Chapter 18—Alternatives Analysis

18.1 Introduction

The purpose of this chapter is to identify and describe alternatives to the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (proposed MTP/SCS). The primary intent of the alternatives analysis in an EIR, as stated in §15126.6(a) of the California Environmental Quality Act (CEQA) Guidelines, is to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Further, the State CEQA Guidelines provide that "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines §15126.6(b)).

Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: failure to meet most of the basic project objectives; infeasibility; and, inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(a)(c)). "Feasible" is defined as "capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (CEQA Guidelines Section 15364). The feasibility of an alternative may be determined based on a variety of factors, including but not limited to economic viability, availability of infrastructure, and other regulatory limitations (CEQA Guidelines Section15126.6(f)(1)).

18.2 Project Objectives

SACOG's mission is to "provide leadership and a dynamic, collaborative public forum for achieving an efficient regional transportation system, innovative and integrated regional planning, and a high quality of life within the greater Sacramento region." SACOG's purpose in proposing the MTP/SCS is to provide a strategy to approach the many challenges faced by the Sacramento region as the population grows and the region expands over the next few decades. The proposed MTP/SCS seeks to guide the Sacramento region toward a more sustainable future through better integration of smart land use decisions with a well-managed transportation system, as envisioned by the Blueprint. The intent of the proposed MTP/SCS is to accommodate the expected population growth and accompanying demand for transportation in the region consistent with federal and state requirements through a multi-modal approach based on the following objectives.

Objectives related to Land use and Environmental Sustainability:

1. Support local land use authority with data, tools, incentives, and programs that reinforce the region's voluntary implementation of the Blueprint.
2. Support housing choice and diversity for all segments of the population that respond to changing economics and demographics in the region.

3. Support improved jobs-housing balance in subareas of the region and complete mixed-use communities.
4. Minimize direct and indirect land use and transportation impacts on agriculture and natural resources.
5. Meet regional air quality plans and goals.
6. Meet federal and state requirements for regional transportation plans, including SB 375 and AB 32.
7. Achieve the greenhouse gas reduction targets assigned to SACOG by the California Air Resources Board.
8. Activate the CEQA streamlining benefits of SB 375.

Objectives related to Financial Stewardship:

1. Support transportation investments that provide high performance benefits for all community types in the region.
2. Improve the condition of the existing transportation system through the maintenance of transportation corridors that can support various modes of travel.
3. Maximize cost-effective investments that both preserve the current system and support the existing and future development served by that system.
4. Deliver cost-effective results from investments in each transportation mode and is feasible to construct and maintain.
5. Satisfy financial constraint requirements, such that all revenues reasonable to assume are used and matched to eligible projects.
6. Deliver more productive and cost-effective public transit services.

Objectives related to the Existing & Planned Transportation System:

1. Support transportation choice and diversity for all segments of the population through a balanced transportation system where investments in various modes complement each other and support the diversity of travel demand in various community types.
2. Reduce both VMT and congested VMT as long as greenhouse gas (GHG) emissions and air quality goals are not adversely affected.
3. Broaden mobility options, as measured by an increase in the transit, bicycle, and pedestrian travel mode share.
4. Connect workers to jobs across the region.
5. Support the economic vitality of the region through efficient goods movement that includes minimizing disruptions to the movement of agricultural products on rural roadways.
6. Support safety and emergency preparedness, as demonstrated by land use and transportation changes that include capital investments in disaster-prone areas, transit services, and improved system maintenance.

18.3 Analysis of Alternatives

The following alternatives were identified for examination and analysis in this EIR:

Alternative 1: Scenario 1
Alternative 2: Scenario 2/No Project
Alternative 3: Scenario 3
Alternative 4: State of Good Repair

18.3.1 Alternatives Considered but Not Carried Forward for Detailed Analysis

- Alternative 4: State of Good Repair Option. In this alternative, roads recover to a state of good repair (a pavement condition index of 80 or better) and all transit capital preservation needs are met by the end of the planning period. All active transportation needs would be met as well. There would be less funding for road capacity projects.

Reasons for rejection of Alternative 4

An alternative that focuses funding on improving local roads and transit to a state of good repair is not based on reasonable revenue availability, and is therefore not economically or legally feasible. Consistent with 23 CFR section 450.322 (b) (11), SACOG is required to prepare a regional transportation plan (RTP) that is supported by revenues that are reasonable to assume. This requirement limits the total funding available and requires that the RTP reflect the fact that individual revenue sources have eligibility requirements out of SACOG's control that restrict the types of projects that can be funded. For this reason, this alternative was rejected for detailed consideration. Also, this alternative was rejected because it is not a fully integrated alternative that can meet the fundamental project objectives of the MTP/SCS including supporting transportation choices that provide high performance benefits in all community types throughout the region, satisfying federal financial constraint requirements (all revenues reasonable to assume must be matched to eligible projects), supporting transportation choice for all segments of the population through a balanced transportation system, reducing congested VMT, connecting workers to jobs, and increasing safety and emergency preparedness.

18.3.2 Comparative Analysis of Alternatives

A total of three alternatives were identified for analysis: the No Project Alternative (Alternative 2) and two other potentially feasible alternative MTP/SCS scenarios (Alternatives 1 and 3).

The No Project alternative is required to be analyzed under CEQA. It is also referred to as Scenario 2 and assumes that growth patterns and transportation investments would be consistent with those set forth in the 2012 MTP/SCS. The three scenarios were designed to allow for analysis of truly distinct alternatives within the bounds of the type of land development and transportation investments that could realistically be expected to occur over the MTP/SCS planning period. In essence, the alternatives reflect different growth patterns and different investment decisions for the transportation system. The alternatives assume the same regional employment, population, and housing growth projections and roughly the same overall transportation budget. The land use patterns were designed first, and then a transportation system was customized to support the land use pattern of each scenario. The transportation budget ranged from a low of $34.6 billion in

Scenario 1 to a high of $36.1 billion in Scenario 3, reflecting a farebox recovery rate range that varied from 38 percent in Scenario 1 to 51 percent in Scenario 3 (Scenario 3 contained the highest share of transit-supportive land uses). All other revenue assumptions were constant across scenarios. Land use and transportation assumptions varied in the following ways:

Land Use Variables:

- The amount of compact development, which is measured in terms of housing product mix (the mix of high and low density housing units) and amount of development occurring in existing developed versus undeveloped areas. Compact development has been shown to be more effectively served by transit, to support potentially higher rates of walking and biking, and to generate less vehicle travel.
- The amount of development in high-quality transit corridors, where residents are more likely to use available transit.
- The amount of complementary, mixed-use development, which supports shorter vehicle trip making and higher rates of non-motorized travel.

Transportation Variables:

- The location, intensity, and type of transit service, based on the extent of transit-supportive land uses in corridors. Higher density, mixed-use corridors provide greater opportunities for higher capacity transit, such as light rail and streetcars.
- The amount, location, and type of investment in complete streets projects, which serve multiple users in locations where land use generates a mix of travel modes.
- The extent and location of roadway and other projects to alleviate major bottlenecks and congestion points, and the extent to which investments were made to alleviate existing bottlenecks, compared to reserving investments for future bottlenecks.
- The level of investment in Blueprint supportive programs and transportation systems management (TSM) strategies, including technology and demand management programs, that allow for greater optimization of existing transportation infrastructure. More compact and mixed-use development patterns can allow some shifts in investment priorities away from road extensions and expansions to improving the function of existing roads for multi-modal travel.

The land use components of the scenarios were designed in a progression from most dispersed development pattern to least dispersed development pattern; the corresponding transportation components followed a progression of most auto-oriented transportation system to most multi-modal transportation system. The alternatives identified for comparative analysis in this EIR are described according to this progression in Table 18.1 below. As stated above, all Alternatives analyzed accommodate the same amount of regional growth: 811,000 new people, 439,000 new jobs, and 285,000 new housing units.

Table 18.1
Description of MTP/SCS Land Use and Transportation Scenarios

Scenario Name	Land Use	Transportation
Alternative 1: Scenario 1	▪ Developing and Established Communities receive highest share of region's growth ▪ Highest growth in Rural Residential Communities of all three scenarios ▪ Smallest share of new compact housing[1] share (61%) ▪ Least amount of new development near high-frequency transit ▪ Smallest share of growth in Transit Priority Areas[2] (20% of new homes, 26% of new jobs) ▪ Most dispersed development pattern / highest amount of developed acres ▪ Highest amount of agricultural and natural resource lands urbanized	▪ Highest investment in new and expanded roads, with focus on both existing and future bottlenecks ▪ Least amount of bicycle and pedestrian street and trail projects, including complete streets ▪ Lowest investment level in bus and rail transit service ▪ Lowest investment level in road maintenance and rehabilitation ▪ Largest decrease in congested vehicle miles of travel and delay ▪ Smallest increase in transit ridership ▪ Smallest increase in bicycle and pedestrian trips ▪ Smallest decrease in VMT and transportation GHG emissions per capita
Alternative 2: No Project/ Scenario 2	▪ More new homes attached versus small-lot and large-lot single-family units ▪ Jobs/Housing balance in major employment centers further improved ▪ More homes and jobs near high-frequency transit service (compared to Alternative 1) allow for greater realization of complete streets opportunities ▪ Higher share of new compact housing[1] (71%, same as 2012 MTP/SCS) ▪ More growth in TPAs[2] ▪ Less dispersed development pattern than Alternative 1/fewer developed acres	▪ Transportation investments focus on existing bottlenecks in Center & Corridor Communities and Established Communities ▪ More transit service than Alternative 1 ▪ Less new road and road expansion than Alternative 1, but more than Alternative 3 ▪ More road maintenance and rehabilitation than Alternative 1 ▪ More bicycle and pedestrian street and trail projects than Alternative 1 ▪ Emphasis on a balance of roadway capacity and operational improvements across all community areas ▪ Performs in-between Alternatives 1 and 3 on most key metrics, including: non-auto mode share; share of bike and walk trips; decreases in VMT and GHG emissions per capita
Alternative 3: Scenario 3	▪ Center & Corridor Communities receive highest share of growth ▪ Least amount of growth in Rural Residential Communities ▪ Highest share of new homes that are attached (53%) ▪ Highest share of new compact housing[1] share (76%) ▪ Highest share of growth in TPAs[2] ▪ Least dispersed development pattern/ fewest developed acres ▪ Highest number of homes and jobs near high-quality transit ▪ Lowest amount of agricultural and natural resource lands urbanized	▪ Highest level of investment in bus and rail transit services ▪ Lowest level of investment in new and expanded roads with the greatest reliance on operational enhancements for roadways (e.g., Intelligent Transportation Systems) ▪ Same investment level in road maintenance and rehabilitation as Alternative 2, but higher than Alternative 1 ▪ Highest level of investment in bicycle and pedestrian projects, including complete streets ▪ Largest increase in transit and bicycle and pedestrian trips ▪ Largest decrease in VMT and transportation GHG emissions per capita

Notes:

[1] Compact housing is defined as small-lot single-family (8 to 25 dwelling units per acre) and attached residential (attached single-family or multi-family homes, e.g., duplexes, triplexes, apartments, condominiums, townhomes, rowhouses, halfplexes, built at densities from 8 to over 50 dwelling units per acre).

[2] Transit Priority Areas (TPAs) are defined as areas within one-half mile of a rail station stop or a high-quality transit corridor. A high-quality transit corridor has fixed-route bus service with service intervals of 15 minutes or less during peak commute hours.

A more detailed description of each of these alternatives is provided below, followed by a comparative analysis of how well the alternative would achieve the project objectives and the relative level of environmental impact associated with each alternative as compared to implementation of the proposed MTP/SCS. For each resource area evaluated in this EIR the text summarizes whether the impacts of the alternative would generally be more or less severe than those of the proposed MTP/SCS.

The proposed MTP/SCS is the same as Alternative 2 in terms of the amount of new compact housing (71 percent). The share of new housing that is in infill areas, the combination of Center and Corridor Communities, and Established Communities, in the proposed MTP/SCS falls in between Alternative 2 and Alternative 3. To support the land use pattern, the proposed MTP/SCS has a level of transit service, BRT, streetcar, and light rail investment in between those of Alternatives 2 and 3. It has more new roads and road expansions than Alternative 3, but fewer than Alternative 2.

Table 18.2 provides an "at a glance" comparison of existing conditions, the three alternatives, and the project.

Table 18.2
Comparison of Baseline, Proposed Project, and Alternatives

Land Use Characteristics	2012 Baseline	MTP/SCS for 2036 (Proposed Project)	Alternative 1 (Scenario 1)	Alternative 2 (Scenario 2)	Alternative 3 (Scenario 3)
Share of homes in Center & Corridor Communities[1]	107,718	86,167	57,359	89,830	102,027
(percent of homes)	12%	30%	20%	31%	36%
Share of homes in Established Communities[1]	686,075	78,750	81,147	68,597	75,648
(percent of homes)	76%	28%	29%	25%	27%
Share of homes in Developing Communities[1]	31,422	114,836	165,101	154,682	143,139
(percent of homes)	3%	40%	47%	42%	36%
Share of homes in Rural Residential Communities[1]	78,237	5,143	13,325	4,896	4,382
(percent of homes)	9%	2%	4%	2%	2%
Share of homes in rural residential and large-lot single-family[1] homes	577,299	83,335	111,652	82,232	65,140
(percent of homes)	64%	29%	39%	28%	24%
Share of homes in small-lot, single-family[1] homes	101,173	72,612	83,031	79,547	68,227
(percent of homes)	11%	26%	29%	28%	23%
Share of homes in attached homes[1]	225,029	128,954	90,597	123,371	151,665
(percent of homes)	25%	45%	32%	43%	53%
Gross Acres of development[1,4]	718,356	47,563	75,622	48,777	37,350
(percent increase in developed acres from 2012)	n/a	7%	11%	7%	5%
Jobs Housing Ratio *(within 4 miles of primary and secondary jobs centers) Regional Average = 1.2*	1.16	1.26	1.28	1.27	1.26
Transportation Attributes	**2012 Baseline**	**MTP/SCS for 2036 (Proposed Project)**	**Alternative 1 (Scenario 1)**	**Alternative 2 (Scenario 2)**	**Alternative 3 (Scenario 3)**
Road Lane Miles[2]	6,340	7,680	8,070	7,840	7,570
(new or expanded roads lane miles, percent increase from 2012)	n/a	24%	31%	27%	23%
Transit Service	3,780	8,400	6,230	7,910	9,190
(vehicle service hours, percent increase from 2012)	n/a	122%	54%	109%	143%
Funding for transit *($ in billions)*	n/a	$10.6	$10.7	$11.30	$13.7
Farebox Recovery *(percent of transit costs recovered by ticket sales)*	38%	38%	38%	41%	51%
Funding for road, bike and ped maintenance and operations *($ in billions)* [8]	n/a	$12.60	$10.90	$11.50	$11.00

Funding for new road capacity *($ in billions)*[8]	n/a	$5.80	$8.70	$7.40	$6.70
Funding for bike/ped street and trail improvements *($ in billions)*[8]	n/a	$2.80	$2.80	$2.80	$3.00
Funding for programs (community design, tdm, etc.) *($ in billions)*[8]	n/a	$1.70	$1.50	$2.20	$1.70
Performance Outcomes	**2012 Baseline**	**MTP/SCS for 2036 (Proposed Project)**	**Alternative 1 (Scenario 1)**	**Alternative 2 (Scenario 2)**	**Alternative 3 (Scenario 3)**
Square miles of farmland converted to development[6] *(4,158 square miles of farmland in 2012)*	n/a	58	93	61	45
Square miles of vernal pools affected by development[7]	n/a	6	7	5	2
Total number of homes near high-frequency transit[3] *(share of all homes near high-frequency transit)*	141,862 16%	442,915 37%	320,857 27%	463,487 39%	463,492 39%
Total number of jobs near high-frequency transit[3] *(share of all jobs near high-frequency transit)*	243,773 27%	631,958 42%	531,091 40%	583,963 44%	570,756 43%
Jobs within 20-minute drive of residence *(200,100 jobs in 2008)*	199,100	272,7000	253,500	260,100	267,800
Vehicle miles traveled to jobs centers *(Commute VMT per worker at jobs centers)*	20	17.1	17.3	17.5	15.7
Trips by transit, bike or walk to jobs centers (Transit/bike/walk commute tips per worker at jobs center)	7%	17%	19%	15%	22%
Mode share for transit, walking and bicycling[5] *Percent of all person trips*	10%	13%	12%	12%	14%
Vehicle miles traveled (VMT)[5] *Per capita per day*	18.0	17.0	17.6	17.2	16.0
Vehicle miles traveled in heavy congestion *(percent of total VMT: 6% of total VMT in 2008)*	4%	6%	5%	6%	5%
Weekday passenger vehicle CO_2 emissions[9] *(percent change per capita from 2005)*	n/a	-16%	-11%	-13%	-18%

[1] Values shown are for growth assumed in the MTP/SCS between 2012-2036, except in 2012 where values are total for 2012.

[2] Values represented are for new or expanded roads in the MTP/SCS between 2012-2036, except for the 2012 scenario where values are total for 2012.

[3] Values represented are total (in 2012 scenario values are total for 2012 and in all other scenarios the value is existing plus new growth).

[4] Except for 2012 acres which represent net acres, for which roads and other public uses have been excluded.

[5] Values for the scenarios were adjusted to account for changes to forecasting model made since the workshop, in order to make the comparable to the current baseline and proposed MTP/SCS results.

[6] A generalized analysis of impacts to farmland was conducted for the scenarios based on all Farmland Monitoring and Mapping Program categories; the same method was applied to the proposed MTP/SCS to allow for comparison.

[7] *A generalized analysis of impacts to vernal pools was conducted for the scenarios using Central Valley Vernal Pool Complexes (Holland, 2009); the same method was applied to the proposed MTP/SCS to allow for comparison.*
[8] *Proposed MTP/SCS budget allocations have been re-calculated to match the same categorical classifications as the workshop alternatives (Alternatives 1, 2, 3).*
[9] *The greenhouse gas emissions reduction target approved by the CARB for the SACOG region is a 16 percent per capita GHG reduction below 2005 levels by 2035.*

ALTERNATIVE 1: SCENARIO 1

Description of Alternative 1

Alternative 1 assumes the same growth and transportation investment as the proposed MTP/SCS, but with less compact development and less focus on maintaining and improving the current transportation system. Overall this alternative is the most dispersed and provides the fewest housing and transportation options. Table 18.1 summarizes key characteristics of all the alternatives, while Table 18.2 compares performance characteristics of each alternative.

Land Use Pattern
Compared to the other two alternatives and the proposed MTP/SCS, this alternative provides the most amount of large lot single family and rural residential new housing, the least amount of growth through infill and redevelopment, and the least improvement in jobs-housing balance within sub-areas of the region. Specifically, 61 percent of the new homes are small-lot or attached and just over half (51 percent) of the new homes are located in Developing or Rural Residential Communities, which is significantly higher than the other alternatives. Alternative 1 has the largest growth footprint, consuming almost 76,000 acres of land.

Transportation
Compared to the other two alternatives, Alternative 1 has a higher amount of funding for, and the largest number of, new roads and road expansion projects. Alternative 1 has significantly lower investments in road maintenance and transit than the other two alternatives. This is largely due to the more dispersed land use pattern.

Alternative 1 Attainment of Project Objectives

This alternative attains many project objectives, but less effectively and successfully than the proposed MTP/SCS.

Land use and Environmental Sustainability Objectives
While the land use pattern of this alternative has some Blueprint-supportive aspects, it would provide the lowest increase in housing options and the lowest increase in transportation options. Specifically, this alternative has the lowest share of housing in small-lot single-family and attached homes combined, and the lowest number of housing and jobs near high-frequency transit. This alternative would have the greatest amount of developed acres of all the alternatives due to its dispersed development pattern, which forecasts the highest proportion of growth in Developing and Rural Residential Communities. Similarly, it has the greatest impact on agriculture and natural resources.

Through the combination of land use and transportation changes, Alternative 1 would have the highest direct and indirect impacts to the environment. This scenario would not achieve the GHG

reduction targets assigned to SACOG by CARB and would not, therefore, activate the CEQA streamlining benefits of SB 375. SB 375 requires SACOG to adopt an MTP/SCS that meets the GHG reductions if it finds that it is feasible to do so.

Finance Objectives
Alternative 1 meets some, but not all, of these project objectives. The financial constraint objective is met by fully allocating the available revenues and matching the budget to eligible investments. However, the alternative does not clearly meet the project objective to fund investments that are feasible to construct and maintain, because it has a significantly higher level of investment in road capacity projectsand the lowest level of funding for the maintenance of these facilities. Additionally, Alternative 1 does not clearly meet the cost-effective investment, transit service, or multi-modal objectives, because it includes the lowest budget for maintenance and operations, the lowest increase in transit service, and the lowest mode share for transit, walking, and bicycling.

Existing and Expanded Transportation System Objectives
Alternative 1 meets some, but not all of these objectives. The alternative reduces VMT from the baseline, though the VMT change is the least of the alternatives. While all of the alternatives increase congested VMT because of the effort to develop more compactly to meet greenhouse gas emissions and air quality goals, Alternative 1 increases congested VMT the least (at the same rate as Alternative 3). This alternative has the lowest number of jobs within a 20-minute drive, which does not meet the objective for connecting workers to jobs as well as the proposed MTP/SCS and other alternatives. Alternative 1 does not clearly meet the project objective related to economic vitality , because it includes the second least increase in transit, walking, and bicycling trips. The alternative also has the smallest increase in commute travel alternatives to driving, and goods movement activities are not fully supported. The larger urban footprint and more dispersed growth pattern makes goods movement travel less efficient between locations, increases encroachment on agricultural lands, and results in commuter traffic along rural roadways that may complicate safe and efficient farm-to-market access to farmlands. Also, the alternative has the lowest level of investment in operational improvements, including safety enhancements and transit services, that may assist in evacuations.

Alternative 1 Environmental Impacts

Aesthetics
Light and glare impacts under this alternative would likely be greater than under the proposed MTP/SCS, because this alternative assumes a development pattern that is more dispersed over more acres. As such, building and site lighting is likely to occur over a larger geographic area. Also, because there are more detached units under this alternative, there are fewer shared walls which may result in the need for greater nighttime lighting, as compared to attached structures which share walls. Light and glare associated with transportation projects are likely to be similar to the proposed MTP/SCS, because the number of transportation projects that would be delivered under this alternative is similar.

Adverse effects of shadows from both land uses and transportation projects under this alternative would likely be less than under the proposed MTP/SCS, because it assumes a lower density and intensity of development. Structures are likely to be lower and more dispersed, with less likelihood of adverse shadows.

Impacts to views from land uses under this alternative would likely be less than under the proposed MTP/SCS, because the alternative assumes a lower density and intensity of development. Structures are likely to have fewer stories and be more dispersed, with less likelihood of adverse impacts to views. Impacts to views from river crossings would be increased, because there are more bridge projects as a part of this alternative.

Degradation of visual character or quality is likely to be greater under this alternative, as compared to the proposed MTP/SCS, because it assumes the same amount of development dispersed over a greater area.

Construction-related aesthetic impacts are likely to be similar under this alternative for both land use and transportation projects. This would occur because this alternative assumes the same employment, population, and housing units and similar number of transportation projects. However, there is the potential that this alternative could result in increased aesthetic impacts, because it assumes the lowest number of attached units, resulting in a larger number of individual detached structures, and a higher budget for transportation capacity projects with a lower allocation for operations and maintenance.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Agriculture and Forestry Resources
Conversion of both farmland and timberland under this alternative would be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over more acres. Approximately 93 square miles of farmland would be converted to development under this alternative as compared to 58 square miles under the proposed MTP/SCS. The potential for conflicts with zoning, land use designations, and/or other applicable regulations would also be greater for the same reason. Similarly, the potential for other changes that could result in the conversion of farm land or timberland to alternate uses would be greater due to increases in urban-rural edge areas under this alternative as compared to the proposed MTP/SCS.

Construction-related impacts to farm land or timberland are likely to be greater under this alternative than the proposed MTP/SCS for both land use and transportation projects, both because there is more growth and there are more transportation projects in rural areas and areas at the urban-rural edge, and because the alternative has more funding for new road capacity projects and less funding for road maintenance and operations.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Air Quality
It is likely that air emissions will be greater under this alternative than the proposed MTP/SCS, because it has the most dispersed development pattern, coupled with the least amount of transit service and the highest amount of new roads and road expansions. This would encourage trips, and rather than offering alternatives, it would eliminate the need for or discourage use of alternative transportation choices.

Operational air emissions under this alternative would be increased as compared to the proposed MTP/SCS. This is because development would be less efficient as the same number of housing units, employment, and population are spread over a greater area.

Potential exposure to air contaminants is likely to be less. Although this alternative has more vehicle miles traveled, which could create more mobile sources of toxic air contaminants (freeways and major roadways), it is likely that exposure could be lower due to greater dispersal of development over a larger area.

Potential exposure to odors is unlikely to change. It is possible it could be lower due to greater dispersal of development over a larger area and, therefore, fewer people are likely to be impacted at any one location. It is also possible however, that this could conversely result in increased exposure to odors, because it becomes more difficult to locate land uses with potential odor emissions in areas away from the population.

Construction-related air quality impacts would potentially be greater under this alternative related to the greater number of rural residential units and large-lot single-family units. This would increase the number of separate construction sites, which could exacerbate overall air emissions associated with the construction phase of development. Construction impacts to transportation projects are likely to be similar, because this alternative assumes a similar number of transportation projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Biological Resources
Impacts on candidate, sensitive, or special status species (including plants, wildlife, and fish) under this alterative would be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over a greater area. The potential for impacts to riparian habitats, oak woodlands, and wetlands would also be greater for the same reason. Approximately seven square miles of vernal pools are projected to be adversely impacted under this alternative as compared to six square miles under the proposed MTP/SCS. Similarly, impacts to migratory wildlife corridors and native wildlife nursery sites would be greater, because development would be dispersed over a greater area.

The potential for conflict with local policies and ordinances that protect biological resources, and/or an adopted conservation plan, is likely to be either similar or greater under this alternative, due to the larger area of development impact.

Construction-related impacts to biological resources are likely to be greater under this alternative for both land use and transportation projects, both because there is more growth and transportation projects in areas with biological resources, and because the alternative has more funding for new road capacity projects and less funding for road maintenance and operations.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Cultural Resources
Impacts to cultural resources (historic, archeological, paleontological, tribal cultural resource, and human remains) under this alterative would be greater than under the proposed MTP/SCS, because this alternative assumes a development pattern that is dispersed over more acres.

This alternative is likely to result in increased impacts to cultural resources during the construction phase, because it assumes the lowest number of attached units − resulting in a larger number of individual detached structures. These individual structures require independent surface and subsurface soil preparation and excavation, which increases the likelihood of encountering unknown

subsurface cultural resources. Development can also indirectly diminish the character of the setting that contributes to the significance of cultural resources by introducing new visual elements or allowing for increased public access that results in damage. Construction impacts from transportation projects are likely to be greater under this alternative, both because of the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Energy and Global Climate Change
Per capita energy consumption under this alternative would be greater than under the proposed MTP/SCS because this alternative assumes the same amount of development dispersed over more acres. The share of homes in rural residential communities types and in large-lot single-family configurations is larger under this alternative (39 percent) than under the proposed MTP/SCS (29 percent). This will contribute to greater energy consumption overall as compared to other community types and neighborhood configurations. It is likely that use of natural gas and oil under this alternative would also be greater for the same reasons.

This alternative is more likely to conflict with the goal of increasing reliance on renewable energy sources. Use of some renewable energy sources could be facilitated by this alternative while use of other renewable energy sources could be hindered. The economics of some small-scale renewable energy sources benefit from serving higher density development and development patterns that produce balanced loads and minimize peak demand; other renewable energy sources require larger areas of land to site, making lower density patterns more optimal. The higher share of homes in rural residential communities, which are remote in location and dispersed in development pattern, make use of alternative fuel vehicles less likely in these areas.

This alternative is more likely to conflict with AB 32 and Executive Orders S-3-05 and B-30-15, as related to greenhouse gas emissions reduction goals/targets (both per capita and total). Additionally, as shown in Table 18.2, Alternative 1 does not achieve the 16 percent SB 375 target for GHG reduction set by CARB, because it is more difficult to achieve decreases in greenhouse gases with a more dispersed development pattern that generates higher VMT.

This alternative is likely to result in an increased use of energy and increased greenhouse gas emissions during the construction phase, because it assumes the fewest attached units resulting in a larger number of individual detached structures. These individual structures require more energy for materials, more materials overall, and more fuels to build than attached structures. Construction impacts of transportation projects are likely to be greater, because of both the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Geology, Soils, Seismicity and Mineral Resources
Impacts associated with geology and soils under this alterative could be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over more acres. Therefore, the potential for exposure of a greater proportion of the population and housing to hazards associated with a specific geologic unit or soil type (e.g. expansive or otherwise unstable soils, subsidence, liquefaction, lateral spreading, collapse, landslides) could increase under this alternative. This would be true for both construction impacts and operational impacts.

Impacts associated with seismicity are more regional in nature, and therefore, unlikely to change under this alternative.

Impacts associated with mineral resources would be greater under this alternative than under the proposed MTP/SCS, because this alternative assumes a more dispersed development pattern. Where land use or transportation projects are located in an area with mineral resources, this alternative would result in restricted access to and potentially the inability to harvest a greater proportion of the resource.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hazards and Hazardous Materials

Impacts associated with hazards and hazardous materials under this alterative are anticipated to be similar or, potentially, slightly greater than under the proposed MTP/SCS for both construction and operational phases. This alternative assumes the same amount of development dispersed over more acres. This could expose more people to hazardous sites and/or to land uses with the potential for accidental releases of hazardous materials. However, less dense development in urban areas could expose fewer people to accidental releases of hazardous materials as a result of an accident during transport. The fact that development is more dispersed under this alternative could complicate emergency evacuation plans that rely in part on public transit. This could place more people in the vicinity of airports and air strips, and place more people in wildland fire areas. Additionally, construction impacts may be greater for this alternative, because it assumes the lowest number of attached units, resulting in a larger number of individual detached structures, and a larger land area for growth and higher budget for transportation capacity projects. Construction-related activities will require the use of construction equipment and materials, which may include hazardous substances and/or release hazardous materials into the environment.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hydrology and Water Quality

Impacts associated with hydrology and water quality under this alternative could be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development, but dispersed over more acres and with a greater proportion of homes in rural residential and large-lot single-family configurations. Rural residential development typically relies on roadside ditches and individual (voluntary) personal systems for control, management, and treatment of stormwater drainage. Overall, this is generally less effective than a municipal system in addressing water quality, and, therefore, associated impacts such as potential for polluted runoff, alterations to existing drainage patterns, potential for flooding, and potential for erosion and/or siltation are likely to be greater. Additionally, the greater proportion of individual structures and transportation capacity projects for this alternative could result in an increase of impervious surfaces, which would have a greater impact than the proposed MTP/SCS on stormwater flows and water quality.

Current state law establishes a 200-year flood protection planning threshold for urban areas and a lesser 100-year flood protection planning threshold for rural areas. All three alternatives have a significant number of people in the 100-year and 200-year floodplain as a result of more compact development. Additionally, the larger land area for growth and higher budget for transportation capacity projects under Alternative 1 could place additional structures in 100- and 200-year flood hazard areas. Because this alternative assumes a lower density and intensity of development, it is

possible there will be more single story structures and fewer multi-story structures within both floodplains, thereby increasing the percentage of people living within the floodplain in the area at greater risk of exposure to flooding. Given these considerations, the flood related impacts are similar between this alternative and the proposed MTP/SCS.

The greater number of rural residential homes under this alternative could mean more people using groundwater rather than surface water; however this is somewhat speculative as municipal supply, depending on location, may also rely on groundwater. As such, it is difficult to determine whether this alternative would result in different impacts related to land subsidence.

Construction-related impacts to hydrology and water quality would potentially be greater under this alternative, because of the increased number of rural residential units and large-lot single-family units. This would increase the number of separate construction sites requiring independent surface and subsurface soil preparation and excavation, which could exacerbate overall runoff, drainage, erosion, and siltation associated with the construction phase of development. Construction impacts to transportation projects are also likely to be greater because of the greater number of road capacity projects generally.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Land Use and Planning
This alternative would satisfy many of the land use requirements and objectives of SB 375, though not as well as the proposed MTP/SCS, because its performance falls short of the greenhouse gas emissions reduction target set by CARB.

All of the alternatives direct growth to areas within city boundaries in the Delta, and all subsequent projects within the proposed MTP/SCS that fall within the LURMP boundaries will be required to demonstrate consistency with the LURMP and satisfy mitigation requirements. However, because of a more dispersed development pattern and a higher budget for transportation capacity projects, Alternative 1 will have greater impacts to agriculture, biological resources, and recreational land, and from contaminated runoff and construction of new utilities facilities, especially at the rural-urban edge.

Noise
This alternative is anticipated to generate noise levels similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. This alternative includes more growth in rural and suburban environments, which are quieter than urban environments that have a wide variety of uses in close proximity to one another. However, conversely, this alternative could also exacerbate the exposure of sensitive receptors to noise adverse conditions as a result of increased dispersal of residential units and the greater number of rural residential units.

Construction-related noise impacts would potentially be greater under this alternative related to the increased number of rural residential units and large-lot single-family units. This would increase the number of separate construction sites, which could exacerbate overall noise emissions associated with the construction phase of development. Construction impacts to transportation projects are also likely to be greater, because of more growth in rural areas and the higher budget for road capacity projects generally.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Population and Housing
Impacts related to population and housing should be similar under all alternatives, because the same number of people and dwelling units are assumed. Mitigation measures identified for the proposed MTP/SCS would be applicable.

Public Services and Recreation
This alternative is anticipated to result in public service and recreation impacts (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. However, this alternative could exacerbate the ability to achieve local levels of service due to a more dispersed development pattern that makes it more difficult to efficiently serve the population. Impacts from transportation projects are similar for all alternatives, since increasing capacity for one mode increases public access to services while simultaneously increasing the service area for service providers. Similarly, this alternative has the lowest reduction in overall VMT, which results in less public access to social services, but also the lowest increase in congested VMT, which results in greater access for emergency service providers.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Transportation and Traffic
This alternative is anticipated to generate more trips and higher vehicle miles traveled than under the proposed MTP/SCS, as a result of increased dispersal of residential units and more rural residential units. This alternative is anticipated to result in fewer trips by bicycle, walking, and/or transit for the same reasons. Similarly, this alternative is expected to result in greater interference with the movement of agricultural equipment and farm products on rural roadways, because the trips associated with the greater number of rural residential units will be competing for the same road capacity. However, as shown in Table 18.2, it results in the lowest increase in congested VMT, a measure that primarily affects the region's major highways, because it includes more capacity investments in these areas.

This alternative assumes the least amount of transit service, the least amount of road maintenance and rehabilitation, and the least amount of bicycle and pedestrian street and trail projects. Since all of the alternatives assume the same total population, housing, and employment, impacts to aviation service, inter-regional goods movement, or project design standards are also the same.

Construction-related impacts to transportation and traffic are likely to be greater under this alternative for land use and greater for transportation projects due to the more dispersed growth pattern and higher budget for capacity enhancing projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Utilities and Service Systems
This alternative is anticipated to result in impacts to utilities and service systems (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. However, this alternative could adversely affect the cost of the necessary utility conveyance and distribution systems (e.g.

water, sewer, storm drain, electricity, telecommunications, and pipelines) due to a more dispersed development pattern that makes it more difficult to efficiently serve the population and a greater proportion of transportation capacity projects that demand more water and energy and produce more waste. With respect to sewer service, this alternative is anticipated to result in fewer units on municipal systems and more units on individual septic systems as a result of the greater number of rural residential units. Municipal systems overall are generally better for the environment than larger number of individual septic systems. All of the alternatives would be required to follow the same federal, state, and local statutes and regulations related to solid waste.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

ALTERNATIVE 2: SCENARIO 2/NO PROJECT

Description of Alternative 2 (No Project Alternative)

Alternative 2, the No Project Alternative, was constructed to be consistent with the growth patterns and transportation investment priorities of the 2012 MTP/SCS. The growth in population, jobs, and homes is slightly less as a result of a new base year, but the total population, jobs, and housing achieved by Alternative 2 by 2036 is the same as the 2035 totals used in the 2012 MTP/SCS. Projected revenues for transportation investments and funding allocations are consistent with the 2012 MTP/SCS. This alternative assumes the same housing and employment growth as the proposed MTP/SCS, but distributes the growth differently as described below. Overall, this alternative would be less dispersed than Alternative 1, but slightly more dispersed than the proposed MTP/SCS.

Table 18.1 summarizes key characteristics of all the alternatives, and Table 18.2 compares performance characteristics of each alternative.

Land Use Pattern
The percentage of the new housing that is rural residential, large-lot single-family, small-lot single-family, and attached; the amount of new growth that is projected to occur through infill versus greenfield development; the proportion of housing and jobs growth expected to occur through redevelopment; and the jobs-housing balance within major sub-areas of the region are all the same under Alternative 2 as under the proposed MTP/SCS. Compared to Alternative 1, this alternative would have a higher share of new compact housing (71 percent), more growth in TPAs and fewer developed acres due to a more compact development pattern. This is in part due to a higher percentage of new homes in Center and Corridor Communities and Established Communities, when compared to Alternative 1. In contrast, compared to Alternative 3, this alternative has less compact housing, less growth in TPAs, and more acres developed. This alternative has the same percentage of large-lot versus compact (small-lot or attached) housing as the proposed MTP/SCS. However, the proposed MTP/SCS has more housing in infill versus greenfield areas, and improves the jobs-housing balance within major sub-areas of the region when compared to this alternative.

Transportation
The transportation system for Alternative 2 matches the investment priorities in the 2012 MTP/SCS. The percentage of the budget dedicated to operations and maintenance, transit, new road capacity, bicycle and pedestrian improvements, and programs is the same as the current 2012 plan. This alternative would have more transit service, including more new BRT, streetcar, and light

rail service than Alternative 1. Alternative 2 would have a 109 percent increase in transit service from 2012. It also would have more bicycle and pedestrian improvements, and fewer new roads and road expansions, than Alternative 1. These differences in the transportation system would support a more compact development pattern. Alternative 2 has more new roads and road expansions, and less transit service than in Alternative 3 and the proposed MTP/SCS, as those alternatives have a more compact development pattern than Alternative 2.

Alternative 2 Attainment of Project Objectives

This alternative attains most project objectives, but less effectively and successfully than the proposed MTP/SCS.

Land use and Environmental Sustainability Objectives
While the land use pattern of Alternative 2 builds on the Blueprint, it would provide more greenfield development and fewer transportation options than the proposed MTP/SCS and Alternative 3. This alternative has 71 percent of new housing in small-lot single-family and attached homes and 39 percent of all homes and 44 percent of all jobs near high-frequency transit, which is similar to the proposed MTP/SCS but less than Alternative 3. Alternative 2 would consume more developed acres (48,777) than the proposed MTP/SCS and Alternative 3 due to a more dispersed development pattern which forecasts a higher share of housing growth in Developing Communities. This alternative would have more funding for programs ($2.2 billion) than the proposed MTP/SCS and Alternative 3, where investment in transportation projects, and particularly in the existing system, are the focus. Alternative 2 does not achieve the GHG reduction targets assigned to SACOG by the ARB and would, therefore, would not activate the CEQA streamlining benefits of SB 375. Although this alternative was constructed to be consistent with the land use pattern and transportation investment of the 2012 MTP/SCS (which does achieve the GHG reduction targets), Alternative 2 does not meet the targets primarily due to projected lower growth in fuel price and auto operating cost than were assumed in the 2012 MTP/SCS (U.S. Energy Information Administration, 2013). The forecast of future fuel prices is set by the federal Department of Energy and must be updated and factored into scenario modeling as part of every MTP/SCS update.

Finance Objectives
Alternative 2 meets all these objectives, but not as effectively as the proposed MTP/SCS. Progress is made in this alternative towards an improved state of good repair through increased maintenance, but with a lower maintenance and operations budget than the proposed MTP/SCS. Alternative 2 delivers cost-effective and productive public transit results for the investments made, but the proposed MTP/SCS includes a greater increase in transit service with a lower funding allocation. Alternative 2 meets the financial constraint objectives.

Existing and Expanded Transportation System Objectives
The alternative meets all but two of these objectives. The diversity of access and mobility needs in the various community types are met through a balance of investments. VMT declines from the baseline level and the alternative results in an increase in the mode share for transit, bike and walk trips, though not to a level less than that of the proposed MTP/SCS. While all of the alternatives increase congested VMT because of the effort to develop more compactly to meet greenhouse gas emissions and air quality goals, Alternative 2 increases congested VMT to the same level as the proposed MTP/SCS. This alternative does connect workers to jobs across the region, but includes less jobs within a 20-minute drive than the proposed MTP/SCS.. Alternative 2 does not clearly meet

the project objectives to minimize interferences to bicycle and pedestrian network connectivity and the movement of agricultural products on rural roadways. In neither case does the alternative minimize interferences, because it has a more dispersed growth pattern overall and includes more growth in Developing Communities than Alternative 3 or the proposed MTP/SCS. More growth in these communities and new or expanded roads to serve the relatively dispersed growth may interfere with bicycle and pedestrian connectivity objectives and may lead to conflicts along rural roadways for safe and efficient agricultural operations.

Alternative 2 Environmental Impacts

Aesthetics
Light and glare impacts under this alternative would likely be greater than under the proposed MTP/SCS, because this alternative assumes a development pattern that is dispersed over more acres. As such, building and site lighting is likely to occur over a larger geographic area. In addition, because there are slightly more detached units under this alternative, there are fewer shared walls, which may result in the need for greater nighttime lighting as compared to attached structures that share walls. Light and glare associated with transportation projects are likely to be greater than the proposed MTP/SCS, because there is more funding for capacity enhancing projects.

Adverse effects of shadows from both land uses and transportation projects under this alternative would likely be less than under the proposed MTP/SCS, because it assumes a somewhat lower density and intensity of development. Structures are likely to have fewer stories and be more dispersed, with less likelihood of resulting adverse shadows.

Impacts to views from land uses under this alternative would likely be less than under the proposed MTP/SCS, because it assumes a somewhat lower density and intensity of development. Structures are likely to be shorter and more dispersed, with less likelihood of adverse impacts to views. Impacts to views from river crossings would be increased, because there are more new or expanded bridge projects as a part of this alternative.

Degradation of visual character or quality is likely to be greater under this alternative as compared to the proposed MTP/SCS, because it assumes the same amount of development dispersed over a greater area.

Construction-related aesthetic impacts are likely to be greater under this alternative for both land use and transportation projects, because both the land area required for development is greater and the budget for new transportation capacity is higher. There is the potential that this alternative could result in increased aesthetic impacts, because it assumes a lower number of attached units resulting in a larger number of individual detached structures.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Agriculture and Forestry Resources
Conversion of both farmland and timber land under this alternative would be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over more acres. Approximately 61 square miles of farmland would be converted to development under this alternative, as compared to 58 square miles under the proposed MTP/SCS. The potential for conflicts with zoning, land use designations, and/or other applicable regulations would also be

greater for the same reason. Similarly, the potential for other changes that could result in the conversion of farmland or timber land to alternate uses would be greater due to increases in urban-rural edge areas under this alternative as compared to the proposed MTP/SCS.

Construction-related impacts to farm land or timber land are likely to be greater under this alternative than the proposed MTP/SCS for both land use and transportation projects, both because there is more growth and transportation projects in these areas, and because the alternative has more funding for new road capacity projects and less funding for road maintenance and operations.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Air Quality

It is likely that air emissions will be greater under this alternative. This is because this alternative has a more dispersed development pattern, coupled with less transit service and more new roads and road expansions. This would encourage automobile trips, rather than offer mobility alternatives, that eliminate or reduce automobile trips.

Operational air emissions under this alternative would be increased as compared to the proposed MTP/SCS. This is because development would be less efficient, as it includes the same number of housing units, employment, and population spread over a greater area.

Potential exposure to air contaminants is likely to be less. Although this alternative would have more vehicle miles traveled, which could create more mobile sources of toxic air contaminants (freeways and major roadways), overall emissions of TACs arelikely to be lower due to greater dispersal of development over a larger area.

Potential exposure to odors is unlikely to change. It is possible that it could be lower due to greater dispersal of development over a larger area and, therefore, fewer people likely to be impacted at any one location. It is also possible, however, that this could result in increased exposure to odors because it becomes more difficult to locate land uses with potential odor emissions in areas away from the population.

There would be fewer construction-related air quality impacts under this alternative, due to a similar number of rural residential units and large-lot single-family units. However, construction impacts to transportation projects are likely to be somewhat greater, due to the more dispersed transportation system and the larger budget for road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Biological Resources

Impacts on candidate, sensitive, or special status species (including plants, wildlife, and fish) under this alterative would be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over a larger area. The potential for impacts to riparian habitats, oak woodlands, and wetlands would also be greater for the same reason. Similarly, impacts to migratory wildlife corridors and native wildlife nursery sites would be greater because development would be dispersed over a greater area. However, approximately five square miles of vernal pools are projected to be adversely impacted under this alternative compared to six square miles under the proposed MTP/SCS.

The potential for conflict with local policies and ordinances that protect biological resources, and/or an adopted conservation plan, is likely to be similar or greater under this alternative, due to the larger area of development impact.

Construction-related impacts to biological resources are likely to be greater under this alternative for both land use and transportation projects, both because of the larger land area affected by growth and transportation projects and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Cultural Resources
Impacts to cultural resources (historic, archeological, paleontological, tribal cultural, and human remains) under this alterative would be greater than under the proposed MTP/SCS because this alternative assumes a development pattern that is dispersed over more acres.

This alternative is likely to result in increased impacts to cultural resources during the construction phase, because it assumes the lowest number of attached units − resulting in a larger number of individual detached structures. These individual structures require independent surface and subsurface soil preparation and excavation, which increases the likelihood of encountering unknown subsurface cultural resources. Development can also indirectly diminish the character of the setting that contributes to the significance of cultural resources by introducing new visual elements or allowing for increased public access that results in damage. Construction impacts to transportation projects are likely to be greater under this alternative, both because of the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Energy and Global Climate Change
Per-capita energy consumption under this alternative would be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over more acres. However, the share of homes in rural residential communities types and in large-lot single-family configurations is lower under this alternative (28 percent) as compared to the proposed MTP/SCS (29 percent). Therefore, energy consumption overall and use of natural gas and oil under this alternative would also be similar for the same reasons.

This alternative is likely to have similar impact on the goal of increasing reliance on renewable energy sources. Use of some renewable energy sources could be facilitated, while the use of other renewable energy sources could be hindered by this alternative. The economics of some small-scale renewable energy sources benefit from serving higher density development and development patterns that produce balanced loads and minimize peak demand; other renewable energy sources require larger areas of land to site, making lower density patterns more optimal. In addition, the development pattern of Alternative 2 is similar to the proposed MTP/SCS in that all but two percent of the growth is within urban areas where use of alternative fuel vehicles is feasible given the constraints of vehicle technology and fueling infrastructure.

This alternative is more likely to conflict with AB 32 and Executive Orders S-3-05 and B-30-15 as related to greenhouse gas emissions reduction goals/targets (both per capita and total), because it is more difficult to achieve decreases in greenhouse gases with a more dispersed development pattern

that generates higher VMT. Alternative 2 does not achieve the SB 375 target for GHG reduction set by CARB. While Alternative 2 is based on the 2012 MTP/SCS which did meet the SB 375 GHG reduction target, the land use and transportation changes related to the updated base year (from 2008 to 2012) and the projected lower growth in fuel price and auto operating costs were significant enough that Alternative 2 no longer achieves the target.

This alternative is likely to result in increased use of energy and increased greenhouse gas emissions during the construction phase, because it assumes fewer attached units, resulting in a larger number of individual detached structures. These individual structures require more energy for materials, more materials overall, and more fuels to build than would be needed for attached structures. Construction impacts from transportation projects are also likely to be greater, both because of the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Geology, Soils, Seismicity and Mineral Resources
Impacts associated with geology and soils under this alterative could be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over more acres. Therefore, the potential for exposure of a greater proportion of the population and housing to hazards associated with a specific geologic unit or soil type (e.g. expansive or otherwise unstable soils, subsidence, liquefaction, lateral spreading, collapse, landslides) could increase under this alternative. This would be true for both construction impacts and operational impacts.

Impacts associated with seismicity are more regional in nature and, therefore, unlikely to change under this alternative.

Impacts associated with mineral resources would be greater under this alternative than under the proposed MTP/SCS, because this alternative assumes a more dispersed development pattern. Where land use and transportation projects are located in an area with mineral resources, this alternative would result in restricted access to and potentially the inability to harvest a greater proportion of the resource.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hazards and Hazardous Materials
Impacts associated with hazards and hazardous materials under this alterative are anticipated to be similar or, potentially, slightly greater than under the proposed MTP/SCS for both construction and operational phases. This alternative assumes the same amount of development dispersed over more acres. This could expose more people to hazardous sites and/or to land uses with the potential for accidental releases of hazardous materials. Since development in urban areas will be similar, the number of people that could be exposed to accidental releases of hazardous materials as a result of an accident during transport would be similar. The fact that development is more dispersed under this alternative could complicate emergency evacuation plans that rely in part on public transit. This could place more people in the vicinity of airports and air strips, and place more people in wildland fire areas.

Additionally, construction impacts may be greater for this alternative, because it assumes a lower number of attached units, resulting in a larger number of individual detached structures, and a larger

land area for growth and higher budget for transportation capacity projects. Construction-related activities will require the use of construction equipment and materials, which may include hazardous substances and/or release hazardous materials into the environment.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hydrology and Water Quality
Impacts associated with hydrology and water quality under this alternative could be greater than under the proposed MTP/SCS, because this alternative assumes the same amount of development, but dispersed over more acres. However, the proportion of homes in rural residential and large-lot single-family configurations is slightly less. Urban development generally relies on municipal systems, which are more effective in addressing water quality and, therefore, associated impacts such as potential for polluted runoff, alterations to existing drainage patterns, potential for flooding, and potential for erosion and/or siltation are likely to be similar or slightly less for this alternative. However, this alternative also includes less attached development, resulting in a greater proportion of individual structures, and higher funding for transportation capacity projects, which could result in an increase of impervious surfaces, and a greater impact than the proposed MTP/SCS on stormwater flows and water quality.

Current state law establishes a 200-year flood protection planning threshold for urban areas and a lesser 100-year flood protection planning threshold for rural areas. All three alternatives have a significant number of people in the 100-year and 200-year floodplain as a result of more compact development. Because this alternative assumes a similar density and intensity of development overall, it is likely that the percentage of people living within the floodplain that are at greater risk of exposure to flooding will not be significantly different than under the proposed MTP/SCS. However, the larger land area for growth and higher budget for transportation capacity projects could place additional structures in 100- and 200-year flood hazard areas. Nonetheless, the flood related impacts are similar between this alternative and the proposed MTP/SCS.

The fewer number of rural residential homes under this alternative could mean less people using groundwater rather than surface water; however, this is somewhat speculative as municipal supply, depending on location, may also rely on groundwater. As such it is difficult to determine whether this alternative would result in different impacts related to land subsidence.

There would potentially be less construction-related impacts to hydrology and water quality under this alternative related to the lower number of rural residential units and large-lot single-family units. This would decrease the number of separate construction sites that could exacerbate overall runoff, drainage, erosion, and siltation associated with the construction phase of development. However, construction impacts to transportation projects are likely to be greater because of more road capacity projects generally.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Land Use and Planning
This alternative is expected to substantively satisfy most of the land use requirements and objectives of SB 375, though generally not as well as the proposed MTP/SCS because its performance falls short of the greenhouse gas emissions reduction target set by the CARB.

All of the alternatives direct growth to areas within city boundaries in the Delta, and all subsequent projects within the proposed MTP/SCS that fall within the LURMP boundaries will be required to demonstrate consistency with the LURMP and satisfy mitigation requirements. However, because of a more dispersed development pattern and a higher budget for transportation capacity projects, Alternative 2 will have greater impacts to agriculture, biological resources, and recreational land, and from contaminated runoff and construction of new utilities facilities, especially at the rural-urban edge.

Noise
This alternative is anticipated to generate noise levels similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. This alternative includes more growth in rural and suburban environments, which are more quiet than urban environments that have a wide variety of uses in close proximity to one another. However, conversely, this alternative could also exacerbate the exposure of sensitive receptors to noise adverse conditions as a result of increased dispersal of residential units.

There would potentially be less construction-related noise impacts under this alternative, due fewer rural residential units and large-lot single-family units. This could decrease the number of separate construction sites, which exacerbate overall noise emissions associated with the construction phase of development. However, construction impacts to transportation projects are likely to be greater, both because of the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Population and Housing
Impacts related to population and housing should be similar under all alternatives, because the same number of people and dwelling units are assumed. Mitigation measures identified for the proposed MTP/SCS would be applicable.

Public Services and Recreation
This alternative is anticipated to result in public service and recreation impacts (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. However, this alternative could exacerbate the ability to achieve local levels of service due to a more dispersed development pattern that makes it more difficult to efficiently serve the population.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Transportation and Traffic
This alternative is anticipated to generate more trips and higher vehicle miles traveled than under the proposed MTP/SCS as a result of increased dispersal of residential units. As shown in Table 18.2, congested VMT is the same as under the proposed MTP/SCS (6 percent of all VMT). This alternative is anticipated to result in fewer trips by bicycle, walking, and/or transit for the same reasons. Similarly, this alternative is expected to result in greater interference with the movement of agricultural equipment and farm products on rural roadways, because the trips growth may limit efficient access to farmland.

As compared to the proposed MTP/SCS, this alternative includes less bus and rail transit service, less bicycle and pedestrian street and trail projects, and more new and expanded roads. Since all of the alternatives assume the same total population, housing, and employment, impacts to aviation service, inter-regional goods movement, or project design standards are also the same.

Construction-related impacts to transportation and traffic are likely to be greater under this alternative for land use and for transportation projects, both because of the larger land area for growth and the higher budget for transportation capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Utilities and Service Systems
This alternative is anticipated to result in impacts to utilities and service systems (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. However, this alternative could adversely affect the cost of the necessary utility conveyance and distribution systems (e.g. water, sewer, storm drain, electricity, telecommunications, and pipelines) due to a more dispersed development pattern that makes it more difficult to efficiently serve the population and a greater proportion of transportation capacity projects that demand more water and energy and produce more waste during construction. With respect to sewer service, this alternative is anticipated to result in a greater number of units on municipal systems and less units on individual septic systems as a result of the fewer rural residential units. Municipal systems overall are generally better for the environment than a larger number of individual septic systems. All of the alternatives would be required to follow the same federal, state, and local statutes and regulations related to solid waste.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

ALTERNATIVE 3: SCENARIO 3

Description of Alternative 3

This alternative assumes the same growth as the proposed MTP/SCS, but with more compact and mixed land uses. Overall this alternative would be less dispersed than the proposed MTP/SCS. During the 2012 MTP/SCS scenario development process, the SACOG Board wanted to analyze an alternative (Scenario 3) that maximized transit ridership for the purposes of gaining an understanding of what would be required to generate a high increase in transit ridership. That Scenario 3 from the 2012 MTP/SCS was the basis for this alternative. Alternative 3 and Alternative 1 are bookends to Alternative 2 in terms of analyzing land use and transportation options. To achieve this level of transit performance for Alternative 3, land use assumptions were made that go beyond the federal requirements of what is reasonable to assume. For instance, the alternative relies on a higher amount of attached housing, especially near transit, than the market and financial incentives currently will support. Additionally, Alternative 3 includes a high funding allocation for transit and relies on an exceptionally high farebox recovery rate, which are unlikely to occur under current operations.

Table 18.1 summarizes key characteristics of all the alternatives, while Table 18.2 compares performance characteristics of each alternative.

Land Use Pattern
Alternative 3 has the highest percentage of new compact housing (76 percent) and the smallest development footprint in comparison to the proposed MTP/SCS and the alternative scenarios described above. This alternative would have the highest percentage of new homes in Center and Corridor Communities and the least amount of new growth in Developing Communities and Rural Residential Communities.

Transportation
Because it has the least dispersed development pattern, this alternative has the highest amount of bus and rail projects of all of the alternatives and would increase transit service (vehicle service hours) by 143 percent from 2012. It also has the highest amount of bicycle and pedestrian projects, and the fewest new roads and road expansions.

Alternative 3 Attainment of Project Objectives

Land Use and Environmental Sustainability Objectives
This alternative would have the lowest number of total new homes in Developing Communities and Rural Residential Communities (147,521) as compared to all of the alternatives being analyzed. Alternative 3 would have the highest number of attached homes (151,665). While this alternative is consistent with the objective of increasing housing choice, it may result in more attached housing than the market and financial incentives currently will support. This alternative would have the smallest amount of developed acres (37,350) of all the alternatives due to the fact that it has the highest proportion of growth in Center and Corridor Communities and the highest proportion of compact housing of all of the alternatives. As such, this alternative would also result in the smallest amount of converted farmland and impacted biological resources. Under this alternative, weekday passenger vehicle CO2 emissions decrease the most (-18 percent) and exceed SACOG's SB 375 target for GHG emissions reduction.

Finance Objectives
Alternative 3 successfully meets project objectives related to the efficient use of existing assets and demonstrating progress towards a state of good repair, but is exceeded by the proposed MTP/SCS maintenance and operations investments. However, this alternative relies on the development of attached housing, especially near transit, at levels that may exceed what the market and financial incentives currently will support. While Alternative 3 includes the greatest increase in transit service, the land use assumptions result in an exceptionally high and unlikely transit farebox recovery rate that is dedicated to more transit and other projects that reduce emissions. Therefore, the project objectives related to financial constraint are not met.

Existing and Expanded Transportation System Objectives
All of these project objectives are met by Alternative 3. The alternative includes a balance of investments that support differences in the access and mobility needs of each community type. Also, the transit, bike, and walk travel mode shares increase substantially due to the supportive land uses and the focus on these investments. Alternative 3 meets the objective of connecting workers to jobs across the region, but is outperformed by the proposed MTP/SCS in the number of jobs within a 20-minute drive. Safety and emergency preparedness objectives are also met as the compact land use pattern minimizes interference with agricultural lands, there are strategic investments in disaster prone areas, and the increase in transit service levels under this alternative may assist emergency evacuations. Alternative 3 also performs the best in reducing VMT. . While all of the alternatives

increase congested VMT in an effort to develop more compactly to meet greenhouse gas emissions and air quality goals, this alternative has one of the lowest increases in congested VMT per capita.

Alternative 3 Environmental Impacts

Aesthetics
Light and glare impacts under this alternative would likely be lower than under the proposed MTP/SCS, because this alternative assumes a denser development pattern that is dispersed over fewer acres. Because there are more attached units under this alternative, there are also more shared walls, which may decrease the need for nighttime lighting as compared to detached structures. Light and glare impacts associated with transportation projects are likely to greater than the proposed MTP/SCS, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects

Adverse effects of shadows from both land uses and transportation projects under this alternative would likely be greater than under the proposed MTP/SCS, because it assumes a higher density and intensity of development. Structures are likely to be taller and less dispersed, with more likelihood of resulting adverse shadows.

Impacts to views from land uses under this alternative would likely be greater than under the proposed MTP/SCS, because it assumes a higher density and intensity of development. Structures are likely to be taller and land uses are likely to be more dense, with more likelihood of adverse impacts to views. Impacts to views from river crossings would be similar under this alternative because there are a similar number of bridge projects.

Degradation of visual character or quality is likely to be equal or less under this alternative, as compared to the proposed MTP/SCS, because it assumes the same amount of development dispersed over a smaller area.

There are likely to be fewer construction-related aesthetic impacts under this alternative for land use projects, because they occur over a smaller land area than under the proposed MTP/SCS. There is the potential that this alternative could also result in decreased aesthetic impacts, because it assumes a higher number of attached units resulting in a lower number of individual detached structures. However, transportation project impacts of Alternative3 are likely to be greater than those under the Proposed Project, because Alternative 3 includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Agriculture and Forestry Resources
Conversion of both farmland and timber land under this alterative would be less than under the proposed MTP/SCS, because this alternative assumes the same amount of development dispersed over fewer acres. Approximately 45 square miles of farmland would be converted to development under this alternative as compared to 58 square miles under the proposed MTP/SCS. The potential for conflicts with zoning, land use designations, and/or other applicable regulations would also be lower for the same reason. Similarly, the potential for other changes that could result in the conversion of farmland or timber land to alternate uses would be lower, due to decreases in urban-rural edge areas under this alternative as compared to the proposed MTP/SCS.

There are likely to be fewer construction-related impacts to farmland or timber land under this alternative for land use projects, because they occur over a smaller area than with the proposed MTP/SCS. However, transportation project impacts could be greater than those with the proposed MTP/SCS, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Air Quality

It is likely that air emissions would be fewer under this alternative. This is because Alternative 3 has a less dispersed development pattern coupled with more transit service, leading to a greater overall reduction in VMT.

Operational air emissions under this alternative would be decreased as compared to the proposed MTP/SCS. This is because development would be more compact, as it includes the same number of housing units, employment, and population developed within a smaller area.

Potential exposure to toxic air contaminants is likely to be more. Although there are less vehicle miles traveled in this alternative, which could create fewer mobile sources of toxic air contaminants (freeways and major roadways), it is likely that exposure could be higher under this alternative due to greater concentration of development over a smaller area.

Potential exposure to odors is unlikely to change. It is possible that it could be greater due to greater concentration of development within a smaller area and, therefore, more people likely to be impacted at any one location. It is also possible however, that this could result in decreased exposure to odors, because it becomes easier to locate land uses with potential odor emissions in areas away from the population.

There would likely be fewer construction-related air quality impacts under this alternative, due to the lower number of rural residential units and higher number of attached units. This would decrease the number of separate construction sites, thus minimizing overall air emissions associated with the construction phase of development. However, construction impacts to transportation projects are likely to be greater, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Biological Resources

Impacts on candidate, sensitive, or special status species (including plants, wildlife, and fish) under this alterative would be fewer as compared to the proposed MTP/SCS, because this alternative assumes the same amount of development concentrated within a smaller area. The potential for impacts to riparian habitats, oak woodlands, and wetlands would also decrease for the same reason. Fewer impacts to vernal pools are projected under this alternative (two square miles) as compared to the proposed MTP/SCS (six square miles). Similarly impacts to migratory wildlife corridors and native wildlife nursery sites would be fewer, because development would be concentrated within a smaller area.

The potential for conflict with local policies and ordinances that protect biological resources, and/or an adopted conservation plan, is likely to be similar or lower under this alternative, due to the smaller area of development impact.

Construction-related impacts to biological resources are likely to be less for land use under this alternative because the projects occur on a smaller land area than under the proposed MTP/SCS. However, construction-related impacts from transportation projects are likely to be greater, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Cultural Resources
Impacts to cultural resources (historic, archeological, paleontological, tribal cultural, and human remains) under this alterative would decrease as compared to the proposed MTP/SCS, because this alternative assumes a development pattern that is more concentrated over fewer acres.

This alternative is likely to result in decreased impacts to cultural resources during the construction phase, because it assumes the highest number of attached units resulting in fewer individual detached structures. These individual structures require independent surface and subsurface soil preparation and excavation, which increases the likelihood of encountering unknown subsurface cultural resources. Development can also indirectly diminish the character of the setting that contributes to the significance of cultural resources by introducing new visual elements or allowing for increased public access that results in damage. However, there are likely to be greater construction-related impacts to transportation projects under this alternative, because they include less funding for road maintenance and operations and more funding for new road capacity projects than under the proposed MTP/SCS.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Energy and Global Climate Change
Per-capita energy consumption under this alternative would be lower than under the proposed MTP/SCS, because this alternative assumes the same amount of development concentrated in a smaller area. The share of homes in rural residential communities types and in large-lot single-family configurations is smaller under this alternative (24 percent) than under the proposed MTP/SCS (29 percent). This will result in lower energy consumption overall as compared to other community types and neighborhood configurations. It is likely that use of natural gas and oil under this alternative would also be lower for the same reasons.

This alternative is likely to have similar impact on the goal of increasing reliance on renewable energy sources. Use of renewable energy sources could be facilitated by this alternative, while use of other renewable energy sources could be hindered. The economics of some small-scale renewable energy sources benefit from serving higher density development and development patterns that produce balanced loads and minimize peak demand, while other renewable energy sources require larger areas of land to site, making lower density patterns more optimal. As with other infrastructure, the feasibility of all sources of renewable energy depends, in part, on the condition and capacity of the existing transmission and distribution system in the immediate area. In addition, the development pattern of Alternative 3 is similar to the proposed MTP/SCS in that all but two

percent of the growth is within urban areas where use of alternative fuel vehicles is feasible given the constraints of vehicle technology and fueling infrastructure.

This alternative is less likely to conflict with AB 32 and Executive Orders S-3-05 and B-30-15 as related to GHG reduction goals/targets (both per-capita and total), because it is easier to achieve decreases in greenhouse gases with a more concentrated development pattern that generates lower VMT. Alternative 3 achieves an 18 percent GHG reduction per capita compared to the 16 percent SB 375 target for GHG reduction set by CARB, primarily due to more compact development and increased transit service.

This alternative is likely to result in decreased use of energy and greenhouse gas emissions during the construction phase, because it assumes a larger number of attached structures over a more compact growth area. Detached structures require more energy for materials, more materials overall, and more fuels to build than would be needed for attached structures. However, construction impacts to transportation projects are likely to be greater, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Geology, Soils, Seismicity and Mineral Resources
Impacts associated with geology and soils under this alterative could be lower than under the proposed MTP/SCS, because this alternative assumes the same amount of development concentrated in a smaller area. Therefore, the potential for exposure of a greater proportion of the population and housing to hazards associated with a specific geologic unit or soil type (e.g. expansive or otherwise unstable soils, subsidence, liquefaction, lateral spreading, collapse, landslides) could decrease under this alternative. However, construction-related impacts from transportation improvements could be greater under this alternative, because it includes less funding for road maintenance and operations and more funding for new road capacity projects

Impacts associated with seismicity are more regional in nature, and therefore, unlikely to change under this alternative.

Impacts associated with mineral resources would decrease under this alternative, as compared to the proposed MTP/SCS, because this alternative assumes a more concentrated development pattern. However, construction-related impacts from transportation improvements could be greater under this alternative, because it includes less funding for road maintenance and operations and more funding for new road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hazards and Hazardous Materials
Impacts associated with hazards and hazardous materials under this alterative are anticipated to be similar or, potentially, lower than under the proposed MTP/SCS for both construction and operational phases. This alternative assumes the same amount of development concentrated over fewer acres. Under this alternative, fewer people would be exposed to hazardous sites and/or to land uses with the potential for accidental releases of hazardous materials. However, more dense development in urban areas could expose more people to accidental releases of hazardous materials as a result of an accident during transport. The fact that development is more concentrated under

this alternative could increase efficiency for emergency evacuation planning that includes public transit, because more growth is closer to transit lines and the alternative has the greatest amount of transit services. This would likely place fewer people in the vicinity of airports and air strips, or in wildland fire areas.

Additionally, there may be fewer construction impacts under this alternative, because it assumes the greatest number of attached units and a more concentrated land area for growth. However, this alternative also includes a higher budget for new road capacity projects. Construction-related activities require the use of construction equipment and materials, which may include hazardous substances and/or release hazardous materials into the environment.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Hydrology and Water Quality

There could be fewer impacts associated with hydrology and water quality under this alternative, as compared to the proposed MTP/SCS, because this alternative assumes the same amount of development concentrated over fewer acres and a lower proportion of homes in rural residential and large-lot single-family configurations. Rural residential development typically relies on roadside ditches and individual (voluntary) personal systems for control, management, and treatment of stormwater drainage. Overall, this is generally less effective than municipal systems in addressing water quality. Therefore, under this alternative, the potential for impacts such as polluted runoff, alterations to existing drainage patterns, potential for flooding, and potential for erosion and/or siltation are likely to be fewer than those associated with the proposed MTP/SCS.

Current state law establishes a 200-year flood protection planning threshold for urban areas and a lesser 100-year flood protection planning threshold for rural areas. All three alternatives have a significant number of people in the 100-year and 200-year floodplain as a result of more compact development. The smaller land area for growth and lower budget for transportation capacity projects could result in fewer structures in 100- and 200-year flood hazard areas. Because this alternative assumes higher density and intensity of development, it is also possible there will be more multi-story structures and fewer single-story structures within the 200-year floodplain. As people on the first floor of a structure are the most vulnerable during a flood event, development of multi-story structures as opposed to single-story structures could reduce the percentage of people located within the floodplain that are at the greatest risk of exposure.

The lower number of rural residential homes under this alternative could mean fewer people using groundwater (in the form of wells) rather than surface water; however, this is somewhat speculative as municipal supply, depending on location, may also rely on groundwater. As such, it is difficult to determine whether this alternative would result in different impacts related to land subsidence.

There would potentially be fewer construction-related impacts to hydrology and water quality under this alternative, because of the lower proportion of rural residential units, large-lot single-family units, and detached units. This would decrease the number of separate construction sites, which minimizes overall runoff, drainage, erosion, and siltation associated with the construction phase of development. However, construction impacts of transportation projects are likely to be greater, because this alternative assumes a higher budget for road capacity projects.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Land Use and Planning
This alternative is expected to substantively satisfy most of the land use requirements and objectives of SB 375.

All of the alternatives direct growth to areas within city boundaries in the Delta, and all subsequent projects within the proposed MTP/SCS that fall within the LURMP boundaries will be required to demonstrate consistency with the LURMP and satisfy mitigation requirements. Due to a more compact development pattern, Alternative 1 will have fewer impacts to agriculture, biological resources, and recreational land, and from contaminated runoff and construction of new utilities facilities from land use changes. However, the increased budget for roadway capacity would lead to greater impacts from transportation projects.

Noise
This alternative is anticipated to generate noise levels similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. This alternative includes more growth in urban environments, which are noisier than rural or suburban environments because they include a wide variety of uses in close proximity to one another. However, conversely, this alternative could also reduce the exposure of sensitive receptors to noise adverse conditions as a result of more compact development that could allow for greater separation of some uses.

There are likely to be fewer construction-related noise impacts under this alternative related to the lower proportion of rural residential units and large-lot single-family units. This would decrease the number of separate construction sites, which could reduce overall noise emissions associated with the construction phase of development. Construction impacts to transportation projects are likely to be greater, because this alternative includes less funding for road maintenance and operations and more funding for new road capacity projects

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Population and Housing
Impacts related to population and housing should be similar under all alternatives, because the same number of people and dwelling units are assumed. Mitigation measures identified for the proposed MTP/SCS would be applicable.

Public Services and Recreation
This alternative is anticipated to result in public service and recreation impacts (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. However, this alternative could improve the ability to achieve local levels of service due to a more concentrated development pattern that makes it more efficient to serve the population. Impacts from transportation procts are similar for all alternatives, since increasing capacity for one mode increases public access to services while simultaneously increasing the service area for service providers. Similarly, this alternative has the highest reduction in overall VMT and the lowest increase in congested VMT, which results in both greater public access to social services and greater access for emergency service providers.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Transportation and Traffic
This alternative is anticipated to generate fewer trips and lower vehicle miles traveled than under the proposed MTP/SCS as a result of the increased concentration of residential units in urban areas and fewer rural residential units. This alternative is anticipated to result in more trips by bicycle, walking, and/or transit for the same reasons. Similarly, this alternative is expected to result in less interference with the movement of agricultural equipment and farm products on rural roadways, because the compact growth maintains efficient access to farmland and there will be fewer trips from rural residential units competing for the same road capacity.

As compared to the proposed MTP/SCS, this alternative assumes: more bus and rail transit services, more bicycle and pedestrian street and trail projects, lower levels of congested VMT, and less overall VMT. Table 18.2 shows how Alternative 3 compares to the proposed MTP/SCS on these metrics. Since all of the alternatives assume the same total population, housing, and employment, impacts to aviation service, inter-regional goods movement, or project design standards are also the same.

Construction-related impacts to transportation and traffic are likely to be greater under this alternative for transportation projects, due to the higher budget for roadway capacity enhancing projects. However, construction-related impacts to transportation and traffic are likely to be fewer for land use changes due to the more compact growth pattern.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

Utilities and Service Systems
This alternative is anticipated to result in impacts to utilities and service systems (both construction-related and operational) similar to those that would be generated under the proposed MTP/SCS, because the same total population, housing, and employment are assumed. This alternative could improve the efficiency of necessary utility conveyance and distribution systems (e.g. water, sewer, stormdrain, electricity, telecommunications, and pipelines) due to a more concentrated development pattern that makes it easier to serve to the population. However, the greater proportion of transportation capacity projects will demand more water and energy and produce more waste during construction. With respect to sewer service, this alternative is anticipated to result in more units on municipal systems and fewer units on individual septic systems as a result of the lower number of rural residential units. Municipal systems, overall, are generally better for the environment than larger number of individual septic systems. However, the higher levels of development in Centers and Corridors and Established Communities could result in higher development costs in areas where existing infrastructure capacity is insufficient to meet the new demand. All of the alternatives would be required to follow the same federal, state, and local statutes and regulations related to solid waste.

Mitigation measures identified for the proposed MTP/SCS would be applicable.

18.4 Environmentally-Superior Alternative

CEQA requires that an EIR identify the environmentally-superior alternative from among the range of reasonable alternatives that are evaluated. CEQA Guidelines Section 15126.6(d)(2) states that if the environmentally-superior alternative is the no project alternative, the EIR shall also identify an environmentally-superior alternative from among the other alternatives.

This chapter analyzes the effectiveness of the alternatives in meeting the objectives of the project and how the potential impacts of the alternatives compare to the potential impacts of the proposed MTP/SCS. Based on this evaluation Alternative 3 (Scenario 3) would be the environmentally-superior alternative, because it would reduce most impacts as compared to the proposed MTP/SCS. However, the overall level of impact and the conclusions regarding those that remain potentially significant and unavoidable are similar between Alternative 3 and the proposed MTP/SCS. Table 18.3 summarizes the pre-mitigation impacts of Alternatives 1, 2, and 3 compared to the proposed MTP/SCS. Alternative 3 ranks the highest, because it would have the most reduced impacts of all alternatives. The proposed MTP/SCS ranks second, Alternative 2 rank third, and Alternative 1 (No Project) ranks fourth, because it would have the most impacts of all alternatives analyzed.

18.4.1 Proposed Project (MTP/SCS) Attainment of Project Objectives

Under the proposed project (MTP/SCS), the land use changes, in combination with strategic transportation improvements, meet SACOG's SB 375 target for GHG emissions reduction. As discussed in more detail below, the MTP/SCS meets all Project Objectives.

Land use and Environmental Sustainability Objectives

The MTP/SCS meets all these objectives by providing a land use forecast that delivers strong performance, while also reflecting market and regulatory realities. Direct and indirect impacts on the environment are minimized by the seven percent increase in developed acres during a planning period that will experience a 36 percent increase in population. A key contribution towards meeting this objective is focusing a large share of new growth towards infill and corridor re-urbanization opportunity sites that reduce the expansion of the urban footprint and thereby protect agricultural and natural resource lands. Objectives related to improved jobs-housing balance and increased housing choice and diversity are also met through the proposed MTP/SCS, which includes the most balanced jobs-housing ratio. To the extent that is reasonable to assume, mixed-use and compact activity centers expand with more jobs and a diversity of housing options to accommodate the region's forecasted changes in demographics and economics. Support towards the realization of these policy-related objectives is reflected in the MTP/SCS investment priorities. The MTP/SCS has a high level of investment in programs to fund data, tools and financial incentives that support local land use decision-making and assist in the voluntary implementation of the Blueprint.

Financial Stewardship Objectives

The proposed MTP/SCS meets all these objectives. The highest level of investment in system maintenance through the MTP/SCS meets the objectives to improve the condition of the transportation system and maximize the cost efficiency of investments. Also, performance objectives to reduce congestion and increase transit, bike, and walk trips are met through emphasizing cost-effective operational improvements and right-sizing road capacity projects. Finally, the MTP/SCS

delivers productive and cost-effective transit services, as evidenced by the low cost per transit vehicle service hour and a farebox recovery rate that improves significantly from the baseline.

EXISTING AND EXPANDED TRANSPORTATION SYSTEM OBJECTIVES

The proposed MTP/SCS meets all these objectives. A balance of investments matched to the travel demand in each of the community types results in strong performance across all indicators. The proposed MTP/SCS has the highest number of jobs within a 20-minute drive of residence, connecting workers to jobs across the region. VMT per capita declines significantly over the planning period. Congested VMT increases at a rate similar to that of the other alternatives, due to a more compact growth pattern. However, the proposed MTP/SCS is the only alternative (besides Alternative 3, which includes unlikely assumptions for fare box recovery and transit investment) that meets the greenhouse gas emissions reductions set by CARB for the region. Mobility options are broadened, as evidenced by the increase in transit, bike and walk trips. This increase in mobility alternatives to driving allows the MTP/SCS to meet the economic vitality objectives related to commute travel and efficient goods movement. Safety and emergency preparedness objectives are also met in the MTP/SCS through compact land uses that minimize conflicts on roadways along the urban/rural edge as well as significant increases in transit investments that may support evacuations. Furthermore, the proposed MTP/SCS includes substantial investments in operational improvements, new bridges, and ongoing maintenance of roads in disaster-prone areas to improve safety and emergency preparedness.

Table 18.3
Summary of Alternative Impacts against the Proposed MTP/SCS

S – Impact is Significant LS – Impact is Less than Significant + Impact is greater than proposed MTP/SCS - Impact is less than proposed MTP/SCS = Impact is same as proposed MTP/SCS **Impact Statement** LU or TRN		Proposed MTP/SCS	Alternative 1 (Scenario 1)	Alternative 2 (No Project Scenario 2)	Alternative 3 (Scenario 3)
AES – 1a: Cast glare and light in such a way as to cause a public hazard or substantially degrade the existing visual/aesthetic character or quality of a site or place for a sustained period of time.	Land Use	S	+	+	-
	Transpo.	S	=	+	+
AES – 1b: Cast shadow in such a way as to cause a public hazard or substantially degrade the existing visual/aesthetic character or quality of a site or place for a sustained period of time.	Land Use	LS	-	-	+
	Transpo.	LS	-	-	+
AES – 2: Block panoramic views or views of significant landscape features or landforms (mountains, rivers, bays, or important man-made structures), as seen from public viewing areas, including state-designated scenic highways.	Land Use	S	-	-	+
	Transpo.	S	+	+	=
AES – 3: Substantially degrade the existing visual character or quality of the site and its surroundings, including established neighborhoods.	Land Use	S	+	+	-
	Transpo.	S	+	+	+

S – Impact is Significant LS – Impact is Less than Significant + Impact is greater than proposed MTP/SCS - Impact is less than proposed MTP/SCS = Impact is same as proposed MTP/SCS **Impact Statement** LU or TRN		Proposed MTP/SCS	Alternative 1 (Scenario 1)	Alternative 2 (No Project Scenario 2)	Alternative 3 (Scenario 3)
AES – 4a: Result in construction-related impacts that would cast glare, light, or shadow in such a way as to cause a public hazard or substantially degrade the existing visual/aesthetic character or quality of a site or place for a sustained period of time.	Land Use	S	+	+	-
	Transpo.	S	+	+	+
AES – 4b: Result in construction-related impacts that would block panoramic views or views of significant landscape features or landforms (mountains, rivers, bays, or important man-made structures) as seen from public viewing areas, including state-designated scenic highways.	Land Use	S	+	+	-
	Transpo.	S	+	+	+
AES – 4c: Result in construction-related impacts that would substantially degrade the existing visual character or quality of the site and its surroundings, including established neighborhoods.	Land Use	S	+	+	-
	Transpo.	S	+	+	+
AG-1: Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation, to non-agricultural use.	Land Use	S	+	+	-
	Transpo.	S	+	+	-
AG-2: Conflict with existing zoning or general plan land use designations for agricultural use, or with a Williamson Act Contract.	Land Use	S	+	+	-

S – Impact is Significant LS – Impact is Less than Significant + Impact is greater than proposed MTP/SCS - Impact is less than proposed MTP/SCS = Impact is same as proposed MTP/SCS **Impact Statement** LU or TRN		Proposed MTP/SCS	Alternative 1 (Scenario 1)	Alternative 2 (No Project Scenario 2)	Alternative 3 (Scenario 3)
	Transpo.	S	+	+	-
AG – 3: Conflict with existing zoning or land use designation for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production.	Land Use	S	+	+	-
	Transpo.	LS	+	+	-
AG-4: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.	Land Use	S	+	+	-
	Transpo.	S	+	+	-
AG-5: Result in the loss of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub.Resources Code § 12220(G)) or conversion of Forest Land to nonforest use.	Land Use	S	+	+	-
	Transpo.	S	+	+	-
AG-6: Result in construction impacts that would convert prime farmland, unique farmland, or farmland of statewide importance; conflict with existing zoning or land use designation for agricultural use or a Williamson Act contract; conflict with existing zoning or land use designations for, or cause rezoning of, forest	Land Use	S	+	+	-

S – Impact is Significant LS – Impact is Less than Significant + Impact is greater than proposed MTP/SCS - Impact is less than proposed MTP/SCS = Impact is same as proposed MTP/SCS **Impact Statement** **LU or TRN**		Proposed MTP/SCS	Alternative 1 (Scenario 1)	Alternative 2 (No Project Scenario 2)	Alternative 3 (Scenario 3)
land, timberland, or timberland zoned Timberland Production; involve other changes in the existing environment which, due to their location of nature, could result in conversion of farmland to non-agricultural use; or result in the loss of Forest Land or conversion of Forest Land into non-forest use.	Transpo.	S	+	+	+
AIR–1: Conflict with or obstruct implementation of the applicable air quality plans.	Land Use	LS	+	+	-
	Transpo.	LS	+	+	-
AIR–2: Expose sensitive receptors to substantial TAC concentrations, including those from construction or operational emissions.	Land Use	S	-	-	+
	Transpo.	S	-	-	+

AIR–3: Create objectionable odors affecting a substantial number of people, including those from construction or operations.	Land Use	**S**	=	=	=
	Transpo.	**LS**	=	=	=
AIR-4a: Be inconsistent or exceed applicable thresholds of significance established by the local air district for long-term operational criteria air pollutant emissions	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	-
AIR-4b: Be inconsistent or exceed applicable thresholds of significance established by the local air district for short-term operational criteria air pollutant emissions	Land Use	**S**	+	-	-
	Transpo.	**S**	+	+	+
BIO-1: Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS, or on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS, or on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
BIO-2: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+

BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	-
BIO-4: Conflict with the Provisions of an Adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or Other Approved Local, Regional, or State Habitat Conservation Plan.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
CR-1: Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
CR-2: Cause a substantial adverse change in the significance of an historical or unique archaeological resource pursuant to CEQA Guidelines Section 15064.5.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
CR-3: Directly or indirectly destroy a unique paleontological resource or site or geologic feature.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+

CR-4: Disturb any human remains, including those interred outside of formal cemeteries.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
CR-5: Cause a substantial adverse change in the significance of a tribal cultural resource.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
ENE-1: Conflict with the goal of decreasing overall per capita energy consumption.	Land Use	**LS**	+	=	-
	Transpo.	**LS**	+	=	-
ENE-2: Conflict with the goal of decreasing reliance on natural gas and oil.	Land Use	**LS**	+	=	-
	Transpo.	**LS**	+	=	-
ENE-3: Conflict with the goal of increasing reliance on renewable energy sources.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	+	=	=

ENE-4: Increase energy consumption from the construction of the proposed MTP/SCS in a manner inconsistent with AB 32.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
ENE-5: Substantially conflict with achievement of AB 32 Goals.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
ENE-6: Conflict with the SACOG region's achievement of SB 375 GHG emissions reduction targets.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
ENE-7: Conflict with applicable local GHG reduction plans.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
ENE-8: Increase GHG emissions from the construction of the proposed MTP/SCS in a manner inconsistent with AB 32.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+

GEO–1a: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
GEO–1b: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
GEO–1c: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
GEO–1d: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
GEO–2: Result in substantial soil erosion or the loss of topsoil.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+

GEO–3: Locate a project on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
GEO–4: Result in development on expansive soil, as defined in Section 1803.5.3 of the International Building Code (International Conference of Building Officials, 2012), creating substantial risks to life or property.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
GEO–5: Have soils incapable of adequately supporting the use of septic tanks or alternative water disposal systems where sewers are not available for the disposal of waste water.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
GEO–6: Result in impacts to geology, seismicity, and soils from construction of the proposed MTP/SCS projects.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
GEO–7: Result in the loss of availability of a designated mineral resource that would be of value to the region and the residents of the state.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+

GEO–8: Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
GEO-9: Result in impacts to mineral resources from construction of the proposed MTP/SCS projects.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
HAZ-2a: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Land Use	**S**	+	+	-
	Transpo.	**S**	-	=	+
HAZ-2b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of asbestos into the environment.	Land Use	**LS**	ii	ii	ii
	Transpo.	**LS**	ii	ii	ii

HAZ-3: Emit hazardous emissions or cause handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
HAZ–4: Result in development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or environment.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	-
HAZ-5: For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.	Land Use	**LS**	=	=	-
	Transpo.	**LS**	=	=	-
HAZ–6: For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
HAZ–7: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-

HAZ-8: Expose people or structures to a significant risk of loss, injury, or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
HAZ-9: Result in construction impacts that would cause a hazard to the public or the environment.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
HYD- 1: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Land Use	**LS**	+	=	-
	Transpo.	**LS**	+	+	-
HYD- 2: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would either (a) result in flooding on- or off-site, or (b) result in substantial erosion or siltation on- or off-site.	Land Use	**S**	+	=	-
	Transpo.	**S**	+	+	-
HYD- 3: Place housing within a 200-year flood hazard area (urban) or 100-year flood hazard area (rural) as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place structures that would impede or redirect flood flows	Land Use	**S**	=	=	-
	Transpo.	**S**	+	+	+

HYD- 4: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam	Land Use	**LS**	+	=	-
	Transpo.	**LS**	+	+	+
HYD- 5: Expose people or structures to inundation by seiche, tsunami, or mudflow	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
HYD- 6: Exacerbate land subsidence associated with groundwater use	Land Use	**S**	ii	ii	ii
	Transpo.	**S**	ii	ii	ii
HYD- 7: Otherwise substantially degrade water quality	Land Use	**LS**	+	=	-
	Transpo.	**LS**	+	+	+
HYD- 8: Violate any water quality standards or waste discharge requirements resulting from construction activities	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
LU-1: Conflict with the land use requirements and objectives of Senate Bill 375.	Cum.	**LS**	+	+	-

LU-2: Conflict with any of the following requirements included in the Land Use and Resource Management Plan adopted by the Delta Protection Commission.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
NOI-1: Result in noise levels that exceed the community type Ldn thresholds identified in Table 13.4 and increase noise levels by more than 1.5 dB for Center and Corridor Communities or more than 3 dBA over baseline conditions for the other community types.	Land Use	**S**	ii	ii	ii
	Transpo.	**S**	ii	ii	ii
NOI–2: Result in excessive vibration and groundborne noise.	Land Use	**S**	ii	ii	ii
	Transpo.	**S**	ii	ii	ii
NOI-3: Result in construction impacts that would increase noise levels above the community type Ldn thresholds identified in Table 13.4, result in increases of more than 1.5 dB for Center and Corridor Communities or more than 3 dBA over baseline conditions for the other community types; or result in excessive levels of vibration and groundborne noise.	Land Use	**LS**	ii	ii	ii
	Transpo.	**S**	ii	ii	ii
POP-1 Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=

PS–1: Impede achievement of acceptable levels of service for police protection, fire protection, emergency response, school, library, social, parks and recreation, and/or other public services, including capital capacity, programming, equipment, and personnel.	Land Use	**S**	+	+	-
	Transpo.	**S**	=	=	=
PS–2: Result in impacts associated with the construction of new or the expansion of existing facilities to maintain adequate capital capacity for police protection, fire protection, emergency response, school, library, social, park and recreation, and/or other public services.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	=	=	=
TRN-1: Cause an increase in vehicle miles traveled (VMT) per capita that exceeds the applicable baseline average.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
TRN-2: Cause an increase in VMT on congested roadways (C-VMT) per capita relative to the applicable baseline for the area, and cause an increase in C-VMT per capita that exceeds the baseline regional average.	Land Use	**LS**	-	=	+
	Transpo.	**LS**	-	=	+
TRN-3: Cause combined bicycle, walk, and transit person trips per capita to be lower than the applicable baseline average, and cause a decline in the bicycle, walk, and transit person trips per capita that exceeds the baseline regional average.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-

TRN-4: Cause average transit passenger boardings per vehicle service hour to be lower than the applicable average.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
TRN-5: Cause an interference with existing or planned pedestrian or bicycle facilities.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	+
TRN-6: Cause a disruption to the movement of agricultural products on rural roadways.	Land Use	**LS**	+	+	-
	Transpo.	**LS**	+	+	-
TRN-7: Cause a disruption to aviation access or service.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
TRN-8: Cause a disruption to goods movement into or through the SACOG region.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=

TRN-9: Cause a disruption to the ongoing operations of the applicable regional or local area transportation system due to construction activities.	Land Use	**S**	+	+	-
	Transpo.	**S**	=	=	=
TRN-10: Result in inconsistency with project design standards related to traffic safety.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=
USS–1: Result in an increased demand for surface or groundwater in excess of available supply.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
USS-2: Exceed the capacity of existing or planned water storage, conveyance, distribution, and treatment facilities.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
USS–3: Exceed the capacity of utility infrastructure including sewage, storm drainage fire flows, solid waste, power, and telecommunications.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+

USS-4: Result the need for the expansion of existing utilities and service system infrastructure required to maintain adequate sewer, wastewater treatment, fire flows, solid waste, power, and telecommunications systems.	Land Use	**S**	+	+	-
	Transpo.	**S**	+	+	+
USS-5: Be out of compliance with federal, state, and local statutes and regulations related to solid waste.	Land Use	**LS**	=	=	=
	Transpo.	**LS**	=	=	=