MID-COAST CORRIDOR
TRANSIT PROJECT

Chapter 6
Evaluation of Conceptual Alternatives

6.0 EVALUATION OF CONCEPTUAL ALTERNATIVES

This chapter provides a structured process for comparing the conceptual Transportation Systems Management (TSM), light rail transit (LRT), bus rapid transit (BRT), and commuter rail alternatives under consideration and reaching a decision on those alternatives that should be carried forward. It recommends a smaller set of alternatives to carry forward into California Environmental Quality Act (CEQA) scoping and recommends those to be eliminated from further consideration. Using the analysis results presented in Chapter 5.0, this chapter evaluates how well the alternatives meet the project goals that were identified in Chapter 2.0. The potential environmental and traffic impacts that could influence the selection of alternatives to carry forward and assessments of cost effectiveness and financial feasibility also are summarized. The chapter concludes with a summary of trade-offs, highlighting the major choices to be made when selecting the alternatives to carry forward.

6.1 Effectiveness in Meeting Project Goals and Objectives

Chapter 2.0, and specifically Table 2-1, identified the project goals that were derived from the purpose and need presented in Chapter 1.0. Table 2-2 identified several additional San Diego Association of Governments (SANDAG) regional policy objectives that are relevant to a decision on which alternatives to carry forward. These goals and objectives were used to evaluate each alternative's effectiveness in addressing purpose and need and consistency with SANDAG regional policy objectives.

The project goals derived from the purpose and need are:

- Goal 1: Increase the overall capacity of the transportation system serving the study area
- Goal 2: Reduce auto person trips and vehicle miles traveled (VMT) and vehicle hours traveled (VHT)
- Goal 3: Link study area transit services with existing transit facilities and services to improve regional connectivity and mobility
- Goal 4: Increase transit ridership and mode share
- Goal 5: Increase transit on-time performance
- Goal 6: Reduce the disparity between highway and transit speeds and travel times
- Goal 7: Provide fast and efficient transit service to the University City area
- Goal 8: Provide direct transit connections to the University of California, San Diego (UCSD) West Campus
- Goal 9: Provide high capacity and quality transit service to those parts of the study area with existing or planned density and other transit friendly characteristics
- Goal 10: Help shape local land use planning to help foster transit oriented development (TOD) near transit stations

The project objectives derived from SANDAG regional policies are:

- Objective 1: Maintain consistency with regional and local plans
- Objective 2: Reduce greenhouse gas (GHG) emissions
- Objective 3: Limit impacts to sensitive habitats
- Objective 4: Improve access for low-income, minority, elderly, and disabled persons
- Objective 5: Avoid adverse impacts to low-income, minority, elderly, and disabled persons

This section assesses how well each alternative addresses these goals and objectives based on the analysis results presented in Chapter 5.0. The most relevant analysis results are summarized in Table 6-1; however, they have been reorganized below to better correlate with the above goals and objectives. For each goal or objective, each alternative is rated from more effective to less effective.

6.1.1 Effectiveness in Meeting Project Goals - Mobility/Accessibility

The purpose and need for a transit investment in the Mid-Coast Corridor focuses on improving mobility and accessibility. This section compares how well the alternatives meet this need, by addressing the project goals and objectives and the analysis results presented in Chapter 5.0.

6.1.1.1 Transportation System Capacity (Goal 1)

All the alternatives under consideration would increase the capacity of the transportation system in the Mid-Coast Corridor. In Table 6-1, capacity is measured using additional place miles of transit service, compared to the No-Build Alternative. Place miles refer to the carrying capacity of the transit system. It is calculated using the vehicle miles reported in Table 5-1 in Chapter 5.0 and multiplying them by the capacity of each vehicle type that would be used to operate the proposed transit service. Another measure of capacity is total peak-hour, peak-direction capacity for all north-south Mid-Coast Corridor transit routes. It is calculated by multiplying the capacity of each vehicle type by the number of vehicles per hour for each route. All transit routes serving the Mid-Coast Corridor north of OTTC were used in the calculation of peak-hour capacity.

Of the alternatives considered, the LRT alternatives would provide the largest increase in transit capacity, with up to 1.5 million annual additional place miles of service. Capacity differences among the LRT alternatives are not significant. Compared to the LRT alternatives, the TSM Alternative would have approximately one-fourth as much new capacity and the Commuter Rail Alternative would have just over half as much new capacity. The BRT alternatives would provide for the smallest increase in new transit capacity. It is important to note that the alternative with the highest capacity may not necessarily be the most efficient, if that capacity is not being utilized. Although the LRT alternatives would provide for the greatest increase in capacity, their capacity exceeds forecast passenger demand because LRT train capacity was determined by maximum passenger loads south of Downtown San Diego. Place miles of capacity for the other alternatives more closely matched forecast passenger demand because capacity for these alternatives are based on passenger demand in the Mid-Coast Corridor north of

Table 6-1. Effectiveness in Meeting Project Goals and Objectives

Goals/Objectives and Evaluation Criteria	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	Commuter Rail
Goal 1: Increase the overall capacity of the transportation system serving the study area													
• Increase in daily place miles of transit service	449,400	1,608,600	1,611,900	1,551,000	1,603,600	1,587,000	1,562,100	1,487,800	37,400	42,700	48,000	42,200	891,000
• Total peak hour, peak direction capacity	3,400	7,300	7,300	7,300	7,300	7,300	7,300	7,300	3,200	3,200	3,200	3,200	4,500
• Rating	●	○	○	○	○	○	○	○	●	●	●	●	◒
Goal 2: Reduce auto person trips and VMT and VHT													
• Change in daily auto-person trips compared to No-Build	-1,900	-12,100	-11,800	-11,800	-12,300	-12,300	-12,100	-11,300	-4,400	-3,000	-2,400	-3,100	-4,600
• Change in daily vehicle miles compared to No-Build	-24,500	-123,900	-121,400	-124,5008	-125,100	-127,500	-119,500	-107,200	-55,300	-32,100	-20,400	-33,000	-39,500
• Change in daily vehicle hours compared to No-Build	-1,500	-7,500	-7,900	-6,900	-7,200	-7,400	-6,800	-6,900	-3,600	-3,100	-2,000	-2,500	-2,200
• Rating	●	○	○	○	○	○	○	○	◒	◒	◒	◒	◒
Goal 3: Link study area transit services with existing transit facilities and services to improve regional connectivity and mobility													
• Transit user benefits (equivalent hours per year)	725,291	3,570,752	3,503,232	3,412,197	3,622,859	3,640,155	3,556,357	3,214,240	876,992	370,629	187,627	434,149	619,680
• Transfer rate (range of transit boardings per transit trip for major travel markets)	1.77 – 2.93	1.65 – 2.49	1.65 – 2.49	1.68 – 2.56	1.65 – 2.49	1.65 – 2.49	1.65 – 2.54	1.64 – 2.62	1.75 – 2.91	1.72 – 2.91	1.73 – 2.91	1.72 – 2.91	1.72 – 3.18
• Rating	●	○	○	○	○	○	○	○	●	●	●	●	●
Goal 4: Increase transit ridership and mode share													
• Daily new transit trips compared to No-Build	1,912	12,329	12,084	12,046	12,512	12,564	12,332	11,530	4,393	2,966	2,396	3,117	4,689
• Daily new transit boardings compared to No-Build	6,011	24,782	24,393	25,948	25,288	25,312	25,736	24,259	12,909	9,294	8,007	9,899	14,034
• Rating	●	○	○	○	○	○	○	○	●	●	●	●	●
Goal 5: Increase transit on-time performance													
• Percentage transit alignment exclusive guideway	0%	100%	100%	100%	100%	100%	100%	100%	88%	55%	12%	25%	100%
• Number of at-grade intersection crossings	49	4	5	0	0	0	0	0	13	32	40	24	0
• Rating	●	○	○	○	○	○	○	○	◒	◒	●	●	○
Goal 6: Reduce the disparity between highway and transit speeds and travel times													
• Change in transit travel time from University Towne Centre (UTC) to Downtown San Diego compared to No- Build	-3 minutes	+1 minute	+3 minutes	-9 minutes	-1 minute	-1 minute	-1 minute	-3 minutes	-4 minutes	+3 minutes	+5 minutes	No change	-8 minutes
• Change in transit travel time from Downtown San Diego to UCSD West Campus compared to No-Build	- 1 minute	- 7 minutes	-7 minutes	-5 minutes	-7 minutes	-7 minutes	-7 minutes	+ 2 minutes	- 11 minutes	-5 minutes	+ 2 minutes	- 5 minutes	+6 minutes
• Change in transit travel time from South Bay to UCSD West Campus compared to No-Build	-5 minutes	-17 minutes	-17 minutes	-14 minutes	-17 minutes	-17 minutes	-17 minutes	-8 minutes	-15 minutes	-9 minutes	-2 minutes	-9 minutes	-4 minutes
• Change in transit travel time from Mission Valley to UCSD West Campus compared to No-Build	-4 minutes	-13 minutes	-13 minutes	-10 minutes	-13 minutes	-13 minutes	-13 minutes	-4 minutes	-13 minutes	-9 minutes	-3 minutes	-9 minutes	+6 minutes
• Rating	◒	○	○	○	○	○	○	◒	○	◒	●	◒	●

Table 6-1. Effectiveness in Meeting Project Goals and Objectives (continued)

Goals/Objectives and Evaluation Criteria	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	Commuter Rail
Goal 7: Provide fast and efficient transit service to the University City area													
• Transit travel time from Mission Valley to UTC	49 minutes	38 minutes	40 minutes	29 minutes	37 minutes	37 minutes	37 minutes	34 minutes	38 minutes	42 minutes	48 minutes	42 minutes	31 minutes
• Transit travel time from Downtown San Diego to UTC	48 minutes	41 minutes	43 minutes	31 minutes	39 minutes	39 minutes	39 minutes	37 minutes	36 minutes	43 minutes	49 minutes	43 minutes	34 minutes
• Rating	◒	○	○	○	○	○	○	○	○	○	◒	○	○
Goal 8: Provide direct transit connections to the UCSD West Campus													
• Transit travel time from Downtown San Diego to UCSD	40 minutes	34 minutes	34 minutes	36 minutes	34 minutes	34 minutes	34 minutes	43 minutes	30 minutes	36 minutes	43 minutes	36 minutes	47 minutes
• Transit travel time from South Bay to UCSD	71 minutes	59 minutes	59 minutes	62 minutes	59 minutes	59 minutes	59 minutes	68 minutes	61 minutes	67 minutes	74 minutes	67 minutes	72 minutes
• Transit travel time from South San Diego to UCSD	60 minutes	48 minutes	48 minutes	50 minutes	48 minutes	48 minutes	48 minutes	57 minutes	49 minutes	56 minutes	63 minutes	56 minutes	61 minutes
• Transit travel time from Mission Valley to UCSD	40 minutes	31 minutes	31 minutes	34 minutes	31 minutes	31 minutes	31 minutes	40 minutes	31 minutes	35 minutes	41 minutes	35 minutes	50 minutes
• Rating	◒	○	○	○	○	○	○	◒	○	◒	●	◒	●
Goal 9: Provide high capacity and quality transit service to those parts of the study area with existing or planned density and other transit friendly characteristics													
• Number of stations with forecast medium- and high-employment density within 1/4 mile of stations[1]	7	6	6	4	6	6	6	5	6	7	7	6	2
• Number of stations with forecast medium- and high-population density within 1/4 mile of stations[2]	8	8	8	6	8	8	8	7	8	8	8	8	2
• Rating	○	○	○	○	○	○	○	○	○	○	○	○	●
Goal 10: Help shape local land use planning to help foster TOD near stations													
• Number and type of planned smart growth centers within which stations are located[3]	8	8	8	6	8	8	8	7	8	8	8	8	2
• Rating	○	○	○	○	○	○	○	○	○	○	○	○	●

1 Employment densities are those downloadable from the SANDAG web page for forecast 2030 civilian employment by census tract and acreage of industrial, office, commercial, and school land use. Low density is < 30 employees per acre, medium density is > 30 but < 50 employees per acre, and high density is > 50 employees per acre based on guidelines published in the *Regional Comprehensive Plan* (SANDAG 2004a).

2 Population densities are those downloadable from the SANDAG web page for forecast 2030 total population by census tract and acreage of single family, multifamily, and mobile home land use. Low density is < 15 dwelling units per acre, medium density is > 14 but < 44 dwelling units per acre, and high density is > 44 dwelling units per acre based on guidelines published in the *City of San Diego General Plan* (CSD 2008a).

3 Smart growth areas are those shown on the July 2008 SANDAG Smart Growth Concept Map.

Table 6-1. Effectiveness in Meeting Project Goals and Objectives (continued)

Goals/Objectives and Evaluation Criteria	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	Commuter Rail
Objective 1: Maintain consistency with regional and local plans													
• Consistent with regional plans	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
• Consistent with local plans	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
• Rating	●	○	○	○	○	○	○	○	●	●	●	●	●
Objective 2: Reduce GHG emissions													
• Change in daily vehicle miles compared to No-Build	-24,500	-123,900	-121,400	-124,500	-125,100	-127,500	-119,500	-107,200	-55,300	-32,100	-20,400	-33,000	-39,500
• Rating	◒	○	○	○	○	○	○	○	◒	◒	◒	◒	◒
Objective 3: Limit impacts to sensitive habitats													
• Length of alignment with construction activities within 100 feet of special-status vegetation communities	0	6,844	6,844	9,070	6,844	6,844	8,210	8,227	6,956	6,106	0	720	6,413
• Acreage of suitable habitat for federal or state listed species within 500 feet of alignment	180	131	122	212	134	127	130	138	119	117	148	146	211
• Rating	○	◒	◒	◒	◒	◒	◒	◒	◒	◒	○	○	◒
Objective 4: Improve access for low-income, minority, elderly, and disabled persons													
• Total population residing within 1/4 mile of stations (2000 U.S. Census)	11,348	12,083	12,083	7,922	12,083	12,083	12,083	10,414	12,083	12,846	11,348	11,835	3,341
• Low-income population residing within 1/4 mile of stations (2000 U.S. Census)	1,539	1,702	1,702	951	1,702	1,702	1,702	1,697	1,702	1,761	1,539	1,679	709
• Minority population residing within 1/4 mile of stations (2000 U.S. Census)	4,124	4,592	4,592	3,010	4,592	4,592	4,592	3,814	4,592	4,782	4,124	4,539	1,048
• Transit-dependent households located within 1/4 mile of stations (2000 U.S. Census)	213	249	249	148	249	249	249	263	249	256	213	242	112
• Rating	○	○	○	○	○	○	○	○	○	○	○	○	●
Objective 5: Avoid adverse impacts to low-income, minority, elderly, and disabled persons													
• Proportion of displaced residences located in disadvantaged neighborhoods	0	0	0	0	0	0	0	0	0	0	0	0	0
• Rating	○	○	○	○	○	○	○	○	○	○	○	○	○

○ ◒ ●

More Effective — Less Effective

OTTC. The comparison of peak-hour, peak-direction transit capacity provided by the alternatives more clearly illustrates the difference between the LRT alternatives and the other build alternatives. The LRT alternatives would provide about twice the transit capacity of the TSM and BRT alternatives. The Commuter Rail Alternative would have over half the capacity of the LRT alternatives.

6.1.1.2 Auto Person Trips and Vehicle Miles and Hours (Goal 2)

Another indicator of each alternative's effectiveness is its projected impact on highway demand. The most effective alternatives are those that reduce highway demand the most by attracting auto trips to transit. As presented in Table 5-11, Chapter 5.0, the LRT alternatives are expected to remove the largest number of daily trips off the highway system. The results of the travel forecasts suggest that LRT Alternatives 4 and 5 would be more effective than the other LRT alternatives, but the differences among the LRT alternatives would be minimal. Compared to the LRT alternatives, the BRT alternatives and the Commuter Rail Alternative would lead to smaller decreases in highway travel, while the TSM Alternative would be the least effective of the alternatives considered.

6.1.1.3 Connections to Regional Transit Services (Goal 3)

As described in Chapter 1, the study area travel patterns are diverse, with people traveling to, from, within, and through the study area. The travel patterns analysis identified large numbers of trips between the study area and Downtown San Diego, South Bay/South San Diego, and Mission Valley. For those traveling by transit, most trips between the study area and major travel markets require a transfer. This goal seeks to make connections to the regional transit system—the existing Trolley, COASTER, and bus systems – more convenient, while reducing the need to transfer between modes and routes.

All the LRT alternatives would improve connections to regional transit service. By extending the Trolley Blue Line to University City, the LRT alternatives would eliminate the transfer between bus and LRT at the Santa Fe Depot. Connections at Old Town Transit Center (OTTC) also would be improved with the cross platform transfer between the Mid-Coast extension of the Trolley Blue Line and the Trolley Green Line. The more direct LRT alternative connections would reduce transfers compared to the other alternatives.

The TSM and BRT alternatives also would improve connections, but would still require a transfer to other regional services to access the major travel markets. The Commuter Rail Alternative also would provide improved connections to regional transit services at OTTC and the Santa Fe Depot.

To quantify these benefits, Table 6-1 presents the user benefits attributable to each alternative. This measure captures the aggregate travel time savings that would result from fewer transfers and transit travel speed changes. As shown, the LRT alternatives are the most effective alternatives under consideration, providing about four times the user benefits compared to the other alternatives.

The transfers required to reach one's final destination are another indicator of improved connections. Because transfers introduce uncertainty and longer travel times, travelers consider transfer time to be more onerous than time spent traveling in a vehicle. Table

6-1 uses the data in Table 5-5 showing transfer rates (boardings per trip) for four major travel markets. The LRT alternatives would have the lowest transfer rates, indicating that the service would require fewer transfers and thus would be more attractive to travelers. Because they all offer similar service and identical connections, all of the LRT alternatives would have almost the same transfer rates.

6.1.1.4 Transit Ridership and Mode Share (Goal 4)

Although the service levels would be similar among the alternatives, the LRT alternatives would be more effective than the TSM, BRT, and Commuter Rail alternatives in attracting new transit riders. Daily transit ridership would increase by over 12,000 trips under the LRT alternatives. LRT Alternatives 4 and 5 would produce the most trips and LRT Alternative 7 the fewest. The lack of a UCSD West Campus Station under LRT Alternative 7 would reduce college trips by transit and total ridership.

The BRT alternatives would attract between 2,400 and 4,200 new transit trips. Although the BRT alternatives would improve travel times, transit riders would still have to transfer for trips to/from South Bay/South San Diego and Mission Valley. The BRT alternatives would not be significantly better than the TSM Alternative.

By comparison, the Commuter Rail Alternative would be somewhat more effective than the BRT alternatives, but would attract 7,000 fewer new transit trips than the LRT alternatives. Because of the lower service frequency, most of the new trips resulting from this alternative would be work trips. The Commuter Rail Alternative would have only two new stations and would provide service to a smaller population than the LRT alternatives. Additionally, the alternative would have no stations on the UCSD campus.

6.1.1.5 Transit On-Time Performance (Goal 5)

Reliability for transit riders would increase under the build alternatives as transit trips would shift from buses operating on streets in shared lanes with mixed traffic to fixed guideway. The LRT and Commuter Rail alternatives would provide an all fixed-guideway alignment and would have more reliable service than the TSM and BRT alternatives. The LRT extension from OTTC to University City under all the LRT alternatives and the Commuter Rail Alternative would be grade separated without street crossings. Within University City, the LRT alternatives would provide fixed guideway, but with at-grade crossings. LRT Alternatives 3 and 4 through 7 would have the fewest number of crossings and thus the fewest potential conflicts with street traffic. Although the Commuter Rail Alternative would be grade separated, and thus reliable, it would depend on connecting transit services for trips not served by the commuter rail. The transfers to connecting transit services would reduce the reliability of this alternative.

The BRT alternatives would vary in the fixed-guideway exclusive lanes north of Downtown San Diego. The percentage of the corridor served by a fixed-guideway alignment would range from 88 percent under BRT Alternative 1 to 12 percent under BRT Alternative 3. With more transit trips carried on new fixed-guideway under the build alternatives, the percentage of transit passenger miles by bus in mixed-flow traffic would be reduced.

6.1.1.6 Disparity between Highway and Transit Speeds and Travel Times (Goal 6)

The build alternatives would increase average transit speeds and reduce transit travel times, making transit more competitive with the automobile. Table 6-1 presents the

travel times changes from the No-Build Alternative for trips between four major travel markets. The comparison of changes show how much faster transit travel would be compared to the No-Build Alternative. These travel markets are: UTC to Downtown San Diego, Downtown San Diego to UCSD, South Bay to UCSD, and Mission Valley to UCSD. LRT Alternatives 1 through 6 and BRT Alternative 1 would offer the greatest speed increase and corresponding travel time reductions.

Travel times between UTC and Downtown San Diego would be reduced by up to 9 minutes under the LRT Alternative 1 compared to the No-Build Alternative. This alternative would provide the highest speeds between these major markets. The travel time benefits would be greatest for those trips where a transfer would be required in the No-Build Alternative. For example, travel times for trips between South Bay and UCSD, which require a transfer, would be reduced by 17 minutes under the LRT alternatives. Even trips that require a transfer would experience a travel time reduction under most build alternatives. Travel times between Mission Valley and UCSD would be reduced by up to 13 minutes under the LRT alternatives and BRT Alternative 1.

6.1.1.7 Fast and Efficient Service to the University City Area (Goal 7)

The University City area, in the northern portion of the Mid-Coast Corridor, is a major regional trip generator. Although transit service is relatively direct, transit travel times are not competitive with the auto. The data in Table 6-1 shows projected travel times between UTC and Mission Valley and between UTC and Downtown San Diego. LRT Alternative 3 would provide the fastest and most direct connection to UTC, followed by the Commuter Rail Alternative.

6.1.1.8 Direct Service to UCSD West Campus (Goal 8)

All but two of the alternatives would provide direct service to the UCSD West Campus. For travel to the UCSD West Campus, LRT Alternative 7 would require a transfer at the UCSD East Station and the Commuter Rail Alternative would require a transfer at the UTC Transit Center Station. Table 6-1 presents the estimated transit travel times between the UCSD West Campus and key destinations. LRT Alternatives 1, 2, 4, 5 and 6 would most effectively link UCSD to these markets, and the Commuter Rail Alternative would be the least effective.

6.1.2 Effectiveness in Meeting Project Goals - Land Use/Economic Development

The project goals and objectives also identify a desire to use a transit investment in the Mid-Coast Corridor to serve more dense areas and help shape land use in accordance with adopted plans, including planned smart growth centers. This section compares the alternatives in terms of how well they support these goals.

6.1.2.1 Service to Areas with Existing or Planned Density (Goal 9)

All the alternatives would offer high capacity and quality transit service to medium- to high-density areas within the study area. The TSM, LRT and BRT alternatives would serve six to eight medium- to high-density areas, while the Commuter Rail Alternative would serve just two. The TSM Alternative would provide somewhat less quality than the LRT and BRT alternatives, however, as the buses would operate largely in mixed traffic, would be less likely to stay on schedule.

6.1.2.2 Shape Land Use Planning (Goal 10)

The SANDAG Smart Growth Map identifies centers that are planned for more compact, higher-density residential and commercial development. Transit can support smart growth plans by providing stations and good transit access within these centers. As shown in Table 6-1, the TSM, LRT, and BRT alternatives would provide stations within six to eight smart growth centers, while the Commuter Rail Alternative would have two stations located within two smart growth centers.

6.1.3 Effectiveness in Meeting Other Project Objectives – SANDAG Regional Policies

In addition to the project goals derived from the purpose and need, the alternatives were evaluated against several SANDAG regional policy objectives relevant to a decision on which alternatives to carry forward. They include objectives related to consistency with regional and local plans, reducing GHG emissions, minimizing impacts to sensitive habitats, and improving access to and avoiding impacts to low-income, minority, elderly and disabled persons. This section compares the alternatives in terms of how well they support these objectives.

6.1.3.1 Consistency with Regional and Local Plans (Objective 1)

SANDAG's *Regional Comprehensive Plan* (RCP) (SANDAG 2004a) and local comprehensive plans have long assumed LRT in the Mid-Coast Corridor along Interstate 5 (I-5) to UCSD and UTC. Thus, all the LRT alternatives are consistent with the adopted plans. The other alternatives are not.

6.1.3.2 Reduce GHG Emissions (Objective 2)

GHG emissions from automobiles are a function of VMT. All the alternatives would make transit a more attractive mode, attracting new riders and reducing VMT. While favorable, the VMT reduction is a small percentage when compared to VMT in the San Diego region. The potential to reduce GHG emissions would be greater under the LRT alternatives.

6.1.3.3 Impacts to Sensitive Habitats (Objective 3)

Because of construction activities in Rose Canyon, LRT Alternative 3 and the Commuter Rail Alternative would have the greatest potential to impact sensitive wildlife habitats. As the TSM Alternative and BRT Alternative 3 would predominately use existing infrastructure near sensitive habitats, these alternatives are considered to have no wildlife impacts. BRT Alternative 4 would require constructing a new San Diego River crossing, where temporary construction activities could potentially impact sensitive wildlife habitats. All other build alternatives (LRT Alternatives 1, 2, and 4 through 7, and BRT Alternatives 1 and 2) would require construction along Rose Creek and the west-facing slopes along the east side of I-5. These alternatives would have a moderate potential to impact wildlife habitats during construction.

6.1.3.4 Improve Access for Low-Income, Minority, Elderly, and Disabled Persons (Objective 4)

All the alternatives would improve access for people who tend to be transit dependent – i.e., low-income, minority, elderly, and disabled persons. The benefits would vary by alternative, with the Commuter Rail Alternative serving the fewest transit dependent persons and LRT Alternative 3 serving a small number of transit dependent persons as well. All the alternatives would be accessible to persons with disabilities and comply with the Americans with Disabilities Act (ADA).

6.1.3.5 Avoid Adverse Impacts to Low-Income, Minority, Elderly, and Disabled Persons (Objective 5)

Residential displacements in disadvantaged neighborhoods are not anticipated with any of the alternatives.

6.2 Other Potential Environmental and Traffic Impact Considerations

An alternative that meets the project goals and objectives may have a high potential for adverse impacts, resulting in its elimination from consideration before the Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR). This section uses the environmental and traffic impacts analyses presented in Chapter 5.0 to identify those potential impacts that could influence the alternatives to be carried forward. The results of the evaluation are presented in Table 6-2. If an alternative is retained for further consideration, its impacts (and potential avoidance and mitigation measures) would be included in the Draft SEIS/SEIR and considered in the selection of a Locally Preferred Alternative (LPA).

6.2.1 Potential Environmental Impacts

This section supplements Section 6.1.3.3, Potential Impacts to Sensitive Habitats, discussed above and identifies other potential adverse community, built environment, and natural and cultural resources impacts that should be considered. For this evaluation, the emphasis is on those impacts that are significant enough to offer a reason to eliminate an alternative from consideration at this point in the process. Further discussion of other potential impacts is provided in Chapter 5.0.

The build alternatives could potentially impact jurisdictional waters as they would require new San Diego River, Tecolote Creek, and Rose Creek crossings. A new San Diego River crossing would be required for all LRT alternatives, BRT Alternatives 1 and 4, and the Commuter Rail Alternative. At Tecolote Creek, a new creek crossing would be required for all LRT alternatives and BRT Alternative 1. Along Rose Creek, the LRT alternatives and BRT Alternatives 1 and 2 would require three new crossings, while the Commuter Rail Alternative would require five new crossings. BRT Alternatives 3 and 4 would not cross Rose Creek, as they would operate on the planned I-5 high-occupancy vehicle (HOV) lanes. BRT Alternative 3 would utilize mostly existing street rights-of-way and have no new jurisdictional water crossings.

The build alternatives would introduce new visual elements. The potential for visual impact depends on the extent to which new visual elements could obstruct a view, create new views, or change the visual character or quality within the surrounding area. In areas where the new guideway would be at grade, visual impacts would likely to be low; however, where an alternative would be on an elevated structure, there would be a high potential for visual impacts to the surrounding area. These impacts could be particularly pronounced in areas of high visual quality, such as Rose Canyon or Rose Creek. Under the build alternatives, the greatest potential for visual impacts would occur under all of the LRT alternatives, except LRT Alternative 3, and all of the BRT alternatives, which would have new aerial structures along roads in University City.

Table 6-2. Other Potential Environmental and Traffic Impact Considerations

	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	CR
Potential Environmental Impacts													
• Number of new crossings of jurisdictional waters	0	5	5	5	5	5	5	5	5	3	0	1	6
• Visual impacts	Low to No Impact	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Low
• Number of dwelling units within 300 feet	1,766	1,307	1,198	1,716	1,284	1,300	1,406	1,372	1,307	1,367	1,766	1,566	1,131
• Rating	○	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒
Potential Localized Traffic Impacts													
• Roadway lane miles converted to transit	0	0	0.6	0	0	0	0.3	0.3	0	3.2	5.2	5.2	0
• Rating	○	○	◒	○	○	○	◒	◒	○	◒	●	●	○

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Noise and vibration can be concerns to the public and property owners. At this stage of planning, potential noise and vibration impacts are measured using potential receptors – i.e., dwelling units within 300 feet of the alignment. The receptors range from 1,200 to 1,700 for the LRT alternatives and from 1,300 to 1,800 for the BRT alternatives. With 1,100 receptors, the Commuter Rail Alternative has the fewest receptors.

6.2.2 Potential Localized Traffic Impacts

Regionally, the alternatives would improve mobility by providing an alternative travel mode to the automobile, leading to fewer auto trips and reduced VMT and VHT. Locally, however, removing travel lanes, increasing transit movements on and across public streets, and traffic signalization changes could impact traffic on streets and highways. The alternatives could lead to traffic circulation pattern changes and traffic could be impacted by changes to bus services feeding into the transit stations.

The greatest potential traffic impact would be the elimination of existing travel lanes. Under BRT Alternative 2, approximately 3 travel lane miles would be removed from Pacific Highway and Morena Boulevard. Under BRT Alternatives 3 and 4, approximately 5 travel lane miles would be converted to semi-exclusive bus lanes. Although right-turns would be allowed in the semi-exclusive bus lanes, the removal of the travel lanes would reduce roadway capacity and could increase delays for other vehicular traffic. LRT Alternatives 6 and 7 would eliminate an Executive Drive through-traffic lane and potentially impact private property access.

LRT Alternative 2 would require a gated mid-block crossing of Regents Road, south of Genesee Avenue, and would eliminate two through-traffic lanes on Executive Drive. This alternative would also impact private property access on Executive Drive.

6.3 Cost Effectiveness

While Section 6.1 evaluated the alternatives on how well they address the project goals and objectives, this section considers costs and compares the benefits of each alternative to the costs needed to achieve them. The evaluation of cost effectiveness used the Federal Transit Administration (FTA) New Starts Cost-Effectiveness Index (CEI), which is a ratio calculated by dividing an alternative's incremental cost, measured as the annualized capital costs plus annual operating and maintenance (O&M) costs, by the alternative's forecast of incremental user benefits.[4] For the TSM Alternative, incremental costs and benefits were calculated using the No-Build Alternative as the baseline. For the fixed guideway alternatives (i.e., the LRT, BRT, and Commuter Rail alternatives), the TSM Alternative was used as the baseline. The results of the evaluation are presented in Table 6-3. The alternatives with the lowest CEI are considered to be most cost effective in the FTA New Starts rating system.

The TSM Alternative and the LRT alternatives would be more cost effective than the BRT alternatives and the Commuter Rail Alternative. BRT Alternative 3, the least costly BRT alternative, is the least cost effective of all the alternatives because it would have few

[4] The discretionary FTA New Starts program is the Federal government's primary financial resource for supporting locally-planned, implemented, and operated fixed-guideway capital investments.

Table 6-3. Cost Effectiveness and Financial Feasibility

	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	CR
Cost Effectiveness													
• FTA CEI	$16.49	$24.84	$26.22	$26.59	$24.91	$23.87	$24.21	$24.11	$184.51	$251.24	$371.81	$208.09	$135.17
• Rating	○	○	○	○	○	○	○	○	●	●	●	●	●
Financial Feasibility													
• Additional funding required above RTIP	No	Within 5%	Within 5%	Within 10%	Within 5%	Within 5%	No	No	Yes	No	No	No	Within 5%
• Rating	○	○	○	○	○	○	○	○	●	○	○	○	○
• Likelihood of securing FTA New Starts funding	Low	High	Medium	Medium	High	High	High	High	Low	Low	Low	Low	Low
• Rating	●	○	○	○	○	○	○	○	●	●	●	●	●

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benefits over and above what can be achieved with the TSM Alternative. For the LRT alternatives, cost effectiveness ranged from $23.87 for LRT Alternative 5 to $26.59 for LRT Alternative 3. The differences in cost effectiveness were not significant.

6.4 Financial Feasibility

Another consideration in selecting alternatives for CEQA scoping and evaluation in the Draft SEIS/SEIR is SANDAG's ability to fund the associated capital and O&M costs. Section 5.3 in Chapter 5.0 analyzed the financial feasibility of the build alternatives using the following:

- Additional funding required above the $1.246 billion budget in the *Regional Transportation Improvement Program* (RTIP) (SANDAG 2008)
- Likelihood of securing FTA New Starts funding

Six of the alternatives are within the RTIP budget allocation – the TSM Alternative, BRT Alternatives 2, 3, and 4, and LRT Alternatives 6 and 7. The other LRT alternatives and the Commuter Rail Alternative exceed the allocation by less than 7 percent. These alternatives are financially feasible, although additional funding or cost savings would need to be identified. The BRT Alternative 1 (which exceeds the allocation by $1 billion) would be the least financially feasible.

A second financial feasibility indicator is the likelihood of securing FTA New Starts funds, which would require completing FTA requirements and successful competition for discretionary funding. Each alternative's CEI was used as an indicator of FTA New Starts funding potential. The LRT alternatives' cost-effectiveness indices are very similar. Based on current estimates, all but two of the LRT alternatives can be expected to receive a medium rating on cost effectiveness, and would be competitive for FTA New Starts funds. LRT Alternatives 2 and 3 would likely be rated medium-low for cost effectiveness. The BRT and Commuter Rail alternatives would receive a low rating on cost effectiveness and their potential for securing FTA New Starts funding is doubtful.

6.5 Analysis of Trade-Offs

This section highlights the key differences among the alternatives and trade-offs to be made in selecting alternatives to carry forward to CEQA scoping and the Draft SEIS/SEIR evaluation. It emphasizes those measures where discernible and significant differences could be identified among the alternatives. Trade-offs refers to the fact that any alternative may have positive and negative aspects and that selecting an alternative to carry forward requires balancing these trade-offs. Table 6-4 summarizes the evaluation presented in prior sections and helps present the significant differences and trade-offs for decision-makers.

The build alternatives would be more effective in meeting the project goals and objectives than the No-Build or TSM Alternatives. The build alternatives would improve mobility and transportation system accessibility and/or connectivity between major travel markets. They would also provide transit improvements supportive of TOD, economic development, and local community plans.

Table 6-4. Summary of Trade-Offs

Project Need	TSM	LRT 1	LRT 2	LRT 3	LRT 4	LRT 5	LRT 6	LRT 7	BRT 1	BRT 2	BRT 3	BRT 4	CRT
Effectiveness in Goal Achievement													
• Increase the overall capacity of the transportation system serving the study area	●	○	○	○	○	○	○	○	●	●	●	●	◒
• Reduce auto-person trips and VMT and VHT	●	○	○	○	○	○	○	○	◒	◒	◒	◒	◒
• Link study area transit services with existing transit facilities and services to improve regional connectivity and mobility	●	○	○	○	○	○	○	○	●	●	●	●	●
• Increase transit ridership and mode share	●	○	○	○	○	○	○	○	●	●	●	●	●
• Increase transit on-time performance	●	○	○	○	○	○	○	○	◒	◒	●	●	○
• Reduce the disparity between highway and transit speeds and travel times	◒	○	○	○	○	○	○	◒	○	◒	●	◒	●
• Provide fast and efficient transit service to the University City area	◒	○	○	○	○	○	○	○	○	○	◒	○	○
• Provide direct transit connections to the UCSD West Campus	◒	○	○	○	○	○	○	◒	○	◒	●	◒	●
• Provide high capacity and quality transit service to those parts of the study area with existing or planned density and other transit friendly characteristics	○	○	○	○	○	○	○	○	○	○	○	○	●
• Help shape local land use planning to help foster TOD near stations	○	○	○	○	○	○	○	○	○	○	○	○	●
• Maintain consistency with regional and local plans	●	○	○	○	○	○	○	○	●	●	●	●	●
• Reduce GHG emissions	◒	○	○	○	○	○	○	○	◒	◒	◒	◒	◒
• Limit impacts to sensitive habitats	○	◒	◒	◒	◒	◒	◒	◒	◒	◒	○	○	◒
• Improve access for low-income, minority, elderly, and disabled persons	○	○	○	○	○	○	○	○	○	○	○	○	●
• Avoid adverse impacts to low-income, minority, elderly, and disabled persons	○	○	○	○	○	○	○	○	○	○	○	○	○
Other Considerations													
• Potential environmental impacts	○	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒
• Potential local traffic impacts	○	○	◒	○	○	○	◒	◒	○	◒	●	●	○
Cost Effectiveness													
• FTA cost effectiveness	○	○	○	○	○	○	○	○	●	●	●	●	●
Financial Feasibility													
• Additional funding required above RTIP	○	○	○	○	○	○	○	○	●	○	○	○	○
• Likelihood of securing FTA New Starts funding	●	○	○	○	○	○	○	○	●	●	●	●	●

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The No-Build Alternative would continue to operate bus service without any major transit investment in the study area. The TSM Alternative would enhance service and be cost effective, but it would have a smaller impact on travel time and ridership. The TSM Alternative would be a less effective catalyst for attracting transit-supportive land uses and economic development to smart growth areas, as it would not include a more permanent fixed guideway and stations and service would be less reliable.

The LRT alternatives would be more effective than the BRT alternatives or Commuter Rail Alternative in terms of many of achieving the project goals and objectives. The greater effectiveness of the LRT alternatives is most apparent in travel time and transit ridership. The LRT alternatives' faster travel times and higher ridership are attributable to improved connections between the Mid-Coast Corridor and major travel markets, reducing the need to transfer. The LRT alternatives take advantage of existing transit investments, such as the Trolley Blue Line to provide direct connections to the South Bay/South San Diego and the Trolley Green Line to provide improved transfer connections to Mission Valley/East San Diego. The improved accessibility and regional connections of the LRT alternatives would also reduce reliance on auto travel and provide a more competitive alternative to congestion than the BRT alternatives or the Commuter Rail Alternative. LRT Alternative 7 and the Commuter Rail Alternative would not meet the goal to "provide direct transit connections to UCSD" because these two alternatives would not have a station on the UCSD West Campus.

The LRT alternatives would be more effective than the BRT alternatives or the Commuter Rail Alternative and would also be more cost effective. Only the LRT alternatives are competitive for FTA New Starts funds, giving SANDAG an opportunity to leverage *TransNet* revenues. Although the LRT alternatives would be a substantial local investment, they are financially feasible or close to being financially feasible.

Generally, the LRT alternatives are equally effective in meeting project goals and objectives. One difference is that LRT Alternative 3 would provide more direct service to the University City area, with the UTC Transit Center Station, and less direct service to the UCSD West Campus. Ridership would be similar for LRT Alternatives 1 through 6, which would serve the UCSD West and East Campuses. However, LRT Alternative 7, which would not have a UCSD West Station, would not directly serve the UCSD West Campus and would attract fewer riders. Other differences among the LRT alternatives include potential for impacts on ecosystems/biological resources and visual and aesthetic considerations. The potential ecological resource impacts would be greater under LRT Alternative 3 than the other LRT alternatives. The LRT alternatives with the most aerial structure would have the highest potential for visual and aesthetic impacts, which would be LRT Alternatives 1 through 5.

BRT Alternatives 3 and 4 would have less potential ecosystems/biological resources impacts than the other alternatives. But these alternatives would have the potential for the greatest impact on highway travel, because converting curb lanes to semi-exclusive lanes for BRT would reduce roadway capacity.

6.6 Recommendations

The evaluation considered a TSM alternative, seven LRT alternatives, four BRT alternatives, and a Commuter Rail Alternative. Based on the evaluation, recommendations were developed on the alternatives to carry forward into scoping and the alternatives to eliminate from further consideration.

Of the seven LRT alternatives considered, five are recommended for presentation at CEQA scoping: LRT Alternatives 1, 3, 4, 5, and 6. The five LRT alternatives effectively meet project goals, improve regional mobility, are cost effective or near cost effective and are anticipated to be competitive for FTA New Starts funding. It also is recommended that LRT Alternatives 1, 4, and 5 be combined into a single alternative with alignment options, as they have similar routes and effectiveness. The two remaining LRT alternatives (LRT Alternatives 2 and 7) are recommended for elimination. The LRT Alternative 1 and 2 alignments are similar with the exception that LRT Alternative 2 is aligned on Regents Road and Executive Drive rather than continuing on Genesee Avenue. While similar, LRT Alternative 2 is higher in capital costs, lower in user benefits, and lower in cost effectiveness than LRT Alternative 1. In addition, the alignment on Regents Road and Executive Drive would have greater potential impacts on traffic and property access, therefore LRT Alternative 2 is recommended for elimination. LRT Alternative 7 would not be as effective as the other LRT alternatives, as evidenced by ridership and user benefits and travel time savings. LRT Alternative 7 would not provide direct service to the UCSD West Campus, thus, it would less effectively meet an important project goal.

It also is recommended that the TSM Alternative, all four of the BRT alternatives, and the Commuter Rail Alternative be eliminated from further consideration. Compared to the LRT alternatives, these alternatives would not be as effective in meeting the project goals and in improving regional mobility and accessibility. Furthermore, the BRT and Commuter Rail alternatives are not cost effective and are unlikely to be competitive for FTA New Starts funds. As a baseline to address the FTA New Starts criteria, the TSM Alternative would be carried forward into the next phase of the project, but it would no longer be considered a build alternative.

A more detailed discussion of the recommendations, detailing the alternatives recommended to carry forward to scoping and the alternatives recommended for elimination from further consideration, is presented below.

6.6.1 LRT Alternatives to Carry Forward into Scoping

The recommended LRT alternatives to carry forward into scoping and the reasons for the recommendation are described below:

- I-5/Voigt Drive/Genesee Avenue Alternative (created by combining LRT Alternatives 1, 4, and 5) – A variation of the 2003 adopted LPA, this alternative would follow I-5, Voigt Drive, and Genesee Avenue in University City. These three alternatives were equally effective in meeting the project goals and in improving mobility and accessibility in a cost-effective manner. The only difference among the alternatives is the Voigt Drive alignment location. If the SANDAG Board selects this alternative to carry forward into the Draft SEIS/SEIR, the three Voigt Drive options will be further

evaluated in the environmental document to determine costs, potential impacts, and mitigation.

- Genesee Avenue Tunnel Alternative (LRT Alternative 3) – This alternative, which would use the existing MTS/SDNR right-of-way to Genesee Avenue, would provide more direct service to UTC, compared to the other LRT alternatives, with faster operating speeds and shorter travel times. By traveling below grade, it would avoid the potential visual impacts of the other LRT alternatives, which would be on an aerial structure along I-5 and Genesee Avenue. LRT Alternative 3 would avoid potential conflicts with the widening of I-5 for the HOV lanes and DARs, and reduce potential property acquisitions by using the existing MTS/SDNR right-of-way to Genesee Avenue.
- I-5/Thornton Hospital Alternative (LRT Alternative 6) – Like the I-5/Voigt Drive/Genesee Avenue Alternative, this alternative would use the I-5 corridor north from State Route 52 (SR 52) to the UCSD West Campus. It would avoid Voigt Drive and any conflict with the planned direct access ramps (DARs) and potential impacts to property access and utilities on Voigt Drive. It would also avoid potential biological impacts to special species under the Genesee Avenue Tunnel Alternative and the potential for archaeological impacts under the I-5/Voigt Drive/Genesee Avenue and Genesee Avenue Tunnel Alternatives. Of all the LRT alternatives, this alternative is the lowest in capital cost and the most cost effective.

6.6.2 LRT Alternatives to Eliminate from Further Consideration

The recommended LRT alternatives to eliminate from further consideration and the reasons for their recommendation are described below:

- LRT Alternative 2 – This alternative is the same as the I-5/Voigt Drive/Genesee Avenue Alternative (LRT Alternatives 1, 4, and 5) except it would follow Regents Road and Executive Drive instead of Genesee Avenue. It is recommended for elimination because of traffic impacts, caused by a gated mid-block crossing of Regents Road and the loss of two through-traffic lanes on Executive Drive. This alternative would also impact private property access on Executive Drive. Moreover, compared to the I-5/Voigt Drive/Genesee Avenue Alternative, which would not have these adverse impacts, it is higher in capital costs and lower in cost effectiveness.
- LRT Alternative 7 – Unlike the other I-5 LRT alternatives that would cross to the west side of I-5 south of Nobel Drive, this alternative would continue east of I-5 north to Thornton Hospital on the UCSD East Campus, without crossing to the west side of I-5 to serve the UCSD West Campus. Because there would be no UCSD West Station, the effectiveness of this alternative in serving UCSD, a major project goal, would be reduced. The LRT boardings forecast for the UCSD campus under LRT Alternative 7, with only one station on the UCSD campus, is estimated to be less than 2,000 daily compared to approximately 7,000 to 7,500 daily under the other LRT alternatives, which would have two stations on the UCSD campus. Thus, this alternative is not considered to be as effective as the other alternatives in improving mobility and accessibility in the Mid-Coast Corridor.

6.6.3 Eliminate TSM Alternative from Further Consideration

It is recommended that the TSM Alternative be eliminated from further consideration because it is:

- The least effective alternative for improving mobility and accessibility. The TSM Alternative:
  - Has significantly lower ridership and user benefits than the LRT alternatives;
  - Would not noticeably improve connections to major travel markets in South Bay/South San Diego and Mission Valley/East San Diego;
  - Has the lowest reliability due to the lack of reserved right-of-way;
  - Has the slowest travel time to UCSD and UTC; and,
  - Has the lowest ridership.

As the baseline in the FTA New Starts criteria, the TSM Alternative would be included in the next analysis phase, but would no longer be offered as a potential LPA.

6.6.4 Eliminate BRT Alternatives from Further Consideration

It is recommended that all of the BRT alternatives be eliminated from further consideration for the following reasons:

- Less effective than the LRT alternatives in improving mobility and accessibility.
  - Significantly lower ridership and user benefits than the LRT Alternatives.
  - Minimal improvement over the TSM Alternative in improving connections to major travel markets in South Bay/South San Diego and Mission Valley/East San Diego. Transfers would still be required for travel between the Mid-Coast Corridor and these major travel markets.
  - Lower reliability of service than the LRT alternatives because the BRT alternatives would have less exclusive-lane guideway.
  - Longer travel times for most trips compared to the LRT alternatives. Lowest number of new transit trips of the fixed guideway alternatives.
- Less cost effective and financially feasible than the LRT alternatives.
  - Cost effectiveness is not within the thresholds considered necessary for FTA New Starts funding or entry into Preliminary Engineering (PE).
  - Less financially feasible because the alternatives would not qualify for FTA New Starts funding.

6.6.5 Eliminate Commuter Rail Alternative from Further Consideration

It is recommended that the Commuter Rail Alternative be eliminated from further consideration for the following reasons:

- Less effective than the LRT alternatives in improving mobility and accessibility.
  - Significantly lower ridership.
  - Fewest number of major attractions served of the build alternatives.
  - Lowest population and employment served of the build alternatives.
  - Lower user benefits than the LRT alternatives.
  - No direct service provided to the UCSD campus. The only alternative that would require a modal transfer to access the UCSD West and East Campuses.
  - Minimal improvement over the TSM Alternative in improving connections to major travel markets in South Bay/South San Diego and Mission Valley/East San Diego. Transfers would still be required for travel between the Mid-Coast Corridor and these major markets.
  - Lower new transit trips than the LRT alternatives.
  - Lower reduction in auto-person trips and VMT and VHT compared to the LRT alternatives.
- Less effective than the LRT alternatives in encouraging economic development and transit supportive land uses.
  - Least potential in fostering TOD near transit stations.
  - Fewest stations within SANDAG Smart Growth centers.
- Less cost effective and financially feasible, compared to the LRT alternatives.
  - Cost effectiveness is not within the thresholds considered necessary for FTA New Starts funding or entry into PE.
  - Less financially feasible without FTA New Starts funding.