



SR-710 Study

Alternatives Analysis Report

Appendix C

Performance of Preliminary Set of Alternatives



Criteria and Measures for Initial Evaluation					Measurement Scales			Alternatives																		
Primary Element of Need (see Elements of Need Technical Memorandum, dated February 2, 2012)	Objective Statements	Evaluation Criterion	Measure Number	Performance Measure	Worst/Low Likely Outcome	Moderate/Medium Likely Outcome	Best/High Likely Outcome	1) No Build	2) TSM/TDM	3) BRT-1	4) BRT-2	5) BRT-3	6) BRT-4	7) BRT-5	8) BRT-6	9) BRT-7	10) LRT-1	11) LRT-2	12) LRT-3	13) LRT-4	14) LRT-5	15) Commuter Rail-1 (CR)	16) Commuter Rail-2 (CR)	17) Commuter Rail-3 (CR)		
					●	◐	◑	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡
1) Regional Transportation System (regional travel speeds low; regional travel delays high; regional travel times are unpredictable)	1) Minimize travel time	Trip travel time	1.1.1	Assessment of changes in multimodal travel times for a range local and regional trips.	Will likely increase/decrease travel times about equally, or have negative effect on travel time	Will likely decrease travel times on limited number of trips.	Will likely decrease travel time on many trips.	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡	
		Total travel time	1.1.2	Assessment of total travel time regionwide.	Likely to increase or have a negligible effect on total VHT	Potential for a slight decrease in total VHT	Potential for more than a slight decrease in total VHT	○	○	○	○	○	○	○	○	○	○	○	◐	○	○	○	○	○	○	○
		Travel time reliability	1.1.3	Percent of facilities in study area with dedicated or managed operations.	Minimal new dedicated facilities	Moderate level of dedicated or managed facilities	Greater than 10 miles of dedicated or managed facilities	○	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠
	2) Improve connectivity and mobility	Access to regional freeway system	1.2.1	Number of new connections to existing highway facilities	No change or potentially reduce freeway access and connections.	Moderate benefits to freeway access and connections.	Major benefits and/or more than three connections to existing freeways	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡
		Employment, health care, and education accessibility	1.2.2	Assessment of changes in travel time to employment bases, using both transit and highway modes.	Will likely increase/decrease travel times about equally, or have minimal effect on travel time for work trips	Will likely decrease travel time significantly on a limited number of work trips.	Will likely decrease travel time significantly on many work trips.	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡
		Access to regional transit system	1.2.3	Number of new connections to existing bus and rail facilities	Changes to bus and rail connections unlikely	Add some new connections to the transit network	Add significant new connections to the transit network	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡
		North-south throughput	1.2.4	Total north/south travel served	Not likely to result in a noticeable increase in north-south capacity.	Likely to result in a small increase in north-south capacity	Likely to result in a major increase in north-south capacity	○	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠
2) Freeway system in study area (over-capacity north/south travel demand affects mobility; high delays and unpredictable travel times on study are freeways; freeway system users take longer trips; high accident rates on freeways due to congestion)	3) Reduce congestion on freeway system	Level of congestion on study area freeways	1.3.1	Ability to attract trips from congested freeway segments in the core network in study area.	Likely to have a negligible change on freeway operations	Likely to have some improvement in capacity but little change in trip making	Likely to provide sufficient capacity to shift trips away from congested freeways, and improve operations.	○	○	◐	○	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝
3) Local Street system (affected by excess freeway traffic; operates at low speeds; out-of-place freeway trips cause high levels of congestion)	4) Reduce congestion on local street system	Local arterials traffic operations	1.4.1	Assessment of the shift in trips from congested arterials.	Negligible change in arterial travel	Minor change in arterial traffic volume and operations due to additional capacity on the surface street and/or freeway	Major change in arterial traffic volumes that will noticeably improve performance.	○	○	◐	○	○	○	○	◐	○	○	○	◐	◑	◒	○	○	○	○	
4) Transit system in study area (operational deficiencies of the highway system affects transit; low travel speeds for buses and increased delay for peak hour trips; north/south transit network is constrained by slow speeds on the arterial network)	5) Increase transit ridership	New transit ridership	1.5.1	Increase in transit ridership	Small increase in ridership	Medium increase in transit ridership	Large increase in transit ridership with the addition of new routes.	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡
		Transit accessibility	1.5.2	Percentage of study area population/employment within 1/4 mile of transit stop with high frequency service	Limited improvement in percentage population or employment within 1/4 mile of major transit lines	Moderate improvement in percentage population or employment within 1/4 mile of major transit lines	Significant improvement in percentage population or employment within 1/4 mile of major transit lines	○	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	◜	◝	◞	◟	◠	◡

Criteria and Measures for Initial Evaluation					Measurement Scales			Alternatives																	
Additional Values and Concerns	Objective Statements	Evaluation Criterion	Measure Number	Performance Measure	Worst/Low Likely Outcome	Moderate/Medium Likely Outcome	Best/High Likely Outcome	1) No Build	2) TSM/TDM	3) BRT-1	4) BRT-2	5) BRT-3	6) BRT-4	7) BRT-5	8) BRT-6	9) BRT-7	10) LRT-1	11) LRT-2	12) LRT-3	13) LRT-4	14) LRT-5	15) Commuter Rail-1 (CR)	16) Commuter Rail-2 (CR)	17) Commuter Rail-3 (CR)	
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Environmental & Communities (Improve environmental conditions related to transportation sources within local communities within the study area)	6) Minimize environmental and community impacts related to transportation	Right-of-way footprint for projects	1.6.1	Acres of right-of-way (all land uses)	Large area of right-of-way acquisition required	Medium area right-of-way acquisition required	Low area of right-of-way acquisition required	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Potential for effects to recreational resources	1.6.2	Recreational sites within proximate distance	Major effects to recreational sites (>2 sites)	Moderate effects to recreational sites (1-2 sites)	Minimal effects to recreational sites (0 sites)	◑	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Potential for effects to known cultural/historic resources	1.6.3	Concentration of known cultural sites/historical districts or buildings within proximate distance	Major effects to cultural/historic resources (>100 resources)	Moderate effects to cultural/historic resources (51-100 resources)	Minor effects to cultural/historic resources (1-50 resources)	◑	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
		Potential for air quality effects	1.6.4	Length through sensitive receptor areas	Major effect to sensitive receptors within the vicinity of the project alignment	Moderate effect to sensitive receptors within the vicinity of the project alignment	Minimal effect to sensitive receptors within the vicinity of the project alignment	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
		Potential for visual effects on communities	1.6.5	Visual intrusion into communities	Visibility of alternative to adjacent land use - (elevated)	Visibility of alternative to adjacent land use - (at-grade)	Visibility of alternative to adjacent land use - (depressed)	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
		Potential for effects on Environmental Justice populations	1.6.6	Environmental Justice populations within proximate distance	Traverses environmental justice populations (>15 census tracts meeting 2 or more EJ criteria)	Traverses environmental justice populations (6-15 census tracts meeting 2 or more EJ criteria)	Traverses environmental justice populations (0-5 census tracts meeting 2 or more EJ criteria)	◑	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
Consistency with Plans (Implement the goals and objectives of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and Long Range Transportation Plan (LRTP) relating to this study area)	7) Assure consistency with regional plans and strategies	Consistency with draft SCAG RTP/SCS regarding corridor	1.7.1	Implements one or more of the RTP/SCS goals/objectives	Meets 0-1 goals/objectives	Meets 2-3 goals/objectives	Meets 4 or more goals/objectives	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Consistency with Measure R intent for corridor	1.7.2	Implements one or more of the goals/objectives	Meets 0-1 goals/objectives	Meets 2-3 goals/objectives	Meets 4 or more goals/objectives	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Metro LRTP intent for corridor	1.7.3	Implements one or more of the goals/objectives	Meets 0 goals/objectives	Meets 1 goal/objective	Meets 2 or more goals/objectives	◐	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
Provide Financially Feasible Transportation Solutions	8) Maximize cost-efficiency of public investments	Cost-effectiveness (Construction costs used as proxy for the initial evaluation)	1.8.1	Relative construction costs (Construction costs used as proxy for the initial evaluation)	Greater than approximately \$4 billion	Approximately \$2-to-4 billion	Less than approximately \$2 billion	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Financial feasibility	1.8.2	Potential for funding	No significant local/regional funding would be available	A moderate portion of cost can be funded with local/regional funding	Potentially all/most of investment can be funded using local/regional funding	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	
		Technical feasibility	1.8.3	Technology demonstrated to be feasible	Technology does not yet exist.	Similar technologies have been successfully completed showing reasonability that technology can be applied	Examples of same type projects have been successfully completed	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	

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