Gateway Cities Council of Governments
Subregional Sustainable Communities Strategy

In Accordance with California Senate Bill 375

final report

prepared for
Gateway Cities Council of Governments

prepared by
Cambridge Systematics, Inc.

with
Willdan Engineering
MIG, Inc.
ESTC

June 21, 2011
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prepared by
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date
June 21, 2011
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Executive Summary

The Gateway Cities subregion is one of 14 within the Southern California Association of Governments (SCAG). The California law Senate Bill (SB) 375 requires each of the 18 metropolitan planning organizations (MPO) in the State to prepare a Sustainable Communities Strategy (SCS).¹ The requirement applies as each MPO prepares its next update of its Regional Transportation Plan (RTP). Unique to the SCAG region, however, a subregional council of governments, such as the Gateway Cities Council of Governments (COG), and the county transportation commission (Los Angeles County Metropolitan Transportation Authority (LACMTA)) may work together to formulate the SCS for that subregional area. Two of the 14 subregions, Gateway Cities and Orange County, exercised this option. The remaining subregions elected to participate with SCAG in development of the regional SCS.

The Gateway Cities SCS was built first by each city selecting GHG strategies that work for their individual community. These local strategies are a blend of efforts that the Gateway COG and its communities have been pursuing over the last decade and future efforts that each jurisdiction plans to implement over about the next 25 years. The Gateway City communities then integrated these local strategy portfolios with subregional and regional transportation projects located within the subregion that are expected to be part of the 2012 SCAG RTP. The results are a Gateway SCS that will exceed the regional targets set by the California Air Resources Board (CARB).

This report provides the Gateway Cities subregional SCS, documenting the program the subregion’s jurisdictions plan to implement to reduce greenhouse gases (GHG) by 2020 and 2035 using transportation and land use strategies throughout the Gateway Cities.

GHG Reduction Results from Gateway Cities

Gateway Cities COG worked with SCAG to obtain the information needed to generate the Gateway Cities subregional baseline emissions per capita in 2005, which is the base year specified by SB 375. This analysis applied the Adopted

¹ Set forth in amendments to the Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, and 65588, and added to Sections 14522.1, 14522.2, and 65080.01 and to amend the Public Resources Code Section 21061.3, add Section 21159.28, and add Chapter 4.2 (commencing with Section 21155) to Division 13 relating to environmental quality.
2008 RTP Growth Forecast and the Local Input/General Plan 2012 RTP Growth Forecast as the per capita denominator for the SB 375 target years of 2020 and 2035. The results of this analysis produced a daily GHG per capita estimate for 2005 of 16.64 lbs of carbon dioxide equivalent (CO₂e) for the Gateway Cities subregion compared to 21.2 lbs CO₂e for the SCAG region. This difference is consistent with the differences between the Gateway Cities subregion and the SCAG region as a whole: higher land use density, lower car ownership per household, higher density and service levels for transit, and lower vehicle miles of travel (VMT) per household. The 16.64 lbs CO₂e per capita in 2005 for the Gateway Cities subregion was used as the benchmark for the Gateway Cities SCS attainment of the CARB targets for the SCAG region. The estimated GHG reductions relative to this benchmark are achieved with the following five bundles of strategies.

- **Transportation Strategies.** Cities and the County submitted approximately 340 strategies. This portfolio generates a significant amount of reduction, the highest GHG reduction after the regional transportation projects. The interactive effects between these strategies and land use (smart growth policies) are accounted for in the land use analysis (described below).

- **Transportation Demand Management (TDM) Strategies.** The focus was on three main categories of TDM: compressed workweek schedules for city employees (12 cities), ridesharing programs for city employees (6 cities), and TDM or Trip Reduction Ordinances for new development (8 cities). This bundle also incorporates the interactive effects between TDM and land use and transit.

- **Land Use.** Of the 26 participating cities, 11 cities chose to evaluate their 2008, 2020, and 2035 default scenarios in the Sustainability Tool (ST). These cities worked with SCAG to revise the 2008 scenario so it more accurately reflected the actual land use at that time. These cities also evaluated their 2020 and 2035 scenarios, which the ST contained as representations of each city’s general plan. After these evaluations, most cities made adjustments so the land use patterns in the ST more closely matched their general plan. None of

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2 The unincorporated areas of Gateway Cities subregion are included in the daily GHG per capita baseline.

3 Approximately 50 additional strategies were either incomplete, did not have sufficient information for analysis, or were not relevant.

4 The inventory of TDM strategies does not include activities being carried out by private businesses or institutions. Insufficient time and resources prevented a survey.

5 The ST converts general plan information from each city into 5.5-acre grid cells, where each grid cell is assigned one of 26 possible types of land use. This assignment process provides a reasonable approximation of a city’s aggregate land use, but may on occasion assign general plan land use designations to incorrect grid cell types.
these cities adopted land use strategies for their 2020 or 2035 scenarios that will differ from their general plans. The remaining cities used the ST-equivalents of their adopted general plans (i.e., default scenarios in the ST), which is SCAG’s best judgment of city general plans converted to grid cells. The ST has functionality that estimates the interactions between land use and proximity to bus and rail (i.e., fixed guideway) transit node.6 These are included in the estimated GHG reductions from each city’s 2020 and 2035 land use policies.

- **Regional Projects, including Measure R.** Regional transportation projects located within the Gateway Cities will reduce GHG within the subregion. Gateway Cities COG staff determined 17 projects that are included in the RTP, such as multimodal and intermodal facilities; and ramp and freeway improvements, such as carpool (high-occupancy vehicle (HOV)), high-occupancy toll (HOT), and toll lanes. The analysis of their estimated GHG reductions was derived from travel demand model output from LACMTA and SCAG.

- **Interactive Effects Between Land Use and Regional Transit Projects.** The long timeframe for implementation of the Measure R transit projects and the long lead time for redevelopment activities adjacent to new transit justify only attributing estimated GHG reductions resulting from the interaction between land use and Measure R transit projects in the Gateway Cities in 2035 and none in 2020.

Combining the GHG reduction strategies from the five categories described above, the subregion, as a whole, is expected to reduce GHG per capita from the benchmark in 2005 by approximately 8.4 percent in 2020 and more than 15 percent in 2035. Table ES.1 and Figure ES.1 present these results.

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6 The influence of land use on travel behavior (i.e., mode choice and VMT) is often separated into four characteristics of the built environment: density, diversity (mix of land use types), design, destination (the 4Ds). The ST has a typology of 24 types of land use that incorporate the significant differences in density, diversity, and design, which is three of the four Ds.
Table ES.1  Summary GHG Reduction Results for Gateway Cities from 2005 Benchmark

<table>
<thead>
<tr>
<th>Absolute Daily GHG Reduction per Capita</th>
<th>Percentage Daily GHG Reduction per Capita</th>
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<tr>
<td></td>
<td>2020</td>
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<tr>
<td>Transportation</td>
<td>0.74</td>
</tr>
<tr>
<td>TDM</td>
<td>0.007</td>
</tr>
<tr>
<td>Land Use</td>
<td>0.48</td>
</tr>
<tr>
<td>Regional Projects</td>
<td>0.18</td>
</tr>
<tr>
<td>Interactive Effects</td>
<td>N/A</td>
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<tr>
<td>Total</td>
<td>1.40</td>
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<tr>
<td>SCAG Targets</td>
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Figure ES.1  Percentage Daily GHG Reduction Per Capita in Gateway Cities

Percent below 16.64 lbs CO$_2$e per person per day
1.0 Introduction

1.1 Gateway Cities COG

The Gateway Cities make up the area of Los Angeles County generally bordered by the City of Los Angeles on the west, Orange County on the east, the Pomona (SR 60) Freeway on the north, and extending south to the Cities of Long Beach and Avalon. The entire Gateway Cities region is home to about two million residents. The cities’ collaboration dates back to their joint establishment of a regional authority, the Gateway Cities Council of Governments (or COG), in the mid-1990s.

The Gateway Cities COG is a California joint powers authority made up of 27 cities and the County of Los Angeles (three County supervisory districts which cover the unincorporated communities within the subregion), formed for the purpose of providing a vehicle for members to voluntarily engage in regional and cooperative planning and coordination of government services for the collective benefit of the residents of Southeast Los Angeles County. The goal and intent of the COG are to foster voluntary cooperation among cities and the County in the areas of transportation, air quality, housing, and economic development. The City of Montebello is a member of the Gateway Cities COG, but associates with the San Gabriel Valley COG, of which it is also a member, on housing policy and regulation. Montebello did not participate in this Sustainable Communities Strategy (SCS), leaving 26 participating cities.7

In addition to the member jurisdictions, the Gateway Cities COG includes the Port of Long Beach as an ex-officio member. In addition, other agencies that have an informal affiliation with Gateway Cities COG include the Los Angeles County Metropolitan Transportation Authority (LACMTA) and Los Angeles County.

1.2 Purpose of the SCS

In September 2008, the State passed Senate Bill 375 (SB 375), which became effective on January 1, 2009. SB 375 assigns each of California’s 18 Metropolitan Planning Organizations (MPO) with targets to reduce greenhouse gas (GHG)

7 The Los Angeles County Public Works Department provided intercity arterial improvement projects described in detail in Appendix G.
emissions from passenger and light-truck vehicle miles traveled (VMT). These targets have been set for each MPO by the California Air Resources Board (CARB); and in accordance with SB 375, CARB formed the Regional Targets Advisory Committee (RTAC) to advise them on targets. CARB assigned the Southern California Association of Governments (SCAG) a target of 8 percent reduction in per capita GHG (i.e., carbon dioxide equivalent or CO$_2$e) from 2005 levels by the year 2020 and 13 percent from 2005 levels by 2035.

SB 375 requires each MPO to prepare an SCS as part of its Regional Transportation Plan (RTP) update that specifies how the region will attain the GHG reduction targets it was assigned. The SCS identifies the land use policies, transportation improvements, transportation demand management (TDM) strategies, and other measures that will in combination reduce GHG to achieve the CARB targets. The SCS may only account for estimated GHG reductions from changes in the emissions from the VMT of autos and light trucks. This narrow specification is difficult to fully understand, so we present the following example:

- Suppose a city launched a new transit service that uses hybrid buses, which emit 50 percent less GHG than buses powered by conventional diesel motors. Suppose this program attracted 1,000 new riders, all of whom were each previously driving single-occupant vehicles (SOV), 10 miles daily. The SCS could account for the difference in GHG between the GHG from the new hybrid buses and the 10,000 VMT eliminated from the mode shift of 1,000 SOVs to the new transit service. It could not include the GHG reduced from using hybrid buses instead of conventional diesel-powered buses. This latter reduction was from a technological source (hybrid power) and not from a transportation improvement (new transit service).

- Now, suppose the city also enacted a new smart growth plan that shifted future commercial development from three low-density business parks to high rises in its central business district (CBD). This compact, high-density development pattern shifted another 1,000 SOVs to use the new transit service that would have otherwise commuted five miles on average to the three business parks. The SCS could add this reduction in GHG from 5,000 VMT towards its target. Nevertheless, the SCS could not take credit for any reduction in GHG from the new high-rise office buildings in the CBD because they were built to green building standards (e.g., efficient heating and cooling, recycling, etc.). This latter reduction comes from a stationary source, which is credited under AB 32, but not SB 375.

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8 SB 375 is one part of a broader GHG reduction effort to meet the Assembly Bill 32 - Global Warming Solutions Act of 2006 (AB 32) target of reducing GHG emissions statewide to 1990 levels by 2020.
Furthermore, suppose the city adopted a TDM ordinance that required all employers to provide discounted transit passes, bike lockers, and flex time schedules to all employees in the CBD. Suppose these TDM programs led to an additional reduction of 10,000 VMT compared to the VMT without such an ordinance. The SCS could add the reduction in GHG from another 10,000 VMT towards its target.

The overall goal of the SCS is to identify and implement land use policies, transportation improvements (including transit), and other supporting strategies that work in combination (i.e., interactions or synergies), which shift drivers from SOVs to transit, carpools, bicycle, or walking. And for those that still drive, the SCS provides strategies that reduce their VMT.

1.3 THE SCS DEVELOPMENT PROCESS

SCAG is preparing the regional SCS in conjunction with its RTP, and CARB must approve the regional SCS. Unique to the SCAG region, however, a subregional COG, such as the Gateway Cities COG, and the county transportation commission (LACMTA) may work together to formulate the SCS for that subregional area. Two of the 14 subregional COGs, Gateway Cities and Orange County, exercised this option. The remaining COGs elected to participate with SCAG in development of the regional SCS.

The Gateway Cities COG and its 26 participating member jurisdictions (the City of Montebello participates with the San Gabriel Valley COG) assessed themselves to retain a consulting team led by Cambridge Systematics, Inc. with Willdan Energy Solutions/Engineering, Eric Schreffler Transportation Consultant, and MIG, Inc. to prepare this SCS. The COG decided to develop a subregional SCS that would fulfill virtually all of the requirements set forth by CARB for the regional SCS. This included quantifying the expected GHG reductions in the two target years of 2020 and 2035 from strategies selected and agreed to by the 26 participating cities, Los Angeles County, and LACMTA. Appendix A provides the Memorandum of Understanding (MOU) between SCAG and Gateway Cities COG regarding the subregional SCS, which includes the SCAG Framework and Guidelines for Subregional Sustainable Communities Strategy as Exhibit A.

The consultant team and Gateway Cities COG staff started with a review of the white paper (Addressing the Requirements of SB 375 at the Sub-Regional Level, December 2009), which was prepared by Willdan in a prior phase of work; and a survey conducted by Willdan in 2009 of COG sustainability efforts to all member cities (see Figure 1.1). A summary of the white paper can be found in Appendix B.

9 Gateway Cities COG formally notified SCAG after the COG Board voted on January 6, 2010.
This information was used to prepare a road map and conduct a gap analysis of what information and analysis would be needed to complete a subregional SCS. This road map and gap analysis were used to frame the contents of a kickoff workshop for Gateway Cities COG Board members, city managers, and planning directors, as well as SCAG staff and LACMTA staff. During this kickoff meeting, which took place in October 2010, Gateway Cities COG staff and consultant team worked with city staff and some stakeholders to refine the overall SCS process and a preliminary approach to estimating GHG reduction. This involved augmenting the task plan from that specified in the request for proposals (RFP). The primary augmentations were the addition of intermediate tasks shown in Figure 1.1 below.

**Figure 1.1 The SCS Development Process**
After the kickoff workshop, the SCS Steering Committee and COG staff acknowledged that no additional funding would be available for the optional tasks. The consultant team, therefore, proceeded with the following required and intermediate tasks:

1. Each of the 26 participating cities included in the Gateway Cities SCS plus the Los Angeles County Public Works Department identified and assisted with the specification of GHG reduction strategies that they would implement. This task constitutes the approach of local formulation of the SCS.

2. Each city conducted between two to five iterations of strategy selections, after which each city formulated a draft strategy portfolio composed of transportation projects (including transit), TDM measures, and land use scenarios.

3. These portfolios were reviewed and refined first by the consultant team, and then by city staff and elected officials during the four technical and two policy workshops. Significant attention was devoted to bundling strategies so that their interactions produce larger effects than if each strategy operated independently.

4. The consultant team refined existing analytical methods on evaluating the performance of GHG strategies to adapt to Gateway Cities’ conditions; and applied these methods using sketch planning models, the SCAG Sustainability Tool, and the LACMTA iMpact Tool.\textsuperscript{10}

5. In addition to the formulation of each city’s portfolio, regional projects were added, and the interaction between these regional projects and land use and transportation improvements was estimated.

6. Once analysis of all city portfolios and regional projects was complete, a further round of analysis evaluated interactions and added these effects to the overall GHG reduction estimates.

7. During the preparation of the draft subregional SCS, the methods, strategies, and some preliminary performance evaluations were presented to the public at four public outreach meetings and a meeting with a group of interested business, housing, and environmental stakeholders.

\textsuperscript{10}The iMpact Tool was developed by Cambridge Systematics for LACMTA to facilitate the preparation of a countywide Congestion Mitigation Fee (CMF). The tool is a web-based geographic information system (GIS) application that allows each of the 88 cities and the Los Angeles County to enter candidate CMF transportation projects, edit land use or socioeconomic forecasts, estimate total costs, forecast revenues, and calculate impact fee schedules by jurisdiction. Gateway Cities COG requested that supplemental functionality be added to the iMpact Tool that would calculate the GHG impacts of individual projects. This functionality was used to estimate the GHG of the 340 transportation projects selected by the participating jurisdictions included in this SCS.
8. The results were integrated into the first draft of the SCS, which was provided for review to the 26 participating jurisdictions, COG staff, SCAG, and other stakeholders. The final SCS was delivered to the Board on June 29, 2011.

1.4 ORGANIZATION OF SCS DOCUMENT

The remainder of this document is organized into 12 sections (including appendices). This organization follows the format specified by CARB and in the MOU between the Gateway Cities COG and SCAG (see Appendix A).

2. Situation Analysis. This section is an overview of the demographic, transportation, and economic context for the Gateway subregion’s SCS. It consists of the following four subsections:

2.1 Growth Trends and Projections. The demographic setting for the SCS, including population, employment, household income, ethnicity, age, and land use density and its relevance to transportation planning and land use patterns.

2.2 Transportation Trends. Existing transportation systems throughout the subregion: facilities, services, and travel patterns. This subsection also describes transportation performance in target years based on funded transportation projects and transportation policies (e.g., Traffic Demand Management (TDM), Transportation System Management (TSM), and others) included in the SCAG RTP and the LACMTA Long-Range Transportation Plan (LRTP).

2.3 Economic and Fiscal Trends. Current real estate markets, employment trends, industry structure of subregion, and other salient business conditions. This subsection also summarizes economic development and current fiscal conditions of cities.

2.4 2005 GHG Performance for Gateway Cities. Presents the analysis used to calculate the 2005 base year GHG per capita baseline.

3. Subregional SCS Development Process. This section has three subsections that describe the process Gateway Cities COG followed to initiate and develop its SCS.

3.1 SCS Delegation to Gateway describes the decision to develop a stand-alone SCS versus one that identified strategies at the jurisdictional and subregional levels. The former calculates the expected GHG reduction and compares the amount reduced to a 2005 benchmark calculated specifically for the subregion.

3.2 Development of Strategy Portfolios describes the approach beginning with each jurisdiction developing its own portfolio, then integration with other jurisdictions, the Gateway subregion, LACMTA, and the SCAG region.
3.3. Stakeholder and public outreach describes the timeline and public outreach activities.

4. **Land Use Characteristics.** This section identifies the general location of uses, residential densities, and building intensities within the subregion. It presents SCAG and State Department of Finance projections for regional population and employment growth trends, and describes revisions made by member jurisdictions. It also summarizes existing general plans and housing elements from all 26 Gateway Cities participating in the SCS.

5. **Growth Accommodations.** This section identifies areas within the subregion sufficient to house all the population of the subregion, including economic segments of the population, over the course of the planning period of the RTP, taking into account net migration into the region, population growth, household formation, and employment growth. It also identifies areas within the Gateway subregion that are sufficient to accommodate the subregion’s projected regional housing need for an eight-year period (pursuant to Section 65584 of the Government Code), and an inventory of surplus development capacity of housing sites by city for the current housing element planning period (2006 to 2014).

6. **Affordable Housing Accommodation.** The law (SB 375) requires this analysis show the ability of the land use patterns proposed in the subregional SCS to accommodate the development of housing to meet the Regional Housing Needs Assessment (RHNA) estimated needs of low-, very low-, and extremely low-income households. It also describes the default densities established in Section 65583.2 of the California Government Code, utilized by the State Department of Housing and Community Development, to determine certification of housing elements of the jurisdictions’ general plans. This process, however, cannot be completed at this time because the State’s RHNA housing allocations will not be provided to SCAG until the fall of 2011, which is some months past the submittal of this SCS to SCAG.

7. **Transportation Network.** This section describes the roadway, transit, TDM, and other strategies employed to reduce GHG emissions.

8. **Resource Areas and Farmland.** This section describes the resource areas and farmland in the subregion as defined in Subdivisions A and B of Government Code §65080.01. Resource areas within the Gateway Cities subregion include:
   a. Publicly-owned parks and open space;
   b. Significant wildlife habitat areas;
   c. Lands subject to conservation or other forms of open space easements; and
   d. Flood prone areas in which development would not meet the requirements of the National Flood Insurance Program.
9. **State Housing Goals.** This section is required to describe the consideration of the state housing goals specified in Government Code §65580 and §65581 and the distribution of SCAG’s subregional RHNA allocation among the member jurisdictions. It will identify adequate appropriately zoned sites to accommodate the projected housing needs. The RHNA allocations, however, will not be available until after this SCS is completed, and thus these requirements will be fulfilled as part of the SCAG SCS.

10. **Integration of Development Pattern with the Transportation Network.** This section describes the integration of the forecasted development pattern for the subregion with the transportation network and other transportation measures and policies. It reports interactions or synergies between land use changes and the other transportation measures and policies. These synergies add significant magnitude to the reductions of GHG emissions from individual strategies.

11. **Compliance with Regional and Federal Requirements.** This section consists of three subsections that present the total reduction of GHG from all strategies (including land use).

   11.1 This subsection describes the SCS strategies, growth forecasts, land use, and housing accommodation; and how other elements of the subregional SCS conform to the SCAG RTP and SCS plans and assumptions.

   11.2 This subsection describes how the Gateway Cities Subregional SCS attains GHG per capita reduction relative to the 2005 GHG per capita benchmark specific for the Gateway subregion. It compares these reductions in 2020 and 2035 to the 2005 benchmark GHG per capita presented in Subsection 2.4. These results demonstrate how well the Gateway SCS achieves the GHG emission targets specified for the SCAG region by the CARB.

   11.3 This subsection describes how the Gateway Cities Subregional SCS complies with the Federal Clean Air Act, and specifically with Section 176 of the Federal Clean Air Act (42 U.S.C. Sec. 7506). See Government Code §65080(b)(2)(B). This Federal law forms the statutory basis for the transportation conformity process. While there is no State Implementation Plan (SIP) budget or National Ambient Air Quality Standards (NAAQS) for GHG emissions, current practice treats proposed controls as Transportation Control Measures (TCM) in the SIP and the controls become subject to the timely implementation requirements of the conformity rule.

12. **Financial and Fiscal Implementation.** This section considers the challenges of implementing the SCS strategies, especially those that would be funded by local jurisdictions.
13 Appendices. The following 10 appendices provide the underlying data, analytical methods, and other supporting materials for the results presented in this document:


13.2 Appendix B. Prior Studies of the Gateway Cities Council of Governments Relevant to SB 375.


13.4 Appendix D. List of Transportation Improvement Projects in the Gateway Cities and the list of Future (Post 2010) Project Costs and Funding.

13.5 Appendix E. Analysis for Transportation Demand Management Strategies in the Gateway Cities.


13.7 Appendix G. List of Regional Transportation Strategies in the Gateway Cities.

13.8 Appendix H. Analysis of Interactive Effects Contributing to Further GHG Reduction in the Gateway Cities.

13.9 Appendix I. CEQA Streamlining.

13.10 Appendix J. Jurisdiction General Plans.
2.0 Situation Analysis

2.1 Overview of Growth

A comparison of data from SCAG’s draft 2012 RTP Growth Forecast (i.e., the Integrated Growth Forecast) indicates that the Gateway Cities will have a lower rate of population growth over the next 10-year and 25-year periods than either the SCAG region or Los Angeles County. Projected population growth for the Gateway Cities subregion is approximately 3.9 percent for the period 2010 to 2020, as compared to 9.3 percent for the SCAG region and 5.6 percent for Los Angeles County for the same period. Similarly, as shown in Figure 2.1, the Gateway Cities subregion has a lower projected population growth at 12.2 percent for the period 2010 to 2035, as compared to 22.2 percent and 14.2 percent for the SCAG region and Los Angeles County, respectively.

Figure 2.1 Relative Population Growth of SCAG, Los Angeles County, and Gateway Cities from Draft 2012 RTP Forecasts

Growth forecasts for employment show a similar trend over the 2010 to 2020 and 2010 to 2035 periods with the Gateway Cities subregion lagging behind higher employment growth rates for the SCAG region and Los Angeles County. Projected employment growth for the Gateway Cities is 7.3 percent for 2010 to 2020 and 12.3 percent for the period 2010 to 2035, as shown in Figure 2.2. By
comparison, projected employment growth for the 2010 to 2020 period is 16.7 percent for the SCAG region and 10.6 percent for Los Angeles County; and 30.8 percent and 17.1 percent, respectively, for the SCAG region and Los Angeles County in the 2010 to 2035 period.

**Figure 2.2 Relative Employment Growth of SCAG, Los Angeles County and Gateway Cities from Draft 2012 RTP Forecasts**

![Chart showing employment growth rates](source)

With regard to growth in the number of households over the 2010 to 2020 and 2020 to 2035 periods, with a household representing the most basic unit of demand for housing, the projected household growth rate for Gateway Cities subregion is once again less than that for either the SCAG region or Los Angeles County. The projected household growth rate for the Gateway Cities is 4.2 percent for the 2010 to 2020 period and 11.1 percent for 2010 to 2035 period. By comparison, the household growth rate for the 2010 to 2020 period is 10.7 percent for the SCAG region and 8.0 percent for Los Angeles County; and 24.7 percent and 17.4 percent for the SCAG region and Los Angeles County, respectively, for the 2010 to 2035 period.

The lower rates for projected population, employment, and household growth in the Gateway Cities COG subregion relative to the SCAG region and Los Angeles County are largely attributable to a higher rate of land utilization or build-out in the Gateway Cities area, as measured by population and employment density. Since the Gateway Cities area is already highly built-out relative to the SCAG region overall, there is less growth opportunity in the Gateway Cities area.
Population density for the Gateway Cities COG subregion in 2010 is reported to be 6,316 persons per square mile, as illustrated in Figure 2.3. This compares with much lower population densities of 468 and 2,439 persons per square mile, respectively, for the SCAG region and Los Angeles County. Similarly, employment density within the Gateway Cities COG subregion is much higher than in the SCAG region and Los Angeles County. Employment density for the Gateway Cities COG subregion was reported at 2,209 employees per square mile. Considerably lower densities were reported for the SCAG region and Los Angeles County at 187 and 1,024 employees per square mile, respectively. Given the highly built-out nature of the Gateway Cities subregion, any major reductions in VMT and related GHG emissions within the subregion will more likely result from the transportation rather than the land use measures that are implemented by the Gateway Cities over the RTP planning period.

**Figure 2.3  Population Density by Region – 2010**

The Gateway Cities subregion is comprised of a lower income population, compared with the SCAG region as a whole and Los Angeles County. Household and per capita income data from the 2010 Census are not available at this time. The 2000 Census, however, reported a median household income of $38,354 for the Gateway Cities COG subregion. The median household income levels for SCAG and Los Angeles County are higher at $45,844 and $42,189, respectively. The average per capita income for the Gateway Cities subregion, according to the 2000 Census, also lags behind Los Angeles County and the State of California. The average per capita income for the Gateway Cities subregion is $16,206, as compared to $20,683 for Los Angeles County and $22,711 for the State of California.
Age further distinguish the population of the Gateway Cities COG subregion from that of Los Angeles County and the State of California. At 31.2 years of age, the median age (average for all cities) reported by the 2000 Census for the Gateway Cities subregion is slightly lower than the median age for Los Angeles County at 32.0 and the State of California at 33.3 years of age.\(^1\) Within the Gateway Cities COG subregion, the median age ranges from a low of 23.8 for the Cities of Bell Gardens and Cudahy to a high of 42.4 for the City of La Habra Heights.

### 2.2 TRANSPORTATION TRENDS

Although SB 375 does not include the analysis of heavy-duty trucks, the transportation trends and improvements in the Gateway Cities are shaped by its role as a goods movement hub. Within the Gateway Cities COG reside two million residents in close proximity to the Ports of Long Beach and Los Angeles, the largest port complex in the United States. Approximately 45 percent of the nation’s containerized imports pass through these two ports, and the I-710 freeway, a primary truck route to service these ports that runs through the Gateway Cities, has the highest concentration of trucks in the country.

The Gateway Cities is also a densely populated residential and employment center with a high density of households and jobs that generates demand for high frequency transit and multimodal services, high quality freeways that can relieve congestion and improve regional travel, and initiatives toward transportation demand management to reduce future travel demand.

The Gateway Cities COG and its member cities have been engaged for the last 20 years in studies aimed at improving mobility, congestion, air quality, and other traffic reduction projects. As part of the I-710 Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), a Multimodal Transportation Report (completed in 2009) reviewed bus and rail transit, park-and-ride facilities, HOV lanes, and goods movement by rail. Transportation Demand Management/Transportation System Management (TDM/TSM) projects were also evaluated along with Intelligent Transportation Systems (ITS), among other alternatives.\(^2\) This report determined that the collective use of multimodal transportation improvements has the potential to reduce future travel demand and increase freeway capacity.

---

\(^1\)As of this writing, the 2010 Census data on median age has not been published.

Figure 2.4 shows the inventory of projects being explored and potentially implemented in the Gateway Cities subregion. An analysis of a subset of these projects is conducted as part of this SCS in Section 10. Transportation performance in target years, based on funded RTP and LRTP transportation projects and transportation policies (e.g., TDM, TSM, and others), is analyzed using a “No Project” baseline with the LACMTA model in Section 10.0.

**Figure 2.4 Regional Transportation Projects and Trends for the Gateway Cities**


### 2.3 Economic and Fiscal Trends

An economic overview and forecast report completed by the Los Angeles County Economic Development Corporation (LAEDC) in January 2003 is useful in providing a summary of the economic structure of the North Gateway area (i.e., a major portion of the Gateway Cities COG subregion). The report identifies the North Gateway area as including 22 incorporated cities (excluding the Cities of Avalon, Hawaiian Gardens, Lakewood, Long Beach, and Signal Hill) and some unincorporated areas.

The North Gateway area is transected by major transportation lines, including being served by six freeways, the Alameda Corridor rail project, transited by the Burlington Northern Santa Fe and Union Pacific railroads, being served by Metrolink, Amtrak service, and MetroRail Green and Blue lines. The North...
Gateway area is substantially built-out resulting in relatively low levels of new residential construction. Most development opportunities for housing are “in-fill” sites on small blocks of land. New residential development has generally been single-family development, but with an increasing shift toward multifamily development on in-fill and mixed-use sites. Some cities have development opportunities on recycled sites, such as brownfield sites, but generally with respect to residential, most activity involved the demolition and replacement of older smaller homes with new larger, single and multifamily structures. Compared to residential development, there have been more opportunities for industrial-commercial development, and there are opportunities for redevelopment efforts in older downtowns.

Even though the LAEDC report is somewhat dated and only focuses on a portion of the Gateway Cities subregion, the report identifies a number of forces that will impact the future economic health of the entire subregion and are still quite relevant, including:

- Importance of an educated population and the need for career connections for students;
- Need for improvements to the transportation infrastructure;
- Need for increased rail capacity;
- Need for upgrading aging infrastructure; and
- Need for the local economy to be considered in a global context.

These major issues must be addressed to maintain and grow economic activity in the entire Gateway area.

Economic development and affordable housing strategies implemented by cities in the Gateway Cities COG subregion over the past decade include:

- Transit-oriented development to relieve transportation pressures;
- Brownfield redevelopment as a source of land for economic development and new housing;
- Programs to encourage employers to locate or expand in the subregion to address jobs/housing balance and reduce VMT; and
- Promotion of infill development for housing and mixed-use development involving commercial and residential uses.

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13This is the only report prepared by the LAEDC for the Gateway Cities subregion. There is no corresponding analysis of the southern portion of the Gateway Cities subregion.
2.4 2005 GHG PERFORMANCE FOR GATEWAY CITIES

Gateway Cities COG obtained the information needed to generate the Gateway Cities subregional baseline emissions per capita in 2005 from SCAG model data. A data request was sent on February 22, 2011, from Gateway Cities COG to SCAG, outlining the methodology and data needs to calculate a 2005 GHG per capita baseline benchmark for Gateway Cities. The information requested included:

- VMT within the SCAG region for all auto trips with a trip origin and/or destination inside of the Gateway Cities COG;
- The VMT not including any light heavy-duty, medium heavy-duty, or heavy heavy-duty VMT;
- Through trips not included in the estimate (i.e., trips that to not have either an origin or destination within the Gateway Cities);
- VMT estimates broken out by into the standard time periods that SCAG models (AM, mid-day, PM, evening, and overnight); and
- VMT provided by speed bin.

The Adopted 2008 RTP Growth Forecast and the Local Input/General Plan 2012 RTP Growth Forecast were used as the per capita denominator for the SB 375 target years of 2020 and 2035.

Table 2.1  Data Sources for Gateway Cities Population Estimates

<table>
<thead>
<tr>
<th>Year</th>
<th>Gateway Cities Population</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>2,094,268</td>
<td>Adopted 2008 RTP Growth Forecast, by City (RTP07_CityLevel.xls)</td>
</tr>
<tr>
<td>2020</td>
<td>2,208,499</td>
<td>Local Input/General Plan Growth Forecast for 2012 RTP (RTP2012_GROWTH-FORECAST.xls)</td>
</tr>
<tr>
<td>2035</td>
<td>2,380,833</td>
<td>Local Input/General Plan Growth Forecast for 2012 RTP (RTP2012_GROWTH-FORECAST.xls)</td>
</tr>
</tbody>
</table>

Figure 2.5   Benchmarks for SCAG and Gateway Cities

**SCAG 2005 Benchmark**

- 21.2 lbs
- Weekday CO₂e per capita

**Gateway Cities 2005 Benchmark**

- 16.6 lbs
- Weekday CO₂e per capita

**lbs CO₂e per person per weekday**

<table>
<thead>
<tr>
<th>SCAG</th>
<th>Gateway Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2 lbs</td>
<td>16.6 lbs</td>
</tr>
<tr>
<td>Weekday CO₂e</td>
<td>Weekday CO₂e</td>
</tr>
<tr>
<td>per capita</td>
<td>per capita</td>
</tr>
</tbody>
</table>

**Figure 2.5**

Gateway Cities Council of Governments Subregional Sustainable Communities Strategy
3.0 Subregional SCS Development Process

3.1 SCS POLICY DEVELOPMENT COMMITTEE

The Gateway Cities COG established an SCS Policy Development Committee to oversee the SCS process and direct the work of the consultant team. The SCS Policy Development Committee is a subcommittee of the Gateway Cities City Managers’ Steering Committee; and includes five city managers, eight planning directors from geographically representative cities, and one public works director. Three COG staff attended meetings and supported the Committee’s work, including Richard Powers, the Executive Director of the Gateway Cities COG. The Committee membership consists of the following officials:

1. Mike Egan, City Manager of Bellflower;
2. Jorge Rifa, City Manager of Commerce;
3. Tom Modica, representing the City Manager of Long Beach;
4. Ron Bates, City Manager of Pico Rivera;
5. Ken Farfsing, City Manager of Signal Hill (Committee Chair);
6. Aldo Schindler, Bell Gardens Planning/Community Development Director;
7. Torrey Contreras, Cerritos Planning/Community Development Director;
8. Sonia Southwell, Lakewood Planning/Community Development Director;
9. Brian Saeki, Downey Planning/Community Development Director;
10. Reuben Arceo, La Mirada Planning/Community Development Director;
11. Wayne Morrell, Santa Fe Springs Planning/Community Development Director;
12. Sonia Shah, South Gate Planning/Community Development Director;
13. Don Dooley, Whittier Planning/Community Development Director;
14. Steve Forster, Chair, La Mirada and Liaison to the Gateway Cities Public Works Officers;
15. Richard Powers, Executive Director of Gateway Cities Council of Governments;
16. Jack Joseph, Gateway Cities Council of Governments Staff; and
17. Nancy Pfeffer, Gateway Cities Council of Governments Staff and Contract Project Manager.
After the consultant team was selected, the Committee met seven times beginning on January 13, 2011 to review progress and provide guidance.

3.2 **SCS Delegation to Gateway**

The SCAG Regional Council approved the Framework and Guidelines for Subregional SCS on April 1, 2010. This 12-page document laid out the terms and conditions for any of the 14 subregions within SCAG to take delegation of their SCS. In October 2010, SCAG and the Gateway Cities COG signed an MOU officially delegating the preparation of the SCS for the Gateway Cities subregion to the Gateway Cities COG. While this six-page MOU incorporated the Framework and Guidelines, neither document anticipated all of the potential issues that could emerge as a result of SCS delegation. This document can be found in Appendix A.

The most significant issue came to light when the Gateway Cities COG and its member jurisdictions carefully considered the range or scale for their SCS. At the modest end of the spectrum, the subregion could compile a list of strategies, which it was prepared to implement. These would be submitted to SCAG for inclusion in the regional SCS. At the other end of this range would be a virtually stand-alone SCS. This would require a rigorous quantification of the estimated GHG reductions from all strategies implemented from 2005 to 2020 and from 2020 to 2035. Once the Gateway Cities SCS Steering Committee decided to pursue the stand-alone approach, it needed to determine the appropriate GHG (CO$_2$e) per capita benchmarks in 2005 for the Gateway Cities subregion in order to measure its attainment of the regional targets.

The regional targets, assigned to SCAG by CARB for a percent reduction in GHG per capita against the regional 2005 benchmark, do not apply to any individual subregion within the SCAG region. Nevertheless, the SCS Policy Development Committee decided to measure the total reduction in GHG from the bundle of strategies that make up the subregional SCS as a percentage against the 2005 benchmark estimated for the Gateway Cities subregion. Because SCAG had not calculated a 2005 GHG per capita for each subregion, the Gateway Cities SCS Policy Development Committee requested that SCAG provide the methodology it used to calculate the regional 2005 GHG per capita, and then applied this methodology to calculate the Gateway Cities’ regional-specific 2005 inventory. The calculations produced the 2005 benchmark of 16.6 lbs of CO$_2$e per capita for the Gateway Cities region compared to 21.2 lbs of CO$_2$e per capita as a 2005 average for the entire SCAG region. This analysis was summarized in Section 2.4.

3.3 **Development of Strategy Portfolios**

The Gateway Cities COG held four technical workshops with the city planning and public works directors from all of the jurisdictions. These workshops were
the interactive tools for cities to work with the consultant research and analysis, and develop portfolios of GHG reduction strategies for each jurisdiction. This approach started with each city assembling three broad categories of strategies that they would select and implement: transportation projects, TDM activities, and land use strategies. The planning directors and public works officers followed a three-step procedure for developing each city’s program for contributing to the subregional SCS:

1. **Screening.** Each city would first select among the universe of GHG reduction strategies a subset that could be implemented at the subregional or jurisdictional level. They would then rank these selected strategies according to their fit with the pilot city’s market conditions, transit infrastructure, land use characteristics, and other circumstances that would affect the cost effectiveness and political feasibility of each candidate strategy.

2. **Scaling and Measurement.** For each of the strategies that was screened and ranked, city staff considered appropriate levels of deployment for each strategy. This step included considering the following attributes of each strategy:
   a. Total amount of reduced GHG;
   b. Bundling with other strategies to achieve the most effective combination (i.e., interactive or synergistic effects);
   c. Performance over time (i.e., immediate to long term);
   d. Fiscal cost, including any potential to generate revenues;
   e. Cost effectiveness (cost per ton of CO2); and
   f. Level(s) of government most appropriate to implement them.

Once each city had assembled an initial portfolio, the consultant team entered the technical characteristics of each strategy into the LACMTA iMpact web-based software that measured GHG impacts of the strategies.14

3. **Bundling.** The consultant team worked with each jurisdiction to group strategies into bundles on three criteria: a) logical combinations of strategies that may have synergies, such as transit investment, land use, and nonmotorized travel; b) consideration of the cost effectiveness of various strategies (e.g., selecting only those strategies meeting a particular cost-effectiveness threshold); and c) each jurisdiction’s political conditions. The consultants then reestimated the impacts of each bundle using the iMpact software tool that included GHG analysis.

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14 The iMpact Tool, developed by Cambridge Systematics for LACMTA, is a web-based GIS application that calculates the GHG impacts of individual transportation projects. This functionality was based on previous Federally-sponsored research conducted for the Moving Cooler study (http://www.movingcooler.info).
An illustration of this process and the linkages associated with the bundling is shown in Figure 3.1.

Figure 3.1 SCS and Strategy Portfolio Development Process

3.4 STAKEHOLDER AND PUBLIC OUTREACH

The SCS outreach program provided opportunities for Gateway Cities stakeholders and community members to learn about the SCS process and provide feedback.

In February 2011, a stakeholder briefing was convened to inform Gateway Cities stakeholders representing climate and environmental groups, chambers of commerce, and housing advocates about the SCS process and to address questions on related topics. Approximately 50 stakeholders were invited by the Gateway Cities COG to attend the two-hour session, which was held at the COG offices.

Public Information Open Houses were also held in four locations representative of the Gateway Cities subregion. These Open Houses were held in the Cities of Cerritos, Long Beach, Pico Rivera, and Commerce. The purpose of these public information events was to present basic information on the SCS process, what the SCS means to the community, and provide an opportunity for community members to have one-on-one dialogue with members of the project team, COG staff, and representatives from subregional cities. Participants were encouraged
to attend exhibit areas, where project staff were available to answer questions and receive feedback from attendees.

Noticing for the public open houses included a series of information materials that were used to advertise the open houses by local media, the COG, and individual Gateway Cities.

- Press release,
- Open house flyer,
- HTML open house invitation, and
- SCS newsletter article.

The press release was distributed to all local media. The open house flyer was distributed to COG cities Planning Directors and Public Works Officers, made available at the COG offices, and mailed to stakeholders that were invited to the stakeholder briefing, with a request for further distribution. Noticing for the open houses was also posted to the Gateway Cities COG web site, as well as made available to the web sites of other Gateway Cities. In addition, information on the open houses and the SCS was packaged for use in local newsletters and other publications. Noticing materials were provided in Spanish as well as English.

The presentation materials that were used at the Public Information Open Houses included:

- Information regarding SB 375 and how the Gateway Cities subregion SCS adheres to the process;
- Display Boards with information on proposed strategies related to land use, transportation, and transportation demand management;
- Frequently Asked Questions information;
- Process Graphic Display Board demonstrating the timeline for the project and depicting the SCS process from start to finish; and
- PowerPoint presentation with background information.

Copies of the outreach materials are included in Appendix C.

All materials presented and utilized at the Public Information Open Houses were made available in English and Spanish. In addition, Spanish-speaking staff were on hand at each open house to answer questions in Spanish.
4.0 Land Use Characteristics

The 2005 land use pattern in the Gateway Cities subregion is shown on Figure 4.1, while the utilization of land within the subregion by acreage is presented in Table 4.1. As seen in Table 4.1, the predominant land use in the subregion is low-density residential, which occupies 43.3 percent of the subregion’s land area, exclusive of streets. Industrial and commercial uses occupy approximately 15.1 percent and 10.1 percent of the subregion’s land area, respectively. Over 11.5 percent of the subregion is devoted to open space, which primarily consists of the resource areas discussed in Section 8.0 of the SCS, but also includes a minor amount of vacant land available for development. Other substantial land uses include medium-density residential at nearly 8.5 percent and public facilities at 8.1 percent. Transportation uses include airports, rail yards, and transit facilities. The agriculture remaining in the area primarily consists of avocado and citrus orchards on large residentially-zoned lots in the northern portion of the subregion and equestrian uses existing at various locations across the subregion.

Table 4.1 Gateway Cities Subregion Existing Land Use – 2005

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Acreage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Density Residential</td>
<td>66,287.51</td>
<td>43.27</td>
</tr>
<tr>
<td>Medium Density Residential</td>
<td>13,002.30</td>
<td>8.49</td>
</tr>
<tr>
<td>High Density Residential</td>
<td>501.70</td>
<td>0.33</td>
</tr>
<tr>
<td>Commercial</td>
<td>15,493.00</td>
<td>10.11</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>342.23</td>
<td>0.22</td>
</tr>
<tr>
<td>Industrial</td>
<td>23,186.75</td>
<td>15.14</td>
</tr>
<tr>
<td>Public Facilities</td>
<td>12,358.25</td>
<td>8.07</td>
</tr>
<tr>
<td>Transportation</td>
<td>3,138.27</td>
<td>2.05</td>
</tr>
<tr>
<td>Open Space</td>
<td>17,684.84</td>
<td>11.55</td>
</tr>
<tr>
<td>Agriculture</td>
<td>442.49</td>
<td>0.29</td>
</tr>
<tr>
<td>Under Construction</td>
<td>741.56</td>
<td>0.48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153,178.90</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

1. No summary data is available for the 2020 and 2035 target years.
2. Exclusive of streets.
3. Includes vacant land available for development.

Source: Acreages tabulated by Willdan Engineering based on 2005 Existing Land Use Map generated by SCAG.
While the predominant land use in the subregion is low-density residential, the Gateway Cities have provided for a wide range of housing types and densities through their general plans and zoning ordinances, capable of accommodating all economic segments of the subregion’s population. This is graphically illustrated on Figure 4.2, which shows 2000 census data for housing density by census block. As seen in this figure, existing housing densities range from large...
lot, semi-rural and traditional single-family densities (i.e., from 1 to 5 units per acre) to low-medium density of 6 to 14 units per acre to medium residential densities of 15 to 39 units per acre up to high densities of 40 units, to well in excess of 100 units per acre.

**Figure 4.2  Housing Density, 2000**

In preparing the SCS, the COG compiled an inventory of the general plans of each of the 26 participating cities. The general plan maps for the Gateway Cities are contained in Appendix J. Collectively, they constitute the land use component of the SCS.

The COG also inventoried the status of the land use, circulation, and housing elements of each city’s general plan. The resulting inventory is presented in Table 4.2, which includes the most recent adoption and horizon dates for each element, as well as any pertinent comments regarding the status of these elements. As seen in this table, only one city has a general plan that extends the course of the planning period for the RTP (i.e., 2035), while 12 cities currently have general plans with horizon dates ranging from 2020 to 2030. As the Gateway Cities continue to update their general plans, most, if not all, of the COG’s members will eventually have general plans with horizon dates that
coincide with the RTP planning period. However, the financial condition of cities across the SCAG region and State poses a constraint to the future updating of general plans.

### Table 4.2 Gateway Cities Subregion General Plan Adoption and Horizon Dates

<table>
<thead>
<tr>
<th>City</th>
<th>Plan Element</th>
<th>Adoption Date</th>
<th>Horizon Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artesia</td>
<td>Land Use Element</td>
<td>2010</td>
<td>2030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>2010</td>
<td>2030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housing Element</td>
<td>2008</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>Avalon</td>
<td>Land Use Element</td>
<td>1972</td>
<td>–</td>
<td>Recently contracted with consultant to update City’s General Plan and Housing Element.</td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>1972</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housing Element</td>
<td>Due</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bell</td>
<td>Land Use Element</td>
<td>1996</td>
<td>2011</td>
<td>City working on General Plan update with completion expected in 2011. Housing Element being drafted.</td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>1996</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housing Element</td>
<td>Due</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Bellflower</td>
<td>Land Use Element</td>
<td>1997</td>
<td>2010</td>
<td>City staff, working with consultant, is preparing the Housing Element update.</td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>1997</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housing Element</td>
<td>Due</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bell Gardens</td>
<td>Land Use Element</td>
<td>1995</td>
<td>2010</td>
<td>The City would like to complete a General Plan update, but is limited by financial constraints until late 2011 or 2012. Working on draft Housing Element to submit to HCD.</td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>1995</td>
<td>2010</td>
<td></td>
</tr>
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<td>General Plan expected to be adopted in May 2011. Housing Element submitted to HCD, waiting for comments.</td>
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<td>Cudahy</td>
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<td>The City updated the General Plan in 2010, including the Housing Element for the period 2008-2014.</td>
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<td></td>
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<td>La Habra Heights</td>
<td>Land Use Element</td>
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<td>2000</td>
<td>General Plan update underway to plan for 2030.</td>
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<td>2014</td>
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<tr>
<td>Lynwood</td>
<td>Land Use Element</td>
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<td>2020</td>
<td>Housing Element certified by HCD.</td>
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<td>2008</td>
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<td></td>
</tr>
<tr>
<td>Maywood</td>
<td>Land Use Element</td>
<td>2007</td>
<td>–</td>
<td>City responding to first round of HCD comments on the Housing Element.</td>
</tr>
<tr>
<td></td>
<td>Circulation Element</td>
<td>2007</td>
<td>–</td>
<td></td>
</tr>
<tr>
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<td>Housing Element</td>
<td>2008</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>Norwalk</td>
<td>Land Use Element</td>
<td>1996</td>
<td>2010</td>
<td>Horizon date only formally noted in Circulation Element. City responding to HCD comments on Housing Element.</td>
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<td></td>
<td>Circulation Element</td>
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<td>2010</td>
<td></td>
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<td></td>
<td>Housing Element</td>
<td>2008</td>
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<td>City</td>
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<td>Adoption Date</td>
<td>Horizon Date</td>
<td>Comments</td>
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<tr>
<td>Paramount</td>
<td>Land Use Element</td>
<td>2007</td>
<td>10 years</td>
<td>No formal General Plan horizon date but it is anticipated to be updated in about 2017. Updated Housing Element in negotiations with HCD.</td>
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<td>Circulation Element</td>
<td>2007</td>
<td>10 years</td>
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<td></td>
<td>Circulation Element</td>
<td>1993</td>
<td>10-15 yrs</td>
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<td></td>
<td>Housing Element</td>
<td>2008</td>
<td>2014</td>
<td></td>
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<tr>
<td>Santa Fe Springs</td>
<td>Land Use Element</td>
<td>1993</td>
<td>21st Century</td>
<td>General reference to horizon date in Land Use Element as guiding development into the 21st century.</td>
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<tr>
<td></td>
<td>Circulation Element</td>
<td>1994</td>
<td>21st Century</td>
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<td>Housing Element</td>
<td>2008</td>
<td>2014</td>
<td></td>
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<tr>
<td>Signal Hill</td>
<td>Land Use Element</td>
<td>2001</td>
<td>2015</td>
<td>City has submitted 2008-2014 Housing Element update, but is still in negotiations with HCD for certification.</td>
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<td></td>
<td>Circulation Element</td>
<td>2010</td>
<td>2025</td>
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<td>South Gate</td>
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<td>Vernon</td>
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<td>Whittier</td>
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<td>General reference made to horizon date in introduction to General Plan. Noncomprehensive updates of General Plan in 2006</td>
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<td>Circulation Element</td>
<td>1993</td>
<td>2010</td>
<td></td>
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<td></td>
<td>Housing Element</td>
<td>2008</td>
<td>2014</td>
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</tbody>
</table>
5.0 Growth Accommodations

The SCS must identify areas within the subregion sufficient to house an eight-year projection of the regional housing need for the subregion pursuant to California Government Code §65584. The SCS must further identify areas within the subregion sufficient to house all of the population of the subregion, including all economic segments of the population, over the course of the planning period of the RTP, taking into account net migration into the region, population growth, household formation, and employment growth. Regarding the first requirement, Government Code §65584 involves the RHNA component of housing element law and the eight-year period referred to is the 2013 to 2021 planning period for the initial RHNA to be generated under SB 375. In allocating sufficient areas to accommodate the subregion’s estimated housing need for this time period, the Gateway Cities COG is also expected to determine that the SCS is consistent with the RHNA for this period. However, it is technically impossible to make this determination due to the timing of these parallel planning efforts.

The Gateway Cities COG must submit its final subregional SCS to SCAG by June 2011. SCAG, in turn, must approve the final regional SCS by April 2012. SCAG will also release the draft RHNA in April 2012, and is tentatively scheduled to adopt the final RHNA when the SCAG RTP and SCS are approved in June 2012. Therefore, neither the Gateway Cities COG nor SCAG will have the ability to determine that the subregional and regional SCSs, respectively, are consistent with the RHNA prior to their finalization. Instead, SCAG will need to determine whether the regional SCS is consistent with the RHNA, upon the release of the RHNA, and amend the regional SCS to achieve consistency, if needed.

Despite the inability to determine consistency between the SCS and RHNA, the SCS must identify areas sufficient to accommodate the subregion’s projected housing need for the 2013 to 2021 period; and addressing the second requirement of SB 375, further identify areas sufficient to house the subregion’s projected population to the end of the RTP planning period in 2035. In reviewing and commenting on SCAG’s preliminary Integrated Growth Forecast for the 2012 RTP, the Gateway Cities have indicated what they believe are realistic estimates for household and population growth in each of their jurisdictions to 2020 and 2035. These estimates were based on past and current growth trends, as well as the capacity of the Gateway Cities general plans to support additional residential development. Since these growth estimates reflect the housing development capacity of local general plans, it can be concluded that the Gateway Cities general plans, as presented in Appendix J, allocate adequate land at appropriate densities to house the subregion’s projected population to 2020 and 2035.

The Gateway Cities expect that the subregional housing need eventually identified for the Gateway Cities COG in the 2013 to 2021 RHNA will be consistent with the Integrated Growth Forecast that is the underpinning of the
subregional SCS. Each of the Gateway Cities has provided SCAG with 2020 and 2035 household and population growth projections. The subregion’s jurisdictions estimate 21,903 additional households from 2010 to 2020. SCAG initially estimated 25,014 additional households, but released their estimate in May 2011 of 23,980 households over a 2011 to 2021 period, which most closely corresponds with the next RHNA planning period, taking into consideration the local input received and 2010 Census data. As of this date, SCAG and the Gateway COG are still reviewing the projections, and Gateway COG is expecting further adjustments to bring the two projections into convergence.
6.0 Affordable Housing Accommodation

The Gateway Cities’ 2020 and 2035 allocations of residential land use are designated in their general plans (Appendix J). These residential land use designations specify allowable density ranges at and well above the default densities established in California Government Code §65583.2 that are applicable to the Gateway Cities. These default densities, which are 20 or 30 dwelling units per acre depending upon city population, are the densities at which the State Department of Housing and Community Development has determined that the development of lower-income housing becomes financially feasible.

Within the Gateway Cities’ general plans, the housing elements allocate sufficient land at appropriate densities to accommodate the projected housing needs. In addition, the general plans identify programs for expanding the supply of affordable housing in the subregion to low- and moderate-income households. These programs include:

- Offering incentives to encourage in-fill development on vacant and underutilized residentially zoned land;
- Rezoning to increase the permitted intensity of development on vacant and underutilized residentially zoned land;
- Offering density bonuses and other incentives to encourage the development of housing affordable to low- and moderate-income households;
- Utilizing redevelopment and brownfield development to generate new affordable housing for low- and moderate-income households;
- Facilitating mixed-use development that incorporates high-density housing along major arterial streets and in downtown areas served by mass transit;
- Pursuing and utilizing state and Federal funding sources to expand the supply of housing affordable to low- and moderate-income households;
- Partnering with private developers and nonprofit housing sponsors to promote the development of housing affordable to low- and moderate-income households; and
- Utilizing housing overlay zones to provide options for the development of special needs and other affordable housing in areas otherwise designated for nonresidential uses.
7.0 Transportation Network

This section describes the roadway, transit, TDM, and other strategies employed to reduce GHG.

7.1 Transportation Improvement Projects

Inefficient transportation networks are a key contributor to transportation-related GHG emissions. Transportation improvement projects that improve traffic flow, reduce vehicle idling and delay, and/or reduce overall VMT can significantly decrease per capita emissions on congested networks.

Gateway Cities jurisdictions submitted 340 revenue-constrained transportation improvement projects, which together have the potential to considerably reduce per capita GHG emissions from the transportation sector.

Figure 7.1 shows the locational extent of these transportation improvement projects in the Gateway Cities using the LACMTA iMpact Tool. Figure 7.2 shows the numerical distribution of submitted transportation projects. These projects fall under six categories:

1. Roadway Capacity Improvements (e.g., new lanes, bottleneck relief);
2. Intersection Improvements (e.g., new signals, new signal phases, new intersection approach capacity);
3. System Operations Improvements (e.g., intersection delay improvements, corridor-wide signal timing, ITS, adaptive traffic control systems, arterial management);
4. Railroad Grade Separations;
5. Nonmotorized Transportation Improvements (e.g., new bicycle and pedestrian facilities); and

Appendix D provides a list of all submitted strategies within these categories.
Figure 7.1Submitted Transportation Project Locations

Note: All red squares and dashed lines denote transportation projects.
Each transportation improvement strategy offers unique potential for reducing per capita GHG emissions, and requires a different methodology to estimate potential emissions reductions. To estimate these potential project-level benefits, a series of sketch planning methodologies was developed for each project type, using algorithms developed in the Moving Cooler Report, the Transportation Research Board (TRB) Highway Capacity Manual (2000), Federal Highway Administration (FHWA) Traffic Signal Timing Manual (2008), and other sources.\textsuperscript{15}

The resulting estimated total GHG reduction per capita per day amounts to 0.74 lbs CO\textsubscript{2}e per capita per day in 2020 and 0.70 lbs CO\textsubscript{2}e per capita per day in 2035.

Each transportation improvement project category is described below, along with a brief note on the project-specific inputs that were required to make sketch planning estimates of potential GHG impacts. (See Appendix K for descriptions of the methodologies used to make these calculations.

\textsuperscript{15}Moving Cooler was an extensive research and documentation commissioned in 2010 by a wide range of agencies and interest groups to obtain objective information about the potential contributions of transportation strategies to GHG reduction goals. Moving Cooler measures the effectiveness and costs of almost 50 types of strategies and combinations of strategies (http://www.movingcooler.info). (See Appendix K).
7.1.1 Roadway Capacity Improvements

Roadway capacity projects are those that either 1) widen an existing facility, or 2) build or extend a new roadway. Roadway capacity improvements have the potential to reduce excess GHG caused by delay at critical bottlenecks and chokepoints on heavily congested roadways. Emission reductions from these projects are derived from increased average vehicle speeds due to capacity expansion and improved traffic flow rates resulting from decreased congestion.\textsuperscript{16} Emission reductions vary by the type of facility under expansion and the location of the facility.

At a large network scale, benefits gained from initial improved traffic flow rates on congested major highways are often offset to some degree by induced traffic (i.e., pent-up demand for travel) over the long term, resulting in lower emissions reductions than initially obtained. All of the local transportation projects included in the subregional SCS, however, are small and mostly isolated improvements. Their small scale and scope make it unlikely that their initial benefits would induce a significant amount of additional travel.

Roadway capacity GHG reduction estimates are a function of several inputs, including project length, number of new lanes, corridor traffic volumes, facility type, and land use conditions. Speed and capacity information by facility type and area types were obtained from the LACMTA travel demand model. Travel speed changes on the facility after capacity expansion was calculated by sketch planning tools developed by Cambridge Systematics based on peer-reviewed methodologies (see Appendix K). These tools used speed-flow curves from the travel demand model. Travel speeds were calculated for peak periods and only during weekdays, since it is conservatively assumed that the speed variations during the off-peak periods and weekends are marginal.

7.1.2 Intersection Improvements

Intersection improvements have the potential to reduce excess GHG emissions caused by idling and delay at single intersections. In general, these improvements fall under three categories:

1. **New Signal.** An unsignalized intersection approaching failure due to intolerable levels of delays is improved to a signalized intersection with an acceptable auto level of service.

\textsuperscript{16}The estimation of GHG impacts from local transportation projects were made using sketch planning models to estimate changes in speed, vehicle hours of delay, and vehicle miles of travel. These outputs were then used as inputs for the EMission FACtors (EMFAC) model, which calculates CO\textsubscript{2} emissions for 2020 and 2035. The EMFAC model incorporates future year emission factors that account for the lower emissions from future vehicles (see http://www.arb.ca.gov/msei/msei.htm).
2. **New Turning Phase.** A new specific turn or movement is enabled at the intersection, or a permissive turn is made into a protected turn by changing the signal phasing and/or timing.

3. **Improved Intersection Capacity.** Physical improvements are made to the signalized intersection that positively impact level of service, including improvements to geometry, approach redesign, or new lanes.

The GHG reduction methodologies used to evaluate each intersection improvement type vary slightly, but estimates are generally a function of factors, such as approach capacities (i.e., number of lanes); peak-hour traffic volumes; facility types; cycle lengths; and land use densities. Since detailed delay and level of service (LOS) calculations were not available for this analysis, traffic volumes and delay were generally approximated using travel model output. Signal cycle lengths either were specified by jurisdictions or approximated using the FHWA *Traffic Signal Timing Manual* (2008). In each case, emissions reduction benefits were estimated by approximating the average reduction in delay per vehicle due to the improvement.

### 7.1.3 System Operations Improvements

System operations projects impact GHG emissions by improving traffic flows and reducing vehicle delay along key corridors involving multiple intersections. Examples include arterial management strategies such as corridor signalization and synchronization improvements, and ITS such as Advanced Traffic Management System (ATMS) implementation. Travel timesavings at each intersection along the corridor are calculated and aggregated by applying a delay reduction factor. Los Angeles County Public Works Department, for example, provided 14 traffic signal synchronization projects and ITS projects on primary arterials through both incorporated and unincorporated areas.

System operations project benefits are a function of inputs, such as corridor length, number of intersections affected, number of lanes, traffic volumes, and existing travel times and cycle lengths. These details were provided by jurisdictions or approximated using travel demand model output; the SCAG Highway Inventory\(^\text{17}\) (a TransCAD database recently compiled); and sources such as the Caltrans Traffic Light Synchronization Program and the TRB *Highway Capacity Manual* (2000).

\(^\text{17}\)The SCAG Modeling/GIS section undertook an inventory of major streets within the six counties comprising the SCAG region. The inventory contains information pertaining to existing LOSs, as well as planned highway improvements. Its primary purpose is to define the highway network for the RTP transportation demand model, but it will also support other programs, such as the Highway Performance Monitoring System. It includes LOS attributes for more than 7,000 streets and highways. It houses attributes such as posted speed, number of lanes, and median type.
7.1.4 Railroad Grade Separations

Separating at-grade railroad crossings reduces vehicle delay and associated GHG emissions caused by railroad facility conflicts. Grade separation project GHG benefits are a function of roadway average daily traffic, existing and improved average speeds, and average gate down time on the affected rail corridor. Average gate down time is used as a proxy for intersection delay prior to the grade separation improvement. Inputs for the sketch analysis were provided by jurisdictions or approximated using travel demand model output, the SCAG Highway Inventory, and documentation and research prepared by local agencies.

7.1.5 Nonmotorized Transportation Improvements

The implementation of bicycle and pedestrian facilities can reduce GHG emissions to the extent that auto trips are replaced by walking or biking, or by transit trips accessed by walking or biking. Generally, bicycle lanes and pedestrian facilities that offer access to transit have greater potential for GHG emissions reduction.

While such improvements typically have a positive impact on reducing auto use, the magnitude of that impact is difficult to estimate. Due to the scarcity of methodologies for accurately estimating the VMT impacts of nonmotorized transportation improvements at the project level, bicycle and pedestrian improvements were approximated using citywide factors based on research by Dill and Carr (2003). Ultimately, the planned bike lanes in Long Beach contributed an estimated 38,000 annual tons of CO$_2$e reduced per bike lane mile.

7.1.6 Park-and-Ride Facilities

Increasing parking capacity at rail transit stations and major transit hubs reduces emissions by encouraging SOV drivers to shift to transit for a proportion of their commute trip. Both new facilities and expansions of existing parking facilities have the potential to reduce per capita GHG. A park-and-ride lot’s potential for reducing GHG is a function of a number of inputs, including number of spaces; average parking lot utilization; average auto trip commute lengths; and the type of transit being served (e.g., urban rail, commuter rail, bus rapid transit (BRT)/express bus, etc.). Project-specific inputs were provided by jurisdictions. Regional inputs, such as parking lot utilization and commute length, were

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18Dill, Jennifer, and Theresa Carr, 2003, Bicycle Commuting and Facilities at Major U.S. Cities: If You Build Them, Commuters Will Use Them, TRB Annual Meeting, 2003. Based on surveys collected in 35 major U.S. cities with at least 250,000 population; each additional mile of Type 2 bike lanes per square mile is associated with a 1-percent increase in bike commuting. Note that this research differs from the methodology presented in Appendix K for quantifying GHG impacts from bicycle improvements.
approximated using local documents, such as the LACMTA Gold Line Phase II Draft EIR (2004).

7.2 TRAVEL DEMAND MANAGEMENT STRATEGIES

7.2.1 TDM Strategies Employed to Reduce GHG Emissions

As stated above, the SCS analysis also included consideration of TDM strategies being employed by Gateway Cities and an assessment of their GHG emission reduction impacts in 2020 and 2035. The analysis keyed on three distinct strategies being implemented by many of the Gateway Cities, including:

1. Compressed work week schedules for city employees,
2. Ridesharing programs for city employees, and
3. TDM or Trip Reduction Ordinances for new development.

Compressed work weeks are generally in the form of city offices closing one day every two weeks, or offering employees 9/80 or 4/40 work schedules. Some cities also utilize 3/36 schedules for safety officers. As shown in Appendix E, 11 cities reported utilizing compressed work week schedules, with more than 3,200 employees participating. It was estimated that, on average, 14 percent of a participating city’s workers were off on any given day. Six cities reported having ridesharing programs for their employees, with various incentives and promotions for the use of alternative commute modes. Several of the cities reported that their Average Vehicle Ridership (AVR) was about 1.3 as a result of their ridesharing programs. This rate is a rise from pre-program levels of between 1.21 to 1.23. It was estimated that about 700 city employees subregion-wide were participating in ridesharing programs.

Finally, the last strategy, TDM ordinances, is reinforced by the LACMTA’s Congestion Management Program and model TDM ordinance. TDM or Trip Reduction Ordinances have been adopted by many Los Angeles County cities in response to the LACMTA Congestion Management Plan, which includes developer-based TDM programs as one strategy for reducing congestion. Seven cities reported having TDM ordinances that apply to new or expanded commercial development (mainly office) of 25,000 square feet or more. One city reported that 30 percent to 40 percent of all its new commercial developments are subject to its TDM ordinance. Conservatively, estimating that these TDM ordinances result in a 10-percent reduction in vehicle trips (many studies show


20Appendix E provides the cost effectiveness of funded projects using published results of past evaluation studies, including many from the South Coast Air Basin.
reductions of 20 percent or more\textsuperscript{21}) and applying this travel behavior impact to 30 percent of the anticipated office growth in these 7 cities, it was possible to estimate the potential GHG reduction from applying TDM ordinance requirements to this new growth.

Table 7.1 provides an estimate of the annual estimated GHG reductions (stated as metric tons of CO\textsubscript{2} reduced) for 2020 and 2035 for each of the three TDM strategies described above.

Table 7.1 Estimated Annual GHG Reduction from TDM Strategies for 2020 and 2035

<table>
<thead>
<tr>
<th>TDM Strategy</th>
<th>Annual GHG Emission Reduction 2020</th>
<th>Annual GHG Emission Reduction 2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed work weeks\textsuperscript{1}</td>
<td>607.5</td>
<td>530</td>
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<tr>
<td>Ridesharing program\textsuperscript{2}</td>
<td>682.5</td>
<td>597.5</td>
</tr>
<tr>
<td>TDM ordinance\textsuperscript{**}</td>
<td>415</td>
<td>607.5</td>
</tr>
<tr>
<td>Total TDM Reduction</td>
<td>1,705</td>
<td>1,735</td>
</tr>
</tbody>
</table>

\textsuperscript{1}For city employees.

\textsuperscript{2}Applied to new office development.

### 7.2.2 Other TDM Strategies Considered

The TDM analysis also sought to quantify the impact of several other travel-reducing strategies being employed in some Gateway Cities, but available data did not allow for more than a qualitative assessment. TDM strategies that likely would contribute to GHG reduction and that are being implemented in many cities include:

1. Participation in the Los Angeles County Bike to Work day (among city and private employees, estimated to reduce 4.36 ton of GHG on Bike to Work day within the Gateway Cities);

2. Promotion and sales of transit passes to residents and others within the city (the U-Pass program at Long Beach State is estimated to reduce more than 2,000 metric tons of GHG per year);

3. Safe Routes to School projects being implemented in many cities, which can lead to travel behavior change (and reduced idling); and

4. Distance learning at local colleges and universities through on-line courses, which reduces the need for some to drive to campus.

While some evidence exists in the form of the self-reported results provided above, insufficient data was available from which to estimate the GHG potential impacts across a broader set of implementing cities and private entities. The possible participation of private businesses and institutions presents significant potential for TDM strategies. To the degree that there is widespread TDM activities among these private entities, the GHG reduction from TDM may be much larger than estimated for this SCS. Unfortunately, the schedule and resources were insufficient to launch a comprehensive survey of Gateway Cities major employers.  

7.2.3 Interactive Effects Between TDM and Land Use/Transit Improvements

The analyses of TDM, transportation, and land use strategies, when considered independently, did not factor in the potential interactive effects between these complementary GHG reduction measures. Smart land use policies and transit service improvements can serve to enhance the effectiveness of TDM strategies, especially when focused on employment at new developments that would benefit from the same land use policies and transit enhancements. Therefore, an additional TDM analysis was undertaken to estimate the multiplicative effects of land use and transit improvements on TDM program effectiveness.

This analysis focused on the TDM Ordinance element of the TDM analysis summarized in Section 7.2.1. The TDM Ordinances are the avenue in which to condition developments to support vehicle trip reduction (and therefore GHG reduction) strategies. These same developments may occur in areas that will benefit from smart land use policies (increased density, mixed uses, etc.) and transit improvements (such as increased coverage, frequency, type of service, fare policies, transit marketing enhancements, etc.). Therefore, the interactive impact analysis of these three measures (TDM, transit, and land use) involved the application of a 13-percent trip reduction to new office development space as analyzed in Section 7.2.1. That analysis assumed an 8-percent vehicle trip reduction (VTR) based on a conservative estimate of TDM program effectiveness at new developments subject to TDM requirements. The higher effectiveness factor (13 percent vs. 8 percent VTR) is based on studies conducted in Utah 23 and Virginia 24. In Fairfax County, Virginia, the research estimated the VTR impacts

---

22Participating cities were unable to provide sufficient detailed information regarding any business-related TDM strategies needed to calculate GHG emissions.


of various TDM programs as implemented at new developments under various transit “intensity” assumptions. The results of that analysis are shown in Table 7.2.

### Table 7.2 National Evidence on TDM Program Impacts

**Vehicle Trip Reduction from Background Conditions**

<table>
<thead>
<tr>
<th>TDM Program or Strategy</th>
<th>High Transit</th>
<th>Moderate Transit</th>
<th>Low Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support, Promotion, Information</td>
<td>3-5%</td>
<td>1-3%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Alternative Commute Services</td>
<td>5-10%</td>
<td>5-10%</td>
<td>1-3%</td>
</tr>
<tr>
<td>Financial Incentives</td>
<td>10-20%</td>
<td>5-15%</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

**Combined Strategies**

<table>
<thead>
<tr>
<th></th>
<th>High Transit</th>
<th>Moderate Transit</th>
<th>Low Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Free Parking</td>
<td>15-20%</td>
<td>10-15%</td>
<td>3-7%</td>
</tr>
<tr>
<td>With Paid Parking</td>
<td>25-30%</td>
<td>15-20%</td>
<td>N/A</td>
</tr>
</tbody>
</table>


This table was used to derive the projected vehicle trip reduction impacts for the application of the eight cities’ TDM ordinances to the new development projected for each city (8 percent) and for enhanced transit and land use policies as reflected in higher transit availability (13 percent). Thirteen percent is a low estimate, as compared to the 15 to 20 percent cited in the table, given the lower base levels of transit availability in the Los Angeles Basin and the somewhat unproven relationship between land use, transit, and TDM effectiveness.

As shown in Table 7.3, the application of a 13-percent vehicle trip reduction to the eight cities with TDM ordinances and their projected growth in office development, the estimated GHG reduction (as compared to TDM ordinance effectiveness without interactive effects or an 8-percent VTR) results in the following estimated impacts.

### Table 7.3 Estimated Annual GHG Reduction from TDM Strategies for 2020 and 2035 with and Without Interactive Effects

**In Metric Tons**

<table>
<thead>
<tr>
<th>TDM Ordinance Impacts</th>
<th>Annual GHG Emission Reduction 2020</th>
<th>Annual GHG Emission Reduction 2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Interactive Effects</td>
<td>415.0</td>
<td>607.5</td>
</tr>
<tr>
<td>With Interactive Effects</td>
<td>652.5</td>
<td>957.5</td>
</tr>
</tbody>
</table>
7.3 **Other Transportation Strategies Not Included in the Gateway Cities Subregional SCS**

7.3.1 Strategies Submitted but not Analyzed

Several transportation and transportation demand management strategies were submitted by Gateway Cities jurisdictions for analysis, but were either incomplete, did not have sufficient information for analysis, or were not relevant. Appendix D provides a list of these strategies under “Gateway Cities Submitted Other Projects that Were Not Analyzed.” These projects were not analyzed for the SCS due to several overarching reasons:

- **ITS Applications such as Traffic Management Centers and Traffic Control Systems.** These are important systems operations improvements that could relieve congestion and reduce bottlenecks in the corridor. Many of these investments are providing infrastructure for coordinated signal systems; however, based on the information provided by cities, a rigorous analysis could not be performed without more information. These systems could be examined in the future for possible GHG reduction potential. Table 7.4 shows the range of annual GHG reduction that could be achieved with different ITS applications.

- **Transit Amenities on a Micro Scale, such as Bus Stops and Shelters.** There is no peer-reviewed literature on the analysis of GHG reduction due only to transit amenities at the micro scale. Even with improvements at a handful of select bus stops, the change in ridership and GHGs is likely to be minimal. There are studies that show that comprehensive improvements in “customer service orientation,” including much more than just bus stops, can lead to a significant ridership increase; however, these strategies would move beyond the amenities submitted.

- **Transit Electric Vehicle Connection.** The Gateway Cities, along with the rest of Southern California, are encouraging electric vehicle usage by installing electric vehicle charging stations at key transit nodes. To date, the research concerning GHG reduction due to mode shift has not been conclusive and there is not yet enough evidence on GHG reduction potential due to electric vehicles as a connection to transit. In the upcoming year, more studies will be conducted, including one by Southern California Edison on Electric Vehicle Readiness.
### Table 7.4  GHG Reduction from ITS Applications from *Moving Cooler*

<table>
<thead>
<tr>
<th>ITS Application</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramp Metering</td>
<td>0.01%</td>
<td>0.44%</td>
<td>0.011</td>
<td>0.025</td>
</tr>
<tr>
<td>Variable Message Signs</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>Active Traffic Management</td>
<td>0.01%</td>
<td>0.42%</td>
<td>0.003</td>
<td>0.004</td>
</tr>
<tr>
<td>Integrated Corridor Management</td>
<td>0.01%</td>
<td>0.42%</td>
<td>0.004</td>
<td>0.031</td>
</tr>
<tr>
<td>Incident Management</td>
<td>0.00%</td>
<td>0.45%</td>
<td>0.006</td>
<td>0.026</td>
</tr>
<tr>
<td>Road Weather Management</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>Signal Control Management</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>Traveler Information</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.002</td>
<td>0.006</td>
</tr>
<tr>
<td>Vehicle Infrastructure Integration</td>
<td>0.01%</td>
<td>0.37%</td>
<td>0.000</td>
<td>0.002</td>
</tr>
</tbody>
</table>

1. Further definitions and assumptions on levels of deployment can be found in *Moving Cooler*, Appendix A, page A-14.

2. *Moving Cooler*, Appendix D, Tables D.3 and D.4. Note that percentage reductions are compared to a nationwide baseline, and ITS strategies are only applied in locations with certain levels of congestion. Therefore percentage reductions for urban areas may be higher than national numbers because they have a higher share of congested roadways than the whole nation.

3. Calculated from *Moving Cooler* Main Report, Table 4.1.

#### 7.3.2 Possible Strategies to Consider for the Gateway Cities

Beyond the strategies selected for analysis in the Gateway Cities subregional SCS, there are several additional strategies that could be explored further in future SCS development. The *Moving Cooler* report analyzed nearly 50 strategies; some of which were included in the SCS, some of which do not apply to SB 375, and some of which cannot be implemented at the local or regional level.

There are, however, three categories of strategies that could be explored further in future SCS development.

- **TDM or Trip Reduction Ordinances.** Within this SCS, we have analyzed the GHG reduction for eight cities in the Gateway Cities reporting having TDM ordinances. Based on an understanding of the LACMTA’s Congestion Management Program and model TDM ordinance, it is assumed that many

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25TDM or Trip Reduction Ordinances have been adopted by many Los Angeles County cities in response to the LACMTA Congestion Management Plan, which includes developer-based TDM programs as one strategy for reducing congestion.
cities – if not all of the cities within the Gateway Cities – have adopted a TDM ordinance within the Gateway Cities. Further assessment of which cities in the Gateway Cities have adopted and implemented TDM ordinances could provide more GHG reduction within the subregion.

- **Pricing strategies (congestion, parking, VMT, etc.).** Despite the political challenges associated with implementing pricing strategies, this category can be both cost effective and provide significant GHG reductions. This category of strategies focuses on raising the costs associated with use of the transportation system by autos and especially by SOVs, both in terms of the cost of VMT and fuel consumption. The revenues generated from pricing strategies can be reinvested in transportation infrastructure, potentially covering the costs of implementing GHG reduction strategies.

- **Regulatory strategies (urban nonmotorized zones, urban parking restrictions, etc.).** This category includes various regulatory measures to moderate vehicle travel and encourage more efficient driving.

For the Gateway Cities, parking pricing merits particular attention. Parking fees could be implemented and charged for parking in CBDs in shopping districts and downtown areas, employment areas, and retail centers to encourage “park once” behavior or reduce single-occupant trips. Other approaches include the introduction of taxes or higher fees on otherwise free private parking lots and parking management approaches, including requirements for residential parking permits, as well as permits for delivery and service vehicles and for visitors.

In terms of regulatory strategies, nonmotorized zones could be established in CBDs and regional employment and retail centers, transforming these areas to transit malls, linear parks, or other nonmotorized zones. Parking restrictions could be imposed in urban areas, capping the absolute number of commuter spaces in a CBD and other regional employment and retail centers, with potential exception for carpools.
8.0  Resource Areas and Farmland

In preparing the SCS, the Gateway Cities COG was required to gather and consider the best practically available information regarding resource areas and farmland in the Gateway Cities subregion. As defined in Government Code §65080.01, resource areas include:

1. All publicly owned parks and open space;
2. Open space or habitat areas protected by natural community conservation plans, habitat conservation plans, and other adopted natural resource protection plans;
3. Habitat for species identified as candidate, fully protected, sensitive, or species of special status by local, state, or Federal agencies or protected by the Federal Endangered Species Act of 1973, the California Endangered Species Act, or the Native Plant Protection Act;
4. Lands subject to conservation or agricultural easements for conservation or agricultural purposes by local governments, special districts, or nonprofit 501(c)(3) organizations, areas of the state designated by the State Mining and Geology Board as areas of statewide or regional significance pursuant to Section 2790 of the Public Resources Code, and lands under Williamson Act contracts;
5. Areas designated for open-space or agricultural uses in adopted open-space elements or agricultural elements of the local general plan or by local ordinance;
6. Areas containing biological resources as described in Appendix G of the California Environmental Quality Act Guidelines that may be significantly affected by the SCS or the alternative planning strategy; and
7. An area subject to flooding where a development project would not, at the time of development in the judgment of the agency, meet the requirements of the National Flood Insurance Program, or where the area is subject to more protective provisions of state law or local ordinance.

Farmland, as defined in Government Code §65080.01, means farmland that is outside of all existing city spheres of influence or city limits as of January 1, 2008; and is classified as prime or unique farmland or farmland of statewide importance.

There is no farmland as defined above in the Gateway Cities subregion. Given the absence of farmland, there are no lands under Williamson Act contracts. Likewise, there are no areas of statewide or regional significance pursuant to Section 2790 of the Public Resources Code. Nevertheless, there are a variety of other resource areas in the subregion, as defined in Government Code §65080.01.
The existing resource areas within the Gateway Cities subregion are shown on Figure 8.1. These resource areas are an integral part of the planned urban development pattern for the subregion as depicted on the general plans of the Gateway cities. These resource areas contribute to the sustainability of the subregion by the various functions they perform, which include:

- Meeting the recreational needs of the subregion’s residents, and thereby contributing to their health and well being through the provision of parks, golf courses, and other recreational facilities;
- Serving as aquifer recharge areas that allow for the replenishment of the groundwater basins beneath the subregion on which the Gateway Cities rely for a major portion of their water supply;
- Preserving significant habitat and other ecologically important areas that are critical to maintaining the biodiversity of the subregion;
- Protecting residents and property within the subregion from the hazard of flooding through an integrated system of flood control facilities; and
- Supporting the production of energy resources by accommodating oil recovery operations.

Recognizing the importance of these areas to the sustainability of the subregion, the majority of these areas have been designated in the Gateway Cities general plans and zoned as open space or public facilities. In doing so, the Gateway Cities have clearly expressed their intent that these areas be preserved in perpetuity as open space/publicly-held land. The one major exception is the areas devoted to oil production. However, the preservation of these areas as open space is not essential to the continued production of oil in these areas. Through the consolidation of wells at strategically located drill sites and the use of slant drilling and other recovery techniques, oil production operations can continue within the oilfields existing across the subregion for years to come while releasing surface areas for other forms of urban in-fill development.
Figure 8.1 Resource Areas
9.0 State Housing Goals

The SCS must consider the state housing goals set forth in Government Code §65580 and §65581. In establishing state housing policy, the California Legislature finds and declares in Government Code §65580 that:

- The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian, including farm workers, is a priority of the highest order.
- The early attainment of this goal requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels.
- The provision of housing affordable to low- and moderate-income households requires the cooperation of all levels of government.
- Local and state governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community.
- The Legislature recognizes that in carrying out this responsibility, each local government also has the responsibility to consider economic, environmental, and fiscal factors and community goals set forth in the general plan; and to cooperate with other local governments and the State in addressing regional housing needs.

In Government Code §65581 the Legislature further states that, in enacting the requirement that each general plan must contain a housing element, it is their intent:

- To assure that counties and cities recognize their responsibilities in contributing to the attainment of the state housing goal;
- To assure that counties and cities will prepare and implement housing elements that, along with Federal and state programs, will move toward attainment of the state housing goal;
- To recognize that each locality is best capable of determining what efforts are required by it to contribute to the attainment of the state housing goal, provided such a determination is compatible with the state housing goal and regional housing needs; and
- To ensure that each local government cooperates with other local governments in order to address regional housing needs.
These state housing goals were considered and fully taken into account during the formulation of this SCS. The general plans of the COG’s member cities, which collectively constitute the land use component of the SCS, allocate adequate land at appropriate densities for residential development to meet the projected housing needs of the Gateway Cities subregion. The goals and policies found in the housing elements of these general plans are consistent with the state housing goals, and the housing programs being implemented by the Gateway Cities contribute to the attainment of the state housing goals. Some of the more widely implemented programs being deployed by the Gateway Cities to expand the supply of housing in the subregion that is affordable to low- and moderate-income households, while also contributing to a more sustainable development pattern within the subregion, have already been identified in Section 6.0 of this SCS. Additional measures that have been taken by the Gateway Cities to address the housing needs of all economic segments of the subregion’s population include:

- Utilizing zoning and property rehabilitation programs to preserve well-established residential neighborhoods and existing housing affordable to low- and moderate-income households;
- Utilizing zoning and other land use controls to accommodate the housing needs of the elderly, disabled, homeless, and other special needs households;
- Providing rental assistance to lower-income households; and
- Offering first-time homebuyer assistance to low- and moderate-income households.
10.0  Integration of Development Pattern with the Transportation Network

This section describes the methodology used to integrate future land development patterns for the subregion with the transportation network and the travel demand the network accommodates. The SCAG Sustainability Tool is used to analyze 2020 and 2035 land use scenarios for each of the 26 participating cities. Additionally, the subregional transportation network and other transportation measures and policies are layered on top of the locally significant projects listed in Section 7.0 and their combined impacts are assessed. This section also reports interactions or synergies between land use changes and the transportation strategies and policies. These synergies add significant magnitude to the reductions of GHG emissions from individual strategies in 2035.

10.1  LAND USE ANALYSIS USING THE SUSTAINABILITY TOOL

SCAG has expended significant effort and conducted extensive one-on-one outreach efforts to develop the Sustainability Tool (ST). For the subregional SCS, Gateway Cities has used the ST as the primary method of assessing GHG impacts of future land use scenarios from individual jurisdictions (i.e., the 26 participating Gateway Cities). By using the tool developed by SCAG, the Gateway Cities have been able to estimate GHG reductions from land use strategies, and provide the underlying GIS and Excel datasets to SCAG in order for SCAG to include the analysis in the regional SCS.

One of the primary goals of SB 375 involves motivating local governments to implement aggressive smart growth land use strategies, and integrate these with systematic transit and nonmotorized transportation investments. The consultant team and SCS Policy Development Committee advocated for this goal. Consultants, COG staff, and Committee members encouraged city staffs to consider aggressive land use reforms during the four technical workshops and numerous communications with individual cities throughout the SCS development process. Some cities had already incorporated significant smart growth policies during the most recent update to their general plans. Other cities considered pushing density and clustering of mixed-use development beyond what was specified in their general plans. Long Beach, for example, experimented with some extremely dense development throughout their transit...
corridors and CBDs. At the end of this process, however, no city adopted land use policies for this SCS that significantly vary from those in their adopted general plans. This outcome probably came about for four reasons:

1. Some cities have already adopted aggressive smart growth policies in their general plans. As an almost universal fact of local governments, cities will protect their authority over land use planning zealously.

2. All cities are currently facing significant slumps in development and may be concerned that aggressive land use regulation may discourage new development.

3. Just about all Gateway Cities are built out and are expecting modest amounts of in-fill development, which provides only modest opportunities to increase density and envision “place making” development opportunities.

4. High quality transit nodes require high quality transit service to attract riders. Current funding for such services has been reduced and service quality has suffered. Meanwhile, little or no incentives (e.g., parking charges, congestion pricing, carbon tax, etc.) have been seriously proposed, let alone implemented, to encourage less driving and more use of transit, biking, and walking. Most transportation analysts are adamant that until pricing policies are used to discourage driving, auto travel will dominate other modes of travel almost regardless of land use policy.

Of the 26 participating cities, 11 cities evaluated the land use data loaded as default scenarios into the ST, and these cities worked with SCAG to develop a modified 2008 land use scenario, as well as apply smart growth policies in 2020 and 2035 scenarios. The remaining cities used the ST equivalents of their adopted general plans (i.e., default scenarios in the ST), which is SCAG’s best judgment of city general plans converted to 5.5-acre grid cells. The ST has functionality that estimates the interactions between land use (expressed as one of 24 types of land use) and proximity to a transit node. The ST specifies proximity as one-quarter mile from a bus stop and one-half mile from a passenger rail station. These interactions are included in the estimated GHG reductions from each city’s 2020 and 2035 land use policies.

The resulting GHG reduction amounts to 0.47 lbs CO₂e per capita per day in 2020 and 0.49 lbs CO₂e per capita per day in 2035. Individual city scenarios can be found in Appendix F.

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26The ST converts general plan information from each city into 5.5-acre grid cells, where each grid cell is assigned 1 of 26 possible types of land use. This assignment process provides a reasonable approximation of a city’s aggregate land use, but may on occasion assign general plan land use designations to incorrect grid cell types.
10.2 Regionally Significant Transit and Transportation Improvement Projects

Planned regional transportation projects located within or near the Gateway Cities (e.g., HOT lanes on I-110, Green Line extension to LAX, Regional Connector) will impact GHG within the subregion. Gateway Cities COG staff determined 17 such projects are included in the RTP. These include Measure R projects, such as multimodal and intermodal facilities; and ramp and freeway improvements, such as HOV, HOT and toll lanes.\textsuperscript{27} The list of projects is shown in Table 10.1.

### Table 10.1 Key Regional Projects Included in the Gateway Cities SCS

<table>
<thead>
<tr>
<th>2020 Regional Project List</th>
<th>Anticipated Completion</th>
<th>Fully Funded/Part of RTP</th>
<th>Partially Funded/Potentially Likely to Proceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-5 (between I-605 to countyline)</td>
<td>2020</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-110 Harbor Transitway HOV lane conversion to HOT lanes</td>
<td>2012</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-710 Arterial Hwy Improvements</td>
<td>2020</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-710 TSM/TDM</td>
<td>2020</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>BNSF Grade Separation</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>California High-Speed Rail</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Goldline Eastside Extension</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Green Line Extension to LAX</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-5 (between I-605 to I-710)</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-5 Arterial Highway Improvements</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-605 Hot Spots</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>I-710 Freight Corridor</td>
<td>2025</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ITS Integration Plan</td>
<td>2025</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Orangeline Development Authority – OLDA Project</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Regional Connector</td>
<td>2025</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Signal Synchronization of Major Arterials (re: I-710)</td>
<td>2025</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>SR 91/I-605/I-405 Arterial Highway Improvements</td>
<td>2035</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{27}Measure R is a one-half-cent, 30-year sales tax dedicated to specific transportation improvements throughout Los Angeles County. Appendix G lists the specific projects located within the Gateway Cities region.
The analysis of their estimated GHG reductions requires using the travel demand model output from LACMTA and SCAG. As shown in the second column of Table 10.1, the anticipated dates of completion for all but one of these projects (I-5 between I-605 to county line) occur after 2020. Most of their estimated GHG impacts, therefore, are accounted for in the second target period from 2021 to 2035. The results of LACMTA and SCAG modeling of these 17 projects were input into EMFAC emission model, which estimated a 7.0 percent reduction in daily CO2 in 2035, compared to the 2005 benchmark, because of increases in network speed; and a 1.1-percent reduction because of reduced VMT (i.e., mode shift). When these two are combined, the estimated total daily CO2 reduction is 7.07 percent (the two are combined by multiplying rather than adding). Appendix G explains the methodology and analysis for the quantification of GHG reduction due to regional transportation projects.

10.3 **LAND USE – REGIONAL TRANSIT CAPACITY EXPANSION INTERACTION**

**10.3.1 Overview**

The ST estimates the interaction between new development and redevelopment in Gateway Cities and regional public transportation projects funded under Measure R with the same methodology as applied for a local bus or local rail transit service. This interaction, however, may be more substantial for regional transit projects that will serve travel across the subregion, the county, and the region. This higher level of mobility from regional transit produces larger interactive impacts when station areas are developed as higher-density transit-oriented developments (TOD).

**10.3.2 Assessment Process in Gateway Cities SCS**

There are two primary components to the land use-regional transit capacity expansion interaction under consideration in the SCS:

1. **Regional Transit Walk Access.** There are two potential interactions to consider:
   
   a. Residential and commercial development and redevelopment identified in the Gateway Cities adjacent to existing and planned transit stations will on average generate less VMT per household than households not adjacent to transit. This interaction is accounted for in the ST.

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28 The relative change in CO2 emissions based on build/no-build comparisons from Metro’s modeling for the 2009 LRTP was used to estimate the emission reductions for the 17 identified projects. This assumes that the benefits of the 2009 LRTP are distributed equitably across Los Angeles County.
b. The improvement of transit access to regional destinations outside the Gateway Cities and new high capacity and frequent regional transit service in Gateway Cities improves the level of service and utility of the transit mode leading to mode shift from vehicle-based trips.

2. **TOD Opportunity.** New or improved transit stations may attract new TOD, as long as the appropriate combinations of higher-density, mixed-use zoning, parking policies, urban design guidelines, and redevelopment investments are implemented. This type of high density and mixed residential and commercial development should facilitate attracting residents and workers with higher propensities for transit trips.

### 10.3.3 Regional Transit Walk Access

The ST has functionality that estimates the interactions between land use (expressed as the trip generation characteristics and mode shares of the 24 types of land use) and proximity to a fixed-guideway transit node (defined as within one-half mile) or a bus stop (defined as within one-quarter mile). The ST subdivides the growth forecasts from the cities into 5.5-acre grid cells, overlays the data with existing and planned transit facilities (planned transit facilities include all projects in the fiscally constrained RTP), and flags all cells within a one-half mile of rail stations and one-quarter mile of bus stops.

In the ST, regional transit walk access is the most significant environmental predictor of household transit trips, with an average elasticity of 0.25 (meaning that for every 10-percent increase in households flagged with regional transit walk access, there is an estimated 2.5-percent increase in transit trips.). Another way to view this interaction is that for every 100 new trips generated within one-half mile of regional transit, 25 of them will be on transit (a 25-percent mode share).

The GHG reduction estimates developed through the ST reflect the benefit of both the growth and land use changes within the Gateway Cities through 2035 and the added accessibility to regional destinations through new transit access in the RTP.

What the ST does not presently consider is the additional VMT reduction that could occur in the Gateway Cities as a result of long-range implementation of Measure R projects that are partially funded and not included in the current fiscally-constrained RTP. Projects in the Measure R plan, anticipated to be completed by 2035 impacting travel in Gateway Cities, include the Gold Line Eastside Extension, the Orange Line Development Authority (OLDA) grade-separated regional transit project, the Regional Connector project linking the Blue Line to other lines in Downtown Los Angeles, and the Green Line extension to Los Angeles International Airport (LAX). These projects will positively affect transit ridership in the Gateway Cities in two ways: 1) the projects will improve regional access to attractions, employment, and services for Gateway Cities
households, and 2) the projects will provide a new fixed guideway transit alternative to private vehicle or bus transit trips.

Fixed guideway transit (i.e., commuter or light rail) tends to be more attractive than bus transit to discretionary travelers (people who have the option of driving), including commuters, visitors, and people traveling to major sport and cultural events if they are located along transit lines. To reflect the transition from bus to fixed-guideway transit access, an assumption that the regional transit walk access elasticity increases from 0.17 for bus to 0.33 for rail is reasonable for these discretionary trips. In other words, travelers with existing access to bus transit would be 1.5 to as much as 2 times as likely to choose transit if they had access to rail transit (while controlling for socioeconomic variables). This increase in transit mode share makes the regional rail projects that transect the Gateway Cities subregion more effective at reducing GHG than existing bus service, and even more effective when rail station areas are developed as TODs.

10.3.4 TOD Opportunity

In expanding transit corridors in California and elsewhere, the presence of new, high capacity, high level of service public transportation options has been shown to be a catalyst for new or redevelopment. Through zoning codes and development regulations, cities may support development of these areas through reduced parking requirements, tax increment financing, and other incentives to maximize the opportunity for development and capitalize on their investment in transit.

It is uncertain how much the opportunity for rezoning and eventual redevelopment of land uses near planned transit stations is incorporated into city general plans. OLDA is the only transit project in the Measure R plan anticipated to be completed by 2035 within the Gateway Cities. This project, which could facilitate TOD in Gateway Cities, would provide access to Vernon, Maywood, Bell, Huntington Park, Cudahy, Downey, South Gate, Paramount, Artesia, Bellflower, and Cerritos.

In addition, other regional transit projects that increase the level of service and accessibility to attractions outside the Gateway Cities (for example, such as new Green Line access to LAX) could also, to a lesser degree than above, facilitate TOD at existing transit stations in the Gateway Cities. It is likely that the benefits from TOD at these locations would occur sooner than TOD associated with the OLDA project given that the transit infrastructure is already in place.

The level to which growth in the Gateway Cities could intensify or be redistributed to focus in areas adjacent to new fixed-guideway transit stations is dependent on available development capacity, supporting infrastructure, zoning and development regulations, and future economic and market conditions. The example analysis of this interaction considers the effect of TOD in areas within one-half mile of Orange Line transit stations.
10.3.5 Results of Interactions

The data summarized in Table 10.2 reflects the range of potential benefits resulting from the interaction between land use and Measure R transit projects in the Gateway Cities in 2035. Given the anticipated long timeframe for implementation of the Measure R transit projects, as well as the long lead time for redevelopment activities adjacent to new transit, the resulting estimated GHG reductions associated with this interaction are only considered for 2035.

Table 10.2 Gateway Cities SCS – GHG Reduction from Land Use and Regional Transit Interactions

<table>
<thead>
<tr>
<th>Gateway Cities – Land Use and Regional Transit Interaction</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interaction 1 – Regional Walk Access</strong></td>
<td></td>
</tr>
<tr>
<td>Improved Access to Regional Destinations</td>
<td></td>
</tr>
<tr>
<td>• Average Daily VMT per Household in Gateway Cities</td>
<td>42.5</td>
</tr>
<tr>
<td>• Total Daily GHG Reduction (lbs GHG per capita)</td>
<td>0.041-0.062</td>
</tr>
<tr>
<td>New Access to Fixed Guideway Transit</td>
<td></td>
</tr>
<tr>
<td>• Total Households within 1/2 mile of possible future station location for potential OLDA project¹</td>
<td>40,075</td>
</tr>
<tr>
<td>• Total Daily GHG Reduction (lbs GHG per capita)</td>
<td>0.021-0.042</td>
</tr>
<tr>
<td><strong>Interaction 2 – TOD</strong></td>
<td></td>
</tr>
<tr>
<td>• Target Density Range in TOD Station Areas (TOD defined as ½ mile of station)²</td>
<td>23.7-60.7 dwelling units/acre</td>
</tr>
<tr>
<td>• Total Households in TOD Station Areas</td>
<td>8,186-20,966</td>
</tr>
<tr>
<td>• Total Daily GHG Reduction (lbs GHG per capita)</td>
<td>0.058-0.073</td>
</tr>
<tr>
<td><strong>Total Daily GHG Reduction (lbs GHG per capita)</strong></td>
<td>0.120-0.177</td>
</tr>
</tbody>
</table>

Notes:
1. Assumes constant residential density across each city based on 2035 forecasts.
2. Change characteristics of range from Town Residential Low Mix to Town Residential High Mix for TOD station areas, as defined in the ST.

Further explanation on interactive effects between transit and land use can be found in Appendix H.
11.0 **Compliance with Regional and Federal Requirements**

11.1 **COMPLIANCE WITH SCAG SCS/RTP**

At the time of this subregional SCS submittal, the SCAG RTP is still under development; thus, Gateway Cities COG cannot determine if the SCS strategies, growth forecasts, land use, housing accommodation, and other elements of this subregional SCS conform with the SCAG RTP and regional SCS plans and assumptions. Nevertheless, the transportation investments included in this subregional SCS must also be included in the 2012 RTP, and must be scheduled in the Regional Transportation Improvement Plan (RTIP) for construction completion by the target years (2020 and 2035) in order to demonstrate any benefits as part of the SCS. Gateway Cities COG has collaborated with LACMTA to coordinate the subregional SCS with future transportation investments.

Gateway Cities COG expects SCAG to accept and incorporate this subregional SCS because 1) it complies with SB 375, 2) it complies with Federal law, and 3) it complies with SCAG’s Subregional Framework and Guidelines. Furthermore, the compiled Gateway Cities subregional SCS achieves the regional targets set for SCAG by CARB. Gateway Cities have adhered to a process and timeline; whereby, the draft subregional SCS was delivered to SCAG for its review and comment, so that SCAG could identify any inconsistencies and resolve these prior to the final SCS being completed.

While completion of this subregional SCS does not exempt the subregion from further GHG emission reduction measures being included in the regional SCS, the clear intent and purpose of this subregional SCS is to occupy the field. Thus, the Gateway Cities COG does not expect to be compelled to adopt additional regional measures needed to meet the regional targets.

In addition, this SCS does work with SCAG to take advantage of the California Environmental Quality Act (CEQA) streamlining provisions of SB 375. To help Gateway Cities COG jurisdictions take advantage of the CEQA streamlining, SCAG will include maps in the regional 2012 RTP/SCS in order to show the uses, densities, intensities, and locations for future development; and in order to facilitate subsequent project consistency findings. More on this subject can be found in Appendix I.
11.2 COMPLIANCE WITH CARB REGIONAL TARGETS

According to CARB, the SCAG region is to comply with the regional targets set forth through the Regional Targets Advisory Committee target-setting exercise.\(^{29}\) For the SCAG region, the proposed targets are 8 percent per capita GHG reduction from passenger vehicles and light trucks for 2020 relative to 2005 and 13 percent in 2035 (Figure 11.1).

**Figure 11.1** CARB GHG Emissions Target for SCAG Region (Emission Reduction Based on 2005 per Capita CO\(_2\)e)

![Graph showing CARB GHG emissions targets for SCAG region.]

Although the regional targets are not applicable at the subregional level, the Gateway Cities wished to compare the performance of their SCS with the regional targets. Thus, the Gateway Cities worked with SCAG to obtain the information needed to generate the Gateway Cities subregional baseline emissions per capita in 2005. This analysis applied the Adopted 2008 RTP Growth Forecast and the Local Input/General Plan 2012 RTP Growth Forecast as the per capita denominator for the SB 375 target years of 2020 and 2035. The results of this analysis produced an estimated daily GHG per capita for 2005 of 16.64 lbs CO\(_2\)e for the Gateway Cities subregion, compared to 21.2 lbs CO\(_2\)e for the SCAG region.\(^{30}\) This difference is consistent with the following differences between the Gateway Cities subregion and the SCAG region as a whole: higher...

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\(^{30}\)The unincorporated areas of Gateway Cities subregion are included in the total GHG per capita baseline.
land use density, lower car ownership per household, higher density and service levels for transit, and lower VMT per household. The 16.64 lbs CO$_2$e per capita in 2005 for the Gateway Cities subregion serves as the benchmark for the Gateway Cities SCS attainment of the CARB targets for the SCAG region. The estimated GHG reductions relative to this benchmark are achieved with the following five bundles of strategies.

1. **Transportation Strategies.** Participating cities submitted approximately 340 strategies; of these, a subset of strategies was either incomplete, did not have sufficient information for analysis, or was not relevant. (See Section 7.3.1, Strategies Submitted but not Analyzed, and Appendix D for detailed descriptions of these projects.) This portfolio generates a significant amount of reduction, the highest GHG reduction after the regional transportation projects. The interactive effects between these strategies and land use (smart growth policies) are accounted for in the land use analysis.

2. **TDM Strategies.** The focus was on three main categories of TDM: compressed work week schedules for city employees (12 cities), ridesharing programs for city employees (6 cities), and TDM or Trip Reduction Ordinances for new development (8 cities). This bundle also incorporates the interactive effects between TDM and land use and transit.

3. **Land Use.** Of the 26 participating cities, 11 cities chose to modify their land use in the ST. These cities worked with SCAG to develop a modified 2008 scenario that more closely approximated their current land use, as well as to apply smart growth policies in 2020 and 2035 scenarios. The remaining cities used the ST-equivalents of their adopted general plans (i.e., default scenarios in the ST), which is SCAG’s best judgment of city general plans converted to grid cells. The ST has functionality that estimates the interactions between each of its 24 types of land use and proximity to a transit node. These are included in the estimated GHG reductions from each city’s 2020 and 2035 land use policies.

4. **Regional Projects, including Measure R.** Regional transportation projects located within or near to the Gateway Cities will reduce GHG within the subregion. Gateway Cities COG staff determined 17 projects that are included in the RTP, such as multimodal and intermodal facilities; and ramp and freeway improvements, such as HOV, HOT, and toll lanes. The analysis of their estimated GHG reductions was derived from travel demand model output from LACMTA and SCAG.

5. **Interactive Effects Between Land Use and Regional Transit Projects.** The long timeframe for implementation of the Measure R transit projects and the long lead time for redevelopment activities adjacent to new transit justify

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31 Proximity is defined as one-half mile from a rail station and one-quarter mile from a bus stop.
only attributing estimated GHG reductions resulting from the interaction between land use and Measure R transit projects in the Gateway Cities in 2035 and none in 2020.

Combining the GHG reduction strategies from the five categories described above, the subregion as a whole is expected to reduce GHG per capita from the benchmark in 2005 by approximately 8.5 percent in 2020 and just over 15 percent in 2035. Table 11.1 and Figure 11.2 present these results.

Table 11.1 Summary GHG Reduction Results for Gateway Cities from 2005 Benchmark

<table>
<thead>
<tr>
<th>Absolute Daily GHG Reduction per Capita</th>
<th>Percentage Daily GHG Reduction Per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.74</td>
</tr>
<tr>
<td>TDM</td>
<td>0.007</td>
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<tr>
<td>Land Use</td>
<td>0.48</td>
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<tr>
<td>Regional Projects</td>
<td>0.18</td>
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<tr>
<td>Interactive Effects</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.40</strong></td>
</tr>
</tbody>
</table>

SCAG Targets

8% 13%
11.3 COMPLIANCE WITH THE FEDERAL CLEAN AIR ACT

Under California Government Code §65080(b)(2)(B), the SCS prepared by SCAG is subject to the requirement that it allow the regional transportation plan to comply with Section 176 of the Federal Clean Air Act (42 U.S.C. Sec. 7506). Section 176 is the portion of Title I, Subpart D, Subpart 1 of the 1990 Clean Air Amendments that establishes the statutory authority for the Transportation Conformity rule and the General Conformity rule. While there is no State Implementation Plan (SIP) budget or National Ambient Air Quality Standards (NAAQS) for GHG emissions, the policies and projects included in the SCS are likely to also affect the criteria pollutant and their precursor emissions, which are subject to conformity.

What are the Requirements?

Transportation Conformity and General Conformity requires that Federal actions (including transportation plans and programs) conform to the region’s State Implementation Plan [42 U.S.C. Sec. 7506(c)(1)]. Activities cannot:

- cause or contribute to any new violation of any standard in any area;
- increase the frequency or severity of any existing violation of any standard in any area; or
- delay timely attainment of any standard or any required interim emission reductions or other milestones in any area [42 U.S.C. Sec. 7506(c)(1)(B)].
The Transportation Conformity rule specifies procedures for use in the evaluation of transportation plans and programs. Generally, these include an emissions budget test, timely implementation of all SIP traffic control measures (TCM), and use of the latest planning assumptions.

General conformity applies to all Federal actions (e.g., funding, licensing, permitting or approving) that do not include the FHWA/Federal Transit Administration (FTA) projects. In an area with a SIP, General Conformity can be demonstrated in one of four ways:

1. By showing that the emission increases caused by an action are included in the SIP;
2. By demonstrating that the State agrees to include the emission increases in the SIP;
3. Through offsetting the action’s emissions in the same or nearby area; or
4. Through mitigation to reduce the emission increase.

**Gateway Cities SCS**

The emission budget tests are applicable to both Transportation Conformity and General Conformity, but are applicable to the South Coast Air Basin as a whole, rather than the Gateway Cities subregion. The strategies covered in the Gateway Cities SCS are expected to reduce the emissions of criteria pollutants and their precursors and, therefore, are consistent with the emission budget tests that SCAG will be required to meet for the next RTP. Many of the regional projects are already included in conforming SCAG RTP and RTIP.

Transportation conformity requires timely implementation of all transportation control measures from the applicable state implementation plan. The 2007 Air Quality Management Plan (AQMP)/SIP includes the following three Transportation Control Measures (TCM) project categories:

1. HOV measures,
2. Transit and systems management measures, and
3. Information-based transportation strategies.

The TCM project categories in Appendix IV-C of the Regional Transportation Strategy and Control Measures of the 2007 Ozone AQMP/SIP are consistent with those of TCM01 specified in the 1994 and subsequent Ozone SIPs, and consist of the projects as specified in the fiscally-constrained portion, or the first two of the years (i.e., fiscal year (FY) 2010/2011 to 2011/2012) of SCAG’s 2011 FTIP, adopted September 2, 2010.

SCAG’s 2011 FTIP incorporates LACMTA’s 2009 LRTP, which was the basis of the regional projects incorporated into the SCS. Therefore, the SCS incorporates all applicable transportation control measures from the 2007 SIP, and is
consistent with the transportation conformity rule’s timely TCM implementation requirement.

**Future Implementation**

Experience in the Bay Area and San Joaquin Valley has shown that assumptions and proposed controls in the RTP can be treated by U.S. Environmental Protection Agency (EPA) as TCM during SIP revisions. When selecting strategies, the implications of the SCS strategies and land use assumptions becoming SIP TCMs, subject to timely implementation requirements, should be considered.
12.0 Financial and Fiscal Implementation

This section considers the fiscal challenges of implementing the SCS strategies, especially those that would be funded by local jurisdictions. The fiscal challenges are large, including the need for approximately $156 million in project funding, even though the plan provides over $215 million in committed funding (see Table 12.2). The cities and MPOs throughout the State have consistently commented that the success of GHG reductions at the local level relies on the State assisting Cities in developing predictable and stable funding sources in order to implement the SCS. The existing predictable and stable funding sources have been eviscerated at the State and local level as a result of the impacts of severe economic recession of 2008 to 2010 and the slow economic recovery. These include drops in sales tax revenues that support local transportation projects, as well as deferrals of local revenues collected by the State. This unpredictability makes it very difficult to plan the major statewide and regional projects that are necessary for GHG reductions.

In many ways, this has been the most severe economic recession since the Great Depression of the 1930s. The impacts of the current recession have been felt especially in the Gateway Cities in terms of persistent high unemployment. Unemployment in the Gateway Cities totaled 13.2 percent in April of this year. Six of the Gateway Cities have unemployment above 15 percent, while 11 of the local communities have unemployment above 13 percent. The City of Long Beach has an unemployment rate of 12.9 percent, with 30,700 persons out of work. Local municipal budgets have been severely reduced by the impacts of the recession, and the State has proposed the elimination of redevelopment, which up to now has been a successful tool at promoting sustainable communities and transit-oriented development in the Gateway Cities subregion. California’s housing market and construction industry has borne the brunt of the recession. The State has the highest number of housing foreclosures in the nation, and the bottom of the housing market has not yet been reached. Building permit activity in the region is at historic lows.

The communities in the Gateway Cities have been proactive in funding this Subregional SCS, and will continue to be proactive in developing and securing the necessary funds to implement the strategy. The voters in Los Angeles County have supported three “self-help” sales tax increases over the last 25 years in order to implement transportation measures, the most recent being Measure R. A small number of the Gateway Cities have traffic mitigation fees, and the LACMTA is working on a pilot program for several of the cities. However, there is great concern in many of the communities that an impact fee will adversely impact a fragile and tentative economic recovery. The success of the Gateway

Cambridge Systematics, Inc.
Cities SCS depends in good part in financial assistance from both the State and Federal government, recognizing that there is only so much local funding that is realistic and available.

### 12.1 Project Costs and Funding Status

All 26 participating cities plus the Los Angeles County Public Works Department submitted transportation projects totaling 340 projects. Of that total, about 240 were funded and became functional between 2005 and 2011. The remaining 100 are planned to become functional between 2011 and 2035 (see Table 12.1), and are estimated to cost a total of roughly $371 million. These future projects are distributed among 16 of the 27 participating jurisdictions (including Los Angeles County).

The 16 jurisdictions have identified about $206 million in funding, which leaves about $156 million more of required additional funding. Table 12.2 below shows the total costs, number of projects, and the funded and unfunded portions.

The $206 million of available funding comes from a broad range of local, county, regional, state, and Federal sources. Appendix D provides details of each project’s funding assumptions.

The estimates for each project’s total costs were either provided by the city staff submitting the project, or were generated by the consultant team. The consultant estimates were made by comparing each project to similar projects with established costs. When multiple projects were available for comparison, an average cost was devised and then applied to the project of unknown cost. In the case of those projects where length was a factor, the average cost per mile was established and then multiplied by the length of the project of unknown cost.

The consultant team has also made estimates for the funded and unfunded portions when city staff were unable to provide funding information. Future revisions and refinements to these estimates are expected.
### Table 12.1  Types of Transportation Strategies by Jurisdiction to be Implemented from 2011 through 2035

<table>
<thead>
<tr>
<th>City</th>
<th>Roadway Capacity</th>
<th>Intersection Improvements</th>
<th>New Signal</th>
<th>New Phase</th>
<th>Intersection Capacity</th>
<th>System Ops-ITS</th>
<th>Grade Separation</th>
<th>Nonmotorized Transportation</th>
<th>Park and Ride</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Gardens</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Compton</td>
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<td>La Mirada</td>
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<td>South Gate</td>
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<td>Whittier</td>
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<td>7</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12 12 13 10 23</strong></td>
<td><strong>26 2 2 100</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Intersection improvements are divided into three types: new signals, new phase, and new capacity.

2. Los Angeles County Public Works Department projects are almost all traffic signal synchronization projects and a few ITS projects on primary arterials through both incorporated and unincorporated areas.

Source: Cambridge Systematics, Inc.
Table 12.2  Estimated Total Costs and Funding for Future Transportation Strategies from 2011 through 2035
(2011 Current Dollars)

<table>
<thead>
<tr>
<th>Number of Projects</th>
<th>Total Cost</th>
<th>Funded Portion</th>
<th>Unfunded Portion</th>
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<tr>
<td>Bell Gardens</td>
<td>2</td>
<td>$300,000</td>
<td>$195,000</td>
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<tr>
<td>Bellflower</td>
<td>2</td>
<td>$4,020,000</td>
<td>$3,010,000</td>
</tr>
<tr>
<td>Commerce</td>
<td>1</td>
<td>$23,008,000</td>
<td>$15,582,000</td>
</tr>
<tr>
<td>Compton</td>
<td>1</td>
<td>$12,000,000</td>
<td>$8,000,000</td>
</tr>
<tr>
<td>Downey</td>
<td>16</td>
<td>$87,555,000</td>
<td>$42,301,000</td>
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<tr>
<td>La Mirada</td>
<td>1</td>
<td>$75,000,000</td>
<td>$37,000,000</td>
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<td>LAPW</td>
<td>14</td>
<td>$24,672,350</td>
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<td>$49,740,000</td>
<td>$35,755,000</td>
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<td>1</td>
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<tr>
<td>Norwalk</td>
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<td>$5,497,351</td>
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<td>Pico Rivera</td>
<td>3</td>
<td>$44,400,000</td>
<td>$22,200,000</td>
</tr>
<tr>
<td>Santa Fe Springs</td>
<td>2</td>
<td>$490,000</td>
<td>$320,000</td>
</tr>
<tr>
<td>Signal Hill</td>
<td>8</td>
<td>$9,119,000</td>
<td>$7,023,000</td>
</tr>
<tr>
<td>South Gate</td>
<td>1</td>
<td>$14,721,000</td>
<td>$9,424,000</td>
</tr>
<tr>
<td>Vernon</td>
<td>2</td>
<td>$17,202,000</td>
<td>$7,002,000</td>
</tr>
<tr>
<td>Whittier</td>
<td>7</td>
<td>$3,484,000</td>
<td>$2,515,000</td>
</tr>
<tr>
<td><strong>All Projects</strong></td>
<td><strong>100</strong></td>
<td><strong>$371,308,701</strong></td>
<td><strong>$215,296,720</strong></td>
</tr>
</tbody>
</table>

Source: Cambridge Systematics, Inc.

The remaining $156 million in unfunded costs presents a challenge for the subregion’s goal of demonstrating a feasible and implementable SCS. The terms laid out in the MOU between SCAG and Gateway Cities COG are silent on the necessity that the subregional SCS conform with the same financial constraint requirement that applies to the SCAG RTP/SCS. If the RTP financial constraint requirement flows down from the regional SCS to a subregional SCS, then this subregional SCS must identify likely revenue sources sufficient to cover the $156 million in unfunded costs.

Gateway Cities will investigate the feasibility of using an assortment of local, regional, state, and Federal sources over the next 24 years. The potential sources

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32 This financial constraint requirement provides the basis for the assumption that the 17 regional projects, which are included in the 2008 RTP, are funded and thus may be included in this subregional SCS.
include local gas tax revenues, redevelopment tax increment, local assessment districts, LACMTA Call for Projects, and state and Federal revenues. Some of these sources will require a local match, or by having a local match put a jurisdiction in a stronger competitive position.

One of the few remaining untapped sources for local funding involves developer impact fees. LACMTA has proposed a countywide Congestion Mitigation Fee (CMF) as a replacement to the debit/credit system previously required (and now temporarily suspended) to conform with the state-mandated Congestion Mitigation Program (CMP). A countywide CMF would collect development impact fees to fund local projects with regional significance. These projects would be selected by each local jurisdiction, but must conform with state requirements for development impact fees (Government Code §66000 et seq.). Two of these requirements are the most applicable for qualifying SCS strategies for funding with a CMF:

1. **Nexus test.** An SCS strategy must be shown to mitigate the impact of new development on future congestion in rough proportion to the amount of impact. This means the aggregate benefits of the SCS strategies that are funded with CMF revenues cannot exceed the impacts of new development, and thus remedy existing deficiencies.

2. **Capital investments.** Only capital costs are eligible for CMF funding. The operating costs of SCS strategies must be funded with other revenue sources.

The CMF funds collected from new development remain under the control of each local jurisdiction. The LACMTA’s role is limited to providing technical assistance in the nexus studies required to adopt a CMF, and monitoring and auditing the CMF programs once each jurisdiction implements them.

LACMTA has initiated pilot studies with all seven other subregions in the County, but none of these pilot studies obligates a subregional COG or any of its member jurisdictions to adopt a CMF. Each jurisdiction’s council (or Board of Supervisors for the unincorporated areas) may decide to adopt a CMF after the LACMTA Board has formally adopted the CMF as the method of complying with the CMP.

Some Gateway Cities jurisdictions have agreed individually to undertake pilot studies for a CMF. The Gateway Cities COG, however, has not formally approved proceeding with a subregional pilot study, so at this point wider participation remains uncertain. This leaves this subregional SCS financially unconstrained. While there is no clear legal guidance from CARB or SCAG, the Gateway Cities COG legal counsel advised the SCS Policy Development Committee (March 11, 2011) that further progress on identifying likely local funding sources may continue after the Gateway Cities COG Board approves and submits this subregional SCS to SCAG. As implementation proceeds, cities may identify additional funding sources and be able to implement all of their strategies.