significant impacts from both the LA to Anaheim and LA to San Diego Sections, and does not support a viaduct system.</p> <p>The City of Pico Rivera urges the Authority to either eliminate this alternative, tunnel the corridor, or construct it within the existing UPRR ROW.</p>
<p><sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.  <sup>b</sup> Research into below-ground utilities has not yet been performed.  <sup>c</sup> Crossings of multilevel interchanges and major railroad crossings.  <sup>d</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.  <sup>e</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.  <sup>f</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.  <sup>g</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet either side of centerline).  <sup>h</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.  <sup>i</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within ½ mile of either side of centerline), following Caltrans standards.                      Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.</p>									

**Appendix B: S1-A5, S1-A6 and S1-A7 Alternatives (I-605/I-10 to Ontario International Airport – Subsection 1)**

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) (Withdrawn)	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) (Carried Forward)	I-605/I-10 to Ontario International Airport via I-10/First Street/State Street (A6.2) (Carried Forward)	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	11:10	9:01	9:01	23:54 (combined with S1-A3)
		Route length (within option) - Miles	23.9	21.9	21.9	24.9
	Maximize connectivity and accessibility	Intermodal connections	No station in this segment.	Potential West Covina station has no existing transit connections. Potential Pomona/Holt station would provide connection to Metrolink.	Potential West Covina station has no existing transit connections. Potential Pomona/First station would provide connection to Metrolink.	Potential West Covina station has no existing transit connections. Potential Pomona/UPRR station would provide connection to Metrolink.
Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	1.10	1.79	1.78	1.00	
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Inconsistent with existing and/planned land uses adjacent to Metrolink corridor and local cities, including City of Baldwin Park, Covina, San Dimas, LaVerne, Claremont, and Upland.  Inconsistent with planned Metrolink LRT; Caltrans planned improvements along I-10/I-605, including HOV and direct connector improvements.	Generally consistent with the transportation intent in the General Plans of the Cities of West Covina, San Dimas, Pomona, and Ontario. Inconsistent with existing and/planned land uses adjacent to Downtown Montclair redevelopment area.  Inconsistent with Caltrans planned improvements along I-10/I-605, including HOV and direct connector improvements.	Generally consistent with the transportation intent in the General Plans of the Cities of West Covina, San Dimas, Pomona, and Ontario.  Inconsistent with Caltrans planned improvements along I-10/I-605 including HOV and direct connector improvements.	Generally consistent with the transportation intent in the General Plans of the Cities of Industry, Walnut, Pomona, and Ontario.  Highly inconsistent with UPRR land use needs to serve existing and future shippers operating along this major freight corridor.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) (Withdrawn)	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) (Carried Forward)	I-605/I-10 to Ontario International Airport via I-10/First Street/State Street (A6.2) (Carried Forward)	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
Constructability	Constructability/Complexity	Construction complexity	Construction of aerial guideway in existing rail corridor will need to maintain freight and Metrolink operations.	Aerial guideway construction along congested I-10 corridor. Tunnel portals in developed areas of West Covina and Pomona. Aerial guideway construction along major arterial (Holt Ave).	Aerial guideway construction along congested I-10 corridor. Tunnel portals in developed areas of West Covina and Pomona.	Construction of aerial guideway in existing rail corridor will need to maintain freight and Metrolink operations.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Impacts on existing BNSF and Metrolink operations. Highly constrained Metrolink ROW.	Aerial crossing of UPRR in Ontario.	Aerial crossings of UPRR in Pomona and Ontario.	Impacts on existing UPRR and Metrolink operations. Highly constrained Metrolink ROW.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>b</sup>	Overhead power lines	Overhead power lines.	Overhead power lines.	Overhead power lines.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>c</sup>	4	2	3	2
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>d</sup>	215 Highest disruption of residential uses along this subsection.	35	54	22
		Acres of commercial	61	195	179	18
		Acres of industrial	116 Second highest disruption of industrial uses along this subsection.	18	90	245 Highest disruption of UPRR-related industrial uses along this subsection.
		Acres of other (Public ROW, open space, schools, etc.)	84	57	112	160
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	7 new bridge crossings 1,772 linear feet of waterways Including impacts to San Gabriel River.	4 new bridge crossings 970 linear feet of waterways Including impacts to San Antonio and Cucamonga Creek, and San Gabriel River.	6 new bridge crossings 1,433 linear feet of waterways Including impacts to San Gabriel River.	3 new bridge crossings 909 linear feet of waterways Including impacts to San Jose Creek and San Gabriel River.

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) (Withdrawn)	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) (Carried Forward)	I-605/I-10 to Ontario International Airport via I-10/First Street/State Street (A6.2) (Carried Forward)	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres)	T/E: 0 acres Wetlands: 1 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: <1 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: 0 acres HCPs: 0 acres NWR: 0 acres	T/E: 0 acres Wetlands: 4 acres HCPs: 0 acres NWR: 0 acres
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>e</sup>	Historic District through City of Claremont (along Euclid Ave).	Historic sites: 1	Historic sites: 2	Historic sites: 3
		Archeological Sensitivity (identified as high, medium, and low potential based on likely locations) <sup>f</sup>	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.	Low level of sensitivity for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	6	3 Including Frank G. Bonelli Regional Park.	1	9
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	No agricultural resources affected.	No agricultural resources affected.	No agricultural resources affected.	No agricultural resources affected.
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>g</sup>	Number of churches, hospitals, schools, libraries, and park properties within 500 feet of the centerline of the proposed ROW	35 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas.	22 potential sensitive receptor sites.	20 potential sensitive receptor sites.	13 potential sensitive receptor sites.
	Change in Visual/Scenic Resources <sup>h</sup>	High, medium, and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW	High level of visual change. Aerial structure highly visible from adjacent residential and historic districts.	Moderate level of visual change.	Moderate level of visual change.	Low level of visual change.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	1 fault (Indian Hill)	2 faults (San Jose and Walnut Creek)	2 faults (San Jose and Walnut Creek)	0

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) (Withdrawn)	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) (Carried Forward)	I-605/I-10 to Ontario International Airport via I-10/ First Street/State Street (A6.2) (Carried Forward)	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>1</sup>	82 sites including areas within 1997 EPA VOC sites	78 sites	114 sites	135 sites 1997 EPA VOC sites
Agency and Public Input	No specific criteria	No specific measurement	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical alignments, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of Covina opposes this alternative unless amended to minimize negative impacts on residential and commercial property.</p> <p>The City of La Verne expresses great concern regarding this alternative due to its impacts on residential properties, industrial, commercial, and retail properties, and a Redevelopment Agency mobile home park.</p>	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical alignments, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of West Covina recommends that rail lines should be constructed on Caltrans I-10 Freeway ROW. The city is concerned about the negative impacts on office buildings, parking structure, and adjacent shopping center and recommends that the station be located to Westfield Mall or Civic Center.</p>	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical alignments, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>The City of West Covina recommends that rail lines should be constructed on Caltrans I-10 Freeway ROW. The city is concerned about the negative impacts on office buildings, parking structure, and adjacent shopping center and recommends that the station be located to Westfield Mall or Civic Center.</p>	<p>The SGVCOG opposes any alignment that does not minimize the impact on properties in the San Gabriel Valley. The SGVCOG requests that the Authority study all horizontal alignments as well as possible vertical alignments, including above-, below-, and at-grade options in order to preserve adjacent neighborhoods and businesses.</p> <p>UPRR will not permit any proposed HST alignment within its ROW.</p> <p>Both Montclair and Ontario voiced strong opposition to this alternative because of impacts on existing development and future planned projects.</p> <p>The City of Ontario would like to see the Ontario station located between the Cucamonga Creek Flood Control Channel and Archibald Av because of its close proximity of the planned Metro Gold</p>

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) (Withdrawn)	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) (Carried Forward)	I-605/I-10 to Ontario International Airport via I-10/First Street/State Street (A6.2) (Carried Forward)	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
			The cities of Claremont and Upland have also expressed concern regarding this alignment because of the narrow ROW and close proximity to residential property.	The City of San Dimas wants this alternative within the I-10 Freeway ROW, and when necessary to leave freeway ROW, to select a route that minimizes impacts on existing residential and developed properties, such as a subterranean alignment along the south side of the I-10.  The City of Pomona supports an HST alignment and station, and would support a Holt Ave alternative if all impacts (noise, disruption, traffic, and pedestrian circulation, street crossings, visual impacts and other issues) are fully addressed and mitigated. The City of Pomona supports an HST alignment in Pomona that has the least impact on existing residents and businesses.  The cities of Montclair and Ontario have expressed concerns with this alignment because of impacts on existing development and the disruption of a major thoroughfare, Holt Ave.	The City of San Dimas wants this alternative within the I-10 Freeway ROW, and when necessary to leave freeway ROW, to select a route that minimizes impacts on existing residential and developed properties, such as a subterranean alignment along the south side of the I-10.  The City of Pomona supports an HST alignment in Pomona that has the least impact on existing residents and businesses.  The City of Ontario would like to see the Ontario station located between the Cucamonga Creek Flood Control Channel and Archibald Ave because of its close proximity of the planned Metro Gold Line station.  Los Angeles World Airports prefers to have the station shown within the Airport Drive ROW, east of the Cucamonga Channel.	UPRR from east of I-605 to Ontario Intl. Airport (A7) (Withdrawn)
						Line station.

Evaluation Measure			Alternatives			
Category	Criteria	Measurement	I-605/I-10 to Ontario International Airport via Metrolink (A5) <b>(Withdrawn)</b>	I-605/I-10 to Ontario International Airport via I-10/Holt (A6.1) <b>(Carried Forward)</b>	I-605/I-10 to Ontario International Airport via I-10/First Street/State Street (A6.2) <b>(Carried Forward)</b>	UPRR from east of I-605 to Ontario Intl. Airport (A7) <b>(Withdrawn)</b>
				<p>The City of Montclair would consider this alternative only if the alignment was below-grade. Montclair city staff has previously expressed that impacts are too great for the community, which does not derive any direct benefit.</p> <p>The City of Ontario would like to see the Ontario station located between the Cucamonga Creek Flood Control Channel and Archibald Ave because of its close proximity of the planned Metro Gold Line station.</p> <p>Los Angeles World Airports prefers to have the station shown within the Airport Drive ROW, east of the Cucamonga Channel.</p>		
<p><sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment</p> <p><sup>b</sup> Research into belowground utilities has not yet been performed</p> <p><sup>c</sup> Crossings of multilevel interchanges and major railroad crossings.</p> <p><sup>d</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.</p> <p><sup>e</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.</p> <p><sup>f</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.</p> <p><sup>g</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet of either side of centerline).</p> <p><sup>h</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources</p> <p><sup>i</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within 1/2 mile of either side of centerline), following Caltrans standards.</p> <p>Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.</p>						

**Appendix B: S2-A1 and S2-A2 Alternatives (Ontario International Airport to Murrieta/Temecula – Subsection 2)**

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	30:48	29:47	30:57	25:54	24:53	26:03
		Route length (within option) - Miles	68.3	67.8	67.5	59.7	59.2	58.9
	Maximize connectivity and accessibility	Intermodal connections	Potential connection to proposed Gold Line LRT extension at Ontario. Connection to San Bernardino Metrolink, proposed Redlands LRT, proposed sbX BRT, and local Omnitrans bus service in Downtown San Bernardino. Potential connection to proposed Perris Valley Line Metrolink near March ARB.	Connection to proposed Gold Line LRT at Ontario. Connection to San Bernardino Metrolink, proposed Redlands LRT, proposed sbX BRT, and local Omnitrans bus service in Downtown San Bernardino. Potential connection to proposed Perris Valley Line Metrolink near March ARB.	Connection to proposed Gold Line LRT at Ontario. Connection to San Bernardino Metrolink, proposed Redlands LRT, proposed sbX BRT, and local Omnitrans bus service in Downtown San Bernardino. Potential connection to proposed Perris Valley Line Metrolink near March ARB.	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.
Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	1.17	1.08	1.22	0.95	0.86	1.00	

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Highly consistent with San Bernardino Downtown Core Vision Action Plan and Transit Center. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistency where at-grade alignment traverses land outside transportation corridor in land designated for residential, commercial, industrial, or other uses.</p>	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Highly consistent with San Bernardino Downtown Core Vision Action Plan. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistency where at-grade alignment traverses land outside transportation corridor in land designated for residential, commercial, industrial, or other uses.</p>	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Highly consistent with San Bernardino Downtown Core Vision Action Plan. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistency where at-grade alignment traverses land outside transportation corridor in land designated for residential, commercial, industrial, or other uses.</p> <p>Inconsistent with UC Riverside Master Plan, resulting in impacts on the existing and future campus development.</p>	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistency where at-grade alignment traverses land outside transportation corridor in land designated for residential, commercial, industrial, or other uses.</p>	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistency where at-grade alignment traverses land outside transportation corridor in land designated for residential, commercial, industrial, or other uses.</p>	<p>Generally consistent with transportation intent in the General Plans for Cities of Ontario, Fontana, Colton Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.</p> <p>Inconsistent with Caltrans planned improvements along I-215 corridor associated with various HOV/interchange improvements. Compatible with proposed rail and intermodal transit centers along I-215 corridor. Inconsistent with UC Riverside Master Plan.</p>

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.			
Constructability	Constructability/Complexity	Construction complexity	Aerial guideway along I-215 freeway corridor, with small section on Chicago Ave.	Aerial guideway along I-215 freeway corridor, with longer section off the freeways on Iowa Ave.	Aerial guideway along I-215 freeway corridor, and also through UC Riverside campus.	Construction of aerial guideway in UPRR ROW will need to maintain UPRR operations. Aerial guideway along I-215 freeway corridor, with small section on Chicago Ave.	Construction of aerial guideway in UPRR ROW will need to maintain UPRR operations. Aerial guideway along I-215 freeway corridor, with longer section off the freeways on Iowa Ave.	Construction of aerial guideway in UPRR ROW will need to maintain UPRR operations. Aerial guideway along I-215 freeway corridor, and also through UC Riverside campus.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Impacts on freight and Metrolink operations from Fontana to San Bernardino. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.	Impacts on freight and Metrolink operations from Fontana to San Bernardino. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.	Impacts on freight and Metrolink operations from Fontana to San Bernardino. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.	Impacts on UPRR operations from Ontario to Colton. Impacts on the Colton Yard. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.	Impacts on UPRR operations from Ontario to Colton. Impacts on the Colton Yard. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.	Impacts on UPRR operations from Ontario to Colton. Impacts on the Colton Yard. Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Aerial crossings of UPRR and BNSF required.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation	Overhead power transmission lines in Ontario and Fontana. Potential conflict with 108-inch Municipal Water District pipeline near March ARB.	Overhead power transmission lines in Ontario and Fontana. Potential conflict with 108-inch MWD pipeline near March ARB.	Overhead power transmission lines in Ontario and Fontana. Potential conflict with 108-inch MWD pipeline near March ARB.	Impact to oil pipeline in UPRR ROW from Ontario to Colton. Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.	Impact to oil pipeline in UPRR ROW from Ontario to Colton. Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.	Impact to oil pipeline in UPRR ROW from Ontario to Colton. Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>b</sup>	26	22	24	23	19	21
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>c</sup>	177	181	174	51	54	47
		Acres of commercial	68	72	57	35	39	24
		Acres of industrial	112	116	112	89 Includes major disruption of UPRR-related industrial uses such as major rail shippers located between LA and Colton.	93 Includes major disruption of UPRR-related industrial uses such as major rail shippers located between LA and Colton.	89 Includes major disruption of UPRR-related industrial uses such as major rail shippers located between LA and Colton.

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
		Acres of other (Public ROW, open space, schools, etc.)	736	732	734	647	642	645
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	45 new bridge crossings 31,138 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	46 new bridge crossings 33,126 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	45 new bridge crossings 30,799 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	36 new bridge crossings 24,318 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	37 new bridge crossings 26,306 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	36 new bridge crossings 23,978 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.
		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres) <sup>d</sup>	T/E: 88 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered Delhi Sands Fly (DSF), north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.  Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain.	T/E: 94 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.  Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain.	T/E: 87 acres Wetlands: 20 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.  Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain.	T/E: 45ac Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.  Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain.	T/E: 51 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.	T/E: 43 acres Wetlands: 20 acres HCPs: 109 acres NWR: 0 acres  Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.  Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.  Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain.

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>e</sup>	No historic sites affected.	No historic sites affected.	No historic sites affected.	No historic sites affected.	No historic sites affected.	No historic sites affected.
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>f</sup>	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	5 Including Santa Margarita Ecological Preserve.	8 Including Santa Margarita Ecological Preserve.	6 Including Santa Margarita Ecological Preserve.	4 Including Santa Margarita Ecological Preserve.	7 Including Santa Margarita Ecological Preserve.	5 Including Santa Margarita Ecological Preserve.
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	247	240	262 Including prime farmland.	247	240	262 Including prime farmland.
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>g</sup>	Number of churches, hospitals, schools, libraries and park properties within 500 feet of the centerline of the proposed ROW.	33 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Rialto.	26 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Iowa Ave.	29 potential sensitive receptor sites. Noise impacts particularly extensive near UC Riverside campus and residential areas.	29 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Rialto.	26 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Iowa Ave.	25 potential sensitive receptor sites. Noise impacts particularly extensive near UC Riverside campus and residential areas.
	Change in Visual/Scenic Resources <sup>h</sup>	High, medium and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW.	High level of visual change. Aerial structure highly visible from residential neighborhoods.	High level of visual change. Aerial structure highly visible from residential neighborhoods.	High level of visual change. Aerial structure highly visible from residential and UC campus.	High level of visual change. Aerial structure highly visible from residential neighborhoods.	High level of visual change. Aerial structure highly visible from residential neighborhoods.	High level of visual change. Aerial structure highly visible from residential and UC campus.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	6 Including Holocene active faults (San Jacinto and Wildomar faults).	6 Including Holocene active faults (San Jacinto and Wildomar faults).	6 Including Holocene active faults (San Jacinto and Wildomar faults).	6 Including Holocene active faults (San Jacinto and Wildomar faults).	2 Including Holocene active faults (San Jacinto and Wildomar faults).	2 Including Holocene active faults (San Jacinto and Wildomar faults).
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>i</sup>	171 sites	136 sites	135 sites	170 sites	135 sites	134 sites
Agency and Public Input	No specific criteria	No specific measurement	The City of Ontario has not expressed a strong preference for I-15 vs. I-215 alignment but has noted that the I-15 alignment could potentially create	The City of San Bernardino is very supportive of HST and would like to see a station in San Bernardino. City has expressed interest in	The City of San Bernardino is very supportive of HST and would like to see a station in San Bernardino. City has expressed interest in	At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and	At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and	At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
			<p>undesirable conditions for the City.</p> <p>The City of San Bernardino is very supportive of HST and would like to see a station in San Bernardino. City has expressed interest for at-grade configuration.</p> <p>City of Riverside and March ARB support I-215 alignment. At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215. City of Riverside requested station to be built outside of city limits to avoid impacts on residential development, especially related to tunneling. City requested that Chicago alternative be redesigned without a station increasing the compatibility of the alignment through the City.</p> <p>RCTC asks that both this I-215 alignment and the I-15 alignment through Corona be continued for study.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and</p>	<p>at-grade configuration.</p> <p>City of Riverside is concerned about impacts on residential development, traffic, tunneling. At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and UC Riverside all support an I-215 alignment.</p> <p>City of Riverside requested that Chicago alternative be redesigned without a station, increasing the compatibility of the alignment through the City, favoring the Chicago alignment over Iowa or UC Riverside.</p>	<p>at-grade configuration.</p> <p>UC Riverside is concerned about placement of stations near the campus. The eastern station is located in an area with physical and biological constraints and should not be considered. The northwest station is located in a proposed development area of the campus, including two parking structures on either side of the freeway near University Ave. A pedestrian bridge over the freeway is planned between the two structures, which would be in conflict with a station.</p> <p>City of Riverside requested that Chicago alternative be redesigned without a station, increasing the compatibility of the alignment through the City, favoring the Chicago alignment over Iowa or UC Riverside.</p> <p>At a July 21, 2010, meeting, March AFB representatives indicated they support three potential stations: one west of I-215 between Cactus and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p>	<p>Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and UC Riverside all support an I-215 alignment.</p>	<p>Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and UC Riverside all support an I-215 alignment.</p>	<p>and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and UC Riverside all support an I-215 alignment.</p>

Evaluation Measure			Alternatives					
Category	Criteria	Measurement	San Bernardino/ I-215 through Riverside via Chicago Avenue (A1.1) <b>(Carry Forward)</b>	San Bernardino/ I-215 through Riverside via Iowa Avenue (A1.2) <b>(Withdrawn)</b>	San Bernardino/ I-215 through Riverside via UC Riverside (A1.3) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Chicago Avenue (A2.1) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via Iowa Avenue (A2.2) <b>(Withdrawn)</b>	Riverside/I-215 through Riverside via UC Riverside (A2.3) <b>(Withdrawn)</b>
			March AFB and UC Riverside all support an I-215 alignment.		State Department of Water Resources also is concerned that alignment would impact the State Water Project. A 108-inch, high-pressure pipeline is approximately 9 feet deep in this location, and all crossings would require encasement.  Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and UC Riverside all support an I-215 alignment .			

<sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.  
<sup>b</sup> Crossings of multilevel interchanges and major railroad crossings.  
<sup>c</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.  
<sup>d</sup> Digital National Wetlands Inventory data is not available for this region.  
<sup>e</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.  
<sup>f</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.  
<sup>g</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet of either side of centerline).  
<sup>h</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.  
<sup>i</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within 1/2 mile of either side of centerline), following Caltrans standards.  
 Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.

**Appendix B: S2-A3 and S2-A4 Alternatives (Ontario International Airport to Murrieta/Temecula – Subsection 2)**

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) <b>(Carried Forward)</b>	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) <b>(Withdrawn)</b>	I-10 through Riverside/I-215 via UC Riverside (A3.3) <b>(Withdrawn)</b>	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) <b>(Withdrawn)</b>	I-15 Corridor - I-15 to Corona (A4.2) <b>(Carried Forward)</b>
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	25:56	24:55	26:05	20:11	20:10
		Route length (within option) - Miles	59.8	59.3	59.0	52.5	52.8
	Maximize connectivity and accessibility	Intermodal connections	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.	No connection to San Bernardino Metrolink. Potential connection with proposed Perris Valley Line Metrolink. Potential connection to Gold Line LRT extension at Ontario.	Potential connection to Metrolink SR 91 line in Corona. No other transit facilities exist in this corridor other than local bus service. Potential connection to Gold Line LRT extension at Ontario.	Potential connection to Metrolink SR 91 line in Corona. Potential connections to local bus service at Ontario, Corona, and Murrieta stations. Potential connection to Gold Line LRT extension at Ontario.
	Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	0.94	0.86	0.99	0.74	0.81

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) (Carried Forward)	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) (Withdrawn)	I-10 through Riverside/I-215 via UC Riverside (A3.3) (Withdrawn)	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) (Withdrawn)	I-15 Corridor - I-15 to Corona (A4.2) (Carried Forward)
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Generally consistent with transportation intent in the General Plans for Cities of Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.	Generally consistent with transportation intent in the General Plans for Cities of Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.	Generally consistent with transportation intent in the General Plans for Cities of Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.	Generally consistent with transportation intent in the General Plans for Cities of Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.	Generally consistent with transportation intent in the General Plans for Cities of Colton, Rialto, Riverside, Corona, Moreno Valley, Perris, Murrieta, and Temecula, and Counties of San Bernardino and Riverside. Conflicts with City of Norco land use objectives to maintain rural character and recreational trail connectivity.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.				

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) (Carried Forward)	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) (Withdrawn)	I-10 through Riverside/I-215 via UC Riverside (A3.3) (Withdrawn)	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) (Withdrawn)	I-15 Corridor - I-15 to Corona (A4.2) (Carried Forward)
Constructability	Constructability/Complexity	Construction complexity	Aerial guideway along I-10 and I-215 freeway corridors, with small section on Chicago Ave.	Aerial guideway along I-10 and I-215 freeway corridors, with longer section off the freeways on Iowa Ave.	Aerial guideway along I-10 and I-215 freeway corridors, and also through UC Riverside campus.	Below-grade construction east of Ontario International Airport will impact numerous buildings and associated utilities.	Below-grade construction east of Ontario International Airport will impact numerous buildings and associated utilities.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Two aerial crossings of UPRR required in San Bernardino County.	Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Two aerial crossings of UPRR required in San Bernardino County.	Impacts on freight operations and proposed Perris Valley Line Metrolink extension south of Riverside. Two aerial crossings of UPRR required in San Bernardino County.	Aerial crossing of existing UPRR/Metrolink line in Ontario and BNSF/Metrolink line in Corona.	Aerial crossing of existing UPRR line in Ontario and BNSF/Metrolink line in Corona.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>b</sup>	Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.	Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.	Overhead power transmission lines in Ontario and Fontana. Potential conflict with MWD pipeline near March ARB.	Overhead power transmission lines in Ontario. Potential conflict with proposed SCE transmission line along I-15.	Overhead power transmission lines in Ontario. Potential conflict with proposed SCE transmission line along I-15.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>c</sup>	27	23	25	15	16
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>d</sup>	63	54	60	42	55
		Acres of commercial	46	39	36	31	20
		Acres of industrial	91	93	91	126	101
		Acres of other (Public ROW, open space, schools, etc.)	660	642	659	587	586
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	36 new bridge crossings 24,321 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	37 new bridge crossings 26,306 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	36 new bridge crossings 23,981 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	42 new bridge crossings 27,183 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.	42 new bridge crossings 27,202 linear feet of waterways Including impacts on Murrieta and Temecula Creek watersheds, and vernal pools within the San Jacinto Valley and Perris Basin areas.

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) (Carried Forward)	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) (Withdrawn)	I-10 through Riverside/I-215 via UC Riverside (A3.3) (Withdrawn)	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) (Withdrawn)	I-15 Corridor - I-15 to Corona (A4.2) (Carried Forward)
		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres) <sup>e</sup>	<p>T/E: 39 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres</p> <p>Impacts include large Delhi Sands sand dune occupied by federally endangered Delhi Sands Fly (DSF), north of the Colton Dunes Conservation Bank.</p> <p>Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.</p> <p>Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain. Various federally threatened and endangered plant species and critical habitat, including vernal plain habitat.</p>	<p>T/E: 51 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres</p> <p>Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.</p> <p>Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.</p> <p>Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain. Various federally threatened and endangered plant species and critical habitat, including vernal plain habitat.</p>	<p>T/E: 38 acres Wetlands: 19 acres HCPs: 109 acres NWR: 0 acres</p> <p>Impacts include large Delhi Sands sand dune occupied by federally endangered DSF, north of the Colton Dunes Conservation Bank.</p> <p>Potential impacts on wildlife connectivity/movement corridor along the Santa Ana River. Critical habitat impacts on least Bell's vireo, San Bernardino kangaroo rat, southwestern willow flycatcher, Santa Ana sucker (proposed critical habitat); federally endangered Santa Ana River woolly-star.</p> <p>Southern portion along I-215 corridor may affect San Jacinto River and associated floodplain. Various federally threatened and endangered plant species and critical habitat, including vernal plain habitat.</p>	<p>T/E: 39 acres Wetlands: 240 acres HCPs: 428 acres NWR: 0 acres</p> <p>Impacts include critical habitat for least Bell's vireo, Santa Ana sucker and associated habitat at the Santa Ana River, wildlife connectivity, wildlife movement corridor, federally endangered Munz's onion. Potential fragmentation of MSHCP cores and constrained linkages; federally endangered San Diego Ambrosia (only four populations of this endangered plant in western Riverside) impact avoidance strongly recommended by resource agencies.</p> <p>Direct impact to parcel conserved with Section 6(f) funds managed by Riverside Land Conservancy for the federally endangered Delhi Sands flower-loving fly. Resource agencies recommend avoiding impacts on this parcel (near SR 60 and Mission Blvd, City of Ontario).</p>	<p>T/E: 39 acres Wetlands: 251 acres HCPs: 433 acres NWR: 0 acres</p> <p>Impacts include critical habitat for least Bell's vireo, Santa Ana sucker and associated habitat at the Santa Ana River, wildlife connectivity, wildlife movement corridor, federally endangered Munz's onion. Potential fragmentation of MSHCP cores and constrained linkages; federally endangered San Diego Ambrosia (only four populations of this endangered plant in western Riverside) impact avoidance strongly recommended by resource agencies.</p>

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) (Carried Forward)	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) (Withdrawn)	I-10 through Riverside/I-215 via UC Riverside (A3.3) (Withdrawn)	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) (Withdrawn)	I-15 Corridor - I-15 to Corona (A4.2) (Carried Forward)
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>f</sup>	No historic sites affected.	No historic sites affected.	No historic sites affected.	Historic sites affected: 2.	Historic sites affected: 3.
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>9</sup>	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	5	7	6	2	2
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	247	240	262 Overall highest impact to agricultural lands.	161	178
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>n</sup>	Number of churches hospitals, schools, libraries and park properties within 500 of the centerline of the proposed ROW.	30 potential sensitive receptor sites.	26 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Iowa Ave.	26 potential sensitive receptor sites. Noise impacts particularly extensive near UC Riverside campus and residential areas.	21 potential sensitive receptor sites.	20 potential sensitive receptor sites.
	Change in Visual/Scenic Resources <sup>l</sup>	High, medium and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW.	Low level of visual change.	Low level of visual change.	Low level of visual change.	High level of visual change associated with scenic vistas of natural open space.	High level of visual change associated with scenic vistas of natural open space.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	2 Including Holocene active fault (Wildomar fault).	2 Including Holocene active fault (Wildomar fault).	2 Including Holocene active fault (Wildomar fault).	2 Including Holocene active fault (Wildomar fault).	2 Including Holocene active fault (Wildomar fault).
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>l</sup>	180 sites	135 sites	144 sites	67 sites	66 sites
Agency and Public Input	No specific criteria	No specific measurement	The City of Ontario has not expressed a strong preference for I-15 vs. I-215 alignment, but I-15 alignment could potentially create undesirable	City of Riverside is concerned about impacts on residential development, traffic, and tunneling. At a July 21, 2010, meeting, March AFB representatives	City of Riverside is concerned about impacts on residential development, traffic, tunneling. At a July 21, 2010, meeting, March AFB representatives	The City of Ontario has not expressed a strong preference for I-15 vs. I-215 alignment but I-15 alignment could potentially create undesirable	The City of Ontario has not expressed a strong preference for I-15 vs. I-215 alignment but I-15 alignment could potentially create undesirable

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) (Carried Forward)	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) (Withdrawn)	I-10 through Riverside/I-215 via UC Riverside (A3.3) (Withdrawn)	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) (Withdrawn)	I-15 Corridor - I-15 to Corona (A4.2) (Carried Forward)
			<p>conditions for the City.</p> <p>Along I-10, City of Fontana has voiced concerns regarding environmental justice issues.</p> <p>City of Riverside requested that Chicago alternative be redesigned without a station, increasing the compatibility of the alignment through the City, favoring the Chicago alignment over Iowa or UC Riverside.</p>	<p>indicated they support three potential stations: one west of I-215 between Cactus and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, and Riverside and March AFB and UC Riverside all support an I-215 alignment.</p> <p>City of Riverside requested that Chicago alternative be redesigned without a station increasing the compatibility of the alignment through the City, favoring the Chicago alignment over Iowa or UC Riverside.</p>	<p>indicated they support three potential stations: one west of I-215 between Cactus and Alessandro, one west of I-215, south of Van Buren Blvd, and the March Air Museum or site east of I-215.</p> <p>Cities of Riverside, Moreno Valley, Perris, Riverside and March AFB and U.C. Riverside all support an I-215 alignment.</p> <p>City of Riverside requested that Chicago alternative be redesigned without a station increasing the compatibility of the alignment through the City, favoring the Chicago alignment over Iowa or UC Riverside.</p>	<p>conditions for the City.</p> <p>The City of Corona supports an I-15 alignment and station in the Dos Lagos area. The City has contracted with designers to present to station design concepts. The City of Corona has concerns about impacts on mining operations and designated environmentally sensitive areas. The City of Norco is very concerned about impact to homes, business district and rural/equestrian lifestyle and is not supportive of HST.</p> <p>The City of Murrieta has not expressed a preference for I-15 vs. I-215 alignment but prefer alignment in freeway median to avoid property impacts. Concerned about impacts on existing and future development. I-15 station requested closer to Los Alamos Road.</p> <p>Pechanga Tribal Lands would be affected by proposed alignment and requested area where two creeks cross be avoided due its cultural significance. Alignment needs to clear Santiago Road and Temecula Creek.</p>	<p>conditions for the City.</p> <p>The City of Corona is very supportive of the I-15 alignment and placement of a station in the Dos Lagos area – either north or south of Cajalco Road. They have hired KTGy to develop station plans for both of these sites. The City of Corona and Corona Chamber of Commerce support HST for its economic development potential and faster travel times.</p> <p>The City of Murrieta has not expressed a preference for I-15 vs. I-215 alignment but prefer alignment in freeway median to avoid property impacts. Concerned about impacts on existing and future development. I-15 station requested closer to Los Alamos Road.</p> <p>Pechanga Tribal Lands would be affected by proposed alignment and requested area where two creeks cross be avoided due its cultural significance. Alignment needs to clear Santiago Road and Temecula Creek.</p>

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	I-10 through Riverside/I-215 via Chicago Avenue (A3.1) <b>(Carried Forward)</b>	I-10 through Riverside/I-215 via Iowa Avenue (A3.2) <b>(Withdrawn)</b>	I-10 through Riverside/I-215 via UC Riverside (A3.3) <b>(Withdrawn)</b>	I-15 Corridor - Milliken/ Hamner to Corona (A4.1) <b>(Withdrawn)</b>	I-15 Corridor - I-15 to Corona (A4.2) <b>(Carried Forward)</b>
<p><sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.</p> <p><sup>b</sup> Research into below-ground utilities has not yet been performed.</p> <p><sup>c</sup> Crossings of multilevel interchanges and major railroad crossings.</p> <p><sup>d</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.</p> <p><sup>e</sup> Digital National Wetlands Inventory data is not available for this region.</p> <p><sup>f</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.</p> <p><sup>g</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.</p> <p><sup>h</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet of either side of centerline).</p> <p><sup>i</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.</p> <p><sup>j</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within ½ mile of either side of centerline), following Caltrans standards.</p> <p>Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.</p>							

**Appendix B: S3-A1, S3-A2, S3-A3, S3-A4 and S3-A5 Alternatives (Murrieta/Temecula to San Diego – Subsection 3)**

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) (Carried Forward)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) (Withdrawn)	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) (Carried Forward)	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) (Withdrawn)	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) (Withdrawn)
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes <sup>a</sup>	30:03-30:39	27:16-27:52	27:16-27:52	27:16-27:52	26:05-26:41	25:54-26:30	21:45-22:21
		Route length (within option) - Miles	60.9	59.4	59.1	58.8	57.2	57.7	50.9
	Maximize connectivity and accessibility	Intermodal connections	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Connection to Coaster, Amtrak, Trolley, and bus at proposed Intermodal Transit Center at SDIA station.	Does not connect to urban center or airport. Connection to Trolley at Qualcomm Stadium Terminus station.
	Minimize Capital Costs	Comparative Capital Costs <sup>b</sup>	1.03	1.19	1.33	1.00	1.16	1.02	0.93

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) (Carried Forward)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) (Withdrawn)	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) (Carried Forward)	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) (Withdrawn)	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) (Withdrawn)
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, City of San Diego Multiplanning Area (MHPA) of the MSCP along the alignment. Inconsistency with Del Mar Mesa Preserve and impacts on USFWS trust resources along Carmel Valley Canyon.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, and City of San Diego MHPA of the MSCP along the alignment.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, and City of San Diego MHPA of the MSCP along the alignment.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, and City of San Diego MHPA of the MSCP along the alignment. Other land use inconsistencies where alignment is located outside of existing transportation ROWs in land designated for recreational park, trails, and open space as part of Rose Canyon Open Space Park.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, and City of San Diego MHPA of the MSCP along the alignment.  Consistency with regional transportation plans to provide multimodal connections with center city and San Diego International Airport.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP, and City of San Diego MHPA of the MSCP along the alignment.	Generally consistent with transportation intent in the General Plans for Cities of Temecula, and Murrieta, and City and County of San Diego.  Inconsistent with Caltrans planned improvements along I-15 corridor associated with various HOV/interchange improvements.  Inconsistent with North County MSCP and City of San Diego MHPA of the MSCP along the alignment.  Inconsistent with regional transportation plans to provide multimodal connections with center city and San Diego International Airport.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) (Carried Forward)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) (Withdrawn)	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) (Carried Forward)	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) (Withdrawn)	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) (Withdrawn)
Constructability	Constructability/ Complexity	Construction complexity	Challenging construction in coastal wetlands. Major bridge crossing of Lake Hodges. Tunneling required south of SR 76.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76. Deep tunnel under UTC.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76. Deep tunnel under UTC.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76. Below-grade configuration needed to clear Montgomery Field runways may require tunnel or trench construction near I-805.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76. Requires a 120-foot high viaduct structure over I-8/I-805 interchange.	Major bridge crossing of Lake Hodges. Tunneling required south of SR 76.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to SR 56.	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to SR 52.	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to SR 52.	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to SR 52.	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to I-8.	Impacts on Trolley, Coaster, Amtrak, and freight operations in LOSSAN corridor from SDIA to I-8.	None.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>c</sup>	No major longitudinal utilities anticipated within freeway ROW. Major sewer and gas lines exist along LOSSAN corridor south of SR 52.	No major longitudinal utilities anticipated within freeway ROW. Major sewer and gas lines exist along LOSSAN corridor south of SR 52.	No major longitudinal utilities anticipated within freeway ROW. Major sewer and gas lines exist along LOSSAN corridor south of SR 52.	No major longitudinal utilities anticipated within freeway ROW. Major sewer and gas lines exist along LOSSAN corridor south of SR 52.	No major longitudinal utilities anticipated within freeway ROW. Major sewer and gas lines exist along LOSSAN corridor south of SR 52.	No major longitudinal utilities anticipated within freeway ROW. Major oil pipelines exist near I-15/Friars Road interchange.	No major longitudinal utilities anticipated within freeway ROW. Major oil pipelines exist near I-15/Friars Road interchange.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>d</sup>	28	23	23	23	32	33	23
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>e</sup>	134 Highest displacement of properties in area.	81	81	86 Second highest displacement of properties in area.	72	70	70
		Acres of commercial	67	54	54	68	58	57	73
		Acres of industrial	55	105	122	71	40	30	50
		Acres of other (Public ROW, open space, schools, etc.)	370	310	284	333	266	272	286

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) (Carried Forward)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) (Withdrawn)	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) (Carried Forward)	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) (Withdrawn)	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) (Withdrawn)
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	17 new bridge crossings 9,870 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	15 new bridge crossings 9,574 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	15 new bridge crossings 8,036 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	16 new bridge crossings 6,011 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	12 new bridge crossings 4,046 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	13 new bridge crossings 13,432 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.	13 new bride crossings 6,011 linear feet of waterways  Includes several important aquatic resources throughout San Diego County, including, but not limited to, the San Luis Rey River, Moosa Creek, Escondido Creek, Los Penasquitos Creek, Carmel Creek, and the San Diego River.
		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres)	T/E: 401 Wetlands: 36acres HCPs:752acres NWR: none  Greatest impacts on natural resources including impacts on creek, wildlife connectivity, coastal California gnatcatcher, vernal pools, and Del Mar Mesa Preserve along Carmel Valley Canyon and SR 56.	T/E: 399 Wetlands: 29acres HCPs: 703acres NWR: 6acres  Including federally endangered willow monardella, coastal California gnatcatcher, vernal pool habitat and associated species.	T/E: 399 Wetlands: 27acres HCPs: 701acres NWR: 5acres  Per USFWS preliminary review, impacts on a small number of willow monardella through University City may be easier to address through translocations than impacts on USFWS trust resources along other alternative alignments.	T/E: 399 Wetlands: 22acres HCPs: 739acres NWR: 1acres  Including federally endangered willow monardella, coastal California gnatcatcher, vernal pool habitat and associated species.	T/E: 399 Wetlands: 18acres HCPs:684acres NWR: none  Vernal pool on Marine Corps Air Station Miramar has only vernal pool on Miramar occupied by federally endangered Riverside fairy shrimp. Vernal pool resources located west side of I-15. Fewer vernal pool resources along east side of I-15 than SR 163.	T/E: 399 Wetlands: 17acres HCPs:674acres NWR: none  Vernal pool on Marine Corps Air Station Miramar has only vernal pool on Miramar occupied by federally endangered Riverside fairy shrimp. Vernal pool resources located west side of I-15. Fewer vernal pool resources along east side of I-15 than SR 163.	T/E: 399 Wetlands: 17acres HCPs:682acres NWR: none  Vernal pool on Marine Corps Air Station Miramar has only vernal pool on Miramar occupied by federally endangered Riverside fairy shrimp. Vernal pool resources located west side of I-15. Fewer vernal pool resources along east side of I-15 than SR 163.
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>f</sup>	0	0	0	0	0	0	0
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>9</sup>	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.	Highly sensitive for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	113 Highest impact to parklands.	78	68	112 Second highest impact to parklands.	63	63	68

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) (Withdrawn)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) (Carried Forward)	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) (Withdrawn)	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) (Carried Forward)	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) (Withdrawn)	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) (Withdrawn)
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	99	74	68	68	68	68	68
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>h</sup>	Number of churches hospitals, schools, libraries and park properties within 500 feet of the centerline of the proposed ROW.	32 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Carmel Valley.	21 potential sensitive receptor sites.	21 potential sensitive receptor sites.	22 potential sensitive receptor sites. Noise impacts particularly extensive in open space/recreational lands associated with Rose Canyon Open Space Park.	20 potential sensitive receptor sites.	18 potential sensitive receptor sites.	17 potential sensitive receptor sites.
	Change in Visual/Scenic Resources <sup>i</sup>	High, medium and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW.	High Aerial structure visible from scenic open space parks/preserves; adjacent to coastal zone corridor.	High Aerial structure visible from scenic open space parks/preserves; adjacent to coastal zone corridor.	High Aerial structure visible from neighborhoods in Mira Mesa community	High Aerial structure visible from scenic open space park and recently commemorated VA cemetery in Miramar MCAS.	High Aerial structure visible from scenic open space parks/preserves.	High Aerial structure visible from scenic open space parks/preserves.	Medium
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	8 Including Rose Canyon, Mount Soledad, Mission Bay, and Old Town fault.	8 Including Rose Canyon, Mount Soledad, Mission Bay, and Old Town fault.	8 Including Rose Canyon, Mount Soledad, Mission Bay, and Old Town fault.	8 Including Rose Canyon, Mount Soledad, Mission Bay, and Old Town fault.	3 Including Mission Bay and Old Town fault .	4 Including Mission Gorge, Mission Bay, and Old Town fault.	5 Including Mission Gorge, Mission Bay, and Old Town fault.
	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>l</sup>	154 sites	144 sites	147 sites	148 sites	114 sites	88 sites	94 sites
Agency and Public Input	No specific criteria	No specific measurement	Army Corps of Engineers asked that this alignment be studied. However, there are significant travel time impacts, environmental impacts through a sensitive habitat conservation area, and community restraints.	This subsection alignment is not preferable for the Marines at MCAS Miramar as it conflicts with an existing VA cemetery and a planned mixed used development along Carroll Canyon.	This alignment is preferred by the City of San Diego and SANDAG as it connects to LOSSAN and allows for connectivity to Lindbergh Field.	This subsection alignment is not preferred due to significant environmental impacts.	This alignment goes through largely industrial areas and does not contain significant environmental or community impacts. It adheres closely to existing freeway ROW and allows for connectivity to Lindbergh Field. Planned Caltrans DAR ramp at SR 163 and Friars Road will need to be avoided.	Significant environmental operational constraints with MCAS Miramar and at Miramar Road and Miramar Way. Design and constructability constraints at I-8/I-805 junction overpass.	Same environmental constraints as S3-A4. Potential superfund site as City of San Diego's only gas tank farm is adjacent to Qualcomm Stadium. This alignment is not preferred by the City of San Diego or SANDAG as it does not provide connection to downtown or Lindbergh Field.

Evaluation Measure			Alternatives						
Category	Criteria	Measurement	Murrieta/Temecula to SDIA via SR 56 and LOSSAN Corridor (A1) <b>(Withdrawn)</b>	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Carroll Canyon (A2.1) <b>(Withdrawn)</b>	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - University City North (A2.2) <b>(Carried Forward)</b>	Murrieta/ Temecula to SDIA via I-15 to Mira Mesa and LOSSAN Corridor - Rose Canyon (A2.3) <b>(Withdrawn)</b>	Murrieta/Temecula to SDIA via SR 163 and I-8 (A3) <b>(Carried Forward)</b>	Murrieta/Temecula to SDIA via SR I-15 and I-8 (A4) <b>(Withdrawn)</b>	Murrieta/Temecula to Qualcomm Stadium Terminus via I-15 (A5) <b>(Withdrawn)</b>

<sup>a</sup> Travel time values are provided as a range, depending upon which alignment through Escondido is utilized.  
<sup>b</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.  
<sup>c</sup> Research into below ground utilities has not yet been performed.  
<sup>d</sup> Crossings of multilevel interchanges and major railroad crossings.  
<sup>e</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.  
<sup>f</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.  
<sup>g</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.  
<sup>h</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet of either side of centerline).  
<sup>i</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.  
<sup>j</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within ½ mile of either side of centerline), following Caltrans standards.  
 Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.

**Appendix B: S3-B1 and S3-B2 Alternatives (Murrieta/Temecula to San Diego – Subsection 3)**

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	Escondido Station I-15 Option (B1.1) (Carry Forward)	Escondido Station Centre City Parkway Option (below-grade) (B1.2) (Withdrawn)	Escondido Station Centre City Parkway Option (above-grade) (B1.3) (Withdrawn)	Downtown San Diego Station Option (SDIA to Santa Fe Depot) - (above-grade) (B2.1) (Withdrawn)	Downtown San Diego Station Option (SDIA to Santa Fe Depot) - (below-grade) (B2.2) (Withdrawn)
Design Objectives	Maximize ridership/revenue potential	Travel time (within option) – Minutes	N/A	36 seconds faster than B1.1, due to 150 mph curves versus 125 mph curves.	36 seconds faster than B1.1, due to 150 mph curves versus 125 mph curves.	1:21	1:21
		Route length (within option) - Miles	8.1	8.2	8.2	1.6	1.6
	Maximize connectivity and accessibility	Intermodal connections	Connects with Sprinter commuter rail and existing Escondido Transit Center (local and regional bus service).	Connects with Sprinter commuter rail and existing Escondido Transit Center (local and regional bus service).	Connects with Sprinter commuter rail and existing Escondido Transit Center (local and regional bus service).	Connects with San Diego Trolley and existing Coaster/Amtrak service in Downtown San Diego.	Connects with San Diego Trolley and existing Coaster/Amtrak service in Downtown San Diego.
	Minimize Capital Costs	Comparative Capital Costs <sup>a</sup>	0.94	3.90	1.00	N/A	N/A
Land Use	Consistency with other planning efforts and adopted plans	Qualitative analysis of applicable planning and policy documents	Generally consistent with the transportation intent of the Escondido General Plan Update and Downtown Specific Plan. Inconsistent with Caltrans I-15 managed lanes project.	Generally consistent with the transportation intent of the Escondido General Plan Update. Inconsistent with Downtown Specific Plan to develop alternative modes of transportation within the City's urban core. Inconsistent with circulation use of Center City Parkway if lanes taken.	Generally consistent with the transportation intent of the Escondido General Plan Update. Inconsistent with Downtown Specific Plan to develop alternative modes of transportation within the City's urban core. Inconsistent with circulation use of Center City Parkway if lanes taken.	Generally consistent with the transportation intent in the San Diego General Plan and Downtown Community Plan. Inconsistent with circulation use of Kettner Blvd if lanes taken. Inconsistent with recently adopted quite zone within Little Italy corridor. Inconsistent with the North Embarcadero Redevelopment Area plans.	Generally consistent with the transportation intent in the San Diego General Plan and Downtown Community Plan. Inconsistent with circulation use of Kettner Blvd if lanes taken. Inconsistent with recently adopted quite zone within Little Italy corridor. Inconsistent with the North Embarcadero Redevelopment Area plans.
	Development Potential for Transit-Oriented Development	Existing and potential land use within ½ mile of station locations	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.	See specific station option discussions.

Evaluation Measure			Alternatives				
Category	Criteria	Measurement	Escondido Station I-15 Option (B1.1) (Carry Forward)	Escondido Station Centre City Parkway Option (below-grade) (B1.2) (Withdrawn)	Escondido Station Centre City Parkway Option (above-grade) (B1.3) (Withdrawn)	Downtown San Diego Station Option (SDIA to Santa Fe Depot) - (above-grade) (B2.1) (Withdrawn)	Downtown San Diego Station Option (SDIA to Santa Fe Depot) - (below-grade) (B2.2) (Withdrawn)
Constructability	Constructability/Complexity	Construction complexity	Majority of the alignment is adjacent to the existing I-15 freeway.	Below-grade station would require large excavation area in middle of city.	Aerial guideway through heart of city.	Very challenging construction in Downtown San Diego. Width of station footprint is wider than existing ROW, which would conflict with adjacent high rise buildings.	Very challenging underground construction in Downtown San Diego. Width of station footprint is wider than existing ROW, which would conflict with adjacent high rise buildings.
	Disruption to existing railroads	Identify existing freight rail and other rail service connections	Station would be constructed over existing Sprinter tracks.	Station would be constructed near existing Sprinter tracks.	Station would be constructed near existing Sprinter tracks.	Significant impacts on existing Coaster/Amtrak terminus at Santa Fe Depot and also San Diego Trolley and freight operations downtown.	Significant impacts on existing Coaster/Amtrak terminus at Santa Fe Depot and also San Diego Trolley and freight operations downtown.
	Disruption/relocation of existing utilities	Identify major utilities requiring relocation <sup>b</sup>	Because most of alignment follows I-15, there should be minimal utility impacts except for overhead power lines.	Numerous utility impacts in downtown Escondido and along Centre City Parkway corridor.	Numerous utility impacts in downtown Escondido and along Centre City Parkway corridor.	Numerous utility impacts in Downtown San Diego.	Numerous utility impacts in Downtown San Diego.
	Transportation Corridor Crossings	Number of major crossings of transportation facilities <sup>c</sup>	3	3	3	1	1
Disruption to Communities	Acres potentially Impacted by Land Use	Acres of residential <sup>d</sup>	23	20	63	3	0
		Acres of commercial	11	7	22	10	2
		Acres of industrial	12	0	3	4	2
		Acres of other (Public ROW, open space, schools, etc.)	13	12	19	5	1
Natural Resources	Waterways and Wetlands and Natural Preserves or Biologically Sensitive Habitat Areas Affected	New bridge crossings of waterways/linear feet of waterways crossed	1 new bridge crossing 204 linear feet of waterways.	No new bridge crossings no waterways affected.	2 new bridge crossings 724 linear feet of waterways, including Escondido Creek.	No resources affected.	No resources affected.

Evaluation Measure			Alternatives				
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		Critical habitat/threatened and endangered species habitat (acres) Wetlands (acres) HCP Habitat (acres) National Wildlife Refuge (acres)	T/E : 0acres Wetlands: 1ac HCPs: 143acres NWR: 0	T/E : 0acres Wetlands: <1acres HCPs: 52acres NWR: 0	T/E : 6acres Wetlands: 1acres HCPs: 165acres NWR: 0	No resources affected	No resources affected
Natural Resources	Cultural Resources	Number of (previously recorded) historic structures within 100 feet of the centerline of the proposed ROW <sup>e</sup>	Historic sites: 0	Historic sites: 0	Historic sites: 0	Historic sites: 2 (Santa Fe Depot and McClintock Storage Warehouse)	Historic sites: 2 (Santa Fe Depot and McClintock Storage Warehouse)
		Archeological Sensitivity (identified as high, medium and low potential based on likely locations) <sup>f</sup>	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.	Moderately sensitive for archaeological deposits.
	Parklands	Acres of parklands within 100 feet of the centerline of the ROW	5 ac	3 ac	4 ac	No parklands affected.	No parklands affected.
	Agricultural Lands	Acres agricultural land affected within 100 feet of the centerline of the ROW	No agricultural lands affected.	No agricultural lands affected.	No agricultural lands affected.	No agricultural lands affected.	No agricultural lands affected.
Environmental Quality	Noise and vibration effects on sensitive receivers <sup>g</sup>	Number of churches, hospitals, schools, libraries and park properties within 500 feet of the centerline of the proposed ROW.	7 potential sensitive receptor sites.	0 potential sensitive receptor sites. Noise impacts particularly extensive at tunnel portals in residential areas along Center City Parkway.	4 potential sensitive receptor sites. Noise impacts particularly extensive in residential areas along Center City Parkway.	2 potential sensitive receptor sites. Noise impacts particularly extensive in urban/residential corridor along Little Italy and Kettner Blvd.	2 potential sensitive receptor sites.
	Change in Visual/Scenic Resources <sup>h</sup>	High, medium and low based on acres of residential, institutional and park properties within 100 feet of the centerline of the proposed ROW.	Medium level of visual change.	Low level of visual change.	High level of visual change. Aerial structure visible from residential uses along Center City Parkway.	High level of visual change. Aerial structure visible from prominent bayfront/view corridors, residential areas.	Medium level of visual change.
	Maximize avoidance of areas with geological and soils constraints	Number of fault crossings (FC) Alquist-Priolo fault zones (APZ)	No known fault crossings.	No known fault crossings.	No known fault crossings.	1 known fault crossing.	1 known fault crossing.

Evaluation Measure			Alternatives				
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	Maximize avoidance of areas with potential hazardous materials	Number of potential hazardous material sites within 1 mile (Cortese/Envirostar) and ½ mile (Geotracker) per Caltrans standard <sup>d</sup>	30 sites	4 sites	63 sites	62 sites	15 sites
Agency and Public Input	No specific criteria	No specific measurement	Preferred by the City of Escondido. This subsection alignment has the fewest community impacts and noise constraints. It is further away from SPRINTER Station and the Escondido Transit Center.	There are significant community, visual and noise impacts. The I-15 alignment is preferred by the City of Escondido.	Same impacts as B1.2. The I-15 alignment is preferred by the City of Escondido.	Santa Fe Depot is not preferred by SANDAG. Significant community and property impacts in a densely populated urban area. This subsection alignment does not provide interconnectivity to Lindbergh Field.	Same impacts as B2.1. Santa Fe Depot is not preferred by SANDAG. This subsection alignment does not provide interconnectivity to Lindbergh Field.

<sup>a</sup> Based on conceptual designs and compared to a corresponding segment from the 2005 Program Alignment.  
<sup>b</sup> Research into below-ground utilities has not yet been performed.  
<sup>c</sup> Crossings of multilevel interchanges and major railroad crossings.  
<sup>d</sup> Environmental constraints values calculated within 100-foot buffer on each side of centerline unless otherwise indicated.  
<sup>e</sup> Value counts only properties listed on the National Register of Historic Places; search of additional databases included in future alternatives analysis phase.  
<sup>f</sup> High/Med/Low ranking based on resources identified in the Statewide Program EIR/EIS, Native American Traditional Cultural Properties, and proximity to waterways known to contain cultural resources.  
<sup>g</sup> Sensitive receptors counted include schools, libraries, hospitals, and places of worship (within 500 feet of either side of centerline).  
<sup>h</sup> High/Med/Low ranking based on acres of residential uses adjacent, acres of parks adjacent, scenic roadway status, and presence of other known visual resources.  
<sup>i</sup> Counts include sites identified using Envirostar and Cortese databases (within 1 mile of either side of centerline), and Geotracker database (within ½ mile of either side of centerline), following Caltrans standards.  
 Note: Highlighted cells indicate primary reasons for recommending withdrawal. Black background in the column header cell indicates a recommendation for withdrawal, white indicates a recommendation for carried forward.