Our Region.  
Our Future.

2050 Regional Transportation Plan/
Sustainable Communities Strategy

Final Environmental Impact Report
Appendix G • Public Comments and Responses
October 2011

State Clearinghouse #2010041061
2050 Regional Transportation Plan/
Sustainable Communities Strategy

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APPENDIX G

RESPONSES TO COMMENTS ON THE DRAFT EIR
The Draft Environmental Impact Report (Draft EIR) for the 2050 Regional Transportation Plan and Sustainable Communities Strategy (2050 RTP/SCS) was distributed for public review on June 7, 2011, initiating a 55-day public review period ending on August 1, 2011. The document was made available online, at public libraries throughout the region, and at SANDAG’s office. During the public review period, a total of 18 letters and emails were received before the close of the public comment period. After the close of the public comment period, 4 more letters were submitted. Pursuant to California Environmental Quality Act (CEQA) Guidelines §15088(a), “the lead agency shall evaluate comments on environmental issues received from persons who reviewed the Draft EIR and shall prepare a written response.” All comment letters received on the 2050 RTP/SCS Draft EIR, including the four letters received after the close of the public comment period, were evaluated for environmental issues, and written responses to comments on environmental issues were prepared.

Table 1 provides a list of the comment letters received, including details on the agency, organization, or individual that submitted the letter and the date of the letter. This appendix presents written responses to comments on environmental issues raised in these letters. The written responses describe the disposition of significant environmental issues raised, as required by CEQA Guidelines §15088(c).

<table>
<thead>
<tr>
<th>Letter No.</th>
<th>Agency/Organization/Individual</th>
<th>Letter Date</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>California Coastal Commission (CCC)</td>
<td>8/1/2011</td>
<td>G-70</td>
</tr>
<tr>
<td>B</td>
<td>California Department of Fish and Game (CDFG)</td>
<td>7/28/2011</td>
<td>G-78</td>
</tr>
<tr>
<td>C*</td>
<td>Office of Planning and Research (OPR)</td>
<td>8/15/2011</td>
<td>G-92</td>
</tr>
<tr>
<td>D**</td>
<td>City of Coronado</td>
<td>8/27/2011</td>
<td>G-99</td>
</tr>
<tr>
<td>E</td>
<td>City of Lemon Grove</td>
<td>6/30/2011</td>
<td>G-104</td>
</tr>
<tr>
<td>F</td>
<td>City of National City</td>
<td>8/1/2011</td>
<td>G-108</td>
</tr>
<tr>
<td>G</td>
<td>City of San Diego - Development Services</td>
<td>8/1/2011</td>
<td>G-109</td>
</tr>
<tr>
<td>H</td>
<td>City of Solana Beach</td>
<td>7/29/2011</td>
<td>G-117</td>
</tr>
<tr>
<td>I</td>
<td>County of San Diego</td>
<td>7/28/2011</td>
<td>G-153</td>
</tr>
<tr>
<td>J</td>
<td>Endangered Habitat League</td>
<td>8/1/2011</td>
<td>G-160</td>
</tr>
<tr>
<td>K</td>
<td>Move San Diego</td>
<td>8/1/2011</td>
<td>G-164</td>
</tr>
<tr>
<td>L</td>
<td>Preserve Calavera</td>
<td>8/1/2011</td>
<td>G-270</td>
</tr>
<tr>
<td>M</td>
<td>Rincon Band of Luiseno Indians</td>
<td>7/7/2011</td>
<td>G-291</td>
</tr>
<tr>
<td>N</td>
<td>San Diego Mountain Biking Association</td>
<td>8/1/2011</td>
<td>G-292</td>
</tr>
<tr>
<td>P</td>
<td>Sierra Club, Pamela N. Epstein, Esq., LL.M.</td>
<td>8/1/2011</td>
<td>G-305</td>
</tr>
<tr>
<td>Q</td>
<td>Sierra Club, Mike Bullock</td>
<td>8/1/2011</td>
<td>G-382</td>
</tr>
<tr>
<td>R</td>
<td>Shute, Mihaly &amp; Weinberger, LLP on behalf of Cleveland National Forest Foundation (CNFF), Save Our Forests and Ranchlands (SOFAR), and the Center for Biological Diversity</td>
<td>7/25/2011</td>
<td>G-520</td>
</tr>
<tr>
<td>U</td>
<td>Derek Galey</td>
<td>7/14/2011</td>
<td>G-653</td>
</tr>
<tr>
<td>V*</td>
<td>Attorney General’s Office</td>
<td>9/16/2011</td>
<td>G-655</td>
</tr>
</tbody>
</table>

Notes:
* Letter C from the OPR, Letter O from the San Luis Rey Band of Luiseno Indians, and Letter V from the Attorney General’s office were received after the close of the public comment period. CEQA does not require a Lead Agency to respond to comments received after the close of the comment period; however, SANDAG has chosen to respond to all comments nonetheless.
** Letter D from the City of Coronado pertains to non-environmental concerns about the 2050 RTP/SCS, rather than to significant environmental issues in the Draft EIR. This letter was also received after the close of the Draft EIR public review period. However, SANDAG has chosen to respond to all comments within the letter nonetheless.
For organizational purposes, each letter has been assigned letter identification as outlined in Table 1. Each comment letter is reproduced in its entirety and is aligned side-by-side with the response(s) to the letter. Where a commenter has provided multiple comments, each comment is indicated by a line bracket and an identifying number in the margin of the comment letter.

**MASTER RESPONSES**

Common themes were repeated throughout many of the comment letters listed in Table 1. Twenty-three Master Responses have been developed to respond to recurring themes mirrored in several of the comment letters. Each Master Response has been identified by a corresponding number, as shown below in Table 2. For efficiency, the text for each Master Response is provided here for ease of reference instead of repeating text for each individual comment received. Individual comments that are addressed by these Master Responses are referred to by the numbered code (i.e., “Please refer to Master Response 1”).

<table>
<thead>
<tr>
<th>Response ID No.</th>
<th>Master Response Topic</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Impact Analysis and Mitigation Measures: Level Of Detail and Deferral</td>
<td>G-2</td>
</tr>
<tr>
<td>2</td>
<td>Draft EIR GHG Analysis: Relationship To SB 375, AB 32, and EO S-3-5</td>
<td>G-4</td>
</tr>
<tr>
<td>3</td>
<td>Recirculation</td>
<td>G-8</td>
</tr>
<tr>
<td>4</td>
<td>Responsibility of Other Agencies to Implement Mitigation</td>
<td>G-11</td>
</tr>
<tr>
<td>5</td>
<td>Previously Submitted Comment Letters</td>
<td>G-14</td>
</tr>
<tr>
<td>6</td>
<td>Significant and Unavoidable Impacts</td>
<td>G-15</td>
</tr>
<tr>
<td>7</td>
<td>Project Transportation Network Components</td>
<td>G-15</td>
</tr>
<tr>
<td>8</td>
<td>Generated Traffic vs. Induced Traffic</td>
<td>G-17</td>
</tr>
<tr>
<td>9</td>
<td>Project’s Overall Consistency With Intent and Goals Of SB375 and AB1358</td>
<td>G-20</td>
</tr>
<tr>
<td>10</td>
<td>Project Funding and Transnet</td>
<td>G-24</td>
</tr>
<tr>
<td>11</td>
<td>SCS Land Use Plan and How It Achieves the Intent of SB 375</td>
<td>G-25</td>
</tr>
<tr>
<td>12</td>
<td>Regional Growth Forecast and Projections</td>
<td>G-27</td>
</tr>
<tr>
<td>13</td>
<td>Project Description: Revisions from Draft to Final EIR</td>
<td>G-32</td>
</tr>
<tr>
<td>14</td>
<td>Transportation Thresholds</td>
<td>G-36</td>
</tr>
<tr>
<td>15</td>
<td>Parking Mitigation Options</td>
<td>G-38</td>
</tr>
<tr>
<td>16</td>
<td>Alternatives Selection and Analysis</td>
<td>G-39</td>
</tr>
<tr>
<td>17</td>
<td>Fast Plan and 50-10 Plan</td>
<td>G-43</td>
</tr>
<tr>
<td>18</td>
<td>Sea Level Rise and Adaptation Planning</td>
<td>G-50</td>
</tr>
<tr>
<td>19</td>
<td>Health Risks Associated With Expanded Highways/Arterials</td>
<td>G-53</td>
</tr>
<tr>
<td>20</td>
<td>GHG Impact Analysis</td>
<td>G-55</td>
</tr>
<tr>
<td>21</td>
<td>GHG Mitigation Measures</td>
<td>G-62</td>
</tr>
<tr>
<td>22</td>
<td>Arterial Project Selection</td>
<td>G-67</td>
</tr>
<tr>
<td>23</td>
<td>GHG Reductions from Individual Projects</td>
<td>G-68</td>
</tr>
</tbody>
</table>

**MASTER RESPONSE #1
ADEQUACY OF IMPACT ANALYSIS AND MITIGATION MEASURES**

Several comments assert that the Draft EIR’s impact analysis is insufficiently detailed and improperly deferred. Comments request analysis of the magnitude of impacts, and additional detail to verify the validity of the impact conclusions. Some comments suggest that the Draft EIR should present project-specific impacts for certain projects.

Similarly, comments assert that the Draft EIR mitigation measures are too vague and improperly deferred. Some comments suggest that the Draft EIR should present project-specific mitigation measures.
Purpose of Program EIR

These comments misunderstand the purpose of and legal requirements for the Program EIR prepared for the 2050 RTP/SCS. As described on page 1-2 of the Draft EIR, a Program EIR is prepared for a series of actions that can be characterized as one project. An advantage of a Program EIR is that it allows the lead agency to consider broad policy alternatives and “program wide mitigation measures” at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. (CEQA Guidelines §15168(b)(4).)

The Program EIR can serve as a first-tier document for later CEQA review of individual projects included in the program. These project-specific CEQA reviews will focus on project-specific impacts and mitigation measures, and need not repeat the broad analyses contained in the Program EIR. As discussed by the California Supreme Court, “it is proper for a lead agency to use its discretion to focus a first-tier EIR on only the…program, leaving project-specific details to subsequent EIRs when specific projects are considered.” (In re Bay Delta (2008) 43 Cal. 4th 1143, 1174).

Level of Detail and Quantification of Impacts

The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated. (CEQA Guidelines §15146.) Also, the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. (CEQA Guidelines §§15151, 15204(a).)

The activity being evaluated in the 2050 RTP/SCS Draft EIR is a long-term Regional Transportation Plan and Sustainable Communities Strategy. The Draft EIR strives to provide as much quantitative detail as feasible regarding the regional environmental impacts of the 2050 RTP/SCS. For example, certain impacts on the following resource areas are quantified: agricultural resources, air quality, biological resources, greenhouse gases, population and housing, transportation, and water supply. However, not all impacts can feasibly or meaningfully be analyzed quantitatively both at a regional level and up to the year 2050.

CEQA Guidelines §15146(b) provides that an EIR prepared for the adoption of a local general plan should focus on the secondary environmental effects to be expected following adoption, but that the EIR need not be as detailed as one prepared for the specific construction projects that follow. Further, CEQA Guidelines §15152(c) states that when a lead agency is using the tiering process for a large scale planning approval such as a general plan, the development of detailed site-specific information may not be feasible and can be deferred to project-specific CEQA documents.

Since the 2050 RTP/SCS is even broader in scope and has a longer time horizon than most general plans, such detail is not required. The geographic scope and complexity of the 2050 RTP/SCS played an important role in determining the appropriate level of detail to include in the EIR. The SANDAG region encompasses 4200 square miles and includes 18 cities, as well as unincorporated San Diego County. The 2050 RTP/SCS is highly diverse, consisting of many transit, highway, and phased arterial projects, as well as a comprehensive Sustainable Communities Strategy.

Mitigation Measure Detail and Deferral

Some comments contend that the Draft EIR’s mitigation measures are improperly deferred and lack specificity. This response addresses general critiques of the Draft EIR’s approach to mitigation.
Responses to comments questioning specific mitigation measures are presented either in topical master responses or detailed responses to individual comment letters.

Since mitigation measures are an important component of an EIR, they are subject to the rules regarding level of detail in a Program EIR described above. The Draft EIR presents program-wide mitigation measures that largely will be implemented by SANDAG and other agencies in subsequent project-specific design, CEQA documents, and approvals. As authorized by the CEQA Guidelines and case law, the Draft EIR’s mitigation measures are less detailed than those that would be part of a project EIR, and the selection of detailed mitigation measures is properly deferred to future project-specific CEQA reviews.

While the Draft EIR strives to provide as much detail as possible in the mitigation measures, some flexibility must be maintained to present mitigation approaches for impacts occurring over a large geographic scope and caused by a wide variety of transportation and land use activities. CEQA case law provides that a first-tier EIR may contain generalized mitigation criteria. (See, e.g., Koster v. County of San Joaquin (1996) 47 Cal.App.4th 29.)

CEQA case law has also held that deferral of the specifics of mitigation is permissible where the lead agency commits itself to mitigation and, in the mitigation measure, either describes performance standards to be met in future mitigation or provides a menu of alternative mitigation measures to be selected from in the future. (California Native Plant Society v. City of Rancho Cordova (2009) 172 Cal.App.4th 603 [the details of exactly how the required mitigation and its performance standards will be achieved can be deferred pending completion of a future study]; Endangered Habitats League Inc. v. County of Orange (2005) 131 Cal.App.4th 777, 793 [deferred mitigation acceptable when performance standards are included]; see also, Riverwatch v. County of San Diego (1999) 76 Cal.App.4th 1428, 1448-1450 [a deferred approach may be appropriate where it is not reasonably practical or feasible to provide a more complete analysis before approval and the EIR otherwise provides adequate information of the project’s impacts]; Sacramento Old City Assn. v. City Council of Sacramento, supra, 229 Cal.App.3d at p. 1028-1029 [deferral of agency’s selection among several alternatives based on performance criteria was appropriate]).

The Draft EIR presents regional performance measures for some mitigation measures, e.g., transportation mitigation measures. For many others, e.g., biological and forest resource mitigation measures, selection of appropriate project-specific performance standards is appropriately deferred to project-specific CEQA documents, since the circumstances of individual transportation and land use projects will vary widely.

**MASTER RESPONSE #2**

**THE DRAFT EIR GREENHOUSE GAS ANALYSIS INCORPORATES THE REQUIREMENTS OF AB 32, SB 375, AND EXECUTIVE ORDER S-3-05**

Several comments contend that the Draft EIR greenhouse gas (GHG) impact analysis incorrectly portrays the requirements of AB 32, SB 375, and Executive Order (EO) S-3-05, including the relationships among these requirements and their application to CEQA GHG emissions impact significance determinations. Several comments contend that the 2050 RTP/SCS must make progress towards the substantial emission reduction targets established by the EO--80% below 1990 levels by 2050--and request that the EO’s GHG emissions reduction goals be used as CEQA significance thresholds. Other comments state that the SCS per capita emissions reduction targets are not derived from AB 32, and that they should not be used as CEQA significance thresholds.
AB 32

AB 32 requires that California achieve 1990 levels of GHG emissions by 2020. AB 32 was enacted after EO-3-S-05 was signed. The Legislature declined to include the Executive Order’s aspirational 2050 goal in AB 32. In fact, the AB 32 Scoping Plan notes that while “the measures needed to meet the [Executive Order] 2050 goal are too far in the future to define in detail, we can examine the policies needed to keep us on track through at least 2030.” (Scoping Plan, p. 117).

Achieving the AB 32 target will require different emissions reductions from different economic sectors, as described in the AB 32 Scoping Plan. The Scoping Plan (Section 2C6, pages 47-51) specifically addresses how reductions from the land use and transportation sectors should be achieved, and sets a statewide 2020 GHG emissions reduction target of 5 million metric tons of CO2e by 2020.

The AB 32 Scoping Plan recognizes that achievement of SB 375’s regional GHG reductions targets will be the main process for achieving this 2020 emissions reduction target from the land use and transportation sectors. Other sectors, such as the energy, industry, and commercial and residential sectors, must also play a significant role in making changes to bring about the GHG reduction targets in AB 32, and that those efforts are not addressed by SB 375. In order to meet the targets in AB 32 and the goals of EO S-3-05, major contributions to the emission reduction effort must be made by these other sectors as is recognized by the Scoping Plan (Sections 2C7-18, pages 51-67).

Relationship of SB 375 to Executive Order

SB 375 requires new RTPs to include Sustainable Communities Strategies (or Alternative Planning Strategies) to meet regional emissions reductions targets for light duty passenger vehicles. In adopting SB 375, the Legislature expressly found in Section 1 that improved land use and transportation systems are needed in order to achieve AB 32’s GHG emissions reduction target. Further, the staff analysis for the bill prepared for the Senate Transportation and Housing Committee’s August 29, 2008 hearing on SB 375 (hereby incorporated by reference) started with the following statement: “According to the author, this bill will help implement AB 32 by aligning planning for housing, land use, transportation and greenhouse gas emissions for the 17 MPOs in the state.” (Available at ftp://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_cfa_20080903_100317_sen_comm.html)

Thus SB 375’s text and legislative history demonstrate that the SB 375 and its per capita GHG emission reduction targets are directly derived from AB 32 requirements. In contrast, SB 375 legislative findings do not mention achievement of the ambitious 2050 EO S-3-05 GHG emissions reductions target. Thus, there is no direct legislative policy linkage between SB 375 and the EO.

The Executive Order establishes state GHG emission targets of 1990 levels by 2020 (the same as AB 32) and 80% below 1990 levels by 2050. It does not call for implementation measures other than the Secretary of CalEPA being responsible for coordination of state agencies and progress reporting. It is uncertain what role regional land use and transportation strategies can or should play in achieving the EO’s 2050 emissions reduction target. A recent California Energy Commission report concludes, however, that the primary strategies to achieve this target should be major “decarbonization” of electricity supplies and fuels, and major improvements in energy efficiency (CEC 2011).

The 2050 RTP/SCS complies with SANDAG’s SB 375 emissions reductions targets, which in turn are based on AB 32 implementation. SANDAG recognizes the aspirational nature of the EO S-3-05 2050 target, but the 2050 RTP/SCS emissions reductions are not legally required to be consistent with this target, and as explained below, this target is not an appropriate CEQA threshold of significance. Please note that the SCS includes specific implementation actions that are expected to result in GHG emission...
reductions in addition to those modeled for the Draft EIR. While all the SCS implementation actions can be found in the Action Element of the SCS, some specific actions include:

- Implement the Regional Energy Strategy and the Climate Action Strategy, in coordination with state and local jurisdiction efforts.
- Support the increased use of clean, alternative fuels in SANDAG and local jurisdiction-owned vehicle fleets, and the vehicle and equipment fleets of contractors and funding recipients, such as the vehicle fleet for the SANDAG Vanpool Program or for local jurisdiction waste haulers.
- Support planning and infrastructure development for alternative fueling stations and plug-in electric vehicle (EV) chargers.
- Develop or facilitate a regional approach to long-term planning for alternative fuel infrastructure that includes the continued development of public-private strategic alliances.
- Monitor research and independent assessments of the impact that increasing the use of clean, alternative fuels would have on gas tax revenues.
- Integrate alternative fuel considerations into the development of the regional transportation network by, for example, integrating infrastructure for electric vehicle charging into regional park-and-ride lots and transit stations.
- Work with San Diego Gas & Electric and other stakeholders to mitigate the potential impacts of electric vehicles on the electric grid.
- To the extent possible, address climate adaptation issues in the design of new projects, and when improvements are made to existing infrastructure.
- Seek funding to develop healthy community or active design guidelines that integrate smart growth, sustainability, walking and bicycling, parking, and street design.

**GHG Significance Thresholds**

CEQA Guidelines §15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The Guidelines advise lead agencies to consider the following factors in determining the significance of GHG emissions: whether the project increases or reduces GHG emissions compared to the existing environmental setting, whether project emissions exceed a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with regulations or requirements of certain adopted GHG reduction plans. (CEQA Guidelines §15064.4(b).) But fundamentally, the courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project. (See Citizens for Responsible Equitable Development v. City of Chula Vista (2011) 197 Cal.App. 4th 327, upholding an AB 32-based approach to setting significance thresholds.)

The Draft EIR used three thresholds of significance: increase in GHG emissions compared to existing conditions (GHG-1), conflict with SB 375 GHG emission reduction targets (GHG-2), and conflict with applicable GHG reduction plan (GHG-3). SANDAG selected the SB 375-based threshold because the 2050 RTP/SCS must comply with regional per capita GHG emissions reduction targets. The other two thresholds are also consistent with CEQA Guidelines suggestions.

The Draft EIR concluded that Impact GHG-1 would be significant in 2035 and 2050, but that Impacts GHG-2 and GHG-3 would be less than significant. Commenters criticizing the use of SB 375’s GHG
emissions reduction targets as a threshold in Impact GHG-2 ignore the fact the GHG emissions for 2035 and 2050 were found to be significant using the different significance threshold in GHG-1.

SANDAG chose not to use the 2050 EO emissions reduction target as a threshold of significance because the EO is not an adopted GHG reduction plan within the meaning of CEQA Guidelines 15064.4(b)(2), and because SANDAG’s role in achieving this target is uncertain and likely small. Although comments note the Attorney General and BAAQMD have advised that the EO 2050 target can inform CEQA analysis, there is no legal requirement to use it as a threshold of significance. Under the CEQA Guidelines and case law, SANDAG retains the discretion to select certain GHG emissions reduction thresholds and not select others.

Furthermore, even if SANDAG had used the 2050 EO emissions reduction target as a threshold of significance, the Impact GHG-1 impact conclusions for 2035 and 2050 would not have changed. These impacts would be significant and unavoidable using either the net increase threshold used in Impact GHG-1, or an EO based threshold.

Executive Order S-3-05 Creates No Legal Requirements for SANDAG

Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger on June 1, 2005. It established GHG emission reduction targets for California, and directed the Secretary of the California Environmental Protection Agency (“Secretary”) to coordinate oversight of the efforts made to meet these targets with other state agencies. Although regularly issued by California governors, executive orders are not expressly defined in the California Constitution or in any other State law, regulation, rule or policy. The Attorney General’s office has analyzed the scope of “executive orders” as follows:

The Governor is authorized to issue directives, communicated verbally or by formal written order, to subordinate executive officers concerning the enforcement of law. Such authority emanates from his constitutional charge, as the ‘supreme executive power’ of this state, to ‘see that the laws are faithfully executed’ (Cal. Const., art V, §1) and by the very dimension of government which necessitates and requires the assistance and participation of others. Accordingly, Government Code section 12010 provides that ‘[t]he Governor shall supervise the official conduct of all executive and ministerial officers.’


The Attorney General opinions stress that the Governor may not invade the province of the Legislature, citing to the California Constitution, Article III, Section 3, which provides that “[t]he powers of state government are legislative, executive, and judicial. Persons charged with the exercise of one power may not exercise either of the others except as permitted by this Constitution.” Consequently, the Governor is not empowered, by executive order or otherwise, to amend the effect of, or to qualify the operation of existing legislation. (See Lukens v. Nye (1909) 156 Cal. 498, 501 (holding that as an executive officer, the governor is forbidden to exercise any power or legislative function except as expressly provided in Article III of the State Constitution).)

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1 See Executive Orders, at http://www.gov.ca.gov/s_executiveorders.php (stating that periodically the Governor issues Executive Orders which typically only affect state agencies and are based on existing constitutional or statutory powers of the Governor).
2 The Governor’s powers are significantly broader in a state of emergency. Pursuant to the California Emergency Services Act, California Government Code §8550 et seq., the Governor may make, amend, and rescind orders and regulations necessary to carry out the provisions of the Act. Orders issued during a state of emergency shall take effect immediately upon their issuance. (Cal. Gov. Code §8567.)
EO S-3-05 directs the Secretary to coordinate efforts to meet certain GHG reduction targets with the heads of six other State agencies. Each one of these seven officials is appointed by the Governor, and each is therefore a “subordinate executive officer” that can be required to implement an executive order.

SANDAG, to the contrary, is a regional planning agency comprised of 19 local governments. SANDAG may voluntarily consider the emissions reduction targets and other provisions of EO S-3-05 in its regional planning, but SANDAG plays no formal role in implementing the EO, as an executive order has no binding legal effect on agencies and personnel outside of the Governor’s chain of command.

MASTER RESPONSE #3
RECIRCULATION

Rules Regarding Recirculation

Several comments contend that the Draft EIR must be recirculated because “significant new information” must be added to the Draft EIR to make it legally adequate. A lead agency is required to recirculate a Draft EIR for additional public review when “significant new information” is added after the initial public review. New information added to a Draft EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a significant environmental effect, or a feasible way to mitigate or avoid a significant effect that is not adopted. (CEQA Guidelines §15088.5(a).)

“Significant new information” requiring recirculation includes, for example, a disclosure showing that:

- A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but is not adopted.
- The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review was precluded.

Since one of the purposes of public review is to encourage lead agencies to consider mitigation measures and alternatives suggested during the public review process, recirculation is not required when project changes would lessen or eliminate a previously-identified significant impact, and such changes are adopted. Also, recirculation is not required when the new information added to the EIR merely clarifies, amplifies, or makes insignificant modifications to an adequate EIR. (CEQA Guidelines § 15088.5(b).)

Information Added to the Draft EIR

The Final EIR does add new information in response to public comments on the Draft EIR. This information includes:

A revised project description. Revisions to the project description are described in detail in Master Response 13. These changes consisted of: changes to the I-5 North project, changes to other certain other freeways and interchanges, certain changes to arterials, certain changes to the transit network including phasing changes, and certain changes to SCS implementation actions. As a result of these project description revisions, the impact analysis for several environmental resources changed from the Draft EIR to the Final EIR. In no case did the project description changes result in a new significant impact, or a
substantial increase in the severity of a significant impact identified in the Draft EIR. The summary below provides a list of the environmental resource areas where impacts increased from the Draft EIR to the Final EIR, and rationale to explain why these changes do not result in a new significant impact, or a substantial increase in the severity of a significant impact identified in the Draft EIR. :

- **Section 4.3 Air Quality**
  
  Impact AQ-1 related to air quality attainment plans, previously determined to be significant and unavoidable, includes an analysis for air quality conformity for 8-Hour Ozone (ROG and NOx). In 2050, NOx increased from 30.69 tons/day to 30.70 tons/day, which is an increase of 0.01 tons/day. This increase is not considered a substantial increase in severity because it represents an increase of .03 percent emissions per day.

  Impact AQ-2 related to air quality standards, previously determined to be significant and unavoidable, includes an analysis of forecasted on-road emissions for CO, ROG, NOx, PM10 and PM2.5. In 2050, NOx increased from 30.07 tons/year to 30.08 tons/year, which is an increase of 0.01 tons/day. This increase is not considered a substantial increase in severity because it represents an increase of .03 percent emissions per year.

- **Section 4.4 Biological Resources**
  
  Impact BIO-4 related to habitat conservation and natural communities conservation planning, previously determined to be significant was revised to include newly obtained data that was received related to the hardline MHCP reserve boundaries. On account of this newly obtained information, more detail was provided on impacts to lands in the existing hardline MHCP preserve, and are reflected in Final EIR Tables 4.4-19, 4.4-20, and 4.4-21. Though the updated information made it possible to quantify impacts to hardline preserves from transportation improvements, the original analysis noted the potential for such impacts. A significant impact was previously concluded for land use changes and the construction of transportation network improvements in each of the horizon years. This conclusion remains unchanged as a result of the newly obtained MHCP data. Thus, while Tables 4.4-19, 4.4-20, and 4.4-21 changed in the Final EIR, these changes merely amplify information in the Draft EIR, and do not represent a new impact or affect the severity of the previously determined significant impact for BIO-4. 

- **Section 4.17 Transportation**
  
  Impact T-4 related to congested travel, already significant and unavoidable, increased in 2050. However, the increase was minimal, adding approximately 314,000 congested vehicle miles of travel (VMT at LOS E or worse in the peak period) compared to a total of approximately 110 million VMT daily region-wide. This increase is not considered a substantial increase in severity because it represents an addition of 0.3 percent of the total daily VMT in the region.

New or revised potentially feasible mitigation measures. Although the Draft EIR mitigation measures met CEQA’s requirements, revised or new mitigation measures were added to the Final EIR in response to public comments. These mitigation measures are proposed for adoption, and therefore their addition does not trigger EIR recirculation Under CEQA Guidelines § 15088.5(a)(3).

A number of mitigation measures have been modified or added in response to comments received on the Draft EIR. None of these modifications or additions change the conclusions within the Final EIR related to the ability of mitigation measures to reduce the project’s significant impacts to less than significant levels. Complete revisions to each of the mitigation measures listed below are provided in the Final EIR in Table ES-1 of the Executive Summary, and shown in strikethrough underline text. These changes are
4.1 Aesthetics and Visual Resources
VIS-B – panoramic views or views of significant landscape features
VIS-E – changes to area character

4.2 Agriculture and Forest Resources
AG-A – agriculture and farmland conservation

4.3 Air Quality
AQ-A – ozone precursors
AQ-B – dust control
AQ-C – NOx and particulate emissions
AQ-D – localized carbon monoxide

4.4 Biological Resources
BIO-A – sensitive vegetation communities
BIO-B – jurisdictional wetlands and other waters
BIO-D – construction impacts
BIO-E – off-site mitigation
BIO-F – special status wildlife species
BIO-G – special status plant species
BIO-K – terrestrial wildlife species
BIO-N – wildlife movement
BIO-O – wildlife corridor design
BIO-R – MSCP and MHCP covered species

4.5 Cultural Resources and Paleontology
CULT-A – records searches
CULT-C – avoidance and preservation of cultural resources
CULT-D – resources monitoring
CULT-E – NAHC and local tribes consultation
CULT-F – human remains

4.8 Greenhouse Gas Emissions
GHG-B – climate action plans
GHG-C – best available control technology

4.9 Hazards and Hazardous Materials
HM-B – wildfire risks

4.10 Hydrology and Water Quality
WQ-A – erosion control measures

4.11 Land Use
LU-B – SCS land use pattern

4.12 Noise
NOI-B – transportation noise

4.14 Public Services, Utilities and Energy
US-C – storm water drainage facilities
4.15 Recreation
REC-B – construction of recreation facilities

4.16 Transportation and Traffic
T-A – RTP/SCS update and evaluation of transportation impacts

The clarifications, amplifications, and minor modifications to Draft EIR content (including project description, impacts, mitigation measures, and alternatives) do not add new or worse significant impacts. Clarification, amplifications and minor modifications are included throughout the Final EIR, but in no case did these changes result in a new significant impact, or a substantial increase in the severity of a significant impact identified in the Draft EIR as described above.

MASTER RESPONSE #4
COMMmITmENT TO MITIGATION THAT OTHER AGENCIES “CAN AND SHOULD” IMPLEMENT

Legal Requirements

Many mitigation measures are stated as “SANDAG shall and other implementing agencies should…..” Several comments are critical of mitigation measures that are the responsibility of other agencies to implement, and the mitigation measure language that they “can and should” implement such mitigation. Comments assert that there is no guarantee these agencies will actually implement these mitigation measures, that SANDAG’s role in their implementation is unclear, and that SANDAG should commit to make these mitigation measures part of the project.

When CEQA findings are adopted, SANDAG will commit to those feasible mitigation measures that are within its responsibility and jurisdiction by making the finding that its mitigation measures “have been required in, or incorporated into, the project.” (Public Resources Code §21081(a)(1); CEQA Guidelines §15092(a)(1).) These include mitigation measures implemented through future regional planning efforts, as well as by a limited number of second-tier transportation projects that SANDAG directly approves or carries out.

As explained in the Draft EIR (p. 4.0-2), CEQA provides that an EIR can include feasible mitigation measures that are within the responsibility and jurisdiction of another agency. The appropriate CEQA finding in such instances is that such mitigation measures have been or “can and should be” adopted. (Public Resources Code §21081(a)(2); CEQA Guidelines §15092(a)(2).)

When this finding is made, there is no further requirement that SANDAG find that mitigation measures that are within the responsibility and jurisdiction of another agency have been incorporated into the project. That finding is reserved for mitigation measures within SANDAG’s responsibility and jurisdiction. Nevertheless, as discussed below, it is reasonable to expect that the other agencies will actually implement the mitigation measures assigned to them.

Transportation Project Mitigation

SANDAG has limited authority to approve individual second-tier transportation network improvement projects in the RTP. Most individual transportation projects in the RTP will be implemented by Caltrans, local transit agencies, and local governments. These agencies routinely implement the types of mitigation measures assigned to them during project design, CEQA review, and/or project construction, and the Draft EIR has made a preliminary determination that these mitigation measures are feasible and effective. Therefore, it is reasonable to expect that these agencies will actually implement them. A recent, relevant
example of an agency’s routine implementation of mitigation (Caltrans), is the mitigation addressing I-5 construction and operations impacts contained within the Interstate 5 North Coast Corridor Project Environmental Impact Report/Environmental Impact Statement. Sample mitigation measures contained within this document that address transportation network impacts include:

- Preparation of a Traffic Management Plan (TMP) to minimize traffic delays and closures through the use of various traffic handling practices.
- Public awareness program would be developed to inform the public of upcoming detours and construction schedules.
- Traffic impacts around schools would be noted in the TMP.
- Equipment would have sound-control devices to minimize noise, and other specifications to turn off idling equipment and installing temporary acoustic barriers around stationary construction noise sources would be implemented.
- Construction equipment and truck staging and maintenance areas would be located as far as feasible and nominally downwind of schools, active recreation areas, and other communities of high-population density.
- During project design and construction, it would be the responsibility of the Caltrans District 11 Landscape Architect to analyze the visual effects of specific project features, synthesize applicable mitigation measures from this document and the corridor design guidelines, apply those requirements to actual design features in specific locations, and submit proposals to the project design team. The team would then develop design solutions that are considered to be reasonable, that achieve team consensus, and can in turn be implemented. The DLA would also provide technical assistance during construction and perform mitigation monitoring of all visual mitigation requirements. Mitigation measures that require regular maintenance and are located outside Caltrans right-of-way such as trees planted along local streets or measures that require the installation of non-standard equipment within the right-of-way such as pedestrian bridge lighting can be implemented only if the responsible local government would be willing to maintain them in perpetuity.

To minimize impacts to nesting migratory bird species, all native vegetation and nonnative shrubs and trees within the impact areas would be removed outside of the breeding season (February 15 to August 31), if possible. Otherwise, a qualified biologist would thoroughly survey all vegetation prior to removal to ensure there are no nesting birds onsite. If nesting birds are identified onsite, vegetation removal would be delayed until the chicks have fledged or the nest has failed. Some comments requested that SANDAG condition grant funding of transportation projects to require implementation of 2050 RTP/SCS mitigation measures.

When SANDAG is a pass-through agency for funding, it is the funding agency’s responsibility to place conditions on grant funding. When SANDAG is the direct source of funding (versus a pass-through agency), SANDAG will require as a grant condition the implementation of those 2050 RTP/SCS mitigation measures that are applicable to, and feasible for, the project type being funded.

**Land Use Plan and Project Mitigation**

SANDAG has no authority to adopt local land use plans or approve local land use projects that will implement the SCS. SB 375 specifically provides that nothing in SB 375 supersedes the land use authority of cities and counties, and that cities and counties are not required to change their land use plans...
and policies, including general plans, to be consistent with an RTP/SCS. (Government Code §65080(b)(2)(K). Local governments are the main agencies responsible for mitigation of the impacts of land use plans and projects that implement the SCS, and SANDAG has no concurrent authority to mitigate the impacts of land use plans and projects. Local governments routinely implement the types of mitigation measures assigned to them during project design, CEQA review, and/or project construction, and the Draft EIR has made a preliminary determination that these mitigation measures are feasible and effective. Therefore, it is reasonable to expect that local governments will actually implement them.

A recent, relevant example of local government implementation of mitigation (County of San Diego) is the mitigation addressing the land use changes and regional growth projected to occur as a result of implementing the County of San Diego General Plan. Sample mitigation addressing land use and regional growth impacts contained within the San Diego County General Plan Update Draft Final Environmental Impact Report includes:

- Continue to develop and implement programs and regulations that minimize landform alteration and preserve ridgelines and steep slopes where appropriate. Examples include the County’s Grading Ordinance, RPO, and CEQA Guidelines.
- Work with communities and other stakeholders to identify key scenic vistas, viewsheds of County scenic road and highways, and other areas of specific scenic value. Apply Resource Conservation Area designations or other special area designators, guidelines, and tools to guide future development of parcels within these viewsheds to avoid impacts to the scenic vistas.
- Coordinate with the San Diego County Water Authority and other water agencies to coordinate land use planning with water supply planning and implementation and enhancement of water conservation programs.
- Implement and revise as necessary the Resource Protection Ordinance and Policy I-68 Proposed Projects in Flood Plains / Floodways to restrict development in flood plains / floodways.
- Implement the RPO, BMO, and HLP Ordinance to protect wetlands, wetland buffers, sensitive habitat lands, biological resource core areas, linkages, corridors, high-value habitat areas, subregional coastal sage scrub focus areas, and populations of rare, or endangered plant or animal species.
- Minimize edge effects from development projects located near sensitive resources by implementing the County Noise Ordinance, the County Groundwater Ordinance, the County’s Landscaping Regulations (currently part of the Zoning Ordinance), and the County Watershed Protection, Storm Water Management, and Discharge Control Ordinance.
- During Community Plan updates, establish policies and design guidelines that encourage commercial centers in compact walkable configurations and discourage strip mall commercial development.
- Establish comprehensive planning principles for transit nodes such as the SPRINTER Station located in North County Metro.
- Locate County facilities near transit facilities, whenever feasible.
- Coordinate with SANDAG, Caltrans, and transit agencies to expand the mass transit opportunities in the unincorporated county and to review the location and design of transit stops. Establish a DPLU transit coordinator to ensure land use issues are being addressed.
Comments Submitted Earlier in CEQA Process or on Draft RTP

Several EIR comment letters included attachments or incorporated comments by reference that were previously submitted to SANDAG, but were not prepared as formal comments on the Draft EIR. For example, some comment letters attached or incorporated by reference comments on the Notice of Preparation (NOP). Others attached or incorporated by reference comments on the 2050 RTP/SCS. CEQA encourages persons and public agencies reviewing Draft EIRs to focus on the sufficiency of the Draft EIR in analyzing the project’s environmental impacts, and ways in which significant impacts of the project might be avoided or mitigated. (CEQA Guidelines §15204(a).) Similarly, CEQA requires lead agencies to provide written responses to comments regarding “significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections).” (CEQA Guidelines §15088(c).)

In compliance with these provisions of CEQA, SANDAG has responded to all significant environmental issues raised in comments, as well as all significant project-related environmental issues raised in attachments/references not otherwise addressed in the response to the primary comment letter. Specifically:

- SANDAG reviewed all attachments/references included in Draft EIR comment letters, and has determined that many of them raise issues that were already raised in the body of the comment letter. As such, SANDAG has responded to those issues in written responses to the Draft EIR comment letter itself.

- To the extent attachments/references included in Draft EIR comment letters relate to the contents or merits of the 2050 RTP/SCS (and not to significant environmental issues), SANDAG has prepared responses to such comments for consideration by the SANDAG Board prior to adoption of the proposed project.

- To the extent attachments/references included in EIR comment letters relate to the NOP or were otherwise submitted before publication of the Draft EIR, SANDAG considered such comments during preparation of the Draft EIR. In some cases, the substance of pre-Draft EIR comment letters is no longer applicable or has been superseded by information presented in the Draft EIR. In other cases, the comments are repeated in the Draft EIR comment letter, and SANDAG has responded to those issues in written responses to the Draft EIR comment letter itself.

General Studies Attached or Incorporated by Reference

While SANDAG has provided thoughtful written responses to all significant environmental issues raised in comments, a Lead Agency is not required to respond to “non-project-specific secondary materials” submitted to support comments on CEQA documents. (Environmental Protection & Information Center v. California Department of Forestry and Fire Protection (2008) 44 Cal.4th 459, 484.) Generic studies, by themselves, are not substantial evidence that that a particular project may have a significant environmental effect in a particular study area. (See, e.g., Save the Plastic Bag Coalition v. City of Manhattan Beach (2011) (52 Cal.4th 155, 175.) Additionally, comments and issues “must be ‘fairly presented’ to the agency….Evidence must be presented in a manner that gives the agency the opportunity to respond with countervailing evidence.” (See Citizens for Responsible Equitable Environmental Development v. City of San Diego (2011) 196 Cal.App. 4th 515, 528.) Thus, SANDAG is not required to
respond to voluminous attachments with little or no nexus to the 2050 RTP/SCS EIR, particularly where the commenter has not explained the relevance of the attachment/reference.

**MASTER RESPONSE #6**  
**NUMBER OF SIGNIFICANT AND UNAVOIDABLE IMPACTS**

Comments were received stating that the large number of unmitigated significant impacts in the Draft EIR indicates that additional efforts should be made to identify feasible mitigation measures. Comments also state that the number of significant and unavoidable impacts is inconsistent with the sustainability goals and intent of SB 375.

It is true that the Draft EIR concludes there are a relatively large number of significant unavoidable impacts. This is attributable to the selection of conservative thresholds of significance, and to conservative judgments that some programmatic mitigation measures cannot be guaranteed to always mitigate significant impacts to less than significant levels for each project implemented in the future. Many of the Draft EIR’s mitigation measures do substantially reduce 2050 RTP/SCS significant impacts, but not always to less-than-significant levels. Analyses documenting the effectiveness of mitigation measures in avoiding or substantially reducing the impacts can be found in the “significance after mitigation” sections for each resource topic in Draft EIR Chapter 4.

SANDAG has made a good faith effort to describe feasible, effective mitigation measures for each significant impact, and to explain why other mitigation measures suggested by the public are infeasible. Public reviewers of the Draft EIR have suggested that SANDAG add specific additional mitigation measures for specific significant impacts. The responses to individual comment letters set forth SANDAG’s responses to these specific mitigation suggestions.

Comments correctly observe that the SANDAG Board of Directors will make final decisions about the feasibility of mitigation measures when it adopts CEQA findings. If a large number of significant unavoidable impacts remain, when the SANDAG Board considers adopting the Statement of Overriding Considerations, it will decide whether the benefits of the 2050 RTP/SCS outweigh its significant environmental impacts.

Lastly, the relatively large number of significant and unavoidable impacts disclosed in the EIR does not mean that the 2050 RTP/SCS is inconsistent with the sustainability goals and intent of SB 375. SB 375 implements its sustainability goals and intent through preparation of an SCS (or APS) that achieves regional GHG emissions reductions targets for 2020 and 2035. The 2050 RTP/SCS achieves these targets, and includes many provisions that promote SB 375’s sustainability goals and intent. (See Draft EIR, pages Section 2.0.2, pages 2-7 to 2-10.) However, even a plan that is intended to promote sustainability can result in significant adverse environmental effects. CEQA requires the disclosure of these effects, and adoption of feasible mitigation measures or alternatives to avoid or substantially reduce them.

**MASTER RESPONSE #7**  
**PROJECT TRANSPORTATION NETWORK COMPONENTS**

Several comment letters were submitted on the Draft EIR about the various project transportation network components planned for the 2050 RTP/SCS. Comments addressed highway improvements, efficacy of managed lanes for increasing transit, phasing of transit and highway projects, and the 2050 planning horizon.
Managed Lanes Approach to Increased Highway Capacity

The 2050 RTP/SCS provides the region’s residents with a path toward living more sustainably by focusing housing and job growth in the urbanized areas where there is existing and planned transportation infrastructure, protecting sensitive habitat and open space, and investing in a transportation network that provides residents and workers with transportation options that reduce GHG emissions. Please see Master Response 9 for a discussion of how the 2050 RTP/SCS realizes the intent and goals of SB 375.

It is important to note that the 2050 RTP/SCS does not propose any new freeways. However, there are planned improvements to the freeways that will greatly facilitate carpooling, and will accommodate additional transit vehicles in managed lanes.

Most of the highway expenditures included in the 2050 RTP/SCS are for managed lanes that will accommodate transit and carpools. Research has shown that Managed Lanes or high occupancy toll (HOT) lanes have increased carpooling. This is true for many of the existing HOT lanes, such as I-25 in Denver, CO, SR 91 in Orange County, CA, I-10 and SR 290 in Houston, TX, and I-15 in San Diego, CA. Managed lanes also promotes increased transit use for several reasons. First, many of the managed lanes facilities to be constructed in the next 10 years will serve key bus rapid transit routes and provide free flow travel to the buses that use the facilities. Second, the revenues from the managed lanes generated by single occupant vehicles are used to support transit services in the same corridors where those funds are generated. SANDAG provides FasTrak® funding to the transit operators for transit services in these corridors.

In 2010, SANDAG contracted with a consultant to assess SANDAG’s assumptions of the level of implementation and effects of vanpool and carpool usage on travel behavior. ARB, in its Informational Report on the San Diego Association of Governments’ Draft SB 375 Sustainable Communities Strategy, California Environmental Protection Agency, Air Resources Board, September 13, 2011, determined the vanpool and carpool assumptions to be reasonable and consistent with the state of the practice. Further, ARB staff compared SANDAG’s description of the highway network development with the NCHRP 365 report, which describes travel demand modeling theory and techniques and their common applications by transportation planning agencies, and observed data for key modeling parameters at the national level. ARB found that SANDAG coded the highway network consistently and within acceptable practice.

Project Phasing

The 2050 RTP/SCS maximizes the investment in transit services based on projected funding that is eligible for transit projects for each of the phasing periods. More than half (56%) of the TransNet Early Action Program through 2015 (along with other local, state, and federal revenues it leverages) funds transit projects included in the 2050 RTP/SCS. Several Early Action transit projects are already underway and will be implemented prior to 2020: Mid-City Rapid (2012), I-15 BRT (2013), South Bay BRT (2014), and Mid-Coast LRT (2016-17). Other investments in transit are included in each 10-year phasing period from 2020-2050. For projects to move up in priority, other transit projects would have to be shifted to a later phasing period. This limited flexibility is further constrained by the annual allocation of most funds, which cannot be advanced. Regarding project priority, deferring a highway project in favor of a transit project is not always feasible given restrictions on how funds can be used. In situations where funds are flexible, funding could be spent on highway or transit projects. The proposed implementation priorities in the 2050 RTP/SCS reflect the goal to have a mixture of rail and bus transit improvements in each phasing period. Most of the highway expenditures included in the 2050 RTP/SCS are for managed lanes that will accommodate transit and carpools. Many of the highway facilities to be constructed in the next 10 years will serve transit routes. Additionally, SANDAG is limited by revenues restrictions for most funding sources.
Please refer to Master Responses 10 and 17 for additional discussion of how TransNet financing constraints affect transit project phasing.

**2050 Planning Horizon**

While some commenters suggested that planning for the year 2050 was speculative and unrealistic, a key justification for developing the RTP with a 2050 planning horizon was to consider future revenues and projects approved by voters through the TransNet Extension Ordinance that extends to 2048. The complete list of TransNet projects is an important part of the EIR project description; omission of the longer-term projects would cause the project description to be incomplete.

**MASTER RESPONSE #8
INDUCED TRAFFIC DEMAND**

Several comments submitted on the Draft EIR state that the SANDAG travel demand model fails to take into account the concept of induced traffic demand. Some of these comments relied primarily upon a Victoria Transport Policy Institute Study describing the effects of vehicle-generated traffic.

**Common Misunderstandings about Induced Demand**

Induced demand is based on the claim that increasing roadway capacity spurs new travel and therefore fails to relieve traffic congestion; however, terms related to the concept of induced demand are often used interchangeably without regard to formal definitions. For example, as explained by Patrick DeCorl Souza and Harry Cohen in their White Paper on induced demand (available at http://www.fhwa.dot.gov/steam/doc.htm), “[m]uch of the misunderstanding about induced travel stems from differing interpretations about its meaning in the context of highway capacity expansion.” These differing interpretations include:

“whether the travel being referred to is "person" travel or "vehicle" travel -- for example, shifts from non-highway modes to the highway mode would not be acknowledged to be "induced" by those thinking in terms of person travel, since no new person trips are involved;

whether the vehicle or person travel being referred to as "induced" consists only of absolutely new trips or whether it also includes additional miles of travel on existing trips, i.e., whether the unit of measure is "trips" or "miles";

whether an increase in peak travel resulting from shifts in time of travel from off-peak to peak periods, without an increase in total daily travel, can be considered to be induced travel, i.e., the time frame of reference;

whether travel on a specific facility, or in a specific corridor or sub-area, is being considered or whether it is the regionwide travel market that is of interest, i.e., the geographic frame of reference -- for example, much of the travel that may rightfully be considered to be "induced" with respect to a specific improved facility may simply be travel that has been diverted from parallel facilities in the travel corridor, or from other origins and destinations in the region, and is therefore not considered to be "induced" by those taking a regionwide perspective.

For purposes of this response, SANDAG defines induced demand as “changes in: (1) vehicle, not person travel; (2) vehicle miles, not vehicle trips; (3) daily vehicle miles, not peak period or peak hour vehicle miles; and (4) regionwide daily vehicle miles, or daily vehicle miles in a specific corridor or on a specific facility.”
The SANDAG Transportation Model Incorporated Induced Demand

**Sensitivity Analysis.** The SANDAG transportation model takes the phenomenon of induced demand into account in that it is appropriately sensitive to expansion of highway infrastructure, as evidenced in Section 3.10 (Capacity Scenarios) of the SANDAG Transportation Model Sensitivity Analysis and Report. In these sensitivity scenarios, SANDAG increased the freeway capacity by approximately 35 percent which resulted in a 7.7 percent increase in freeway Vehicle Miles Traveled (VMT). These results indicate a 0.22 elasticity (7.7 percent / 35 percent) between freeway capacity and VMT. These results are consistent with the 2001 Cervero study which states, “[b]ased on California experiences along 24 freeway corridors over the 1980 to 1994 period, a near-term ‘induced travel’ elasticity of 0.24 was estimated.” (Cervero 2001). (Elasticity in this context is a measure used to describe the relationship between changes in roadway capacity and increases in VMT.)

The CARB (2011) has found that the results of SANDAG’s sensitivity analysis for freeway capacity is within the range of expected VMT based on the empirical literature. The following are excerpts’ from the CARB report.

“Roadway capacity reflects how easily vehicles travel through a transportation system. Studies have found that traffic will generally move [from] a lower capacity facility type (local streets and roads) to a larger facility type (highways….) SANDAG ran two sensitivity tests to assess the impact of doubling the number of lanes on highways or arterials compared to the baseline network, up to a maximum of eight lanes per direction. SANDAG staff provided ARB staff with the changes in lane miles in the SANDAG region for the increase in highway capacity test…..As shown in Table 1, the increase in highway lane miles from the baseline results in a three percent increase in VMT.

<table>
<thead>
<tr>
<th>Test</th>
<th>Modeled Total VMT (thousands)</th>
<th>Expected Total VMT* (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in highway capacity</td>
<td>107,132</td>
<td>104,706 - 107,579 (short-run)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>106,517 - 109,328 (long run)</td>
</tr>
<tr>
<td>Baseline</td>
<td>104,082</td>
<td>--</td>
</tr>
</tbody>
</table>

*ARB staff calculated VMT based on elasticity of 0.1 to 0.56 percent change in VMT per 1 percent change in lane miles (short run) and 0.39 to 0.84 (long run).

“Empirical studies on the vehicle travel impacts of increasing highway capacity in California report short-run elasticities ranging from 0.1 to 0.56, and long-run elasticities from 0.39 to 0.84 (Cervero and Hansen (2002), Cervero (2002)). Short-run impacts are those resulting from a policy over a period of less than five years, while long-run effects are realized over five or more years. SANDAG’s modeled results fall within the range of expected VMT based on the empirical literature for both short- and long-term timeframes.”

**Feedback in Model.** In addition to properly accounting for the trip distribution and mode choice components of new transportation infrastructure (or the short-term redistributive components of induced demand), the 2050 RTP/SCS includes a direct feedback between the land use and transportation models that accounts for the generative (or long-term) nature of induced demand. In the 2050 RTP/SCS, SANDAG based the land use forecast on the Draft 2050 Revenue Constrained transportation network. For example, SANDAG ran the land use model for 2020 based on the previous transportation model year. Subsequent land use models runs until 2030 were based on the 2020 network travel times. And the 2030 transportation model scenario is based on the 2030 integrated land use. This process continued through all...
of the model years. The result is a land use development that is consistent with the phased transportation network development.

**Induced Transit Demand.** Finally, a similar induced demand phenomenon is true for investment in transit (and non-motorized) infrastructure. A common misconception about the SANDAG transportation model is that it underestimates future transit use for expanded transit alternatives. This is not the case. The model estimates transit use for each zone-to-zone movement based upon the quality of transit service relative to other modes. Existing trolley corridors provide a basis for determining potential transit use with high quality transit service. As more light rail, BRT, and bus service is provided, the model recognizes the resulting transit service improvements and shifts travel to transit from other modes. As a result, the model forecasts a doubling of the work trip transit mode share between 2008 and 2050, when an expanded transit system is expected to be in place. This forecasted increase in transit mode share exceeds historical changes in transit mode share.

**Reliance on Expert Opinions and Studies**

As noted above, some of the comments received on the Draft EIR regarding induced demand relied upon a study prepared by the Victoria Transport Policy Institute. CEQA case law gives lead agencies considerable discretion in the choice among differing expert opinions and studies, such as the induced demand studies relied upon in the 2050 RTP/SCS Draft EIR. A lead agency may accept the environmental conclusions reached by the experts that prepared the EIR even though others may disagree with the underlying data, analysis or conclusions. (Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal. (1988) 47 Cal.3d 376, 408.) Discrepancies in results arising from different methods for assessing environmental issues do not undermine the validity of the EIR’s analysis as long as a reasonable explanation supporting the EIR’s analysis is provided. (Planning & Conserv. League v. Castaic Lake Water Agency (2009) 180 Cal.App.4th 210, 243.)

The existence of differing opinions arising from the same pool of information is not a basis for finding the EIR to be inadequate; when approving an EIR, an agency need not correctly resolve a dispute among experts about the accuracy of the EIR’s environmental forecasts. (See Eureka Citizens for Responsible Gov’t v. City of Eureka (2007) 147 Cal.App.4th 357 (City could accept expert’s findings on noise impacts despite disagreement over methodology used); California Oak Found. v. City of Santa Clarita (2005) 133
Cal.App.4th 1219, 1243 (City could rely on its water management plan rather than contrary evidence.)

The lead agency is free to reject criticism from an expert or a regulatory agency on a given issue as long as its decision to do so is supported by substantial evidence. (Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal. (1988) 47 Cal.3d 376, 408.)

As mentioned above, SANDAG’s transportation modeling did address the topic of induced demand using appropriate methodologies that CARB has found acceptable for purposes of demonstrating SB 375 compliance. SANDAG did not use an approach to induced demand based on the Victoria Transport Policy Institute Study because SANDAG relies on empirical data collected from travel behavior surveys conducted in the San Diego region. While SANDAG does review academic studies to understand trends and methodologies being used elsewhere, transportation modeling in the San Diego region is based on actual travel behavior in this region.

**MASTER RESPONSE #9**

**PROJECT’S OVERALL CONSISTENCY WITH INTENT AND GOALS OF SB 75 AND AB 1358**

Several comments were submitted regarding the project’s overall consistency with intent and goals of SB 375 and AB 1358. In addition, comments were submitted on the 2050 RTP/SCS Draft EIR regarding the relationship between vehicle miles travelled (VMT) and greenhouse gas (GHG) reduction. These comments also questioned the network components proposed as part of the RTP and how the RTP would meet the goals and intent of SB 375 and AB 1358. Comments also assert that the increase in GHG emission between 2035 and 2050 undermines the goal of SB 375.

**Intent and Goals of SB 375**

SB 375’s intent and goals are implemented through achievement of regional GHG reduction targets for 2020 and 2035 (see Master Response 2.) The 2050 RTP/SCS achieves these targets, and therefore is consistent with the intent and goals of SB 375. Since SB 375 does not require achievement of GHG reduction targets for 2050, the EIR GHG impact significance threshold related to achieving SB 375 targets is inapplicable to the year 2050.

The 2050 RTP/SCS focuses on transportation and land use strategies that SB 375 is intended to promote. The key to the Draft 2050 RTP/SCS is a balanced approach that provides many choices for people to get to work, school, or play. The 2050 RTP/SCS does not represent “business as usual” investments in primarily highway expansion. The Draft 2050 RTP/SCS includes more investment in transit and alternative modes compared to any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are five new light rail transit lines, new express bus services, and increased frequencies for all transit modes (see 2050 RTP/SCS Chapter 6). The Draft 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs (see 2050 RTP/SCS Chapter 8).

The SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region as envisioned by SB 375. Much of the San Diego region will remain undeveloped in the future because of the designated park, open space, national forest, and habitat lands. More than 80 percent of new housing will be higher density. Seventy-nine percent of all housing and 86 percent of all jobs will be located within the areas where the greatest investments in public transit are being made (within the Urban Area Transit Strategy Study Area). Meanwhile, the Plan will maintain more than 50 percent of the region's land area as open space and parkland (see 2050 RTP/SCS Chapter 3).
Air Resources Board Review of Draft SCS

A technical review of SANDAG’s draft SB 375 Sustainable Communities Strategy (SCS) was conducted by the Air Resources Board (ARB or Board) staff (Informational Report on the San Diego Association of Governments’ Draft SB 375 Sustainable Communities Strategy, California Environmental Protection Agency, Air Resources Board, September 13, 2011). That report indicates that quantification of GHG emissions from the draft SCS will meet the ARB target of 7 percent per capita reduction in 2020 and a 13 percent per capita reduction by 2035. As a result, ARB staff will recommend that the Board accept the SANDAG finding that implementation of the SCS would meet the targets. If SANDAG modifies the draft SCS (although no such change is proposed in the Final EIR), ARB staff would review the changes to determine the impact on greenhouse gas emissions. ARB staff would then inform the Board of the outcome, including any need to reconsider whether the final SCS would meet the target.

Electronic copies of this document, which is hereby incorporated by reference into the Final EIR, can be found on ARB’s website at http://www.arb.ca.gov/cc/sb375/sb375.htm. Alternatively, paper copies may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990.

The ARB staff review focused on the technical aspects of the regional modeling and supporting analyses that underlie the GHG quantification. This includes the modeling results, model inputs, and other supporting analyses. The review methodology was intended to provide the framework for a transparent evaluation of the reductions in GHG emissions expected from SANDAG’s draft SCS. The four specific technical components of ARB staff’s review method are: the travel model, data inputs and assumptions, sensitivity analyses, and regional performance indicators.

The report indicates that SANDAG validated their model following CTC and FHWA guidelines to test the capability of SANDAG’s travel demand model to predict future travel behavior. The validation process involves comparing model outputs for the base year with observed or empirical travel data. The CTC 2010 RTP guidelines, which include both requirements and recommendations, direct large MPOs like SANDAG with rapid growth, large population centers, and established transit systems to employ enhanced modeling capabilities and validation procedures. SANDAG’s travel model meets these requirements. The model must also respond reasonably to the time, cost, and other factors that affect travel choices. To address this, SANDAG’s model uses capacity sensitive assignments to estimate the peak and off-peak link volumes and speeds.

As described in the report, the SANDAG travel demand model satisfies the requirements of the CTC 2010 RTP guidelines overall. SANDAG used the latest land use, population, employment, and other network-based assumptions in their travel demand model, consistent with the 2010 RTP guidelines. Appendix B of the report describes the requirements in the Guidelines that SANDAG’s model applied, as well as the CTC recommendations that SANDAG incorporated into the model. A letter from Caltrans District 11 was submitted to SANDAG on July 8, 2011 supporting ARB staff’s conclusion.

The relationship between VMT and GHG emissions

Many of the comments refer to changes in VMT in association with changes in GHG emissions. While there is a relationship between VMT and CO₂ emissions, it is not a 1-to-1 relationship, and there are a number of factors that may affect CO₂ emissions but may not necessarily affect VMT. Vehicle fleet makeup is expected to change over time, and more efficient vehicles will make up a larger vehicle fleet mix as older, less efficient vehicles are retired. This will increase overall efficiency and reduce CO₂
emissions, even if total VMT does not change. In addition, implementation of AB 1493 (Pavley I)\(^3\) will create more fuel-efficient vehicles, while implementation of the Low Carbon Fuel Standard (LCFS)\(^4\) will lower the carbon content of fuels. All of these factors may lead to CO\(_2\) emissions reductions without affecting VMT. While VMT is a component included in estimating GHG emissions and lowering VMT would also lead to a reduction in GHG emissions, for the above reasons, evaluating GHG emissions directly is a more appropriate measure of climate change impact than evaluating VMT.

**Per-Capita Vehicle-Related CO\(_2\) Emissions and VMT**

The 2050 RTP/SCS correctly includes a discussion of VMT of all vehicle classes between 2008 and 2050, establishing the changes in VMT expected from existing (2008) conditions to the horizon year (2050) (Table TA 3.1: Performance Measure 22). This analysis shows a -1% change in daily per capita VMT for all vehicle classes. Section 3 of the 2050 RTP/SCS includes a discussion of changes in daily per-capita GHG emissions only for passenger vehicles (Table 3.1). That analysis showed a -9% change in GHG emissions from 2005 to 2050. (Please note that the 1 percent change and 9 percent numbers taken from the draft 2050 RTP/SCS have changed in the final 2050 RTP/SCS due to modifications to the network and rounding to the nearest whole number. The final 2050 RTP/SCS includes 2 percent and 10 percent numbers, respectively. The project description changes are described in Master Response 13.)

Some of the comments have incorrectly compared these numbers. In order to clarify the differences in the analyses, the tables below show the relationship between two data sets that are not comparable. Table 1 shows the RTP/SCS impacts on per-capita emissions of CO\(_2\), while Table 2 shows impacts on VMT through 2050.

<table>
<thead>
<tr>
<th>Year</th>
<th>CO(_2) per capita (tons)</th>
<th>Change from 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB 375 Vehicles</td>
<td>All Vehicles</td>
</tr>
<tr>
<td>2005</td>
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</tr>
<tr>
<td>2008</td>
<td>24.9</td>
<td>28.0</td>
</tr>
<tr>
<td>2010</td>
<td>23.8</td>
<td>26.4</td>
</tr>
<tr>
<td>2020</td>
<td>22.4</td>
<td>25.8</td>
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<td>22.6</td>
<td>26.7</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>VMT per capita</th>
<th>Change from 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB 375 Vehicles</td>
<td>All Vehicles</td>
</tr>
<tr>
<td>2005</td>
<td>25.4</td>
<td>27.6</td>
</tr>
<tr>
<td>2008</td>
<td>24.4</td>
<td>25.6</td>
</tr>
<tr>
<td>2010</td>
<td>23.4</td>
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</tr>
<tr>
<td>2020</td>
<td>22.3</td>
<td>23.6</td>
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<td>22.8</td>
<td>24.3</td>
</tr>
<tr>
<td>2050</td>
<td>23.6</td>
<td>25.2</td>
</tr>
</tbody>
</table>

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\(^3\) Assembly Bill (AB) 1493 required the California Air Resources Board (ARB) to set emission standards for greenhouse gas emissions from new passenger vehicles. The current standards (Pavley I) are set for vehicles from 2010 – 2016.

\(^4\) Senate Bill (SB) 1078, SB 107, and SB X1-2 referred to as the Low Carbon Fuel Standard (LCFS), requires that 33% of electricity retail sales be served by renewable energy by 2020.
The analysis of vehicle-related GHG emissions in the 2050 RTP/SCS and Draft EIR focuses on 1) impacts from all vehicle types, and 2) impacts related to compliance with SB 375, which has targets of per capita GHG reductions for light-duty (passenger) vehicles only. Comments regarding the 2050 RTP/SCS and Draft EIR questioned why the 2050 RTP/SCS estimates a 9% decrease in per capita GHG reductions by 2050 (Table 2-2 of the Draft RTP/SCS), but only a 1% decrease in. This response presents reasons for the differences in those reductions, which are related to differences in (1) base year, and (2) analysis of total vehicle versus only light-duty vehicles, as required by SB 375. These differences can result in apparent discrepancies between information presented in various sections of the RTP and EIR. However, the information in both documents is consistent in both documents once base year and vehicle class are taken into account.

In addition, these comments misinterpret information provided in the Draft 2050 RTP/SCS. In that document, SANDAG forecasts a 1 percent drop in total Vehicle Miles Traveled (VMT) between 2008 and 2050. Over the same time period, SANDAG forecasts a 29 percent reduction in per capita GHG (based on CARB vehicle and fuel standards) (2050 RTP/SCS Table TA 3.1: Performance Measure 31).

As shown in Table 2, the per-capita CO₂ emissions decrease by 14% in 2020 and 13% in 2035 compared to 2005 conditions, meeting the targets of SB 375. Per-capita GHG emissions from all vehicle classes also decline, as does VMT (Table 2). However, the percent change in GHG emissions is not the same as the percent change in VMT over time, as explained above. Thus, a small reduction in VMT over time (e.g., 8% decrease in VMT 2005 – 2050) does not accurately reflect the vehicle-related impact to climate change (11% decrease in transportation-related CO₂ emissions 2005 – 2050), which includes vehicle fleet makeup, efficiency, and fuel carbon content, in addition to VMT.

SB375: Agricultural Resources and Forest Lands

Additionally, SB 375 states that, “the metropolitan planning organizations shall consider financial incentives for cities and counties that have resource areas or farmland.” SANDAG manages and implements the TransNet Environmental Mitigation (EMP) Program, which is one potential source of financial incentives. EMP funds have been used for the conservation of critical habitat areas. As these lands are acquired in advance of their mitigation needs, a section of the TransNet Ordinance allows for additional funds related to economic benefit to be released. These “economic benefit” funds could be used to preserve land that supports biological preserves that include working landscapes such as agricultural lands. These lands are beyond the mitigation requirements of a project and provide additional acquisition, management, and/or monitoring that may be necessary to enhance the regional preserve system. The amount and timing of the release of economic benefit funds, and the actual lands that could be acquired have not been determined. Because forest lands are likely to be located within biological preserves, the EMP program would also help conserve forest lands.

Intent and Goals of AB 1358

The proposed Final 2050 RTP/SCS is being revised to include Complete Streets supportive language, supporting the intent of AB 1358. SANDAG's existing programs that support Complete Streets include the Active Transportation and Smart Growth Incentive grant programs, Complete Streets Education Program from the Regional Bicycle Plan, and the TransNet Routine Accommodations policy. Complete streets training is a proposed program element in SANDAG’s Regional Bicycle Plan. While these programs support the intent of AB 1358 (2008), the legislation is implemented only through amendment of general plan circulation elements to include Complete Streets policies, and does not impose any legal requirements on SANDAG.
MASTER RESPONSE #10
PROJECT FUNDING, PHASING, AND TRANSENT

Several comments were submitted on the 2050 RTP/SCS EIR which questioned the allocation of funding for transportation improvements over the 40-year horizon and stated that most of the funding was being allocated to highways in the early years of the plan and transit in the later years of the plan. Further, comments recommended front-loading transit investments in the earlier years and building highways in the later years of the plan, if needed. Specific responses to the 50-10 and Fast plans, which prioritize transit events, are presented in Master Response 17.

Funding Allocation

As shown in Table 5-2 of the 2050 RTP, the 2050 RTP/SCS dedicates nearly half of its projected expenditures to transit, a larger investment than any previous RTP. Improvements will include enhanced frequencies on trolleys and most buses (15 minutes or better by 2020, 10 minutes or better by 2035); new Rapid Bus, Bus Rapid Transit (BRT) and Express BRT services in key corridors that utilize limited stops, faster boarding methods, and signal priority technology for higher-speed service; expanded Light Rail Transit (LRT) and Express LRT services that will expand and enhance the existing trolley network, including a downtown trolley tunnel; expanded commuter rail services via improvements to the COASTER; high-speed rail; and streetcars/shuttles in high-density neighborhoods. In addition, the bulk of the highway expenditures in the 2050 RTP are for Managed Lane projects that directly support transit and carpooling. This constitutes an unprecedented investment in a wide variety of transit services to fit the differing needs of travelers in the San Diego region.

As mentioned above, most of the highway expenditures included in the 2050 RTP/SCS are for managed lanes that will accommodate transit and carpooling. Many of the highway facilities to be constructed in the next 10 years will serve transit routes. The current transit strategy priorities reflect the aim of having a mixture of rail and bus transit improvements in each phasing period. In July 2011, the SANDAG Board of Directors accepted modifications to the I-5 North Coast Corridor Project to reflect the I-5 North alternative selected by Caltrans and FHWA and advanced Phase 1 of the Mid-City Light Rail Trolley. The funding that was previously allocated to the additional two general purpose lanes was redistributed by advancing initial phase of the transit project and supplementing funding to Safe Routes to Transit, Regional Rail Grade Separations, and additional Smart Growth Incentive Program funding.

Project Phasing

The Draft EIR (Section 6.5.1, p. 6-201) points out that an extreme phasing alternative is legally infeasible as well as economically infeasible. Federal law (23 CFR 450.322(b)(11)) requires RTPs to be revenue constrained. RTPs legally may include only those projects based on reasonable revenue projections. The extreme front-loading of transit investments during the early years recommended by comments is infeasible because restrictions on how funds can be used prevent major shifts in funding from highway projects to transit. This limited flexibility is further constrained by the annual allocation of most funds, which cannot be advanced. The state and federal governments provide the region funding for transportation projects that are allocated by gas tax receipts and population formula. These funds are distributed annually across the state and/or country and cannot be advanced.

For transit projects, a significant portion of the TransNet funding is allocated to support substantial transit investments in the 2050 RTP/SCS. More than half (56%) of the TransNet Early Action Program through 2015 (along with other local, state, and federal revenues it leverages) funds transit projects included in the 2050 RTP/SCS, such as improvements to LOSSAN, SPRINTER, Blue Line Trolley, and implementation of the Mid-Coast LRT and Mid-City Rapid. When the TransNet Ordinance passed in 2004, it included...
provisions that outlined how projects identified in the Ordinance could be modified. Some projects and programs in the ordinance specifically require two-thirds voter approval to modify, which may be difficult to achieve, depending on the projects involved. Some examples of these projects and programs include improvements to State Routes 76 and 52, which are already under construction, the Mid-Coast Light Rail Project, and the Environmental Mitigation Program. Other projects and programs require a two-thirds vote of the SANDAG Board of Directors to modify, which also may be difficult to achieve, depending on the projects involved. These projects include all the other highway and transit projects outlined in the Ordinance.

The 2050 RTP/SCS financing strategy assumes 50% match from non-TransNet sources for major capital transit projects. SANDAG competes with other regions in the country for New Starts dollars to match TransNet funding. New Starts is a federal program through the Federal Transit Administration to build new large transit capital projects. SANDAG made reasonable assumptions about how many New Starts grants could be awarded in the San Diego region knowing that the funding is allocated throughout the country. It is unreasonable for SANDAG to make overly aggressive assumptions about how many New Starts grants could be awarded due to the limited funding available at the federal level and the inability to identify adequate funding to support ongoing operations of any such facilities.

The TransNet Ordinance requires the SANDAG Board of Directors evaluate the expenditure plan every 10 years (first reevaluation will occur in 2018) to ensure the ordinance is aligned with the region’s priorities which could change over time. The Board of Directors has discussed modifications to the TransNet measure and are reaffirmed the priorities identified in the measure and the TransNet Early Action Program.

Operating Expenses

The 2050 RTP/SCS must be revenue constrained in that SANDAG cannot front load the Plan with projects prior to receiving revenue. In the first 20 years, the San Diego region expects, based on reasonable assumptions, to receive only one-third of the total projected revenues, with two-thirds of the revenues available in the last 20 years of the Plan. If significantly more transit were to be built in the earlier years of the Plan, there are no funds identified or available to support the operations of those facilities, which has been an on-going issue with transit operations. As is outlined in the 2050 RTP/SCS (Chapter 5, Table 5.2), operating expenses for transit increase substantially from decade to decade due to the expected increased operating expenses over time and the additional services that must be operated as each decade’s projects get built. The problem in recent years has been reduced operating revenues due to the recession and cuts in state funding for transit, which has resulted in major service cutbacks in rail and bus services. Adding in more funding for transit operations to reinstate lost services and add new services in the early decades of the plan while desirable, would increase the overall costs for operating transit significantly though the horizon year of the plan, well beyond expected revenue levels.

MASTER RESPONSE #11

SCS LAND USE PLAN AND HOW IT ACHIEVES THE INTENT OF SB 375

Several comments were submitted questioning whether the land use plan assumed in the SCS met the intent of SB 375 and whether SANDAG could use additional tools to encourage smart growth development. Although these comments largely focus on the content of the SCS and not the EIR, a Master Response is provided below.
SCS Land Use Pattern

The SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region as envisioned by SB 375. Much of the San Diego region will remain undeveloped in the future because of the designated park, open space, national forest, and habitat lands. More than 80 percent of new housing will be higher density. Seventy-nine percent of all housing and 86 percent of all jobs will be located within the areas where the greatest investments in public transit are being made (within the Urban Area Transit Strategy Study Area). Meanwhile, the Plan will maintain more than 50 percent of the region's land area as open space and parkland (see 2050 RTP/SCS Chapter 3).

Process for Developing Regional Growth Forecast and SCS and Limits of SANDAG’s Land Use Authority.

Comments suggest that to the extent that the SCS represents an integration of local general plans, it promotes “business as usual” sprawl development. As explained in Draft EIR Section 2.0.4, the 2050 Regional Growth Forecast is the foundation of the SCS land use pattern, and was developed using several sources of information, not just existing general plans. The 2050 Regional Growth Forecast is based on economic and demographic projections for 2050, existing land use plans and policies, and potential changes to those plans and polices, including draft general plan updates, which were developed by local governments.

The Regional Growth Forecast and SCS reflect the intent of SB 375 because they rely on many local general plans in the region that have adopted smart growth policies consistent with SB 375’s intent. Since adoption of the Regional Comprehensive Plan (RCP) in 2004, several local jurisdictions have updated their land use plans to reflect the smart growth and sustainable development principles outlined in the RCP. The most populous jurisdiction in the region, the City of San Diego, adopted a comprehensive update to its general plan in 2008 which sets a City of Villages strategy that mirrors the RCP. In 2005, the City of Chula Vista approved an update to their general plan to include smart growth principles and as recent as August 2011, the County of San Diego adopted a General Plan update that focuses growth and development to reduce sprawl in the back country. Another example of land use changes includes the City of National City, which adopted a General Plan update in 2011. The City of National City’s general plan update was designed around achieving SB 375’s intent. Also, general plan updates which will address smart growth policies and SB 375 are underway in the cities of Vista and Encinitas, among others. Finally, and as further described in MR 21 (see Table 2), many jurisdictions are also in the process of developing or have scheduled development of Climate Action Plans to address global climate change.

Further, federal air quality conformity law requires RTPs to be based on the “most recent planning assumptions” at the time the conformity analysis begins. (40 CFR 93.110(a).) If the 2050 RTP/SCS provided a land use pattern than was substantially different from local general plans and planning assumptions, the RTP would be inconsistent with air quality conformity law, and the Draft EIR’s analysis of future conditions and impacts would not be realistic. As further explained in Master Response 4, SANDAG has no authority to adopt local land use plans or approve local land use projects that will implement the SCS. SB 375 specifically provides that nothing in SB 375 supersedes the land use authority of cities and counties, and that cities and counties are not required to change their land use plans and policies, including general plans, to be consistent with an RTP/SCS. (Government Code §65080(b)(2)(K).)
Additional SANDAG Smart Growth Incentives and Tools

SANDAG does work closely with local jurisdictions to provide incentives and tools to encourage smart growth. These incentives include giving higher priority to transit investments in areas where local jurisdictions are planning for smart growth in the preparation of the RTP and by providing planning and capital grants. The SANDAG Smart Growth Tool Box includes additional tools including visualization tools and a photo library to illustrate smart growth development in a variety of settings, Smart Growth Design Guidelines, a Smart Growth Trip Generation/Parking Study and other tools. In addition, the TransNet Smart Growth Incentive Program provides planning and capital grants to local jurisdictions planning for smart growth development. The criteria adopted by the SANDAG Board of Directors for the capital grants give weight to areas with the highest land use densities and existing transit service. The complete evaluation criteria are available at http://www.sandag.org/uploads/projectid/projectid_340_8985.PDF How the SCS Achieves SB 375’s Intent

ARB Finding That 2050 RTP/SCS Meets SB 375 Regional Targets

A technical review of SANDAG’s Draft SB 375 Sustainable Communities Strategy (SCS) was conducted by the Air Resources Board (ARB or Board) staff (Informational Report on the San Diego Association of Governments’ Draft SB 375 Sustainable Communities Strategy, California Environmental Protection Agency, Air Resources Board, September 13, 2011). That report indicates that quantification of GHG emissions from the draft SCS will meet the ARB target of 7 percent per capita reduction in 2020 and a 13 percent per capita reduction by 2035. As a result, ARB staff will recommend that the Board accept the SANDAG finding that implementation of the SCS would meet the targets.

MASTER RESPONSE #12
REGIONAL GROWTH PROJECTIONS

Comments submitted for the 2050 RTP/SCS EIR asked about the differences between the 2010 census data and the Draft EIR 2010 estimates of population and housing. They also asked about the accuracy of the Draft EIR’s 2010 estimate of employment (adjusted from EDD 2008 data), and whether more current EDD or other estimates of employment are available. Comments also inquired about the difference between 2008 population estimates in the 2050 RTP/SCS and the EIR 2010 baseline. Some comments reflected a misunderstanding of how the SANDAG’s Regional Growth Forecast was developed. Others asked about the implications of alleged inaccuracies in the Draft EIR’s 2010 baseline demographic data for the accuracy of SANDAG’s growth forecast, and for the accuracy of EIR impact analysis. Lastly, comments asked about the implications of the Draft EIR’s 2050 population projection being 2.7% lower than projected by the Department of Finance.

Why 2010 Census Data Were Not Used in EIR

A Lead Agency need not delay an EIR to include all results of “works in progress” that might shed some additional light on the EIR’s subject. (See Towards Responsibility in Planning v. City Council (1988) 200 Cal.App. 3d 671, 681.) SANDAG did not include Census 2010 information in the Draft 2050 RTP/SCS or the EIR due to the schedule conflicts between the Draft 2050 RTP/SCS, the Draft EIR, and the Census 2010 data releases. The 2050 RTP/SCS was released for public review on April 22, 2011, and the Draft EIR was released for public review on June 7, 2011; demographic data to serve as the baseline for both documents had to be decided upon well before these dates, since they are the basis for both planning and environmental impact assessment. The Summary File 1 tables from Census 2010, which contain key information about the age and household structure of the population, were not released until June 23,
Differences Between EIR Baseline Data and Other Sources

The 2010 baseline for the DEIR were developed using the best available sources at the time of publication of the EIR Notice of Preparation (NOP), as required by CEQA. This data included 2010 population estimates from the California Department of Finance, 2010 housing unit and household estimates from the SANDAG housing inventory (based on data from the San Diego County Assessor, local building permits, aerial imagery, and other sources), and 2008 employer records from the California Employment Development Department (EDD), U.S. Department of Defense, and local self-employment business licenses.

Table 1 compares the baseline data in the Draft EIR with other sources.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Benchmark</th>
<th>Estimate in EIR and RTP</th>
<th>Numeric Difference</th>
<th>Percent Difference</th>
<th>Source for Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>3,095,313</td>
<td>3,224,432</td>
<td>129,119</td>
<td>4.2%</td>
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<tr>
<td>Housing Units</td>
<td>1,164,786</td>
<td>1,149,426</td>
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<td>-1.3%</td>
<td>U.S. Census Bureau, Census 2010</td>
</tr>
<tr>
<td>Total Jobs (2008)</td>
<td>1,500,180</td>
<td>1,501,080</td>
<td>900</td>
<td>0.1%</td>
<td>California Employment Development Department, Industry Employment and Labor Force – annual average, September 2011</td>
</tr>
<tr>
<td>Civilian Wage &amp; Salary Jobs</td>
<td>1,309,300</td>
<td>1,310,200</td>
<td>900</td>
<td>0.1%</td>
<td>California Employment Development Department, Industry Employment and Labor Force – annual average, September 2011</td>
</tr>
<tr>
<td>Military</td>
<td>89,269</td>
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<td>0</td>
<td>0.0%</td>
<td>U.S. Department of Defense, NAVFAC Southwest</td>
</tr>
<tr>
<td>Self-employment</td>
<td>101,611</td>
<td>101,611</td>
<td>0</td>
<td>0.0%</td>
<td>Business license records from local jurisdictions</td>
</tr>
</tbody>
</table>

It is important to note that jobs, housing, and land use data used as the Draft EIR baseline are consistent with the most current sources, including Census 2010. Details are provided below.

Jobs

Published EDD numbers refer only to civilian wage-and-salary workers, and do not include the nearly 100,000 each of uniformed military jobs and self-employed workers in the region, which comprise a substantial portion of the region’s workforce. The uniformed military data come directly from the Department of Defense, and self-employment counts are estimated based on local business license records. The SANDAG 2008 estimates are consistent with the EDD annual average data for wage-and-salary jobs (1.3 million in 2008 and 1.2 million in 2010), but the SANDAG estimates and projections also include uniformed military and self-employed workers, which EDD data do not include.

With respect to more recent employment data, EDD provides SANDAG with the data for a given year in (approximately) early autumn of the following year. Once received, there is a six-month process to geocode and verify the individual employer records. Thus, the 2010 EDD data were not available at the
time the NOP was published, and were not received until after the release of the DEIR. As explained later in this response, the 900 job difference between the 2008 employment baseline used in the Draft EIR and the EDD 2008 employment estimate has minimal effect on the accuracy of SANDAG’s employment projections. By 2010 both the SANDAG forecast and current EDD annual average estimates show just over 1.2 million jobs.

**Population**

There is some difference (129,119 persons, or about 4 percent) between the DOF population estimate for 2010 used as the EIR baseline and the U.S. Census Bureau population count for 2010. However, the SANDAG transportation model is driven primarily by jobs, housing, and land use, all of which show a high degree of accuracy when compared with most recent benchmark data.

**Housing**

The Draft EIR baseline housing unit estimates are 1.3% less than the 2010 Census counts. The SANDAG estimate reflects January 1, 2010, while the Census count reflects April 1, 2010. The four-month later date for the Census reduces the size of the difference in housing unit counts between the two sources. In addition to the four month difference in data collection (SANDAG forecast date of January 1, and Census date of April 1), the Census also includes a number of housing units that SANDAG, the County Assessor, and local jurisdictions consider to be resort or tourism related. For example, there are several cases where hundreds of time share units were counted by the Census Bureau as “housing” whereas SANDAG considers those units to be part of a “resort” and not part of the housing stock. If the 2010 census data were to be adjusted back to January 1 and if resort or tourism housing units were deleted from the 2010 census data, there would be minimal difference in housing estimates between the SANDAG 2010 estimate and the 2010 Census.

**Why RTP/SCS Baseline Was 2008 and EIR Baseline Was 2010**

SANDAG initiated the 2050 Regional Growth Forecast in 2008. The baseline for the 2050 RTP/SCS was 2008 as that was the year the growth forecast was initiated. A growth forecast takes approximately 18 months to develop, which is why there is a lag between the baseline data SANDAG’s RTPs and the year of the RTP.

For the EIR, CEQA requires the baseline be set at the time the NOP is published. SANDAG distributed the NOP on April 19, 2010, thereby establishing the baseline year for the EIR as 2010. The legal adequacy of the EIR’s 2010 baseline is not affected by use of a different baseline year (2008) for the 2050 RTP/SCS.

**Accuracy of SANDAG Regional Growth Forecast**

SANDAG is entitled to make reasonable assumptions regarding population projections. (See *City of Long Beach v. Los Angeles Unified School District* (2010) 176 Cal.App.4th 889; *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018 [“A public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true.”].) Technical data, such as demographic projections, used in an EIR are not held to a standard of absolute perfection, and an EIR’s sufficiency is reviewed in light of what is “reasonably feasible.” (See CEQA Guidelines §15151.)

The RTP/SCS and the DEIR rely on SANDAG’s 2050 Series 12 Regional Growth Forecast for demographic projections. (DEIR, Sec. 4.13.1.1, p. 4.13-1.). The 2050 Regional Forecast was an initial
step in preparing the RTP/SCS, and was accepted for use by SANDAG’s Board on February 26, 2010. A technical update to the forecast was released with the draft RTP in April 2011. SANDAG uses this forecast to comply with all applicable statutes and regulations regarding the RTP, SCS and the RHNA from SB 375 and the California Transportation Commission RTP Guidelines. (See http://www.sandag.org/index.asp?projectid=355&fuseaction=projects.detail) Please note that the ARB (2011) has accepted the transportation modeling SANDAG used to demonstrate the achievement of SB 375 regional GHG reduction targets; this modeling was based on growth forecasts from the Regional Growth Forecast.

The Regional Growth Forecast is completed in two stages and is an iterative process. During the first stage, based on the most up-to-date data available, SANDAG staff produces a forecast for the entire San Diego region, called the regionwide forecast. This regionwide forecast does not include any land use constraints, but simply projects growth based on existing demographic and economic trends such as fertility rates, mortality rates, domestic migration, international migration, and economic prosperity.

During the second stage, SANDAG staff develops a subregional forecast by working with local jurisdictions to understand existing land use plans and planning assumptions. These local land use plans and planning assumptions then become an input to a subregional, or neighborhood-level, forecast model that utilizes data on existing development, future land use plans, proximity to existing job centers, past development patterns, and travel times to project where growth is likely to occur in the future. As directed by the SANDAG Board of Directors in July 2009, SANDAG staff provided a presentation on the 2050 growth forecast to each jurisdiction at a council, supervisor, and/or planning commission meeting. At these meetings, SANDAG requested each jurisdiction's assistance developing local land use scenarios beyond the 20-25 year horizon of most existing local general plans. Each jurisdiction provided a vision of their community beyond the horizon of their general plans. Upon collecting information from each jurisdiction, SANDAG staff produced a draft subregional forecast in early 2010. (See: http://www.sandag.org/index.asp?projectid=355&fuseaction=projects.detail)

SANDAG has a strong record of accurately producing population forecasts over the past four decades, even in cases where the starting point was not a Census data year. For more than three decades SANDAG forecasts have averaged less than one half of percent error per forecast year, regardless of the starting date. (See: SANDAG Board of Directors Meeting, staff presentation, February 26, 2011.)

**No Material Differences in Growth Forecasts**

SANDAG believes that any slight inaccuracies in 2010 baseline data, if they were to exist, would have negligible consequences for demographic forecasts to 2050. For example, SANDAG’s slightly lower 2010 population estimate compared to US Census counts would be offset by the higher fertility rates of a higher Hispanic population estimated by the US Census. The 2010 Census found 32.0 percent of the region’s population to be Hispanic, whereas the SANDAG 2010 estimate was 30.6 percent. Higher fertility rates would lead to a faster-than-projected rate of growth, which would, over time, offset the slightly lower 2010 estimate.

SANDAG believes that the 2020, 2035, and 2050 employment projections are accurate and not overly optimistic. Although EDD data show a slight decline in employment in 2010 compared to the 2008 EIR baseline, recent trends show a recovery underway. When comparing each month with the same month from the prior year, based on figures from EDD, the region has been steadily adding jobs since July 2010.

The SANDAG employment forecast does take the recession into account. The forecast shows region-wide job losses during the recession years, followed by a period of high unemployment during the first few years of the economic recovery. To date, the region-level SANDAG projections for wage-and-salary jobs
and unemployment have tracked very closely with the peak of the recession and beginning of the recovery, when compared with data published by EDD. For example, SANDAG projected a 10 percent unemployment rate for 2010 and a 9 percent rate for 2011. The actual monthly rate in 2010 was between 10.1 and 10.9, and in the first half of 2011 has been between 9.8 and 10.5. In terms of wage and salary jobs, the SANDAG forecast projects an annual average of 1.26 million for 2011. While annual average data are not yet available from EDD, monthly data show mid-year (June 2011) employment of 1,256,400. Given that end-of-year jobs figures tend to be higher than mid-summer as retail hires more staff for the holidays, it appears that the 2011 projection is on track. (Source: California Employment Development Department, Labor Market information Division, August 2011).

The Series 12 forecast is in alignment with a variety of other projections. For example, EDD projects 1,578,000 employed residents in San Diego County by 2018 (California Employment Development Department, Labor Market Information Division, Projections of Employment by Occupation, March 2009 Benchmark). The Series 12 forecast projects 1,573,000, a difference of only 0.3%.

Based on the parameters outlined in SB 375, the SANDAG forecast must be within +/- 3 percent of population projections produced by the California Department of Finance. By 2050, SANDAG forecasts 2.7 percent fewer people in the San Diego region than the California Department of Finance, leaving the SANDAG projections well within the statutory range. The projections were reviewed twice by a panel of outside experts and were found to be reasonable. (See RTP Chapter 3.) In addition, it should be noted that SANDAG updates the forecast every 4 years, and will revisit the population projections at that time. Similarly, DOF is in the process of revising their 2050 projections to take new Census 2010 population information into account. The significance conclusions circulated in the draft 2050 RTP/SCS EIR and included in the final 2050 RTP/SCS EIR would not change as a result of this variation in projected population. To reiterate, the numbers used in the plan and used for evaluation purposes in the EIR are within the tolerance allowed by statute in SB 375.

With respect to the growth forecast taking market conditions such as vacancy rate into account, SANDAG assumes a continued relatively high vacancy rate through the first decade of the plan. SANDAG forecasts assume the vacancy rate will remain above 6 percent until 2015 and above 5 percent until 2019. By 2050, SANDAG forecasts a vacancy rate of 4.1 percent in the San Diego region.

**Differences in 2010 Population Estimates Have Minimal Effect on 2050 RTP/SCS and EIR**

A population difference of 129,119 people between the 2010 Census and the SR12 Growth Forecast would have minimal effect on VMT and VMT-related environmental impacts. The SANDAG travel demand model uses housing units as the base for person trip generation rather than population. Population by age group is used for home to school and home to college trip purposes but those trips purposes only account for 4.8% of the person miles traveled in the 2010 baseline model run.

Additionally, most early phased projects in the 2050 RTP/SCS are programmed based on current need from over-capacity highway segments or currently needed critical transit linkages to jobs and services. The need for these projects would not be affected by any small differences in 2010 population estimates. The 2010 State of the Commute indicates that in 2009 there was still 2.8 million annual freeway vehicle-hours of delay in the San Diego Region, including significant delay on many of the major corridors such as I-5, SR 78, I-15, and I-805 (http://www.sandag.org/uploads/publicationid/publicationid_1583_12975.pdf).

SANDAG calibrates the base year transportation model with current traffic counts collected from Caltrans and local jurisdictions and compares resultant model VMT to Caltrans Highway Performance
Monitoring System (HPMS) VMT figures published in the 2008 California Public Road Data report (http://www.dot.ca.gov/hq/tsip/hpms/hpmslibrary/hpmspdf/2008PRD.pdf). The calibration process is intended to ensure model accuracy, and in the process also offsets any potential inaccuracies in base dwelling unit, population, land use acreage, and employment numbers. The benefits of calibration then carry forward into traffic forecasts for future year.

The above discussion addresses transportation implications of the Draft EIR potentially overstating 2010 population by 129,119 people. Regarding other Draft EIR topics relying on population projections, a potential overstatement of 129,119 people in 2010, if carried forward to 2020, 2035, and 2050, would not change the relative amount of impact in those years compared to baseline conditions.

MASTER RESPONSE #13
PROJECT DESCRIPTION

Comments were received regarding the accuracy of the project description. Other comments asserted that the Draft EIR should provide a greater level of detail in the project description. The following response addresses these comments and summarizes the revisions made to the project between the Draft EIR and the Final EIR. Changes in impacts causes by these project description changes are described in Master Response 3. In no case, did changes to the project description result in a new significant impact or a substantial increase in the severity of a significant impact.

Level of Detail Provided in the Project Description

The purpose of the project description is to describe the project in a way that would be meaningful to the public, reviewing agencies, and decision makers. As provided in Section 15124 of the CEQA Guidelines, a complete project description must contain the following information but is not required to supply extensive detail beyond that needed for evaluation and review of the environmental impact: (1) the location and boundaries of the proposed project on a regional and detailed map; (2) a statement of objectives sought by the proposed project; (3) a general description of the project’s technical, economic, and environmental characteristics; and (4) a statement briefly describing the intended uses of the EIR. The project description included in the Draft EIR meets these requirements.

Information included in the project description was sufficient to conduct the EIR’s environmental impact analysis using accepted methodologies appropriate for the Program EIR’s level of detail. An EIR project description should not supply extensive detail beyond that needed for evaluation of environmental impacts.(CEQA Guidelines §15124(a).) Please refer to Master Response #1 regarding the level of detail appropriate for a Program EIR.

Transportation Network Improvement Revisions from Draft EIR to Final EIR

The project description, as presented in the Draft EIR, has been modified to include revisions to various highway, transit, and arterial improvements. The revised project description is included in the Final EIR, Chapter 2 Table 1 below describes each improvement change, the horizon year for the improvement to be implemented, the project name, and a comparison of the project details from the Draft EIR to the Final EIR.

The following categories of changes to the project description were made:

- I-5 North: The Draft EIR preliminarily evaluated potential changes to the impacts of the Draft 2050 RTP/SCS of modifying the I-5 (10F+4ML) improvements (from State Route 56 to Vandergrift) to an 8F+4ML facility, a facility consistent with SB 468. Since Caltrans
subsequently selected this alternative in the Final EIR for the I-5 North Coast Corridor (add citation), the 8F+4ML facility was incorporated into the Final 2050 RTP/SCS that is evaluated in the Final EIR. The funding that was previously allocated to the additional two general purpose lanes was redistributed by advancing initial phase of the transit project and supplementing funding to Safe Routes to Transit, Regional Rail Grade Separations, and additional Smart Growth Incentive Program funding. It should be noted that the change in the I-5 North project was made by Caltrans, and was not a discretionary decision made by SANDAG.

- Other changes to freeways and highway: As listed in Table 2.0-6 of the Final EIR, there are a few revisions to highway projects. For horizon year 2020, the managed lanes improvements for SR 15 from I-8 to I-805 were changed to transit only lanes. Also, the managed lanes improvements on SR 15 from I-805 to SR 94 originally in the 2020 phase will now be implemented by 2035. In addition, four I-5/SR 78 connector projects (two HOV to HOV connectors and two missing freeway connectors) will be advanced to 2035. The I-15/SR 78 HOV connector would be implemented by 2020 in the Final EIR instead of 2035 as included in the Draft EIR.

- Arterials: While SANDAG does not approve the regional arterial projects (see Master Response 23), some local jurisdictions indicated that project originally planned to be built within the next five years have been moved to later years and were removed from Table 2.0-7. In addition, Table 2.0-7 of the Final EIR provides revisions to the title, location, and description of certain arterial projects as indicated below in Table 1. The name of the Plaza Bridge project in National City has been corrected to Plaza Boulevard Widening. By horizon year 2020, improvements to Woodland Parkway and Barham Drive in the City of San Marcos will include widening and realignment of Barham Drive to accommodate a new eastbound SR 78 on-ramp. SM 48 in San Marcos, formerly titled SM 46 Bent Ave Bridge – San Marcos Boulevard to Discovery Street, was changed to the construction of a new connector road between Via Vera Cruz to Grand Avenue. Also in San Marcos, a new interchange at Smilax Road and SR 78 will be constructed by 2035.

- Changes in transit network: Table 2.0-5 of the Final EIR, which lists phased transit services, was revised to include changes to services implemented by 2020, 2035, and 2050. For horizon year 2020, BRT Route 688 will extend to San Ysidro, and a three new Airport express bus services will be implemented. Trolley Route 560 from SDSU to downtown via El Cajon Boulevard/Mid-City will be split into two phases, and the first phase, Mid-City to downtown via El Cajon Boulevard/Mid-City, will be implemented by 2035 instead of 2050. Phase 2, extending the Trolley line to SDSU, will be implemented by 2050. Also by 2050, Trolley Route 562 will continue to San Ysidro instead of terminating at Palomar Trolley Station in Chula Vista.

- Changes in SCS implementation actions: Table 2.0-3 of the Final EIR, which lists the SCS implementation actions, was revised to include the following new actions:
  - Prepare a regional Transit Oriented Development strategy as part of the Regional Comprehensive Plan update.
  - Provide additional guidance on Senate Bill 375 (Steinberg, 2008) (SB 375) California Environmental Quality Act streamlining provisions.
  - Continue to make enhancements to travel demand models to improve GHG and VMT estimates.
  - Evaluate the feasibility of developing preliminary maps that identify transportation infrastructure that could be vulnerable to environmental changes to climate change, including precipitation, heat, and sea level rise.
  - Modify actions to provide additional language to support complete streets principles.
<table>
<thead>
<tr>
<th>Horizon Year</th>
<th>Project Type (Transit, Highway, Arterial)</th>
<th>Transit Service/Project Name</th>
<th>Project Details in Draft EIR</th>
<th>Project Details Final EIR</th>
<th>Summary of Change</th>
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<tbody>
<tr>
<td>2020</td>
<td>Transit</td>
<td>BRT Route 688</td>
<td>Millenia/Otay Ranch to Sorrento Mesa Express</td>
<td>San Ysidro to Sorrento Mesa Express</td>
<td>Change from Millenia/Otay Ranch to San Ysidro</td>
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<tr>
<td></td>
<td></td>
<td>Airport Express</td>
<td>Not included as part of Draft EIR in 2020</td>
<td>Airport Express Routes with 30 minute peak and off peak headways</td>
<td>Addition of three Airport express bus service within existing right of way with 30 minute headways</td>
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<tr>
<td></td>
<td></td>
<td>I-15 from I-805 to I-8</td>
<td>SR 15 from SR 94 to I-8; 8F → 8F +2ML</td>
<td>I-15 from I-805 to I-8; 8F → 8F +2TL</td>
<td>Incorrectly labeled SR 15 in Draft. Corrected to I-15. Originally planned to begin from SR 94 in Draft EIR, but Final EIR beginning at I-805. The SR 94 to I-805 portion of this project pushed back to 2035. -- Managed Lanes (ML) changes to Transit Lanes (TL).</td>
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<td>I-15/SR 78 East to South &amp; North to West HOV Connectors</td>
<td>Projects not scheduled to be implemented until 2035.</td>
<td>Projects to be implemented by 2020.</td>
<td>Project Implementation adjusted/advanced to 2020 from 2035.</td>
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<tr>
<td></td>
<td>Arterial</td>
<td>NC01 in National City</td>
<td>Plaza Bridge</td>
<td>Plaza Boulevard Widening</td>
<td>Name clarification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SM24 in San Marcos</td>
<td>Modify existing ramps at Woodland Parkway and Barham Drive; widen and realign SR 78 undercrossing and associated work.</td>
<td>Modify existing ramps at Woodland Parkway and Barham Drive; widen and realign Barham Drive to accommodate a new eastbound SR 78 on-ramp; widen and realign SR 78 undercrossing and associated work.</td>
<td>Additional detail added: widen and realign Barham Drive to accommodate a new eastbound SR 78 on-ramp.</td>
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<tr>
<td></td>
<td></td>
<td>SM 48 in San Marcos</td>
<td>SM 46 Bent Ave Bridge – San Marcos Boulevard to Discovery Street</td>
<td>Creekside Drive: Construct approximately 3000 feet of a two-lane collector road from Via Vera Cruz to Grand Avenue in the City of San Marcos. The road will include two 12’ lanes, diagonal parking on the north side, and parallel parking on the south side. In addition, the project will also include a 10’ bike trail meandering along the south side.</td>
<td>Revised Project title and description</td>
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<td>Horizon Year</td>
<td>Project Type (Transit, Highway, Arterial)</td>
<td>Transit Service/Project Name</td>
<td>Project Details in Draft EIR</td>
<td>Project Details Final EIR</td>
<td>Summary of Change</td>
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<td>2035 Transit</td>
<td>Trolley Route 560</td>
<td>SDSU to downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to LRT)</td>
<td>Phase 1: Mid-City to downtown via El Cajon Blvd/Mid-City to be completed by 2035</td>
<td>Project split into phases and implementation timeframe adjusted/advanced to 2035 from 2050.</td>
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<tr>
<td>Highway</td>
<td>I-5 from SR 56 to Manchester</td>
<td>8F+2HOV → 10F+4ML</td>
<td>8F+2HOV → 8F+4ML</td>
<td>reduced from 10F+4ML to 8F+4ML.</td>
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<tr>
<td></td>
<td>I-5 from Manchester Ave to Palomar Airport Road</td>
<td>8F+2HOV → 10F+4ML</td>
<td>8F+2HOV → 8F+4ML</td>
<td>reduced from 10F+4ML to 8F+4ML.</td>
<td></td>
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<tr>
<td></td>
<td>I-15 from SR 94 to 805</td>
<td>SR 15 from SR 94 to I-8; 8F → 8F+2ML</td>
<td>I-15 from SR 94 to 805: 8F → 8F+2ML</td>
<td>-- Incorrectly labeled SR 15 in Draft. Corrected to I-15; -- Originally planned as one project from to begin from SR 94 to I-805 in Draft EIR, but Final EIR splits project in two phases, with the I-8 to I-805 occurring by 2020 and the SR 94 to I-805 portion occurring by 2035.</td>
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<tr>
<td>I-5/SR 78 Connector projects (4 total)</td>
<td>Projects not scheduled to be implemented until 2050.</td>
<td>Projects to be implemented by 2035.</td>
<td>Project Implementation adjusted/advanced to 2035 from 2050.</td>
<td></td>
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<tr>
<td>Arterial</td>
<td>SM 10 San Marcos</td>
<td>Not in Draft EIR</td>
<td>SR 78/Smilax: Construct new interchange at Smilax Rd. interchange and SR 78 improvements.</td>
<td>Project Added</td>
<td></td>
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<tr>
<td>2050 Transit</td>
<td>Trolley Route 560</td>
<td>SDSU to downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to LRT)</td>
<td>Phase 2: SDSU to downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to LRT) completed by 2050</td>
<td>Project split into two phases; Phase 1 implemented in 2035.</td>
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<tr>
<td></td>
<td>Trolley Route 562</td>
<td>UTC to Palomar Trolley Station via Kearny Mesa, Mission Valley, Mid-City, National City/Chula Vista via Highland Ave/4th Ave</td>
<td>UTC to San Ysidro via Kearny Mesa, Mission Valley, Mid-City, National City/Chula Vista via Highland Ave/4th Ave</td>
<td>This route was formerly from UTC to Palomar Trolley Station (in Chula Vista) in Draft EIR. In Final EIR, this route is planned to continue to San Ysidro.</td>
<td></td>
</tr>
<tr>
<td>Highway</td>
<td>--</td>
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<td>No other changes besides I-5/SR78 connector projects moving up to 2035.</td>
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<tr>
<td>Arterial</td>
<td>--</td>
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<td>No Arterial projects in 2050 horizon year</td>
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MATER RESPONSE #14
TRANSPORTATION THRESHOLDS (SIGNIFICANCE CRITERIA) SELECTED FOR THE 2050 RTP/SCS EIR

Several comments have been raised regarding the appropriateness of the thresholds of significance (referred to as significance criteria in the Draft EIR) selected to evaluate the transportation impacts of the 2050 RTP/SCS in the Draft EIR. Specifically, these comments suggest that the significance criteria evaluated in the Draft EIR reflect performance measures that are primarily automobile-oriented, including congestion and travel times, rather than evaluating sustainable performance measures such as overall quality of accessibility and mode split. Moreover, the comments suggest that the selected significance criteria also do not adequately analyze or address public transit and non-auto modes of transportation.

CEQA gives the lead agency the responsibility to determine whether an adverse environmental effect identified in an EIR should be classified as “significant” or “less than significant.” (CEQA Guidelines § 15064(b).) Under Section 15064(b), “the significance of an activity may vary with the setting” and, as a result, an inflexible definition of what constitutes a significant effect is not always possible. The lead agency has discretion to set its own significance criteria, which requires it to make a policy judgment about how to distinguish impacts which are adverse but significant from impacts which are adverse but not significant. (Eureka Citizens for Responsible Gov’t v. City of Eureka (2007) 147 Cal.App.4th 357.) A lead agency may select a standard of significance based on its judgment about an appropriate standard of significance. (Sierra Club v. City of Orange (2008) 163 Cal.App.4th 523, 541.) The standards of significance used in an EIR may also rely upon policies adopted and implemented by the lead agency. (Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477.)

2050 RTP/SCS Goals and Performance Measures

SANDAG developed nearly 40 performance measures for the 2050 RTP/SCS to gauge its progress toward meeting the RTP/SCS policy goals and objectives and to address its two overarching themes of Quality of Travel and Livability, and Sustainability. Quality of Travel and Livability relates to how the regional transportation system functions from the customer’s perspective, and includes the goals of mobility, reliability, and system preservation and safety. Sustainability relates to the manner in which the regional transportation system makes progress simultaneously in each of the Three “Es” (Healthy Environment, Prosperous Economy, and Social Equity) from a regional perspective. The SANDAG Board of Directors considered these goals during the development of the 2050 RTP/SCS, and it considered them all related and equally important.

In addition to the two overarching themes, other more traditional concepts were critical in SANDAG’s development of the 2050 RTP/SCS goals and performance measures. These concepts included providing convenient travel options, optimizing the transportation systems’ productivity for people and goods, tailoring transportation improvement to serve compatible land uses, and promoting alternative travel modes.

A list of the 2050 RTP/SCS performance measures is provided in Table 2.2 of the 2050 RTP/SCS. These performance measures evaluate indicators such as congestion and travel time, work and higher education accessibility, non-work related accessibility, economic impacts, work trip mode share, and total bike and pedestrian trips. In addition, the 2050 RTP/SCS performance measures contain a number of metrics to assess how well improvements are distributed in low income and minority communities (also known as LIM communities), and in communities with limited mobility and little civic or community engagement by residents. The performance measures projected the extent to which the 2050 RTP/SCS would shorten travel times and improve access to transit stops, schools, healthcare, the San Diego International Airport.
(SDIA), and everyday amenities such as shopping, parks, and beaches. These indicators measure performance on a system-wide basis, inclusive of all modes of transportation including automotive, transit, and non-motorized modes of travel throughout the San Diego region. Analysis of these performance measures allows SANDAG to gauge how well the transportation network improvements planned throughout the region over the next 50 years will meet the goals and objectives set forth in the 2050 RTP/SCS.

**Draft EIR Transportation Significance Criteria**

As described in Section 4.16.3 of the Draft EIR, the significance criteria selected to evaluate transportation impacts were primarily selected from a subset of the 2050 RTP/SCS performance measures. The transportation significance criteria are as follows:

**T-1:** Substantially increase average work trip travel time (in minutes). A substantial increase is equal to 3 minutes or greater.

**T-2:** Substantially decrease the percentage of work and higher education trips accessible within 30 minutes in peak periods. A substantial decrease is equal to 3 percent or greater.

**T-3:** Substantially decrease the percentage of non-work-related trips accessible within 15 minutes. A substantial decrease is equal to 3 percent or greater.

**T-4:** Substantially increase the congested vehicle miles travelled (LOS E and F) in peak periods. A substantial increase is equal to 3 percent or greater.

**T-5:** Impede response times for emergency access and response.

The significance criteria above represent performance measures that indicate how well the regional transportation system functions. These particular measures were selected as the best indicators of the significance of transportation impacts because they are multimodal and are closely tied to achieving RTP/SCS policy goals and objectives, such as travel time, congestion, and accessibility. SANDAG is entitled to rely upon their discretion and policy judgments in setting significance thresholds (see *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477.).

The significance criteria selected by SANDAG reflect all modes of travel. Significance criteria offered by commenters, such as VMT, often addressed or emphasized a single mode of travel, transit. Vehicle Miles Traveled is not a multi-modal performance measure. VMT does not address transit, bicycle, or pedestrian travel. SANDAG selected significance criteria reflecting all modes of travel because these criteria best address achievement of the RTP/SCS policy goals and objectives. They also were selected because it was feasible for the SANDAG transportation model to quantify whether the criteria were achieved by the 2050 RTP/SCS and alternatives. The performance of individual transportation modes (i.e., automotive, transit, and non-motorized) are built into the transportation model and are analyzed collectively to measure the overall average travel conditions in the region by any mode. Within the significance criteria, the selection of quantitative thresholds to indicate a substantial change was based upon the professional judgment of highly trained and experienced SANDAG transportation planning staff experts.

**Sustainability Objectives addressed in Other EIR Sections and SANDAG Programs**

Comments requested that the transportation thresholds reflect the sustainability goals and intent of SB 375. In addition to the transportation significance criteria, several other EIR sections use additional
significance criteria addressing sustainability. These include sections on environmental justice, air quality, noise, water pollution, land use, habitat protection, GHG emissions, and aesthetics.

Also, SANDAG monitoring programs, such as the Regional Comprehensive Plan (RCP) Monitoring Program, collect and monitor data on the livability of the region, including such topic areas as housing, healthy environment, economic prosperity, and public facilities. In 2006, SANDAG released the Regional Comprehensive Plan: Establishing a Baseline for Monitoring Performance (Baseline Report), to be used to benchmark progress on an annual basis. The 2008 Regional Comprehensive Plan Annual Performance Monitoring Report (2008 Monitoring Report) was the second since the Baseline Report was accepted by the Board in October 2006. The 2008 Monitoring Report included the most recent data available for each indicator, typically from 2007. For all indicators, the most recent data are provided and related to the Baseline Report. Based on the data collected for the 2008 Monitoring Report, the indicators illustrate those areas in which the region appears to be moving in the right direction and those in which improvement is needed. More information on the RCP Monitoring Program is available at http://www.sandag.org/index.asp?projectid=309&fuseaction=projects.detail. As monitoring continues and if trends can be identified, the Board of Directors will decide if course corrections are needed.

**MASTER RESPONSE #15**

**PARKING MITIGATION OPTIONS**

Several comments indicate that the Draft EIR failed to consider the impact that parking strategies have on transit usage. Specifically, these comments question the Draft EIR’s conclusion that mitigation measures requiring an increase in parking fees are infeasible. The comments also suggest that the Draft EIR discussion of parking policies fails to support SANDAG’s Smart Growth policies and the need for additional parking policy options.

**Option to Increase Congestion Pricing by Elevating Parking Fees**

During development of the 2050 RTP/SCS, SANDAG performed four tests to examine the effect of changes in parking costs on the regional model. These tests analyzed parking costs from 50 percent to 150 percent of the baseline in select areas of the region. The results of these analyses were that regionwide VMT and transit share varied only slightly in response to these changes. (Informational Report on the San Diego Association of Governments’ Draft SB 375 Sustainable Communities Strategy, California Environmental Protection Agency, Air Resources Board, September 13, 2011) Therefore, even if increased parking fees were to be considered as a potentially feasible mitigation measure for VMT-related impacts, based on these SANDAG analyses it would not have been effective in substantially reducing these impacts.

Further, the Draft EIR, Section 4.16.5 (pp. 4.16-34 and 4.16-35) presents several reasons why a regional program for increased parking fees was not considered to be a feasible mitigation measure to reduce transportation impacts. First, SANDAG would not be able to implement this mitigation measure adequately and equally for all member agencies. In contrast to other Draft EIR mitigation measures for impacts that are the responsibility of local governments to implement, local governments in the SANDAG region have not routinely implemented increased parking fees to reduce vehicle trips. In addition, any changes to parking fee policies in the coastal zone would require California Coastal Commission (CCC) approval and implementation, and these policies could conflict with other CCC policies promoting coastal access. Uniform regional implementation of a coordinated parking fee program would be necessary to assure success of a regional parking fee program.

Because SANDAG has no independent authority to require local governments or the CCC to implement a coordinated regional parking fee program developed by SANDAG, this mitigation measure is considered
legally infeasible. Mitigation measures that are beyond the powers conferred by law on lead agencies are legally infeasible. (Pub. Res. Code §21004; CEQA Guidelines §15040.)

In addition, this mitigation measure was rejected on policy grounds because it is inconsistent with fundamental 2050 RTP/SCS social equity goals and objectives. Achieving social equity is a major goal of the 2050 RTP/SCS. (Draft EIR, Section 2.02, p. 2-8) Major objectives of the 2050 RTP/SCS include providing convenient travel options for people and goods, and providing a transportation system that offers an equitable level of service for all populations, thereby ensuring access to jobs, services, and recreation for populations with fewer transportation choices (Draft EIR, Section 2.03, p. 2-11). Increased parking fees would adversely affect the travel costs of drivers who do not have convenient transit options.

Furthermore, this mitigation measure is considered logistically infeasible for inclusion in the 2050 RTP/SCS and EIR. While SANDAG acknowledges that parking pricing can influence driving decisions and behavior to some extent (see first paragraph of this response), it would not have been feasible to develop a detailed region parking fee program in the timeframe necessary to adopt the 2050 RTP/SCS. Many policy issues would need to be addressed before a regional parking fee program could be determined to be feasible and effective. SANDAG will consider a regional parking policy as part of the update to the Regional Comprehensive Plan. Through this process the issues could be discussed and direction provided for the next update of the Regional Transportation Plan.

Regional Parking Strategies in the Future

SANDAG has prepared a tool for local jurisdictions to use in the local planning efforts, Parking Strategies for Smart Growth, which was accepted by the Board of Directors in June 2010. Additionally, on December 3, 2010 the SANDAG Board of Directors has directed staff to consider parking policies, including fees and other parking options, as part of the Regional Comprehensive Plan update that will be initiated in Fiscal Year 2012. In addition to pricing, strategies that have been discussed include: zoning changes to reduce or eliminate parking minimums; zoning to reduce parking maximums; shared parking programs and standards; employer parking cost cash-outs; and, unbundling of parking costs from housing costs in targeted areas. The report provided to the Board of Directors is available at the following link: http://www.sandag.org/uploads/meetingid/meetingid_2553_12143.pdf

MASTER RESPONSE #16
ALTERNATIVES: RANGE EVALUATED AND ANALYSIS LEVEL OF DETAIL

Comments assert that the range of alternatives evaluated in the EIR does not meet CEQA’s requirement to evaluate a reasonable range of potentially feasible alternatives that would avoid or substantially reduce the project’s significant environmental impacts, citing CEQA Guidelines §15126.6. The comments claim there is little difference in impacts between the proposed project and the alternatives. They also assert that insufficient evidence supports the selection of the proposed project over the other alternatives, in that most of the alternatives as well as the proposed project meet the fundamental objectives of the 2050 RTP/SCS.

Other comments contend that the Draft EIR’s alternatives analysis is legally inadequate because it does not include a “meaningful analysis”, including quantitative analysis where possible, comparing the proposed project’s environmental effects with those of the alternatives. Comments state that the alternatives analysis comparative charts (starting with Table 6.3-1) contains only a few sentences about each impact, and that its conclusions are not verifiable.
Range of Alternatives

When considering whether the range of alternatives evaluated in the EIR is adequate, several principles apply. The “discussion of alternatives need not be exhaustive,” and the requirement to discuss alternatives is “subject to a construction of reasonableness.” (Residents Ad Hoc Stadium Committee v. Board of Trustees (1979) 89 Cal.App.3d 274, 286.) “An EIR need not consider every conceivable alternative to a project.” (CEQA Guidelines §15126.6(a))

Under CEQA, absolute perfection is not the standard governing a lead agency's proposed range of project alternatives. Rather, in preparing an EIR, a lead agency need only make an objective, good faith effort to provide information permitting a reasonable choice of alternatives that would feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening the project's significant adverse environmental impacts. (California Oak Foundation v. Regents of University of California (2010) 188 Cal.App. 4th 227, 275-276.)

The Draft EIR evaluated a reasonable range of alternatives. As explained in Chapter 6, seven alternatives to the proposed project were evaluated in detail. These included alternatives with features suggested by the public such as a greater emphasis on transit projects, moving transit projects earlier in priority, and planning for a modified, more compact land use pattern.

The seven alternatives evaluated in detail are described in Draft EIR Section 6.2 (pages 6-6 through 6-32) and summarized in Draft EIR Section ES.6 (pages ES-44 through ES-47). They include:

- Alternative 1: No Project
- Alternative 2a: Modified Funding Strategy/2050 Growth Forecast Land Use
- Alternative 2b: Modified Funding Strategy/Modified Land Use
- Alternative 3a: Transit Emphasis/Modified Phasing/2050 Growth Forecast Land Use
- Alternative 3b: Transit Emphasis/Modified Phasing/Modified Land Use
- Alternative 4: 2050 RTP/SCS Transportation Network/Modified Land Use
- Alternative 5: Slow Growth

Draft EIR Section 6.5 (pages 6-187 to 6-203) explains why other alternatives suggested by the public during EIR scoping were not evaluated in detail, either because they did not meet the project objectives, they were infeasible, or they were similar to the seven alternatives already evaluated in detail. Additional alternatives suggested in Draft EIR comment letters were evaluated in individual responses to comments (see Final EIR) for their ability to meet project objectives, feasibility, and/or similarity to the seven alternatives evaluated in detail.

Some of the alternatives suggested by commenters were variations of alternatives that the Draft EIR evaluated in detail. CEQA does not require an EIR to consider multiple variations on the alternatives analyzed in a Draft EIR. “[W]hat is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned.” (Village Laguna of Laguna Beach, Inc. v. Board of Supervisors of Orange County (1982) 134 Cal.App.3d 1022, 1029.)

Other alternatives suggested by commenters were alternatives to one component of the 2050 RTP/SCS, e.g., transit-only alternatives, rather than comprehensive alternatives addressing the SCS and highway network improvements as well as transit. To be legally adequate under federal transportation law and SB 375, the 2050 RTP/SCS is required to address transit projects, highway projects, and sustainable land use patterns; all three components are integrated into the fundamental project objectives described in EIR Section 2.0.3 (pages 2-10 and 2-11). When a large-scale program contains multiple, interrelated objectives, an alternative that does not meet all of those objectives may be excluded from detailed
analysis. (See In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1162–1168.) An EIR must discuss alternatives to a project in its entirety but is not required to discuss alternatives to each particular component of a project. (See California Oak Foundation v. Regents of University of California (2010) 188 Cal.App.4th 227, 276-277.)

Differences Between Proposed Project and Alternatives

Please see Draft EIR Section 6.4 (pages 6-185 through 6-197) for a discussion of the differences in impacts between the proposed project and the alternatives. As explained in the Draft EIR, alternatives calling for a modified, more compact land use pattern would substantially reduce a number of the proposed project’s significant impacts because they call for less development in the eastern two-thirds of the County, and reduce the amount of development-related ground disturbance Countywide. However, these same alternatives would somewhat increase impacts in the more urban western third of the County. Alternatives placing a greater priority on transit improvements would reduce some of the proposed project’s transportation impacts, but increase others; generally, these alternatives reduce travel times but increase congestion.

Regarding selection of the proposed project over the other alternatives, the 2050 RTP/SCS described in the Draft EIR is only a “proposed project;” it has not been formally “selected” or adopted. The SANDAG Board of Directors will be responsible for final “selection” and adoption of the Final 2050 RTP/SCS. Also, the fact that the alternatives meet most of the basic project objectives does not indicate a flaw in project decisionmaking, because an EIR is required to focus on alternatives that could feasibly attain most of the basic project objectives. (CEQA Guidelines §15126.6(a).) Table 6.1-1 was included in the Draft EIR to demonstrate how each of the alternatives meets this requirement. The Board will make feasibility findings on alternatives to the proposed project when it adopts CEQA findings. The final selection and adoption of either the project or an alternative will occur when the Board certifies the EIR, adopts CEQA findings and approves the project.

Alternatives Analysis Level of Detail

The CEQA Guidelines (§15126.6(d)) require an EIR to include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. They authorize use of a matrix displaying each alternative’s significant environmental effects to summarize the comparison. The Draft EIR meets these requirements by presenting a series of detailed matrices comparing the impacts of each alternative to the proposed project (Tables 6.3-1 through 6.3-7), a summary matrix comparing the impacts of the alternatives and the proposed project (Table 6.4-1), and a narrative comparison explaining the major differences between the impacts of the 2050 RTP/SCS and those of the seven alternatives.

The explanations for the conclusions about each alternative’s impacts are contained in the text of Tables 6.3-1 through 6.3-7. For greenhouse gas and transportation impacts, these conclusions are supported by quantitative estimates because it was feasible to provide such estimates based on modeling. For the remaining impacts, these conclusions are supported using qualitative analysis.

A qualitative analysis comparing the proposed project’s impacts to those of the alternatives is especially appropriate for a Program EIR on an RTP/SCS. As discussed in Master Response 1, the degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated. (CEQA Guidelines §15146.) That Master Response addresses the required level of detail in Program EIR impact analysis, and the principles discussed in that response also apply to the required level of detail in a Program EIR alternatives analysis.
Some of the comments appear to cite the CEQA Guidelines (§15126.6(b)) and case law for the proposition that a valid alternatives analysis must always include “quantitative analysis, where possible.” However, neither CEQA, the cited Guideline, nor any other Guideline establishes such a requirement. In Laurel Heights Improvement Ass’n v. Regents of University of California (1988) 47 Cal.3d 376 (Laurel Heights I), the court rejected an EIR because alternatives were summarily dismissed and not evaluated at all, and because the EIR failed to set forth facts justifying that alternatives were in fact feasible; it did not address the need for a quantitative comparison of the proposed project’s impacts to those of the alternatives. In Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, the court rejected a project-specific EIR that failed to provide a quantitative comparison of the proposed project’s air emissions and water use to those of the alternatives, where data to support the comparison were readily available. However, Kings County Farm Bureau did not establish a general rule that quantitative analysis in general is required for a meaningful EIR alternatives comparison. It also did not address the need for a quantitative analysis of alternatives in a Program EIR, where impact analyses are often qualitative due to the general nature of the proposed project and alternatives.

The degree of specificity in an EIR, including the EIR alternatives analysis, corresponds to the degree of specificity of the underlying activity being evaluated. (See CEQA Guidelines §15146.) Due to the general programmatic nature of the 2050 RTP/SCS, for many impact topics it was infeasible or impractical to quantify the proposed project’s impacts and the impacts of alternatives (see Master Response 1). The sufficiency of an EIR, including an EIR alternatives analysis, is reviewed in light of what is reasonably feasible. (CEQA Guidelines §15151.)

**Slow Growth Alternative**

Comments indicate that Alternative 5: Slow Growth defers environmental impacts rather than reducing impacts. Alternative 5 would implement growth-slowing policies, assuming that restrictive land use regulations and/or economic disincentives (such as increased taxes, development fees, and similar types of economically based actions) were applied to slow the growth of both regional population and employment. Although regional growth/land use change and transportation network improvements would be similar to the 2050 RTP/SCS, complete implementation would be delayed by 5 years. This alternative would implement the 2050 RTP/SCS Regional Growth Forecast land use, but at a slower pace than the 2050 RTP/SCS. Growth in population, housing and employment under this alternative would occur as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Housing</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>3,364,191</td>
<td>1,201,230</td>
<td>1,538,781</td>
</tr>
<tr>
<td>2035</td>
<td>3,870,000</td>
<td>1,369,807</td>
<td>1,752,630</td>
</tr>
<tr>
<td>2050</td>
<td>4,282,462</td>
<td>1,491,629</td>
<td>1,940,784</td>
</tr>
</tbody>
</table>

Alternative 5 also would implement the 2050 RTP/SCS transportation network, but at a slower pace than the 2050 RTP/SCS, with implementation of each improvement delayed for 5 years.

While this alternative does have the effect of delaying growth, it does not delay environmental impacts. Instead, it reduces them within San Diego County by implementing growth-slowing policies. This alternative may also displace environmental impacts to locations adjacent to the San Diego County, such as Riverside County, Imperial County, and Baja, California if growth that would otherwise occur in San Diego County is deflected by such policies. However, the location and magnitude of environmental impacts caused by this displaced growth are speculative and do not require further review in the Final EIR as indicated in CEQA Guidelines § 15145.
**Need for an Alternative that Reduces GHG Emissions**

Comments indicate the EIR needs to include a project alternative that reduces greenhouse gas (GHG) emissions. As described in Chapter 6.0 Alternatives Analysis, Alternative 5: Slow Growth reduces GHG emissions.

Alternative 5 reduces impact GHG-1 (increase GHG emissions compared to existing conditions in 2010) to a less than significant level in 2020 and reduces the significant impact of the 2050 RTP/SCS in 2035 and 2050, although the impact for both time periods would remain significant under this alternative. Alternative 5 results in a less than significant impact for GHG-2 (conflict with SB 375 GHG emission reduction targets) in 2020 and 2035. Since SB 375 implementation does not set an emissions reduction target for 2050, no specific conclusion is reached in the Draft EIR regarding GHG-2 in that year for the 2050 RTP/SCS or any of the project alternatives. Alternative 5 also results in a less than significant impact for GHG-3 (conflict with applicable GHG reduction plans) in 2020, 2035 and 2050.

Additionally, Alternatives 1, 2a, and 2b also reduce significant impact GHG-1 of the 2050 RTP/SCS in 2050, although the impact would remain significant under those alternatives.

**MASTER RESPONSE #17
FAST PLAN AND 50-10 PLAN**

Comments transmitted two transit plans, the FAST plan and 50-10 plan, and requested they be evaluated as alternatives to the 2050 RTP/SCS. This response discusses CEQA requirements regarding the range of reasonable alternatives and then discusses each plan separately.

**CEQA Requirements Regarding Range of Alternatives**

As stated in Master Response 16, when considering whether the range of alternatives evaluated in the EIR is adequate, it is important to keep several principles in mind. The “discussion of alternatives need not be exhaustive,” and the requirement to discuss alternatives is “subject to a construction of reasonableness.” (Residents Ad Hoc Stadium Committee v. Board of Trustees (1979) 89 Cal.App. 3d 274, 286.) “An EIR need not consider every conceivable alternative to a project.” (CEQA Guidelines §15126.6(a)).

Under CEQA, absolute perfection is not the standard governing a lead agency's proposed range of project alternatives. Rather, in preparing an EIR, a lead agency need only make an objective, good faith effort to provide information permitting a reasonable choice of alternatives that would feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening the project's significant adverse environmental impacts. (California Oak Foundation v. Regents of University of California (2010) 188 Cal.App. 4th 227, 275-276.)

When a large-scale program contains multiple, interrelated objectives, an alternative that does not meet all of those objectives may be excluded from detailed analysis. (See In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal. 4th 1143, 1162–1168.) An EIR must discuss alternatives to a project in its entirety but is not required to discuss alternatives to each particular component of a project. (See California Oak Foundation v. Regents of University of California (2010) 188 Cal.App. 4th 227, 276-277.)

Lastly, CEQA does not require an EIR to consider multiple variations on the alternatives analyzed in a Draft EIR. “What is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned.” (Village Laguna of Laguna Beach, Inc. v.21 Board of Supervisors of Orange County (1982) 134 Cal.App.3d 1022.)
FAST Plan

Plan Overview. As described in Section 1 of the FAST plan (page 6), the FAST plan was designed with one overarching goal: attracting a significantly larger share of choice riders to transit. Another important goal of the plan is to support existing urban form, as well as future development. The FAST plan is a transit-only plan composed of two major elements: transit services and right-of-way infrastructure (Section 4). It also includes numerous specific transit projects (Section 5) and transit routes (section 6). It does not address highway improvements or the SCS. The FAST plan was not included in the EIR reasonable range of alternatives for several independent reasons.

Inability to Meet Fundamental Project Objectives. The FAST plan was not included in the EIR reasonable range of alternatives because it was unable to meet most of the fundamental project objectives. It is an alternative to one component of the 2050 RTP/SCS, e.g., transit, rather than a comprehensive alternative addressing the SCS and highway network improvements as well as transit. The FAST plan does not present any proposed highway network improvements as an alternative to the proposed 2050 RTP/SCS highway improvements, and does not present different land use patterns as an alternative to the SCS. To be legally adequate under federal transportation law and SB 375, the 2050 RTP/SCS is required to address transit projects, highway projects, and sustainable land use patterns; all three components are integrated into the fundamental project objectives described in EIR Section 2.0.3 (pages 2-10 and 2-11). These objectives are listed below, together with explanations of why the FAST plan does not meet them.

1) Provide an environmentally sustainable transportation system and SCS that foster efficient concentrated land development patterns. The FAST plan does not address the complete transportation system (highways as well as transit), and does not provide an alternative land use pattern to the SCS.

2) Provide a safe regional transportation system. The FAST plan does not address highway safety, bicycle safety, or pedestrian safety as separate elements. Under SAFETEA-LU, safety must be a crucial component and goal of the Regional Transportation Plan (RTP). The focus of transportation safety has been integrated in all transportation modes and within multiple facets of the 2050 RTP development process including the refinement of transportation project evaluation, as well as the development of plans and programs such as Safe Routes to Transit, Safe Routes to Schools, the San Diego Regional Bicycle Plan, Transportation Demand Management (TDM), and Public Safety, all of which are part of the 2050 RTP/SCS.

3) Provide transportation system that offers convenient travel options and reasonable travel costs. Again, the FAST plan does not address travel options other than transit that are included in the 2050 RTP/SCS such as single occupant driving, carpooling/vanpooling, bicycling, and walking and the role each plays in creating a comprehensive transportation plan.

4) Provide transportation system that support’s improvement of region’s standard of living. The FAST plan does not provide a complete transportation system, just transit systems.

5) Provide reliable transportation system that offers relatively consistent travel times by mode from day to day. The FAST plan addresses just one transportation mode, transit.

6) Provide equitable levels of service. The FAST plan does not address equitable levels of service for transit or for highways.

The FAST Plan Has Many Similarities to the Transit Components of the 2050 RTP/SCS. CEQA does not require the consideration of multiple variations of the same alternative. The FAST Plan indicates that an effective transit system needs to address several critical design factors (see Section 3):
Network Structure: does the transit service network connect enough of the right locations without requiring transfers?

System Performance: are most transit trips competitive with the car? That is, can you get there roughly in the same time as a solo driver?

Customer Experience: what is the walking and waiting environment like getting to and from transit? What kind of information is available for customers to make the system easy to use? Are the transit vehicles clean and appealing?

The FAST Plan addresses these design factors through a system of Quickways and other bus guideway projects; the 2050 RTP/SCS transit component also addresses these design factors through a mixture of rail, BRT, and Rapid Bus projects. The objectives of the two transit approaches, to address several critical design factors, match fairly well. The two transit approaches differ in the specific types of transit modes and transit network design details to accomplish them.

More specifically, Figure 6.9 of the FAST Plan (page 66) illustrates the overall FAST plan network. The 2050 RTP/SCS transit component achieves a similar level of network connectivity and high speed service as the FAST plan through a different network design of LRT (improvements to existing rail lines and several new corridors) and BRT services that utilize the Managed Lanes system. By comparison, for each of the geographic areas shown in Figure 6.9, the 2050 RTP/SCS LRT/BRT provides a more extensive infrastructure network than does the FAST Plan Major Quickway/Transitway project plan, as follows:

- North County – improved Coaster service frequencies and improved connectivity with the UTC/Sorrento Mesa area
- Central County – I-15 BRT connecting Escondido, north I-15 corridor, Kearny Mesa, and the connecting to points in the Urban Core areas along the I-15 corridor using the Managed Lanes facility that includes Mission Valley, Mid-City and Downtown San Diego; I-15-UTC BRT that connects the north I-15 corridor with Sorrento Mesa/Tech Center, UTC, UCSD in the short term that would be converted to LRT in the long range.
- Urban Spine: in the RTP plan, the urban spine focuses on the I-15, I-805, and SR 163 corridors rather than a single urban spine facility in the FAST Plan---for the SR 163 corridor, Rapid Bus would connect Kearny Mesa, Sharp Hospital, Fashion Valley, Uptown, 5th Ave, and Downtown via arterial transit priority measures; in the I-15 corridor, the I-15 BRT as previously mentioned; in the I-805 corridor, a BRT line initially and long term a LRT line that would connect the Central County areas of UTC/UCSD to Kearny Mesa, and to Urban Spine areas along the I-805/I-15 north-south corridors not included in the FAST Plan Quickway/Transitway Plan (Mission Valley, Mid-City/Centerline, Southeastern SD) and South Bay areas to the Otay Mesa Border; for access to the airport, the main access point would be shifted to the north side of Lindbergh Field to provide direct access to existing trolley, Coaster, Amtrak, and the future high-speed rail line.
- Mid-Coast – in addition to the Mid-Coast LRT line that provides direct connections from the Mid-Coast corridor to downtown San Diego and the South Bay areas, an LRT line directly connecting Pacific Beach with the Central County areas of Kearny Mesa, connections to the I-15 corridor urban spine services in Mission Valley, and also to East County areas including SDSU and El Cajon
- East County – in addition to the existing Orange and Green LRT lines, an LRT line that would connect downtown San Diego with Uptown, Mid-City/Centerline, and SDSU.
• South Bay – In addition to the exiting Blue Line LRT, an LRT line that would connect South Bay (San Ysidro, Chula Vista, National City along the I-5 corridor) to the Urban Spine areas along the I-805/I-15 corridors (Southeastern SD, Mid-City/Centerline, Mission Valley), and Central County areas (Kearny Mesa, UTC/UCSD); two BRT lines via Managed Lanes facilities that connect 1) Otay Mesa border, Otay Ranch, Chula Vista, National City to downtown and, 2) Otay Mesa border, Otay Ranch, Chula Vista, National City to Urban Spine areas in the I-15/I-805 corridor (Southeastern SD, Mid-City/Centerline, Mission Valley) and Central County areas (Kearny Mesa, UTC/UCSD).

No Evidence that the FAST Plan Reduces the 2050 RTP/SCS Significant Environmental Impacts. The EIR must analyze alternatives that avoid or substantially reduce the proposed project’s impacts. (CEQA Guidelines §15126.6.) A lead agency is not required to consider potential alternatives that would not reduce the significant environmental impacts of the project as proposed. (See Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, 928-930.) There is no evidence that the FAST Plan, submitted in the Move SD comment letter as an alternative, would avoid or substantially reduce any of the 2050 RTP/SCS significant environmental impacts. The FAST plan includes the construction of different transit projects at different locations than the 2050 RTP/SCS; however, at a programmatic level, impacts from transit project construction would likely be similar under either transit approach. To the extent that the FAST plan relies on Quickways, which rely on tunneling and aerial structures, some environmental impacts could actually be worse than the transit component of the 2050 RTP/SCS.

Section 8 of the FAST plan asserts that a major benefit of the plan is increased transit ridership compared to existing conditions and presumably to the 2050 RTP/SCS; neither the FAST plan nor the Move SD comment letter provides a comparison of transit ridership increases of the FAST plan compared to the 2050 RTP/SCS. Without a clear understanding of the missing highway network and land use pattern that would accompany the FAST plan, any potential increase in transit ridership or reduction in operational impacts such as air pollutant and GHG emissions is speculative.

50-10 Plan

Plan Overview. Under the 50-10 plan, 50 years of transit improvements would be implemented over the next decade. The plan calls for halting “any” highway construction until the transit system is fully functional. An equally critical element of the plan calls for modification of the TransNet program to re-prioritize transit over highway projects. (See Executive Summary, page 1.) The 50-10 plan was not included in the EIR reasonable range of alternatives for several independent reasons.

Inability to Meet Fundamental Project Objectives. The 50-10 plan was not included in the EIR reasonable range of alternatives because it was unable to meet most of the fundamental project objectives. It is an alternative to one component of the 2050 RTP/SCS, e.g., transit, rather than a comprehensive alternative addressing highway network improvements and land use patterns and as well as transit. The plan does not specify whether it includes “any” highway expansion projects; if it is intended to include highway expansion projects, it does not specify which highway projects would be built, and when they would be built, other than after a high quality transit network is established. Similarly, the 50-10 plan discusses the benefits of smart growth, but does not present an alternative land use pattern to the SCS.

The above analysis concerning inability to meet fundamental project objectives for the FAST plan applies equally to the 50-10 plan, since both are transit-only plans. Fundamental objectives are listed below, together with explanations of why the 50-10 plan does not meet them.

1) Provide an environmentally sustainable transportation system and SCS that foster efficient concentrated land development patterns. The 50-10 plan does not address the complete
transportation system (highways as well as transit), and does not provide an alternative land use pattern to the SCS.

2) Provide a safe regional transportation system. The 50-10 plan does not address highway safety, bicycle safety, or pedestrian safety as separate elements.

3) Provide transportation system that offers convenient travel options and reasonable travel costs. Again, the 50-10 plan does not address highways as travel options.

4) Provide transportation system that support’s improvement of region’s standard of living. The 50-10 plan does not provide a complete transportation system, just transit systems.

5) Provide reliable transportation system that offers relatively consistent travel times by mode from day to day. The 50-10 plan addresses just one transportation mode, transit.

6) Provide equitable levels of service. The 50-10 plan does not address equitable levels of service for transit or for highways.

**The 50-10 Plan is Within the Scope of the Transit Components of the 2050 RTP/SCS and Alternatives.** CEQA does not require the consideration of multiple variations of the same alternative. (See Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477.) The 50-10 plan transit projects would be “generally consistent with” the 2050 RTP/SCS transit projects (see Section 3, page 8 of the 50-10 Plan). The main difference between the two approaches is that the 50-10 plan would fund “the most important transit projects” within 10 years, and postpone any future roadway expansion until a high-quality transit network is established. Thus the only meaningful difference between the 2050 RTP/SCS and the 50-10 plan is the timing of transit projects.

Also, based on scoping comments, SANDAG recognized that there was interest in moving transit projects up in priority. In response, SANDAG developed Alternatives 2a, 2b, 3a, and 3b. Alternatives 2a and 2b modify TransNet allocations by increasing the number of transit projects and implementing some of them earlier, and eliminating or delaying some highway improvement projects. Alternatives 3a and 3b would also implement transit projects earlier, but not increase the number of transit projects beyond those in the 2050 RTP/SCS. These alternatives, especially 2a and 2b, were designed to reflect the 50-10 plan’s transit emphasis, but also were designed to be feasible within TransNet funding constraints, while the 50-10 plan is not (see below discussion).

**No Evidence that the 50-10 Plan Reduces the 2050 RTP/SCS Significant Environmental Impacts.** The EIR must analyze alternatives that avoid or substantially reduce the proposed project’s impacts. (CEQA Guidelines §15126.6.) A lead agency is not required to consider potential alternatives that would not reduce the significant environmental impacts of the project as proposed. (See Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, 928-930.) The 50-10 plan states that the plan will have several environmental benefits, including: shorter commutes, reduction of VMT, and congestion relief; reduced GHG emissions and air pollution; less fossil fuel consumption; and greater conservation of farmlands and habitat (see Section 6, pages 15-19 of the 50-10 Plan). Since the 50-10 plan includes construction of essentially the same transit projects as the 2050 RTP/SCS, transit project construction-related impacts would be essentially the same as the 2050 RTP/SCS; they would just occur earlier.

The asserted environmental benefits of the 50-10 plan relate to operational impacts. However, the basis for these conclusions about environmental benefits is an assumption that regional VMT would be 12.4% less in 2050 based on data in a statewide report “Vision California.” This assumption does not constitute substantial evidence because no true regional analysis has been done to demonstrate that statewide data are relevant and applicable to the San Diego region. Further, the reduction in operational impacts is speculative without an understanding of the missing highway network and land use pattern that would
accompany the 50-10 plan. Finally, there is no evidence in the 50-10 plan that the claimed environmental benefits of the 50-10 plan, even if they occurred, would avoid or substantially reduce any of the 2050 RTP/SCS significant environmental impacts.

Assertions are also made that the 2050 RTP/SCS does not represent the Smart Growth land use option, but instead is reflective of the Vision California report’s Mixed Growth land use option. However, the 2050 RTP/SCS actually exceeds the characteristics of the Smart Growth option which calls for new growth over the next 40 years to consist of approximately 37% single-family residential units (large lot and small lot), 14% townhome residential units, and 36% multifamily residential units. Implementation of the 2050 RTP/SCS will result in new growth consisting of approximately 18% single-family and townhome units combined, and 84% multifamily units (with a loss of approximately 2% of existing mobile home units). The Smart Growth option also indicates that in 2050, the total of existing units plus new growth would be approximately 53% large lot and small lot single-family units, 14% townhome units, and 33% multifamily units. By 2050, the RTP/SCS would result in a total for existing units plus new growth of 50% single-family and townhome units combined and 48% multifamily units, with 2% mobile home units. Therefore, the 2050 RTP/SCS represents the Smart Growth land use option described in the Vision California report.

The 50-10 Plan is Financially Infeasible. The Draft EIR (Section 6.5.1, p. 6-201) points out that an extreme phasing alternative is legally infeasible as well as economically infeasible. Federal law (23 CFR 450.322(b)(11)) requires RTPs to be revenue constrained. RTPs legally may include only those projects based on reasonable revenue projections.

The 50-10 plan is financially infeasible because restrictions on how funds can be used prevent major shifts in funding from highway projects to transit. This limited flexibility is further constrained by the annual allocation of most funds, which cannot be advanced. The state and federal governments provide the region funding for transportation projects that are allocated by gas tax receipts and population formula. These funds are distributed annually across the state and/or country and cannot be advanced. The 2050 RTP/SCS maximizes the investment in transit services based on projected funding that is eligible for transit projects for each of the phasing periods. More than half (56%) of the TransNet Early Action Program through 2015 (along with other local, state, and federal revenues it leverages) funds transit projects included in the 2050 RTP/SCS. Several Early Action transit projects are already underway and will be implemented prior to 2020: Mid-City Rapid (2012), I-15 BRT (2013), South Bay BRT (2014), and Mid-Coast LRT (2016-17). Other investments in transit are included in each 10-year phasing period from 2020-2050. For projects to move up in priority, other transit projects would have to be shifted to a later phasing period. This limited flexibility is further constrained by the annual allocation of most funds, which cannot be advanced. Regarding project priority, deferring a highway project in favor of a transit project is not always feasible given restrictions on how funds can be used. In situations where funds are flexible, funding could be spent on highway or transit projects. The proposed implementation priorities in the 2050 RTP/SCS reflect the goal to have a mixture of rail and bus transit improvements in each phasing period. Most of the highway expenditures included in the 2050 RTP/SCS are for managed lanes that will accommodate transit and carpools. Many of the highway facilities to be constructed in the next 10 years will serve transit routes. Additionally, SANDAG is limited by revenues restrictions for most funding sources.

Passed by voters in 2004, the TransNet Extension Ordinance and Expenditure Plan (Ordinance CO-04-01) includes provisions that enable either the voters in the San Diego region, or the SANDAG Board of Directors, acting as the San Diego County Regional Transportation Commission (SDCRTC), to modify the expenditure plan that outlines how TransNet funding will be allocated over the 40-year life of the measure. Completion of State Routes 52 and 76 and the construction of the Mid-Coast Light Rail Transit project can only be modified by two-thirds approval of the general electorate. Similarly, the TransNet
Environmental Mitigation Program (EMP) and certain other Ordinance provisions can only be modified by the voters. Other projects outlined in the expenditure plan and other Ordinance provisions can be modified by a two-thirds vote of the SANDAG Board in its capacity as the SDCRTC. Since 2004, the SANDAG Board has acted on the following limited amendments to the TransNet Extension Ordinance and Expenditure Plan:

- December 2006: Amendment to Ordinance CO-04-01 Revising the Expenditure Plan to Include Completion of the SPRINTER – enabled fully funding the completion of the SPRINTER rail project between Oceanside and Escondido (Ordinance CO-06-1)
- May 2008: Amendment to Ordinance No. CO-04-01 to Revise EMP Principle No. 10 – extended to the year 2010 the deadline for the Board to act on additional regional funding measures to meet the long-term requirements for implementing habitat conservation plans in the San Diego region (Ordinance CO-08-01)
- July 2009: Amendment to Ordinance CO-04-01 regarding Audit Reporting for the Regional Transportation Congestion Improvement Program (RTCIP) – aligned the timeline for the RTCIP audits with the TransNet annual fiscal and compliance audit requirements (Ordinance CO-09-01)
- November 2009: Amendment to Ordinance No. CO-04-01 to Revise EMP Principle No. 10 – extended to the year 2012 the deadline for the Board to act on additional regional funding measures to meet the long-term requirements for implementing habitat conservation plans in the San Diego region (Ordinance CO-10-02)

The TransNet Extension Ordinance also includes a provision for “Ten-Year Comprehensive Program Review,” which requires SANDAG to re-evaluate the expenditure plan in ten-year increments to ensure performance with the intent of TransNet and to make revisions to the expenditure plan, if necessary. The first review will occur in 2018. The SANDAG Board of Directors has indicated that modifying TransNet at this point prior to the first comprehensive ten-year review, would be premature; at this time, the Board has indicated its desire to maintain the specific major corridor projects that the voters approved in 2004.

The 2050 RTP/SCS financing strategy assumes 50% match from non-TransNet sources for major capital transit projects. SANDAG competes with other regions in the country for New Starts dollars to match TransNet funding. New Starts is a federal program through the Federal Transit Administration to build new large transit capital projects. SANDAG made reasonable assumptions about how many New Starts grants could be awarded in the San Diego region based on past experience and the highly competitive process/long timeframe needed for securing these funds. SANDAG cannot make overly aggressive assumptions about how many New Starts grants could be awarded due to the limited funding available at the federal level and the inability to identify adequate funding to support ongoing operations of any such facilities.

The 2050 RTP/SCS must be revenue constrained in that SANDAG cannot front load the Plan with projects prior to receiving revenue. In the first 20 years, the San Diego region expects, based on reasonable assumptions, to receive only one-third of the total projected revenues, with two-thirds of the revenues available in the last 20 years of the Plan. If significantly more transit were to be built in the earlier years of the plan, there are no funds identified or available to support the operations of those facilities, which has been an on-going issue with transit operations. The 2050 RTP/SCS acknowledges the need for additional local funding and anticipates new local funding sources to provide a more stable and ongoing source of revenues for transit operations in the future that is currently not available.
MASTER RESPONSE #18
SEA LEVEL RISE AND ADAPTATION PLANNING FOR SEA LEVEL RISE

Several comments indicated that the EIR analysis should have included a discussion of impacts associated with sea level rise caused by climate change and a comprehensive adaptation strategy and measures to ensure that sea level rise is considered in development of coastal infrastructure. Comments also requested that impacts associated with sea level rise should have been evaluated and modeled beyond 2050.

Risks to Regional Growth/Land Use Changes

Section 4.10, Hydrology and Water Quality, of the Draft EIR discusses the potential impacts of sea level rise on both regional growth/land use changes and on transportation infrastructure. The general potential for increased flooding due to sea level rise is described on Draft EIR page 4.10-50. As discussed in Section 4.10 (pages 4.10-50 to 4.10-55), the flooding potential due to climate change would be more severe in 2050 than in 2020 or 2035. Implementation of the 2050 RTP/SCS would result in development in areas prone to flooding and that may be vulnerable to sea level rise. Tables 4.10-5 – 4.10-8 of the EIR list planned land use and transportation changes that would occur in the 100-year floodplain. Particularly vulnerable will be the coastal areas where increases in housing density and population and local bus routes are proposed (refer to Figures 2.0-2, 2.0-3, 2.0-5, 2.0-6, 2.0-8, 2.0-9, and 2.0-11 – 2.0-13 in comparison to Figure 4.10-3). Due to the increased population, housing, and transportation networks in 2035 and 2050 relative to 2020, the impact would be greater in future years.

However, as stated in Section 4.10 (pages 4.10-50 to 4.10-55), development projects would implement design measures consistent with local flood control requirements that address sea level risks, ensuring flood risks would be less-than-significant. For example, drainage facilities would need to accommodate peak 50-year flood discharge. In addition, Climate Action Plans developed by local jurisdictions may also include additional adaptation strategies for sea level rise for regional growth/land use changes, as mentioned in Mitigation Measure GHG-B.

Risks to Transportation Network Improvement Projects

Draft EIR Section 4.10 (pages 4.10-50 to 4.10-55) also evaluates sea level rise risks to transportation network improvements included in the 2050 RTP/SCS. As stated in that section, flooding potential due to sea level rise would be more severe in 2050 than in 2020 or 2035, and some transportation facilities would be exposed to flood risks associated with sea level rise. As stated in Section 4.10 (pages 4.10-50 to 4.10-55), transportation projects would implement design measures consistent with federal, state and local flood design standards that address sea level risks, ensuring flood risks would be less-than-significant. Climate Action Plans developed by local jurisdictions may also include additional adaptation strategies for sea level rise for transportation projects, as mentioned in Mitigation Measure GHG-B.

For transportation projects, “adaptation strategies” refer to plans for the effects of climate change on the state’s transportation infrastructure, and plans for strengthening or protecting the infrastructure from damage. As mentioned above, every transportation project in the 2050 RTP/SCS would be required to comply with applicable state, county, or municipal flood-control policies and regulations. All projects within San Diego County must comply with the Drainage Design Manual (County of San Diego 2005). For federally funded projects, Caltrans design standards accommodate the pass-through conveyance of 100-year storm flows without impeding or redirecting the flows that could harm life and property. By incorporating these and other mandatory design standards, the extent of 100-year flood events would not be redirected or impeded, but could be reduced by the 2050 RTP/SCS facilities. Implementation of these design measures in development associated with the 2050 RTP/SCS would ensure flood risks would be less than significant.
The status of Caltrans planning for sea-level rise is described below. Caltrans is responsible for funding or implementing many of the 2050 RTP/SCS transportation network improvement projects.

Caltrans administers state transportation funding and provides statewide guidance, planning and program coordination. SANDAG works closely with Caltrans on projects and applies guidance from Caltrans to the programming and design of projects in the 2050 RTP/SCS. Caltrans has developed guidance to determine whether and how to incorporate sea level rise concerns into the programming and design of projects (Caltrans 2011a).

### Sea-Level Rise Projections using 2000 as the Reference Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Average of Models</th>
<th>Range of Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030</td>
<td>7 in (18 cm)</td>
<td>5-8 in (9-17 cm)</td>
</tr>
<tr>
<td>2050</td>
<td>14 in (36 cm)</td>
<td>10-17 in (26-43 cm)</td>
</tr>
<tr>
<td>2070</td>
<td>Low 23 in (59 cm)</td>
<td>17-27 in (43-70 cm)</td>
</tr>
<tr>
<td>Medium 24 in (62 cm)</td>
<td>18-29 in (46-74 cm)</td>
<td></td>
</tr>
<tr>
<td>High 27 in (69 cm)</td>
<td>20-32 in (51-81 cm)</td>
<td></td>
</tr>
<tr>
<td>2100</td>
<td>Low 40 in (97 cm)</td>
<td>31-50 in (78-128 cm)</td>
</tr>
<tr>
<td>Medium 47 in (121 cm)</td>
<td>37-60 in (95-152 cm)</td>
<td></td>
</tr>
<tr>
<td>High 55 in (140 cm)</td>
<td>43-69 in (110-176 cm)</td>
<td></td>
</tr>
</tbody>
</table>

1 For dates after 2050, Table 2 includes three different values for SLR - based on low, medium, and high greenhouse gas emission scenarios. These values are based on the Intergovernmental Panel on Climate Change emission scenarios as follows: B1 for the low projections, A2 for the medium projections and A1FI for the high projections (Caltrans 2011a).

This guidance is intended for use by Caltrans Planning staff and Project Development Teams in Project Initiation Documents (PID). If the project does not meet screening criteria, then the PID must include a more detailed discussion of sea level rise and adaptation. As part of the evaluation of sea level rise, Caltrans will also determine whether to incorporate additional project funding for sea level rise adaptation measures. The analysis and incorporation of adaptation measures will then be addressed at the project level.

Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise. At this time, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise (Caltrans 2011b).

### Other Sea Level Rise Strategies

Climate Action Plans developed by local jurisdictions may also include adaptation strategies for sea level rise for both transportation infrastructure and growth/land use change, as mentioned in Mitigation Measure GHG-B.

SANDAG developed its Climate Action Strategy (CAS) in March 2010 to serve as a guide to help policymakers address climate change as they make decisions to meet the needs of our growing population, maintain and enhance our quality of life, and promote economic stability. As a result, the CAS focuses on areas where regional and local agencies have the authority or opportunity to influence emissions and make our region more resilient to the changing climate. The CAS includes Goal 4 that will “Protect Transportation Infrastructure from Climate Change Impacts.” Specifically, Objective 4b is designed to address policy measures that will “Protect Transportation Infrastructure from Sea Level Rise and Higher Storm Surges.” The measures include:
• Develop a climate vulnerability plan that will identify areas in the San Diego region at risk of damage from sea level rise and storm surges.

• Modify standards for the design, location, and construction of infrastructure to account for areas potentially subject to storm surge, sea level rise, and more frequent flooding events.

• Reduce building in floodplains and areas subject to storm surge or sea level rise

• Engage a multi-disciplinary team of climate change and coastal experts along with hydraulics and bridge design specialists during the scoping process of coastal bridge projects.

• Identify adaptive management and monitoring to incorporate into regional transportation planning (SANDAG)

• Address adaptation issues in the design and location of new projects and when improvements are made to existing infrastructure.

Implementation of the CAS and including policy measures in local planning activities, such as Climate Action Plans, will reduce risks of sea level rise on transportation projects included in the 2050 RTP/SCS.

**Year 2100 Analysis**

The time horizon of the RTP/SCS is 2050, and the discussion of sea level rise maintains consistency with that timeframe. The Draft EIR did not present a detailed analysis of climate change risks in the year 2100; qualitatively, these risks would likely be more severe than in 2050 (see above table). The adaptation opportunities described above for to reduce year 2050 sea level rise risks (Caltrans guidance, CAPs, Sea Level Rise Adaptation Strategy for San Diego Bay, SANDAG Climate Action Strategy) would also be applicable to year 2100 sea level rise risks. The text of the Draft EIR (p. 4.10-54) has been revised to state that, although the EIR evaluation stops at the 2050 RTP/SCS and EIR horizon year is 2050, it should be recognized that risks to development and transportation projects from sea level rise would continue to increase through 2100 and beyond unless appropriate adaptation strategies are implemented. Also, revisions to the Impact WQ-4 flood hazard analysis have been made to recognize that design measures incorporated into projects to reduce flood risks would incorporate any applicable information regarding flooding resulting from climate change that could occur in the long-term (e.g., the year 2100).

The Draft EIR did not present a detailed analysis of sea level rise risks in the year 2100 because: because the extent of sea level rise risks in the year 2100, and adaptation measures that may be taken to reduce these risks, would be are speculative, and are the subject of ongoing study. A lead agency must use its best efforts to find out and disclose all that it reasonably can about the potential adverse environmental effects, but is not required to foresee the unforeseeable. (CEQA Guidelines §15144.) Year 2100 impacts associated with sea level rise are speculative because there is a wide range of potential sea level rise scenarios, and because there are no authoritative hazard maps, risk assessments or land use plans showing the extent of sea level rise risks in the San Diego region. CEQA Guidelines §15126.2(a) provides that exposing development to hazards areas may be considered a significant impact if hazardous conditions are identified in authoritative hazard maps, risk assessments, or land use plans. As indicated in the CEQA Guidelines, “If after a thorough investigation, an agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact” (CEQA Guidelines §15145). As more reliable information is available regarding sea level rise beyond 2050 and adaptation strategies, it may be included in future versions of the RTP/SCS and future RTP/SCS EIRs.

MASTER RESPONSE #19
HEALTH RISKS ASSOCIATED WITH EXPANDED HIGHWAYS AND ARTERIALS

Several comments suggested that the air quality section of the EIR needs to address the health effects of the increased diesel particulate matter (diesel PM) and toxic air contaminants contained in the increased vehicle emissions from the increase in vehicle traffic proposed by the 2050 RTP/SCS EIR. The comments further claim that the proposed highway encroachment on residential neighborhoods and schools will reduce air quality and result in an increase of particulate matter from vehicle exhaust; and that the 2050 RTP/SCS EIR does not address the correlation between automobile and truck exhaust and various diseases.

Draft EIR Addresses Health Risks

The Toxic Air Contaminant (TAC) section of the Draft EIR (Section 4.3.1.2) included a discussion of diesel PM and the health effects, i.e. cancer risks and chronic non-cancer risks from on-road traffic emissions, primarily associated with diesel PM and 1, 3-Butadine. Specific diseases caused by TACs, such as hardening of the arteries, were not specifically discussed in the EIR, but rather collectively identified as:

Human exposure to TACs at sufficient concentrations and durations can result in cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems.

Section 4.3.1.2 of the Draft EIR also identifies that diesel PM has been designated by USEPA as one of the six priority primary Mobile Source Air Toxics (MSATs), and that diesel PM poses the greatest health risk. The EIR section further states that TACs/MSATs may pose a threat to public health even at low concentrations due to their high toxicity. Therefore, no exposure levels are considered safe. Furthermore, for federal highway projects, the Draft EIR states that FHWA has established interim policy for impact analysis of TACs and MSATs, and that given the emerging state of the science and project-level analysis techniques, there are no established criteria for determining when MSAT emissions should be considered a significant issue in the NEPA context.

The EIR impact analysis (Impact AQ-4, in Section 4.3.4) determined that potential health risk analyses for TACs related to transportation improvements in the 2050 RTP/SCS would best be addressed at the project level, as the level of this exposure can only be determined through project-level health risk assessments once facility designs of individual projects are available. At the project level, specific health impacts can be analyzed for each sensitive receptor. Project-level analysis is consistent with EPA’s requirements. At a programmatic level, the DEIR conservatively recognized that the impacts of transportation project operations on air toxics would be significant and unavoidable.

Revisions to Draft EIR

In response to comments on the Draft EIR, the Draft EIR air quality setting has been revised in Section 4.3.1.2 under Recent Studies to include a summary and references of recent studies of diesel PM from air quality sensitive receptors located in proximity to freeways, including the progression of atherosclerosis. Although the Draft EIR Impact AQ-4 analysis met applicable CEQA requirements for analysis of air quality impacts on sensitive receptors, SANDAG has nevertheless added a discussion of air quality and associated health risks associated with regional transportation corridors to the Impact AQ-4 analysis. This “localized air quality index analysis” was added to the Final EIR to identify communities that could
potentially be exposed to increases in localized CO and particulate concentrations and concomitant health risks over the horizon years of the 2050 RTP/SCS. However, due to variables discussed in the analysis, health risks to specific communities from specific projects can be most accurately determined only through project-specific analysis. The conclusion reached in the Draft EIR for Impact AQ-4 indicates that sensitive receptors, such as residential areas, would be potentially exposed to substantial pollutant concentrations, a significant and unavoidable impact. The localized air quality index analysis included in the Final EIR does not change that conclusion, and Impact AQ-4 remains significant and unavoidable.

Also, Mitigation Measure AQ-C has been modified to recognize that particulate matter hot spot analysis and health risk assessments, will be conducted for individual transportation projects consistent with EPA guidance. Mitigation measure AQ-C also addresses mitigating health risks associated with planning and land use projects. The revised text of Mitigation Measure AQ-C is as follows with additions shown in bold text:

**AQ-C Transportation Network Improvements**

For **transportation network improvements, during** project-specific design and CEQA review, SANDAG shall and other implementing agencies can and should evaluate the potential localized CO impacts of each project using procedures and guidelines contained in the CO Protocol (UCD ITS 1997) to determine the level of local CO “hot spot” analysis required (qualitative or quantitative) at the project level, if any, for the project. If required from the project analysis, mitigation measures would be added to the project design concept or scope to reduce local CO emissions.

For **transportation network improvements, during** project-specific design and CEQA review, SANDAG shall and other implementing agencies can and should evaluate the potential localized particulate (PM10 and PM2.5) impacts and their health risks of project using procedures and guidelines for PM hotspot analysis consistent with USEPA (2010) PM guidance. If required from the project analysis, mitigation measures would be added to the project design concept or scope to reduce local particulate (PM10 and PM2.5) emissions. Per USEPA (2010) PM guidance, potential mitigation measures to be considered include but are not limited to: providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones, and replacing older buses with cleaner buses.

**Land Use Plans and Development Projects**

For land use plans and projects, cities in the San Diego region and San Diego County can and should assess health risks associated with CO and particulates during project-specific design and CEQA review, and mitigate them to the extent feasible. These assessments should focus on sensitive communities already experiencing high levels of air pollution and related diseases, and on other sensitive receptors.

For development projects, mitigation measures to reduce air pollution-related health risks include but are not limited to:

- Avoiding siting new sensitive land uses within 500 feet from the right of way of a freeway
- Implementing the construction mitigation measures listed in Mitigation Measures AQ-A and AQ-B
Buffering residential, public assembly, and other sensitive land uses from industrial uses generating air pollutants that may pose public health risks

Including landscaping, barriers, ventilation systems, and air filters or cleaners in project designs

Health Risk Assessments for Projects Involving Transportation Network Improvements or Land Use Plans and Development Projects

During project specific design and CEQA review, SANDAG shall and other implementing agencies can and should require, where warranted, the completion of health risk assessments using dispersion modeling. A health risk assessment (HRA) is the quantitative evaluation of the risk of cancer (and sometimes non-cancer health effects) that may result from human exposure to pollutants such as toxic air pollutants. HRAs are complex and typically involve emissions quantification, air dispersion modeling, and risk modeling. Dispersion modeling is a modeling tool capable of predicting concentrations of pollutants in air in the vicinity of the pollutant sources. It is typically used to predict PM concentrations at receptor locations around a source of PM. AERMOD and CALPUFF are two of several dispersion modeling tools.

MASTER RESPONSE #20
GREENHOUSE GAS IMPACT ANALYSIS

Several comments indicate that the Draft EIR does not fully analyze the impact of the proposed project on climate change. The comments focus on the analysis of GHG emissions and relationship to changes in VMT through the year 2050. The comments state that reductions in per capita and total VMT are necessary to achieve GHG reductions. In addition, comments suggest that the Draft EIR should also include detailed methodology, such as data and assumptions related to trip lengths, fuel consumption, and land use patterns, that were used to estimate GHG emissions, as well as clarify the different baselines that were used in the 2050 RTP/SCS and the EIR.

The response will address the following issues:

1. The relationship between VMT and GHG emissions
2. GHG emissions methodology for transportation and land use
3. Approach on differing analyses
4. Emissions on a per-capita GHG and VMT basis and achieving the goals of SB 375
5. Per-capita GHG trajectory
6. Total VMT and GHG emissions

The Relationship between VMT and GHG Emissions

Many of the comments refer to changes in VMT in association with changes in GHG emissions. While there is a relationship between VMT and CO₂ emissions, it is not a 1-to-1 relationship, and there are a number of factors that may affect CO₂ emissions but may not necessarily affect VMT. Vehicle fleet makeup is expected to change over time, and more efficient vehicles will make up a larger vehicle fleet mix as older, less efficient vehicles are retired. This will increase overall efficiency and reduce CO₂ emissions, even if total VMT does not change. In addition, implementation of AB 1493 (Pavley I)\(^6\) will

\(^6\) Assembly Bill (AB) 1493 required the California Air Resources Board (ARB) to set emission standards for greenhouse gas emissions from new passenger vehicles. The current standards (Pavley I) are set for vehicles from 2010 – 2016.
create more fuel-efficient vehicles, while implementation of the Low Carbon Fuel Standard (LCFS)\(^7\) will lower the carbon content of fuels. All of these factors may lead to CO\(_2\) emissions reductions without affecting VMT. While VMT is a component included in estimating GHG emissions and lowering VMT would also lead to a reduction in GHG emissions, for the above reasons, evaluating GHG emissions directly is a more appropriate measure of climate change impact than evaluating VMT.

**EIR GHG Analysis Methodology**

CEQA case law gives lead agencies considerable discretion in the choice of EIR technical methodologies, such as the GHG analysis methodology used in the 2050 RTP/SCS Draft EIR. A lead agency may accept the environmental conclusions reached by the experts that prepared the EIR even though others may disagree with the underlying data, analysis or conclusions. (*Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 408.) Discrepancies in results arising from different methods for assessing environmental issues do not undermine the validity of the EIR’s analysis as long as a reasonable explanation supporting the EIR’s analysis is provided. (*Planning & Conserv. League v. Castaic Lake Water Agency* (2009) 180 Cal.App.4th 210, 243.)

The existence of differing opinions arising from the same pool of information is not a basis for finding the EIR to be inadequate; when approving an EIR, an agency need not correctly resolve a dispute among experts about the accuracy of the EIR’s environmental forecasts. (*See Eureka Citizens for Responsible Gov’t v. City of Eureka* (2007) 147 Cal.App.4th 357 (City could accept expert’s findings on noise impacts despite disagreement over methodology used); *California Oak Found. v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1243 (City could rely on its water management plan rather than contrary evidence.).) The lead agency is free to reject criticism from an expert or a regulatory agency on a given issue as long as its decision to do so is supported by substantial evidence. (*Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 408.)

The EIR GHG emissions analysis is based on the 2050 RTP/SCS future land use, transportation projects, and population and employment data.

VMT was calculated first, using the transportation network improvements described in Tables 2.05-2.07 of Chapter 2.0 of the DEIR, Project Description. Transportation modeling assumptions were based on detailed assumptions of growth by region, including trip and vehicle characteristics. Appendix B of the RTP/SCS, titled “Air Quality Planning And Transportation Conformity,” describes the methodology used to generate the VMT and conversion of VMT to GHG emissions estimates; this document is hereby incorporated by reference into the 2050 RTP/SCS EIR, and is available online at http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail.

The general process by which GHG emissions were estimated included running the transportation computer package TransCAD 5.0, which includes trip distribution, trip lengths, speed, and other factors. The SANDAG travel demand model is a zonal model where land use is analyzed at the Traffic Analysis Zone (TAZ) and is available on the SANDAG Web site at www.sandag.org/2050forecast. GHG emissions associated with the VMT output from TransCAD were estimated using the most up-to-date CARB emissions inventory model available at the writing of the DEIR, Emission Factors (EMFAC) 2007. EMFAC is used to estimate emissions (including CO\(_2\)) and fuel consumption from on-road motor vehicles at the state, county, air district, or air basin level in California. The model was run for San Diego County. For purposes of evaluating impacts in the EIR, CARB’s Pavley I + LCFS Postprocessor Version

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\(^7\) Senate Bill (SB) 1078, SB 107, and SB X1-2 referred to as the Low Carbon Fuel Standard (LCFS), requires that 33% of electricity retail sales be served by renewable energy by 2020.
1.0 was used to account for reductions that will occur as a result of state legislation requiring increased fuel efficiency in passenger vehicles and lower carbon content in fuels.

Emissions to evaluate achievement of SB 375 GHG reduction targets were calculated using the methodology described above but excluded non-passenger vehicles. Per-capita emissions rates were estimated by dividing the passenger vehicle emissions by the expected population as forecast by SANDAG. In addition, reductions due to state measures were not applied (i.e., CARB’s Postprocessor was not used).

The estimates of regional transportation-related emissions analyses meet the requirements established in the Transportation Conformity Rule, 40 CFR Sections 93.122(b) and 93.122(c). These requirements relate to the procedures to determine regional transportation-related emissions, including the use of network-based travel models, methods to estimate traffic speeds and delays, and the estimation of vehicle miles of travel. In addition, the model conforms to the CTC RTP Guidelines on modeling and the federal conformity rules on modeling. Methodologies used by SANDAG for GHG analysis have been accepted by CARB as appropriate for demonstrating that the 2050 RTP/SCS meets the SB 375 regional GHG reduction targets. (CARB 2011). The CARB staff report outlining their review and concurrence on SANDAG’s SCS is available on the CARB website at http://www.arb.ca.gov/cc/sb375/sandagscs.pdf.

Land use emissions assumptions were based on County-wide GHG emissions developed by the University of San Diego’s Energy Policy Initiatives Center (EPIC). Forecast GHG emissions for 2020 and 2035 were also provided by EPIC and forecast 2050 emissions were calculated using SANDAG growth forecasts for population (for the sectors Electricity, Natural Gas, Aviation, Waste, and Water-Borne Navigation); employment (for the sector Industrial Processes), and historic patterns (all other sectors).

**Approach for Differing Analyses**

Many of the comments submitted to SANDAG compared two performance measures that cover differing reference years and vehicle classes.

Comments correctly identified different baseline/reference years were used in different parts of the 2050 RTP/SCS and EIR. The 2050 RTP/SCS evaluated existing conditions based on 2008 conditions. The reference year for evaluating impacts for purposes of CEQA was based on the date of the NOP, which was 2010. Finally, the reference year for evaluating reductions in accordance with SB 375 was 2005, set by ARB.

In addition, SB 375 requires per-capita GHG reductions associated with passenger vehicles only. Therefore, when evaluating impacts related to SB 375, emissions were limited to those derived from passenger vehicles, while other analyses included all vehicle classes. Table 1 below clarifies how the analyses were conducted.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Baseline Year</th>
<th>Vehicle Classes</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>2050 RTP/SCS</td>
<td>2008</td>
<td>All</td>
<td>Total GHG emissions</td>
</tr>
<tr>
<td>EIR</td>
<td>2010</td>
<td>All</td>
<td>Total GHG emissions</td>
</tr>
<tr>
<td>SB 375</td>
<td>2005</td>
<td>Passenger Vehicles</td>
<td>Per-capita GHG emissions</td>
</tr>
</tbody>
</table>
Per-Capita Vehicle-Related CO₂ Emissions and VMT

The 2050 RTP/SCS correctly includes a discussion of VMT of all vehicle classes between 2008 and 2050, establishing the changes in VMT expected from existing (2008) conditions to the horizon year (2050) (Table TA 3.1: Performance Measure 22). This analysis shows a -1% change in daily per capita VMT for all vehicle classes. Section 3 of the 2050 RTP/SCS includes a discussion of changes in daily per-capita GHG emissions only for passenger vehicles (Table 3.1). That analysis showed a -9% change in GHG emissions from 2005 to 2050. (Please note that the 1 percent change and 9 percent numbers taken from the draft 2050 RTP/SCS have changed in the final 2050 RTP/SCS due to modifications to the network and rounding to the nearest whole number. The final 2050 RTP/SCS includes 2 percent and 10 percent numbers, respectively. The project description changes are described in Master Response 13.)

Some of the comments have incorrectly compared these numbers. In order to clarify the differences in the analyses, the tables below show the relationship between two data sets that are not comparable. Table 2 shows the RTP/SCS impacts on per-capita emissions of CO₂, while Table 3 shows impacts on VMT through 2050.

Table 2
RTP/SCS Impacts on Per Capita CO₂ Emissions through 2050

<table>
<thead>
<tr>
<th>Year</th>
<th>CO₂ per capita (tons)</th>
<th>Change from 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB 375 Vehicles</td>
<td>All Vehicles</td>
</tr>
<tr>
<td>2005</td>
<td>26.0</td>
<td>31.3</td>
</tr>
<tr>
<td>2008</td>
<td>24.9</td>
<td>28.0</td>
</tr>
<tr>
<td>2010</td>
<td>23.8</td>
<td>26.4</td>
</tr>
<tr>
<td>2020</td>
<td>22.4</td>
<td>25.8</td>
</tr>
<tr>
<td>2035</td>
<td>22.6</td>
<td>26.7</td>
</tr>
<tr>
<td>2050</td>
<td>23.5</td>
<td>27.8</td>
</tr>
</tbody>
</table>

Table 3
RTP/SCS Impacts on Per Capita VMT through 2050

<table>
<thead>
<tr>
<th>Year</th>
<th>VMT per capita</th>
<th>Change from 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SB 375 Vehicles</td>
<td>All Vehicles</td>
</tr>
<tr>
<td>2005</td>
<td>25.4</td>
<td>27.6</td>
</tr>
<tr>
<td>2008</td>
<td>24.4</td>
<td>25.6</td>
</tr>
<tr>
<td>2010</td>
<td>23.4</td>
<td>24.2</td>
</tr>
<tr>
<td>2020</td>
<td>22.3</td>
<td>23.6</td>
</tr>
<tr>
<td>2035</td>
<td>22.8</td>
<td>24.3</td>
</tr>
<tr>
<td>2050</td>
<td>23.6</td>
<td>25.2</td>
</tr>
</tbody>
</table>

The analysis of vehicle-related GHG emissions in the 2050 RTP/SCS and Draft EIR focuses on 1) impacts from all vehicle types, and 2) impacts related to compliance with SB 375, which has targets of per capita GHG reductions for light-duty (passenger) vehicles only. Comments regarding the 2050 RTP/SCS and Draft EIR questioned why the 2050 RTP/SCS estimates a 9% decrease in per capita GHG reductions by 2050 (Table 2-2 of the Draft RTP/SCS), but only a 1% decrease in. This response presents reasons for the differences in those reductions, which are related to differences in (1) base year, and (2) analysis of total vehicle versus only light-duty vehicles, as required by SB 375. These differences can result in apparent discrepancies between information presented in various sections of the RTP and EIR. However, the information in both documents is consistent in both documents once base year and vehicle class are taken into account.
In addition, these comments misinterpret information provided in the Draft 2050 RTP/SCS. In that document, SANDAG forecasts a 1 percent drop in total Vehicle Miles Traveled (VMT) between 2008 and 2050. Over the same time period, SANDAG forecasts a 29 percent reduction in per capita GHG (based on CARB vehicle and fuel standards) (2050 RTP/SCS Table TA 3.1: Performance Measure 31).

As shown in Table 2, the per-capita CO₂ emissions decrease by 14% in 2020 and 13% in 2035 compared to 2005 conditions, meeting the targets of SB 375. Per-capita GHG emissions from all vehicle classes also decline, as does VMT (Table 3). However, the percent change in GHG emissions is not the same as the percent change in VMT over time, as explained above. Thus, a small reduction in VMT over time (e.g., 8% decrease in VMT 2005 – 2050) does not accurately reflect the vehicle-related impact to climate change (11% decrease in transportation-related CO₂ emissions 2005 – 2050), which includes vehicle fleet makeup, efficiency, and fuel carbon content, in addition to VMT.

**Per-Capita GHG Trajectory**

Comments have correctly pointed out that the per capita passenger-vehicle GHG reduction percentage is slightly lower in 2035 (13%) than 2020 (14%), and lower still in 2050 (10%). (As mentioned above, the 2050 GHG per capita reduction numbers in the draft 2050 RTP/SCS were 9%, while the Final EIR per capita GHG reduction is 10%. This change between draft and final is due to changes that were made between the draft and final 2050 RTP/SCS. Those changes are described in Master Response 13.)

This “upward trajectory,” which is more accurately described as a “diminishing decline” in per capita GHG emissions, does not present an SB 375 or CEQA compliance issue. The 2050 RTP/SCS meets SB 375 per capita GHG emission reduction targets for 2020 and 2035, and SB 375 does not include a requirement to address impacts beyond 2035. Increased per capita GHG emissions in 2035 and 2050 compared to 2020 have no effect on the legal adequacy of the EIR GHG impact analysis. The EIR correctly analyzed GHG emissions by comparing per capita GHG emissions in 2035 and 2050 against the legally-required EIR baseline of 2010 as reflected in the EIR analysis of Impact GHG-1.

SANDAG shares the commenters’ concerns about the implications of the diminishing decline of per capita GHG emissions. SANDAG has undertaken many steps to assure that the GHG reductions in the Plan can be achieved and even surpassed. These include:

- 156 new miles of trolley service,
- new trolley tunnel in downtown San Diego,
- expanding COASTER service,
- doubling transit service miles and increasing transit service frequency in key corridors,
- Preserve more than half the land area of the region as open space, parkland, and habitat
- 130 miles of managed lanes to facilitate carpools, vanpools, and premium bus service
- $2.7 billion investment in regional and local bicycle and pedestrian projects
- New carpool and telework incentive programs to reduce solo drivers
- 84% of new housing units built in the region will be multi family
- Nearly 75% of multifamily housing will be built on redevelopment or infill sites
- Homes and jobs within one-half mile of transit nearly doubles
- Investments are distributed equitably throughout the region

There are three sets of conservative modeling assumptions that help explain the diminishing decline in per capita GHG emissions by 2050. First, SANDAG used conservative modeling assumptions regarding long-term advances in technology because it does not wish to overstate the potential GHG benefits of the 2050 RTP/SCS. While the 2050 RTP/SCS horizons year is 2050, the EMFAC model (EMFAC2007) used
to estimate GHG emissions extends to only to 2040. EMFAC 2007 accounts for some changes in vehicle efficiencies through 2040 only. It is anticipated that additional technological advances will occur beyond 2040, but are not currently modeled. The model assumed no further technological advances such as increases in fuel efficiency between 2041 and 2050. Vehicle fuel efficiency and other technological advances would likely result in additional GHG reductions in 2050, beyond those estimated in the 2050 RTP/SCS. For example, Pavley II\(^8\) was not included in the analysis of transportation-related GHG emissions and would be incorporated into future versions of the RTP/SCS. CARB’s Postprocessor includes only Pavley I and neither Pavley I nor LCFS were included in the SB 375 analysis. The accuracy of 2050 per capita GHG emissions estimates will be improved in future RTP/SCSs through the use of revised and updated emission models, which will likely show lower 2050 per capita GHG emissions when accounting for additional long-term technological advances.

Second, SANDAG used conservative modeling assumptions regarding transit ridership, again because it does not wish to overstate potential GHG benefits of the 2050 RTP/SCS. By 2050, continued growth was projected to result in higher per-capita VMT than in 2035, resulting in higher per-capita GHG emissions. However, the transportation model used to estimate VMT conservatively assumed that traveler perceptions related to transit use would not change in the future.

The model assumes that travelers make logical and systematic decisions about which form of transportation to take based on knowledge of the time and cost of completing a trip by alternative modes. The model is sensitive to a wide range of facility improvements and policies; however, the model is currently insensitive to programs designed to alter mode use without altering times or costs, such as:

- Advertising campaigns to increase the use of transit, bicycling, or ridesharing,
- Rideshare matching programs,
- Construction of bicycle lanes,
- Replacing older buses to increase the attractiveness of transit, and
- Providing safer and more comfortable transit stops.

SANDAG will rely on household transit survey data to accurately account for actual behavioral changes over time, and it is anticipated that increased use of alternative transportation modes will be assumed in future RTP/SCSs. For example, advertising campaigns to increase the use of transit have proven effective in several studies\(^9\).

In addition, SANDAG used conservative modeling assumptions regarding the 2050 land use pattern, again because it does not wish to overstate potential GHG benefits of the 2050 RTP/SCS. The 2050 Regional Growth Forecast used to project 2050 land use patterns was based on current general plans, as well as assumptions about 2050 growth provide by local governments based on current planning policies, since general plans typically do not have a 2050 horizon. Federal air quality conformity law requires RTPs to be based on the most recent planning assumptions at the time the conformity analysis begins. (40 CFR 93.110(a).) Based on these assumptions, the 2050 RTP/SCS land use pattern for 2050 demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region, as envisioned by SB 375. However, there is a strong recent trend for local governments in the San Diego region to strengthen their sustainability policies whenever general plans are updated; see Master Response 11 for documentation of this trend. If this trend continues, future updates of the Regional Growth Forecast will reflect it, resulting in 2050 land use

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\(^8\) Pavley II, also known as LEV III, will apply greenhouse gas emission standards for new passenger vehicles beyond those set for Pavley I (i.e., for 2017-2025).

\(^9\) Refer to the following studies related to advertising campaigns and the use of transit: *Transit Agencies Need to Invest in Marketing: A lesson from Los Angeles* by Ethan Arpi, The City Fix, December 8, 2009; and *Research-Based Transit Marketing in Southeastern Wisconsin*, Scott J. Bush, Transportation Research Record, TRB, Volume 1669/1998.
patterns for future RTP/SCSs that are still more compact and higher density, and which generate lower per capita VMT and GHG emissions than estimated in the 2050 RTP/SCS.

Finally, SANDAG continues to assume growth in interregional commuters from Riverside and Orange counties and Baja California. As these areas grow, average commute and other trip lengths increase. This is a conservative assumption based on historic trends in home prices and interregional trip making. As the San Diego region continues to expand its housing opportunities, as stated above, there may be less incentive for people to live outside of the region. GHG targets are expressed as a per capita of local population; interregional commuters contribute to overall GHG while they do not add to the population base of the San Diego region.

Total VMT and GHG Emissions

Absolute VMT increases under the 2050 RTP/SCS by 51% between 2010 and 2050, from approximately 78 million VMT to 118 million VMT per weekday under the plan (Table 4.3-3). This is VMT that includes all vehicle classes, not only passenger vehicles as discussed earlier related to the analysis for the GHG emission reduction targets for SB 375. VMT increases are attributable to several factors, including anticipated improvements to the economy which are directly correlated with fluctuations in VMT, as well as population growth between 2010 and 2050. In addition, as the economy recovers, SANDAG projects unemployment rates to drop in the region, spurring more commute- and recreational-trip making. Finally, as described in the GHG trajectory response above, absolute VMT increases due to several conservative modeling assumptions made for the 2050 RTP/SCS. These assumptions result in average trip length increasing by 2050. As modeling approaches evolve, future versions of the RTP/SCS may project lower total VMT in 2050 than projected in the 2050 RTP/SCS.

As discussed earlier, VMT and GHG emissions cannot be compared on a 1-to-1 basis. Although VMT is expected to increase 51% 2010 – 2050, transportation-related GHG emissions are expected to decrease 3% despite a substantial increase in population and employment. Overall, total average weekday GHG emissions from on-road vehicles are forecasted to decrease by nearly 1,200 tons per day over the planning horizon of the 2050 RTP/SCS (2050 RTP/SCS Draft EIR Appendix F1).

Because of population growth and economic development, most regions cannot feasibly reduce absolute VMT (EPA 2011). Reducing per capita VMT can help a region achieve air quality, climate change, and congestion reduction goals without penalizing it for population growth (EPA 2011). Therefore, the sustainability of the transportation system in San Diego is more appropriately discussed as a function of per capita GHG emissions and per capita VMT. As discussed earlier, changes in per capita VMT and GHG emissions would not necessarily be a 1-to-1 relationship, and per capita GHG emissions are the most appropriate measure of the effects of the 2050 RTP on climate change.

It is speculative to assume that the changes in VMT and GHG emissions through 2050 “would not result in sustainable land use or transportation.” As discussed earlier, GHG emissions are affected by a number of factors. Given the nature of estimating GHG emissions in the future, it is also important to understand how technology will change to potentially offset any long-term increases in VMT. The analysis included in the Draft EIR used the current models and assumptions available at the time of Draft EIR preparation, and any changes will be incorporated in future versions of the RTP/SCS. In addition, any changes in requirements to reduce GHG emissions would be included and evaluated in future versions of the RTP/SCS.
MASTER RESPONSE #21
THE MITIGATION MEASURES INCLUDED IN THE DRAFT EIR
GREENHOUSE GAS ANALYSIS MEET CEQA REQUIREMENTS

Several comments suggested that the mitigation measures included in the Draft EIR greenhouse gas (GHG) impact analysis do not meet CEQA legal requirements. The comments claim that the mitigation measures simply list policies that “can and should” be adopted and do not guarantee that mitigation measures will be adopted or implemented; they also question SANDAG’s authority to implement mitigation measure GHG-C. The comments also state that GHG mitigation measures are improperly deferred, and that no estimates of GHG emission reductions achieved by mitigation measures are provided in the analysis. Comments also suggested additional GHG mitigation measures for consideration in the EIR.

Consistency of RTP/SCS and EIR Mitigation Measures the AG Recommendations

As required by Government Code Section 65080(b)(3), the RTP/SCS includes an “action element that describes the programs and actions necessary to implement the plan and assigns implementation responsibilities”. The 2050 RTP/SCS contains many policies and actions that would implement the plan with respect to GHG reductions, and the Draft EIR contains additional GHG reduction mitigation measures. The policies, actions and mitigation measures are consistent with recommendations of the California Attorney General’s (AG) Office (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), which provides example policies to include in plans to address climate change. This list was consulted during development of the 2050 RTP/SCS and EIR, and represents potentially feasible policies that would achieve GHG reductions at the plan level to meet CEQA requirements.

Table 1 includes each of the AG-recommended policies and the corresponding RTP/SCS policies and actions, and EIR measures.

Table 1
Attorney General Policies to Address Climate Change matched with RTP/SCS Policy/Action or EIR Mitigation Measures

<table>
<thead>
<tr>
<th>AG Policy</th>
<th>RTP/SCS Action (#.#) or EIR Mitigation Measure (XX-#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships</td>
<td>3.1–3.12, 3.4, 3.5, 3.6, 3.8, 3.27, 6.2 GHG-A, GHG-B</td>
</tr>
<tr>
<td>Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation; create disincentives for auto use</td>
<td>6.3–6.17, 6.44–6.55 GHG-A, GHG-B</td>
</tr>
<tr>
<td>Energy- and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing prioritization, and other implementing tools</td>
<td>US-A, US-B GHG-B</td>
</tr>
<tr>
<td>Green procurement and alternative fuel vehicle use through municipal mandates and voluntary bid incentives</td>
<td>GHG-B, GHG-C</td>
</tr>
<tr>
<td>Alternative fuel facilities and infrastructure through land use designations, zoning, and public-private partnerships</td>
<td>3.19–3.24 GHG-B</td>
</tr>
<tr>
<td>Renewable energy generation (utility and residential) through feasibility evaluations, land use designations, zoning, permit streamlining, incentives and financing</td>
<td>US-E, US-F GHG-B</td>
</tr>
<tr>
<td>Waste diversion, recycling, water efficiency, energy efficiency and energy recovery in cooperation with public services districts and private entities</td>
<td>US-B, US-F GHG-B</td>
</tr>
<tr>
<td>Urban and rural forestry through tree planting requirements and programs; preservation of agricultural land and resources that sequester carbon; heat island reduction programs</td>
<td>3.13–3.16, FRA-A, FRA-B GHG-B</td>
</tr>
</tbody>
</table>
In response to comments, Mitigation Measure GHG-B has been revised as follows with added text shown in bold:

**GHG-B**

San Diego region cities and the County government can and should adopt and implement Climate Actions Plans (also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that contain the following information:

a) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within their respective jurisdictions;

b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;

d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

e) Establish a mechanism to monitor the plan’s progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and

f) Be adopted in a public process following environmental review.

**CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change at both the plan and project level.**

Specifically, at the plan level, land use plans should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships

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Source: AECOM 2011
• Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use

• Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, they should also incorporate, when appropriate, policies to encourage implementation of the Attorney General’s list of project specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf, including, but not limited to measures from the web page such as:

• Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation

• Build or fund a major transit stop within or near development

• Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers

• Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments

• Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following web page: http://ag.ca.gov/globalwarming/ceqa/resources.php.

SANDAG will assist local governments in preparing CAPS and other climate strategies through continued implementation of the SANDAG Climate Action Strategy and Energy Roadmap Program. The Climate Action Strategy provides a toolbox of land use, transportation, and related policy measures and investments that help implement the 2050 RTP/SCS through reducing GHG emissions. Policy measures also are identified for buildings and energy use, protecting transportation and energy infrastructure from climate impacts, and to help SANDAG and local jurisdictions reduce GHGs from their operations. Through the Energy Roadmap Program, SANDAG will continue to provide energy planning assistance to local governments to reduce local energy-related GHG emissions. SANDAG’s Climate Action Strategy can be found at: http://www.sandag.org/uploads/publicationid/publicationid_1481_10940.pdf.

In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation (San Diego Foundation Focus 2050 report) and in conjunction with Executive Order S-13-08, which seeks to enhance the State’s management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State’s first climate adaptation strategy.
These changes reflect the addition of resources that can and should be used by local jurisdictions when implementing Mitigation Measure GHG-B.

**EIR Mitigation Measures Implemented by Others**

Specific mitigation measures are included in the Draft EIR to further address potentially significant impacts associated with increases in GHG emissions. Mitigation Measure GHG-B states that “San Diego region cities and the County government can and should adopt and implement Climate Actions Plans”. As shown in Table 2, this mitigation measure is already in the process of being implemented. Cities and the County government are currently working to address global climate change by completing GHG inventories for municipal and communitywide emission sources. Many jurisdictions are also in the process of developing or have scheduled development of Climate Action Plans.

<table>
<thead>
<tr>
<th>Agency</th>
<th>GHG Inventory (Year Completed)</th>
<th>Climate Action Plan (Year Completed or Anticipated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of San Diego</td>
<td>2005</td>
<td>2012</td>
</tr>
<tr>
<td>City of San Diego</td>
<td>2005</td>
<td>2005/2012</td>
</tr>
<tr>
<td>City of Encinitas</td>
<td>2005, 2010 (draft)</td>
<td>2011</td>
</tr>
<tr>
<td>City of Chula Vista</td>
<td>2005,08,09,10 (draft)</td>
<td>2008</td>
</tr>
<tr>
<td>City of Vista</td>
<td>2009</td>
<td>24 months after General Plan Update</td>
</tr>
<tr>
<td>City of Escondido</td>
<td>2010</td>
<td>To be completed after General Plan Update (estimated 2012)</td>
</tr>
<tr>
<td>City of Solana Beach</td>
<td>2009</td>
<td>N/A</td>
</tr>
<tr>
<td>City of La Mesa</td>
<td>2009</td>
<td>N/A</td>
</tr>
<tr>
<td>City of Del Mar</td>
<td>2010</td>
<td>late 2011/early 2012 (Draft)</td>
</tr>
<tr>
<td>City of National City</td>
<td>2009</td>
<td>2011</td>
</tr>
</tbody>
</table>

Source: AECOM 2011
Notes: N/A indicates that although the jurisdiction has completed a GHG Inventory, they are not yet developing a Climate Action plan at this time.

For those agencies that have not adopted a Climate Action Plan, the Draft EIR includes the recommendation that those agencies should adopt one.

As discussed in Master Response 4, CEQA provides that an EIR can include feasible mitigation measures that are within the responsibility and jurisdiction of another agency. The appropriate CEQA finding in such instances is that such mitigation measures have been or “can and should be” adopted. (Public Resources Code §21081(a)(2); CEQA Guidelines §15091(a)(2). Based on the above analysis of climate action planning and routine incorporation of GHG-reducing BACT into project construction and operation, it is reasonable to expect that the other agencies will actually implement GHG-B and GHG-C, respectively.

**Implementation of Mitigation Measures GHG-C by SANDAG**

Some comments questioned whether SANDAG has the authority to implement Mitigation Measure GHG-C for projects it implements. Effective January 1, 2003, SB 1703 (Peace) consolidated all of the roles and responsibilities of SANDAG with many of the transit functions of the Metropolitan Transit System (formerly the Metropolitan Transit Development Board) and North County Transit District (formerly the North San Diego County Transit Development Board). Under the agency consolidation, SANDAG assumed transit planning, funding allocation, project development, and eventually construction of major
public transit projects in the San Diego region in addition to its ongoing transportation responsibilities and other regional roles.

In this role, SANDAG solicits construction bids on many projects ranging from major transit stations/park and ride facilities and rapid bus, bus rapid transit, and light rail transit projects. In addition, SANDAG is responsible for the project development and construction of many of the LOSSAN corridor double track projects within the region. In this role, SANDAG would be responsible for implementing mitigation applicable and feasible measures that require Best Available Control Technology (BACT) during the construction of major public transit and rail projects. To further strengthen the implementation of BACT during the construction of projects, Mitigation Measure GHG-C has also been revised as follows, with new text added in bold:

**GHG-C:** SANDAG shall and implementing agencies can and should require Best Available Control Technology (BACT) during construction and operation of projects, including:

- a) Solicit bids that include use of energy and fuel efficient fleets;
- b) Solicit preference construction bids that use BACT;
- c) Employ use of alternative fueled vehicles;
- d) Use lighting systems that are energy efficient, such as LED technology;
- e) Use CEQA Guidelines Appendix F, Energy Conservation, to create an energy conservation plan;
- f) Streamline permitting process to infill, redevelopment, and energy-efficient projects;
- g) Use an adopted emissions calculator to estimate construction-related emissions;
- h) Use the minimum feasible amount of GHG-emitting construction materials that is feasible;
- i) Use of cement blended with the maximum feasible amount of fly ash or other materials that reduce GHG emissions from cement production;
- j) Use of lighter-colored pavement where feasible;
- k) Recycle construction debris to maximum extent feasible; and
- l) Plant shade trees in or near construction projects where feasible.

**GHG Mitigation Measure Deferral and Quantification of Effectiveness**

See Master Response 1 for a general discussion of how the Draft EIR’s approach to mitigation measures meets CEQA requirements for a Program EIR. As explained in Master Response 1, while the Draft EIR strives to provide as much detail as possible in the mitigation measures, some flexibility must be maintained to present mitigation approaches for impacts occurring over a large geographic scope and caused by a wide variety of transportation and land use activities. CEQA case law provides that a first-tier EIR may contain generalized mitigation criteria. (*See, e.g., Koster v. County of San Joaquin* (1996) 47 Cal.App.4th 29.)
CEQA case law has also held that deferral of the specifics of mitigation is permissible where the lead agency commits itself to mitigation and, in the mitigation measure, either describes performance standards to be met in future mitigation or provides a menu of alternative mitigation measures to be selected from in the future. (See, e.g., *California Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603 [the details of exactly how the required mitigation and its performance standards will be achieved can be deferred pending completion of a future study]).

The Draft EIR presents program-wide mitigation measures that largely will be implemented by SANDAG and other agencies in subsequent project-specific design, CEQA documents, and approvals. As authorized by the CEQA Guidelines and case law (see Master Response 1), the Draft EIR’s mitigation measures are less detailed than those that would be part of a project EIR. The development of detailed mitigation measure, and quantification of their effectiveness in reducing project-specific GHG emissions, is properly deferred to future project-specific CEQA reviews.

**Measures Suggested in Draft EIR Comments**

Several comments suggested additional GHG mitigation measures to be included in the EIR. One of the suggestions was to condition transportation funding based on reduction of GHG emissions. When SANDAG is a pass-through agency for funding, it is the funding agency’s responsibility to place conditions on grant funding. When SANDAG is the direct source of funding (versus a pass-through agency), SANDAG will require as a grant condition the implementation of those 2050 RTP/SCS mitigation measures, including GHG reduction mitigation measures, that are applicable to, and feasible for, the project type being funded.

One suggestion was to include a performance standard in the RTP to target VMT reductions. The comment indicates that these VMT reductions would reduce GHG emissions. As discussed in Master Response 20, the percent change in GHG emissions is not the same as the percent change in VMT over time. There are a number of factors that may affect GHG emissions but may not necessarily affect VMT. Please refer to Master Response 20 for additional details.

Another suggestion was to establish a goal for transit mode share as a mitigation measure. Analysis of transit mode share in the 2050 RTP/SCS has been based on conservative assumptions. As indicated in Table 2.2 of the 2050 RTP/SCS, current transit mode share is estimated at 6.1 percent and is projected to decrease to 5.2 percent in the No Build Condition. However, with implementation of the 2050 RTP/SCS, transit mode share is projected to increase to 11.1 percent by the year 2050. Increasing transit ridership beyond that percentage a mitigation measure is considered infeasible because of lack of known funding for levels of transit significantly higher than those assumed in the 2050 RTP/SCS (see Master Responses 10 and 17).

Further, reductions in VMT or increases in transit mode share are indirect measures of climate change impact that do not necessarily correlate to similar reductions in GHG emissions. Therefore, they would not be effective mitigation measures to directly reduce GHG emissions.

**MASTER RESPONSE #22**

**REGIONAL ARTERIALS**

Several comments were submitted to SANDAG on the 2050 RTP/SCS Draft EIR that relate to the regional arterial system.
The regional arterial system includes those projects and roadway improvements identified in the circulation elements of each of the local jurisdictions in the San Diego region. SANDAG does not prioritize, approve, or otherwise influence the construction of any arterials in the regional system. All of the regional arterials are included in the transportation modeling for the 2050 RTP and EIR.

The 2050 RTP/SCS EIR characterizes the regional arterials as expanded or new local infrastructure that would be necessary to support new development. Local general plans in the SANDAG region have variously stated policies, implemented through land use regulations and project approvals, that, in general, require adequate local infrastructure be provided to serve new development. Expanded or new infrastructure that would be built to support the regional growth/land use changes forecasted by the 2050 RTP/SCS is considered part of the project description for purposes of the 2050 RTP/SCS EIR.

While TransNet funding does support the construction of the regional arterial system, it is up to the local agencies to decide if, and how, TransNet funds will be included in any budget to construct a regional arterial. Further, other funding sources contribute to the construction of regional arterial projects – funding that does not come through SANDAG – and only those projects that will utilize TransNet funding are included in the Transportation Improvement Program (TIP), which is a five-year programming process to allocate funds to projects nearing construction. The only discretion SANDAG has in this process is to ensure the funds are being applied to an eligible use, including roadway maintenance, rehabilitation, and improvements. Prioritization for improvements to regional arterials is within the purview of local jurisdictions and interested parties need to work within the established local process to raise awareness and secure funding for those improvements.

The 67 arterial projects that are included in Table 2.0-7 (and Figure 2.0-18) of the 2050 RTP/SCS EIR are the arterial improvements that the local jurisdictions have indicated will be designed and/or built within the next five years and would be included in the Transportation Improvement Program. These 67 projects are a subset of all the 343 arterial projects listed in RTP Technical Appendix 4, Table TA 4.26; the 343 arterial projects in that table are the full list of projects in the region projected to be built through 2050. Only those projects that will utilize the local street and road funding from TransNet are included in the tables in the RTP. All the regional arterials are included in the Air Quality Conformity analysis that is conducted as part of the 2050 RTP/SCS development and is required by §42 USC 7506(c).

MASTER RESPONSE #23
EFFECT OF INDIVIDUAL LAND USE AND TRANSPORTATION COMPONENTS ON GHG REDUCTION

Interactions Among Strategies/Projects; Model Constraints

Several comments suggested that the Draft EIR should evaluate and disclose the VMT or GHG reductions achieved by individual 2050 RTP/SCS land use strategies or transportation strategies or projects. Because the 2050 RTP/SCS is a regional plan, the regional land use pattern and transportation system were evaluated in its entirety in order to analyze the full interaction of projects. For example, it is well understood that smart growth land use policies and increased public transit, when implemented together, produce more GHG reductions than the sum of their individual contributions. It was also infeasible for SANDAG’s transportation model to provide the information requested because it is dynamic, and looks at land use and transportation strategies and projects as an integrated whole. Due to these types of interactions and modeling constraints, the 2050 RTP/SCS and EIR were unable to provide the GHG reduction contribution of any individual strategy or project.
Some information on the GHG impacts of individual transportation projects is available in the project evaluation rankings used to help prioritize projects for inclusion in the revenue constrained network. This information is included in Technical Appendix 4 of the Draft 2050 RTP/SCS. Again, it is important to point out that two individual projects may sum to a different outcome compared to when they are analyzed in combination. For example, evaluating the Mid-City Light Rail (LRT 560) and the UTC-Palomar Light Rail (LRT 562) individually would not reduce GHG as much as the two lines in concert because of the mutual benefit of a transfer in the Mid-City neighborhood.

**SANDAG Modeling Approach Meets SB 375 and CEQA Requirements**

All land use and transportation strategies and projects in the 2050 RTP/SCS meet SB 375 Regional GHG reduction targets, resulting in GHG emission reductions of 14 percent and 13 percent for 2020 and 2035, respectively (per capita GHG emissions reduction from a 2005 base year for passenger vehicles). The SANDAG transportation model has been accepted by CARB (2011) as an appropriate methodology for demonstrating the SB 375 regional GHG reduction targets have met (p. ES-2). CARB has found that using SANDAG’s transportation model, SANDAG has demonstrated implementation of Draft SCS described in DEIR would achieve GHG reduction targets, without the need to evaluate individual project components (pp. 43-44).

Also, CEQA does not require an EIR for an integrated project to analyze the impacts of individual project components, just the project as a whole. This is especially the case for a Program EIR, which is prepared for a series of actions *that can be characterized as one project*. An advantage of a Program EIR is that it allows the lead agency to consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. (CEQA Guidelines §15168(b)(4).) See Master Response 1 for further discussion of the purposes of the Program EIR prepared for the 2050 RTP/SCS.

Regarding the impacts of alternative project components, an EIR for an integrated multi-component project such as the 2050 RTP/SCS is required to examine integrated alternatives that could achieve the integrated project objectives, but is not required to evaluate alternatives to each project component. (*California Oak Foundation v. Regents of the University of California* (2011) 188 Cal.App. 4th 227, 277.)

Nevertheless, the EIR alternatives analysis was structured to provide information on the regional GHG impacts effects of two basic alternative RTP/SCS strategies: 1) more intensified land use, and 2) placing greater priority on transit. Differences among the alternatives were not large due primarily to the fact that the model evaluates the entire system including what is already on the ground (land use) and what transportation facilities are already operational. When the projected growth is added to what already exists, it only represents approximately 25% of the total population and 34% of the region’s total jobs and housing.

**Model Improvements for Next Version of RTP/SCS**

SANDAG is actively pursuing improvements to its transportation model for the next version of the RTP/SCS including the development of an Activity Based Transportation Model (ABM) and an improved subregional land use model called PECAS. These new models are being developed under “open source” licenses (Apache License, Version 2 <http://www.apache.org/licenses/LICENSE-2.0.html>), which will allow stakeholders to evaluate directly the transportation (and therefore GHG) impacts of alternative land use and transportation strategies.
APPENDIX G
RESPONSE TO COMMENTS

Letter A
California Coastal Commission

August 1, 2011

Rob Rundle
Principal Regional Planner
SANDAG
401 B Street, Suite 600
San Diego, CA 92101

Re: Draft Environmental Impact Report for 2050 Regional Transportation Plan/Sustainable Communities Strategy (RTP)

Dear Mr. Rundle,

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) Draft 2050 San Diego County RTP. We appreciate the work SANDAG has undertaken in this planning effort for the transportation infrastructure that is so essential to rational land use decision making. One of the primary tenets of the Coastal Act is to protect and enhance public access to the coast, which requires a well planned and interconnected public transportation system. The stated goals of the 2050 RTP, to improve “Quality of Travel and Livability, and Sustainability” thus create an opportunity to enhance San Diego’s established transportation system in a manner that is supportive of the Coastal Act. These goals, which are inclusive of a Sustainable Communities Strategy pursuant to the requirements of SB 375, also afford the possibility to advance complimentary local and regional efforts to address likely climate change scenarios.

Coastal staff recently submitted a comment letter to SANDAG (dated June 30, 2011) regarding the draft RTP document itself, and the comments contained within that letter should be referenced in association with the following comments on the DEIR for the draft RTP.

The DEIR/EIS correctly identifies several instances where Coastal Act policies relevant to the draft RTP exist, including where virtual (Section 30251) and biological (Section 30240) resources would be present. However, reference to several other Coastal Act policies is lacking and should be updated within the document. These Coastal Sections include: Sections 30210 and 30213 (coastal recreation), Sections 30241 and 30242 (coastal agriculture), Section 30253 (air quality and energy use), Section 30253 (wetlands), 30231 (water quality), Section 30236 (floodplains) and 30235 (coastal hazards). Additionally, discussion within the Biology Section (4.4) describes potential mitigation for impacts to wetlands and biological resources through payment of in-lieu fees or off-site mitigation. Traditionally, the Commission has not accepted in-lieu fee payments to mitigate for impacts to biological resources, and has encouraged that mitigation occur within close proximity to anticipated impacts. When mitigation cannot be accommodated on-site, alternative mitigation is typically sought for locations within

A-1

These introductory comments are noted and no further response is required.

A-2

The referenced policies have been added to the appropriate topical analysis sections of the Final EIR as follows:

- Coastal recreation - Section 4.15
- Coastal agriculture - Section 4.2
- Air Quality - Section 4.3
- Wetlands – Section 4.4
- Water quality and floodplains – Section 4.10
- Coastal hazards – 4.9

A-3

In response to this comment, mitigation measures BIO-A, B, and E in Section 4.4.5 have been modified to provide that mitigation for sensitive vegetation and/or wetland impacts within the coastal zone with comply with applicable Coastal Commission policies (added language in bold).
the Coastal Zone at sites that would still provide regional benefits to the impacted resources.

Given the proximity of significant portions of the County’s key regional infrastructure adjacent to the coast, it is imperative that transportation and land use planning carefully anticipate the effects of predicted sea level rise and associated hazards. Ensuring that coastal infrastructure is designed to accommodate for the projected range of sea level rise throughout the life of projects in accordance with the relevant policy and guidelines of the various federal, state, and local agencies is an increasing concern to the Coastal Commission. (A number of guidance documents on this subject have been produced for reference, including the State of California Sea-Level Rise Intergovernmental Guidance Document adopted by the California Ocean Protection Council on March 11, 2011, Guidance on Incorporating Sea-Level Rise Considerations in Civil Works Programs, produced by the US Army Corps of Engineers, July 1, 2009, and the 2009 California Climate Adaptation Strategy (in response to Executive Order S-13-2008), produced by the California Natural Resources Agency, Dec. 2009).

Current guidance within the DEIR does not cover a full range of potential sea level rise conditions, and is only limited to a 2050 timeline. Sea level rise conditions should be modeled for the entirety of the expected life of major infrastructure projects, which for most bridges, for example, would be approximately 75-100 years. Projects should be modeled to include both the tidal hydraulic and fluvial modeling across this range of projected increases in global mean sea level rise as applied to the local area (e.g., San Diego County open coast).

Review of the various alternatives analyzed for comparison in the draft RTP, indicates that several of the proposed alternatives with more concentrated development patterns, and increased focus on transit priorities, are options that would reduce impacts to numerous coastal resources while resulting in only minor increases in congestion and travel time. We suggest that further investigation into these alternatives is warranted to determine what system of transportation projects is most protective of sensitive coastal resources while at the same time providing reliable travel and travel choice within the coastal corridor.

Finally, project tables (2.0-6, 6.2-3 and 6.2-6) and several discussion sections (Aesthetics and Visual Resources 4.1, Biological Resources 4.4, Environmental Justice 4.6, and Recreation 4.15) all indicate reference to State Route 241 (SR 241) and its proposed connection to the I-5 just south of the Orange/San Diego County border. Recent State (CC-018-07 (Transportation Corridor Agencies) denied at February 6th, 2008 Coastal Commission hearing) and Federal (Secretary of Commerce decision on December 18th, 2008) decisions have denied the proposed alignment for this connection due to significant impacts to sensitive coastal resources. Given these decisions Coastal staff finds that inclusion of SR 241 is inappropriate and unjustified. Barring significant changes to the route and a complete re-examination of the SR 241 corridor’s environmental impacts in this document, the SR 241 alignment system should be deleted from the 2050 RTP at this time.
acceptable. Should the project come forward in the future, it will be evaluated in a project-level CEQA document.

A-7

The closing comments are noted and no further response is required.

A-7

The following comments are from the attachment originally submitted on the RTP on June 30, 2011. For convenience, the responses below repeat those provided on the RTP.

We look forward to future collaboration on improvements to the transportation systems located within San Diego County, and appreciate the commitments presented within the Draft RTP to preserve and enhance coastal resources. If you have any questions or concerns, please do not hesitate to contact me at our San Diego District Office.

Sincerely,

Gabriel Buhr
Coastal Program Analyst III
San Diego District
June 30, 2011

Rob Rundle
Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Re: Draft 2050 Regional Transportation Plan (RTP)

Dear Mr. Rundle,

Thank you for the opportunity to comment on the Draft 2050 San Diego County RTP.

We appreciate the work SANDAG has undertaken in this planning effort for the transportation infrastructure that is so essential to rational land use patterns. We acknowledge that one of the primary tenets of the Coastal Act, to protect and enhance public access to the coast, requires a well-planned and interconnected public transportation system. The presented goals of the 2050 RTP, to improve “Quality of Travel” and “Livability,” and “Sustainability” create an opportunity to enhance San Diego’s established transportation system in a manner that is supportive of the Coastal Act. These stated goals, which are inclusive of a Sustainable Communities Strategy pursuant to the requirements of SB 375, also afford the possibility to address both local and regional efforts to address likely climate change scenarios.

Many of the transportation corridors located within the San Diego region bisect or are located directly adjacent to sensitive marine resources including coastal lagoon systems and the Pacific Ocean itself. Impacts to these resources are prohibited by Coastal Act policies. Except for certain specific instances, fill of a wetland or other coastal waters is prohibited (PRC 30225), and the marine resources (PRC 30230), water quality (PRC 30231) and environmentally sensitive initial areas (PRC 30240) often associated with the coastal environment are also protected. Many of these coastal systems have already significantly deteriorated due to historical transportation infrastructure development. Future transportation improvements planned for the Coastal Zone should seek to minimize if not eliminate these constraints and enhance coastal resources whenever feasible.

The development of smart growth solutions to future transportation and land use challenges is strongly supported through Coastal Act policies. Public Resources Code (PRC) 30250 requires that new development shall be located within or directly adjacent to existing developed areas having adequate public services able to accommodate the new development and that the new development will neither individually or cumulatively impact coastal resources. Public transit development that facilitates improved public coastal access is encouraged (PRC 30252), and new development projects are directed to minimize energy consumption and vehicle miles travelled. These policies can be implemented through the concentration of development densities along existing...
transportation corridors and employment centers, improving the connectivity for various types of transit linkages available within these areas, and protecting and expanding pedestrian and bicycle opportunities. Additionally, concentrating development into existing areas can serve to preserve existing coastal agricultural resources (PRC 30241 and 30242) and reduce carbon emissions associated with the import of these locally produced goods. The reduction of GHG emissions through adherence to the direction from SB 375 can further assist in achieving compliance with Coastal Act policies.

Primary transportation planning themes for the Coastal Zone. Most of our recommendations derive from several planning themes that we’ve been emphasizing in discussions with our local transportation partners over the past several years. These themes are the result of evaluating how we can best understand and apply California Coastal Act policies that protect coastal resources, direct land use, and provide for public access to and along the coast. We believe these policies should be applied in a way that will facilitate, rather than complicate, the protection and improvement of the State’s mobility infrastructure serving the Coastal Zone.

1. Land use planning and transportation planning need to be closely integrated. The RTP provides a list of recommended transportation-related strategies for local governments to consider when updating the kinds, locations and densities of allowable development in their General Plans. For portions of the County located within the Coastal Zone, reference is also needed to the overlying Coastal Act land use policies that direct growth management strategies and the corresponding transportation infrastructure. Coastal Act policies reinforce the goals presented in the 2050 RTP in terms of correlating allowable growth to infrastructure capacity; avoiding urban sprawl; and by encouraging walkable community design, employee housing located close to work sites, and bicycle and transit-oriented development patterns.

2. Transportation planning needs to be regional in scope. San Diego County is a prime example where local transportation is innately connected with surrounding areas to both the north and south due to external inputs of both people and goods into the transportation network. Regional-level traffic demand modeling and the consolidation of RTP programmatic environmental review under the RTP EIR represent encouraging progress towards region-based planning.

3. The Coastal Act policies need to be cited as one of the basic considerations for transportation project planning in the coastal counties. This group of policies will have a direct bearing on what transportation improvement projects will—and will not—be possible in the Coastal Zone. For example, these policies require that new or expanded public works facilities must be designed to accommodate [but not exceed] demand from existing and permitted development (PRC 30254); with few exceptions, wetland fill is prohibited (PRC 30233); and, conversion of agricultural lands must be minimized (PRC 30241-30242).

We recommend that the maps in each plan show that portion of the region that falls within the Coastal Zone. Each plan should have a text section that states that—for the Coastal Zone—additional policy considerations will apply. A table

A-10 Cont.

A-11 Comment noted.

A-12 Text will be added to the 2050 RTP/SCS to acknowledge the importance of Coastal Act policies and LCPs in implementing the SCS.

A-13 Comment noted.

A-14 Text will be added to the 2050 RTP/SCS to acknowledge the importance of Coastal Act policies in transportation planning. Individual transportation network improvement projects are required to be consistent with these policies to acknowledge the importance of Coastal Act policies and LCPs in implementing the SCS.

A-15 Text will be added to the 2050 RTP/SCS to acknowledge the importance of Coastal Act policies and LCPs in implementing the SCS. The SCS is a regional sustainable communities strategy,
rather than a land use plan. The level of detail requested in map revisions and new tables is not consistent with the SCS’s level of detail.
The Regional Bike Plan includes the Coastal Rail Trail (San Diego Rail Trail) and SANDAG's implementation strategy for bike plan includes direct involvement of SANDAG in the completion of that project along with other regional bikeway corridors. The information about the California Coastal Trail in the Draft 2050 RTP/SCS is based on an initial scoping study of the trail conducted by SANDAG and reflects the current extent of our knowledge about the opportunities to complete the trail. Plans are underway to undertake a feasibility study of the CCT that will provide more detailed information on opportunities and constraints.

Specific recommendations: The following responses are based in large measure on these coastal transportation planning themes, and recommend ways in which this RTP can more completely reflect the applicable Coastal Act policies:

The 2050 RTP currently describes plans for the Interstate 5 corridor (I-5) to include expansion to 10 general lanes plus 4 managed lanes (10+4) throughout much of the North County corridor. Recent developments associated with SB 468 have identified that SANDAG would likely support an 8+4 alternative extending throughout this corridor instead. This potential shift to a less expansive highway design should be reflected in updated versions of this RTP.

The revenue constrained network for the RTP lists several key factors utilized to select and prioritize projects for the RTP. One of the stated goals of the revenue constrained network is to add new Trolley and Bus Rapid Transit (BRT) lines to provide high-quality regional transit connections along high-demand corridors within the County. The DEIR/EIS for the I-5, and the draft PWP, both describe the North County corridor as a principal north-south transportation corridor, as well as predominant route for the movement of goods and commerce through the region; however, no new trolley lines and a very minimal BRT network is proposed for this portion of the County. This omission appears counter to the stated goals of the RTP to focus on improving and expanding transit services throughout the County and should be addressed. Further, we would encourage including prioritization factors that promote the region’s ability to plan for and adapt to expected sea level changes as discussed further below.

Table 6.2 presents Phased Transit Services throughout the County included under the revenue constrained network. Specifically within the North Coast Corridor, it is encouraging to see the emphasis to move forward double tracking projects into the near (2018) and mid (2030) phases; however, it is equally disappointing that other potential
improvements in mass transit improvements are scheduled for later phases including 2030 for the Rapid Bus and 2035 for the limited service BRT. Meanwhile, the majority of I-5 expansion and associated improvements in this corridor are slated to be completed by 2030. In order to better facilitate the movement of people and goods through this corridor, especially during periods when heavy construction and associated delays will be present along the I-5, it might be more prudent to accelerate mass transit projects so that they are available to compensate for some of the traffic delays that are anticipated to coincide with the freeway improvements.

The draft RTP includes a Goods Movement Strategy that describes how freight and goods would be transported through the corridor. It describes that the majority of the region's freight travels by truck, and states that an evaluation of the potential to transport truck freight on the proposed Managed Lanes network is forthcoming. We strongly encourage future investigation of alternatives that would result in the removal of freight truck travel along general purpose lanes, particularly actions that would promote shifting the goods delivery system to less energy-intensive options such as rail cargo.

The Sustainable Communities Strategy (SCS) component of the draft 2050 RTP discusses future challenges that face the County associated with Climate Change. One specific area of concern within the Coastal Zone is the likely impacts associated with predicted sea level rise. The SCS contains action items to be utilized to achieve the goals presented within the SCS and the associated RTP. These strategies reference the need to identify climate adaptation issues as a part of the design of new or replacement projects, and also propose completion of mapping exercises that would designate infrastructure that is vulnerable to changes in sea level rise or other related variations attributed to climate change. Given the proximity of significant portions of the County's infrastructure adjacent to the coast, it is imperative that preparations be conducted for the effects that predicted sea level rise and associated hazards may create. Future transportation improvements should be designed to account for predicted sea level rise extending to at least 2100, or beyond if the design life of the project extends into the next century. Additionally, it will be important to inventory existing transportation infrastructure in order to prepare for sea level rise and to develop appropriate adaptation strategies to address these potential impacts. Any future infrastructure should be planned to avoid and minimize impacts while preserving the valuable resources located along the ocean.

We look forward to future collaboration on improvements to the transportation systems located within San Diego County, and appreciate the commitments presented within the draft RTP to preserve and enhance coastal resources. If you have any questions or concerns, please do not hesitate to contact me at our San Diego District Office.

Sincerely,

Gabriel Buhr
Coastal Program Analyst III
San Diego District

A-20
Project phasing reflects the overall quantitative ranking of the various projects evaluated for inclusion in the RTP. Since there are limited capital and operating funds available during each phasing period, implementing all desirable projects in early phases is not possible. However, a Transportation Resource and Enhancement Program/Public Works Plan encompassing transit, highway, community and environmental enhancements in the I-5 North Coast Corridor is underway and will address phasing and balancing the planned transportation and environmental projects in the corridor.

A-21
Comment noted. We agree that a truck managed lane study would be a first step in assessing the potential for truck managed lanes. SANDAG recently received grant funding to conduct such a study.

A-22
Please note that the potential effects of sea level rise on the RTP were discussed in the Draft EIR on page 4.10-50. Also, Caltrans, which is responsible for implementing many of the RTP's transportation projects, will be addressing sea level rise in project location and design pursuant to the 2009 California Climate Adaptation Strategy. In addition, many local governments have prepared or are preparing climate action plans which address adaptation to sea level rise.

A-23
Please note that the potential effects of sea level rise on the RTP were discussed in the Draft EIR on page 4.10-50. Also, Caltrans, which is responsible for implementing many of the RTP's transportation projects, will be addressing sea level rise in project location and design pursuant to the 2009 California Climate Adaptation Strategy. In addition, many local governments have prepared or are preparing climate action plans which address adaptation to sea level rise.

A-24
Comment noted.
Introductory comments and description of project understanding are noted. The prior comment letter submitted by CDFG on the Notice of Preparation dated June 2011 has been received and the information provided in that letter is noted. SANDAG recognizes that CDFG is a Trustee Agency under CEQA. However, CDFG is not a Responsible Agency for the 2050 RTP/SCS EIR because it does not directly carry out or have discretionary approval over the 2050 RTP/SCS; please see response to comment H-28 for a detailed explanation. SANDAG acknowledges the need to be compliant with Federal and State regulations for species protection.

Conserving California’s Wildlife Since 1870
The 2050 RTP/SCS is based upon other forecasts and plans, such as the 2050 Regional Growth Forecast, Climate Action Strategy, Regional Energy Strategy, San Diego Regional Bicycle Plan, Urban Area Transit Strategy, Regional Housing Needs Assessment, Comprehensive Freight Gateway Forecast, airport multimodal planning, high speed rail planning, and corridor and sub-regional studies. The 2050 RTP/SCS includes the Sustainable Communities Strategy developed in accordance with mandates under Senate Bill 375 (SB 375). Those mandates include development of sustainable communities with a goal in reducing greenhouse gas emissions from passenger cars and light-duty trucks. Achieving those goals would require concentrating development patterns (e.g., focused in the western portion of the region), conserving open space (e.g., located in the eastern portion of the region), and investing a transportation network that reduces vehicle miles traveled and provides alternative transportation options. The 2050 RTP/SCS includes an overview of projects and corresponding analysis associated with regional rail and bus services, Managed Lanes and highways, local streets, bikeways, and walkways, along with managing demands on the transportation system and managing the transportation system.

The draft PEIR provides the following alternatives to the proposed project: No Project; Modified Funding Strategy/2050 Growth Forecast Land Use; Modified Funding Strategy/2050 Growth Forecast Land Use; Transit Emphasis/Modified Phasing/2050 Growth Forecast Land Use; Transit Emphasis/Modified Phasing/2050 Growth Forecast Land Use Assumption; 2050 RTP/SCS Transportation Network/Modified Land Use Assumption; and Slow Growth. The Slow Growth alternative was determined to be the environmentally superior alternative under CEQA standards.

It is the policy of the Department to promote and foster the development of planning strategies at the ecosystem level through active participation in local development of regional NCCPs, which often include innovative multiple species habitat conservation planning efforts (e.g., MSCP). The success of these plans is reliant on maintaining core biological resource areas and habitat linkages that are essential to the long-term biological viability of associated flora and fauna. Many of those projects defined within the 2050 RTP/SCS extend through diverse and biologically valuable habitats, consequently the need for comprehensive planning and creative designs solutions will be essential to ensure goals and objectives articulated in current and draft NCCPs/HCPs efforts are not undermined. We believe the 2050 RTP/SCS provides a unique opportunity to develop and refine the San Diego Association of Governments (SANDAG) policies and strategies that could lead to more effective implementation of resource conservation and species protection. This includes compliance with State and Federal endangered species acts, approved NCCPs/HCPs (e.g., County of San Diego’s (County) and City of San Diego’s approved MSCP) and the in-process North County MSCP. Our comments below are intended to complement existing work to date and provide guidance to reduce the potential for any subsequent conflict that could occur between existing and/or future plans, and other regulations for species protection (e.g., MSCP/MHCP, Lake and Streambed Alteration Agreements under Fish and Game Code §1850 et seq., Fish and Game Code §3500, et seq., etc.) that have received, or are anticipated to receive State and Federal permits.
SANDAG acknowledges that the Coastal Commission's evaluation of the previously proposed route for SR 241 determined that potential impacts to sensitive coastal resources and biological resources that could result from project implementation were inconsistent with its coastal management program in several respects. The Coastal Commission's decision was upheld on appeal to the Department of Commerce. The Department of Commerce decision did not, however, eliminate alternative routes for SR 241 from further consideration; therefore this project is still considered to be a possible future roadway improvement that would take place within the region, potentially with an alternative alignment or other project modifications. For this reason, the project has been left in the 2050 RTP/SCS Project Description to provide a complete picture of the possible future transportation network and associated impacts. The SR 241 project is phased in two phases with the first phase project to be completed in 2020 and the second by 2035. As this project is further studied the project phasing can be refined. The timing of this project is determined through the allocation of state and federal funding, which often have restrictions and limitations as to how and when funds can be used. For further discussion on project phasing, please refer to Master Responses 7 and 10.

The SR 241 alignment is currently being reevaluated and the proposed footprint may change. The alignment analyzed in the biological resources section is based on the best available alignment data to date. Because the Draft EIR is a programmatic document, the specific and complete determination of individual project impacts is not always possible. The lead agency for the SR 241 project would be required to analyze all potential environmental impacts of project implementation per CEQA requirements and obtain all necessary permits.

Tables 4.4-10 and 4.4-11 have been revised to list all ESA and/or CESA listed species, including arroyo toad (Bufo californicus), noted in the California Coastal Commission staff report (CC-018-07).

This comment introduces the commenter’s concern regarding the planning and coordination that will be required for the proposed double tracking of the LOSSAN. SANDAG acknowledges the LOSSAN double-tracking project will continue to require extensive planning and coordination with various resource agencies.

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1 The Department of Commerce decision is available at http://www.noaanews.noaa.gov/stories2008/images/TCA%20decision.pdf
3. Past impacts to coastal resources by rail projects have been significant, and improvements proposed by the 2050 RTP/SCS are important elements which address removal of serious impediments to restoration of coastal wetlands, as well as removing rail elements from other sensitive habitats. These include the Del Mar tunnel, bridge modifications to convert wood pilings to modern structures, and eliminating the Rose Canyon loop by tunneling under University City. The Department encourages planning and design elements which provide enhancement of, or restoration opportunities for, sensitive habitats. We also agree that all such improvements will require additional environmental and alternative analyses prior to implementation.

4. The PEIR acknowledges that a primary goal of the region's MSCP/MHCP planning process is to minimize habitat fragmentation and to provide connections between core habitat areas for facilitating gene flow, daily and/or seasonal movements, and dispersal for covered species. Ensuring the long-term biological viability of associated flora and fauna within core habitat areas can be achieved through retaining well-defined habitat linkages. We suggest that in addition to the narrative (i.e., Section 4.4.1.4) that discusses wildlife movement on the regional/local context, a map depicting known linkages and wildlife movement corridors (as identified within adopted and draft MSCP/MHCP Subarea Plans (SAP) be included in the main body of the final PEIR and not confined solely to the technical appendices. Because of the importance of wildlife movement corridors as defined within MSCP/MHCP SAPs (including NCCP plans that are in draft phase or preliminary planning stages), we further encourage that SANDAG consider adding to the SCS Implementations Actions list (Table 2.0-3) recommendations for early development/implementation of wildlife movement studies and the establishment of linkage design standards that will be applied to future transportation planning efforts identified in the 2050 RTP/SCS. We believe that integrating these standards into the design process early-on will lend itself to avoiding potential conflicts or undermining the goals and objectives defined under the conservation planning process. The Department's NCCP program is available to discuss critical elements that should be included into long-term monitoring and study needs.

5. The compensatory mitigation obligation discussed under Mitigation Measure BIO-A should include a protection and notice element. For example, all mitigation areas should be permanently protected with a conservation easement or dedicated to a State or Federal land management agency with appropriate encumbrances to preclude conflicting land uses prior to impacts occurring on project sites.

6. Per the programmatic-level mitigation guidance provided in the 2050 RTP/SCS and the concentration of projects that occur within the jurisdictional boundaries of the City of San Diego (City), we suggest that Mitigation Measure BIO-A reference the City's Environmental Sensitive Lands (ESL) Regulations during subsequent design and environmental review. Fulfillment of the City's MSCP mitigation obligations is integrated through the City's ESL Regulations, Open Space Residential Zone, and CEQA. This similar regulatory path applies to the City of Chula Vista's MSCP planning area and corresponding Habitat Loss and Incidental Take Ordinance.

B-4 SANDAG acknowledges the impacts to resources that can result from rail projects as noted in the comment. SANDAG will continue to work with the resource agencies to identify planning and design elements to minimize impacts and provide opportunity for enhancement or restoration. Once project specifications are completed for rail projects, complete project-level environmental analysis would be required.

B-5 Appendix C-4 includes three figures, from three different sources, illustrating habitat and linkages. Each of the three sources of wildlife corridor mapping were intentionally kept separate to facilitate a clear understanding of which corridor is being discussed within the text and maintain a clear connection to the original analysis represented on each figure. Each figure, including Figure 2-2 from the County of San Diego 1998 MSCP, provides technical background to support the discussion and analysis. The County of San Diego 1998 MSCP is available at http://www.sdcounty.ca.gov/dplu/mscp/sc.html. Discussion in the EIR appropriately directs readers to Appendix C. (See, e.g., discussion under Multiple Species Conservation Plan on p. 4.4-34.) These figures were created by 3rd party sources and thus were included in the appendix of the document. No changes were made to the location of these figures and no additional figures have been added.

B-6 Table 2.0-3 is a concise summary of the SCS implementation actions. One of the implementation actions states the following: "Design future infrastructure projects in a way that protects wildlife corridors and habitat linkages in designated habitat conservation plans." Mitigation measures BIO-M, N, O, and P have been developed to reduce impacts to wildlife corridors and movement. BIO-M and N already convey that wildlife movement studies will be used to ensure the maintenance of wildlife corridors. These implementation actions and mitigation measures are consistent with the commenter's recommendation. Therefore, no changes were made to Table 2.0-3.

B-7 Changes consistent with the commenter's recommendations to provide a protection and notice element have been made in Section 4.4.5 to Mitigation Measure BIO-A, as follows (added text in bold): "... Compensatory mitigation is intended to result in the establishment of self-sustaining sensitive vegetative communities, replacing the lost habitat and/or habitat value, as required to offset those lost to the impacts and meet the requirements of all applicable agency and adopted plans, ordinances, and policies. All mitigation areas will be conserved (e.g. conservation easement) and managed in perpetuity...".

B-8 The requested changes have been made in Section 4.4.5 to Mitigation Measure BIO-A, as follows (added text in bold): "... Where unavoidable, compensatory mitigation for impacts shall be required as specified through consultation with resource agencies and in approved Multiple Species Conservation Program (MSCP) or Multiple Habitat Conservation Program (MHCP) documents; and the County of San Diego's Biological Mitigation Ordinance (BMO), Resource Protection Ordinance (RPO), County of San Diego Guidelines for Determining Significance for Biological Resources, Habitat Loss Permit (HLP) ordinance, City of San Diego's Environmentally Sensitive Lands (ESL) regulations, City of Chula Vista's Habitat Loss and Incidental Take (HLIT) regulations, and all other NCCP implementing ordinances for all vegetation communities...".
The statement in the Draft EIR regarding the 2-year maintenance and monitoring period was referring specifically to revegetation which may be occurring on site, but which is not being used as compensatory mitigation for vegetation impacts. Given that such non-mitigation restoration is inherently not intended to mitigate for biological impacts, that discussion has been removed from BIO-D in Section 4.4.5.

BIO-A did not previously state a specific maintenance and monitoring timeframe requirement, and instead left it up to the permitting agencies to determine the appropriate period of time. To improve clarity and to make the EIR’s minimum requirements more explicit, language has been added in Section 4.4.5 to BIO-A requiring a 5-year maintenance and monitoring period as follows: “…To the extent allowed by the above plans and ordinances, project specific mitigation may be provided through on-site restoration of temporary impacts, on-site or off-site preservation of existing habitats, or off-site restoration. On-site or off-site restoration areas used as mitigation shall be maintained and monitored for a minimum of 5 years, but monitoring shall continue until required success criteria are achieved. If the restoration is not meeting success criteria, remedial measures shall be implemented and would typically include, but are not limited to, replanting, reseeding, grading adjustments, supplemental irrigation, access control, increased weed control, and extended maintenance and monitoring periods. After final success criteria have been met and relevant permitting agencies have approved the mitigation project as complete, all mitigation areas shall be permanently conserved (e.g. conservation easement) and managed in perpetuity. As the CEQA lead agency, SANDAG shall and other agencies should review and approve all restoration plans prior to their implementation…”

BIO-D has further been revised to ensure grading and earth-moving activities are limited to the planned transportation facility footprint as follows: “…SANDAG shall and other implementing agencies can and should limit all grading and earth-moving activities to within the planned transportation facility footprint…”

As described in Section 4.4.5, Mitigation Measure BIO-E has been revised to include supplemental conditions consistent with the comment, as follows: “…When mitigation is provided outside of an adopted NCCP/HCP the following conditions shall apply to the maximum extent practicable: mitigation lands will be connected to existing conserved open space; consideration will be given to contributing in the establishment of large blocks of habitat or lands which are otherwise critical for covered species and/or providing for biological core areas and habitat linkages consistent with current regional conservation planning goals; and impacts to critical habitat will be mitigated within the same Critical Habitat Unit where the impacts occurred. Mitigation lands must be protected in perpetuity (e.g. through a conservation easement or similar legal protection) and adequately managed to maintain the originally intended biological quality and function in perpetuity…”
In lieu mitigation fee provisions are included in mitigation measures BIO-A, BIO-B and BIO-E, as stated in Section 4.4.5. In lieu fees, in each case, would be consistent with the compensatory mitigation otherwise required. Please note that mitigation measure BIO-E provides that acquisition of off-site mitigation should be on lands contiguous with areas of native habitat, and coordinated with resource agencies and regional habitat conservation and planning efforts such as the MSCP and MHCP. This is consistent with the commenter’s priority for providing compensatory mitigation in areas that contribute to a regional system. None of these mitigation measures set a lower limit on mitigation acreage. To the extent the comment suggests categorically limiting the application of an in-lieu mitigation fee program to apply to only small or minor projects would limit mitigation options for other projects in a manner that potentially limits ecologically beneficial options. The discretion on which mitigation options are most appropriate to a given project situation is most appropriately applied at the project review level.

As stated in Section 4.4.5, the language in BIO-F and BIO-G has been revised to include supplemental conditions consistent with the comment, as follows: “...If an individual project has the potential to result in “take” of a special status wildlife species, all appropriate take authorizations (e.g. Section 2081 Incidental Take Permit, Section 7) will be acquired prior to construction as required by state, federal, and regional conservation plan (NCCP/HCP) regulations.”

SANDAG concurs with CDFGs explanation of the take authorization process as detailed in the comment and the specifications that would be required of individual projects dependent upon their location and the applicable jurisdiction or agency. Refer to Response to Comment B-12 for revisions to BIO-F and BIO-G.

This comment suggests SANDAG take early consideration towards developing mitigation banks. The comment has been noted.
sites within the County for the purposes of compensating for future project impacts. As reported in Table 4.4-18, there are considerable acreage impacts proposed to critical habitat for arroyo toad, quino checkerspot butterfly, coastal California gnatcatcher, and peninsular bighorn sheep, whereas Table 4.4-21 reports 2,471 acres of direct impacts to MSCP hardline preserve. Early consideration directed towards developing large consolidated mitigation/conservation banks could provide benefits in the project permit process and provide more biologically sustainable mitigation site. These mitigation sites should support the preserve-building efforts of the regional habitat conservation plans within the County. Furthermore, securing large biological mitigation sites to serve the needs of multiple projects should be one of the defined goals for the 2050 RTP/SCS under the Healthy Environment portion of the Sustainable Communities Strategy element.

11. Based on the PEIRs programmatic-level based mitigation guidance, a key element to consider for ensuring individual project consistency to a local jurisdiction's MSCP/HHCP SAP should include adherence to the land use adjacency guidelines, as defined under the corresponding SAP. Corresponding guidelines focus on applying sound planning principles for development in relation to conserved habitats. These provide consideration for issues associated with drainage, toxic, lighting, noise, barriers, invasive plants, brush management, and grading/land development. We recommend either a reference to MSCP/HHCP land use adjacency criteria (e.g., Section 1.4.3 City of San Diego's MSCP SAP) be incorporated in Mitigation Measure BIO-R, or an acknowledgement of these standards be included in Section 4.11.5 of the PEIR.

12. We suggest that the State Laws and Regulations analysis (Section 4.4.2 of the PEIR), include a referral to the substantive planning guidance provided within California's Wildlife Action Plan (http://www.ctf.ca.gov/wildlife/wpreport.html). Many of the recommended statewide conservation actions provided in the plan (Chapter 4) parallel those region-specific conservation planning strategies that are included in the 2050 RTP/SCS; for example, ensuring environmental stewardship (i.e., species and habitat protection) is fully considered during infrastructure project designs. In terms of a sustainable community planning strategy, it is the Department's position that open space (including NCCPs/HHCP preserve lands) be considered "green capital or infrastructure" and that preserving environmental resources be weighed equally in the planning process, when compared to meeting regional infrastructural build-out obligations and growth demands. Recognition of similarities in planning strategies at state, regional, and local levels will inevitably result in a more cohesive planning strategy (as opposed to certain issue areas being missed or relegated to a lower priority in the land-use decision tree) as individual projects are brought forth for review.

Greenhouse Gas (GHG) Emissions

13. The mitigation measures provided in Section 4.8.5 of the PEIR should consider incorporating by reference some of the applicable mitigation measures proposed by the Attorney General's Office and California Air Resources Board. The complete document available at: http://ag.ca.gov/globalwarming/pdf/GW/mitigation_measures.pdf

14. The impact analysis should provide clear guidance that at a minimum, project boundaries associated with planned transportation infrastructure should include the...
GHG-B  San Diego region cities and the County government can and should adopt and implement Climate Actions Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that contain the following information:

a) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within their respective jurisdictions;
b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;
d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
e) Establish a mechanism to monitor the plan’s progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and
f) Be adopted in a public process following environmental review.

CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change. They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following web page: http://ag.ca.gov/globalwarming/ceqa/resources.php. SANDAG will assist local governments in preparing CAPS and other climate strategies through continued implementation of the SANDAG Climate Action Strategy and Energy Roadmap Program. The Climate Action Strategy provides a toolbox of land use, transportation, and related policy measures and investments that help implement the 2050 RTP/SCS through reducing GHG emissions. Policy measures also are identified for buildings and energy use, protecting transportation and energy infrastructure from climate impacts, and to help SANDAG and local jurisdictions reduce GHGs from their operations. Through the Energy Roadmap Program, SANDAG will continue to provide energy planning assistance to local governments to reduce local energy-related GHG emissions. SANDAG’s Climate Action Strategy can be found at: http://www.sandag.org/uploads/publicationid/publicationid_1481_10940.pdf

In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation (San Diego Foundation Focus 2050 report) and in conjunction with Executive Order S-13-08, which seeks to enhance the State’s management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State’s first climate adaptation strategy.

B-18  Under Section 4.8.4, GHG-1, the methodologies for analyzing the impacts associated with GHG emissions are stated, and include construction and operational emissions. While the emissions associated with transport of materials and workers commuting to project sites are included in the construction impact analysis, the text has been revised to clearly state this emission source.
A fundamental objective of the 2050 RTP/SCS is a land use pattern that accommodates the region's future employment and housing needs, and protects sensitive habitats and resource areas. (DEIR, p. 2-10.) The compact development pattern of the 2050 RTP/SCS that focuses development in and near existing urban centers and established transportation corridors will allow for the conservation and protection of substantial tracks of open space land. These open space areas could serve as carbon sinks and be incorporated into mitigation as appropriate. Further, mitigation measure BIO-B provides a 2:1 mitigation ratio for permanent impacts to jurisdictional wetlands. Please note that the SCS land use pattern identifies 1.37 million acres of protected natural resource areas, park land and open space (DEIR, p. 4.4-51).

SANDAG acknowledges the LID guidance standards provided the Governor's Office of Planning and Research as a useful tool when preparing LID design. This additional reference was added to 4.10.2 under State Regulations as well as WQ-A. Mitigation Measure WQ-A has been revised as follows with revisions shown in strikethrough and bold text:

**WQ-A**

During project-specific design and CEQA review, SANDAG shall and other implementing agencies can and should develop detailed erosion control mitigation measures tailored to the project and site to be developed and included in the SWPPP upon application for a Construction General Permit. During construction, SANDAG shall and other implementing agencies can and should avoid construction on unstable slopes and erosion-prone areas where possible; use special construction techniques to minimize erosion; and manage on-site grading to maximize the capture and retention of on-site runoff by creating perimeter ditches, trenches, siltation ponds, or similar depressions. Low-impact development (LID) guidance provided by the Governor’s Office of Planning and Research (http://www.opr.ca.gov/ceqa/pdfs/Technical_Advisory_LID.pdf) as well as other implementing agencies such as the County's LID Handbook shall be used to select Low-impact development (LID) design features. These features, including drought-tolerant landscaping, shall be incorporated into each drainage design to the maximum extent practicable. Where permanent, postconstruction BMPs are specified (e.g., detention/retention systems), features shall be utilized for temporary sediment trap devices during construction. In addition, agencies can and should develop an erosion control and revegetation plan for the project site to delineate measures to minimize soil loss and prevent short-term and long-term significant soil erosion problems. Routine site inspections shall be made to assess long-term effectiveness of soil erosion control.

Potential modifications in peak flows, velocity, volume and duration will be addressed through compliance with County and local hydromodification management requirements, discussed in Section 4.10.2. (See pp. 4.10-22 – 4.10-23 for discussion of the Hydromodification Management Plan.) These require that projects implement hydrologic control measures such that postproject runoff flow rates and durations do not exceed preproject flow rates and durations where they would result in an increased potential for erosion or significant impacts to beneficial uses (which include habitat and biological resource value). Project-specific environmental review for future

**Hydrology and Water Quality**

16. Given the acknowledgement to integrating Low Impact Development (LID) Best Management Practices (BMPs) into all forthcoming projects, Mitigation Measure WQ-A should further direct SANDAG and other Implementing Agencies to the supplemental LID guidance standards provided by the Governor’s Office and Planning and Research Technical Advisory: CEQA and Low Impact Development Stormwater Design: Preserving Stormwater Quality and Stream Integrity Through California Environmental Quality Act (CEQA) Review (http://opr.ca.gov/ceqa/pdfs/Mine/Technical_Advisory_LID.pdf).

17. Based on those projects that would result in increases in impervious surface area and the level needed to adequately mitigate for associated impacts, the Department suggests adding concerns about the effects of project-related changes in the surface flows on habitats and biological resources associated with on-site/adjacent drainageways and downstream tributaries. Along with modifications in peak flows, we are concerned about changes in the velocity, volume, duration, and frequency of wet- and dry-season flows (and associated pollutant load discharges). We recommend that efforts be directed to all project designs that minimize the increase in dry- and wet-weather flows and that should integrate on-site BMPs that will attenuate flows and thus reduce impacts on stream morphology and habitats. This would include locating all contributing and post-construction BMPs within the development footprint (i.e., included in the impact analysis as loss of habitat) and providing figures depicting the location of BMPs in association with the development footprint.

18. The Department recommends adding emphasis that all modifications to drainage conveyance associated with forthcoming projects need to ensure that all upgraded and new culverts facilitate wildlife movement to the maximum extent possible. Each project should identify a mechanism for design and routine maintenance of the culverts so they retain a soft-bottom and drainage capacity, but do not accumulate sediment such that wildlife movement is blocked or significantly restricted. If these factors are not considered in the design and maintenance of the culverts, they may result in having little value to wildlife movement over time, resulting in significant wildlife loss.

19. The Hydrology and Water Quality Analysis (Section 4.10) cites that effects of flooding as a result of climate change have not been fully analyzed for the San Diego region. The discussion further states that within the 2020 analysis, implementation of appropriate design measures in development associated with the 2030 RTP/SCS would ensure flood risks, including those associated with climate change, would be less than significant. We believe that the analysis should provide a clearer distinction

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**Cont.**

Low-impact development (LID) design features. These features, including drought-tolerant landscaping, shall be incorporated into each drainage design to the maximum extent practicable. Where permanent, postconstruction BMPs are specified (e.g., detention/retention systems), features shall be utilized for temporary sediment trap devices during construction. In addition, agencies can and should develop an erosion control and revegetation plan for the project site to delineate measures to minimize soil loss and prevent short-term and long-term significant soil erosion problems. Routine site inspections shall be made to assess long-term effectiveness of soil erosion control.

**B-21**

Potential modifications in peak flows, velocity, volume and duration will be addressed through compliance with County and local hydromodification management requirements, discussed in Section 4.10.2. (See pp. 4.10-22 – 4.10-23 for discussion of the Hydromodification Management Plan.) These require that projects implement hydrologic control measures such that postproject runoff flow rates and durations do not exceed preproject flow rates and durations where they would result in an increased potential for erosion or significant impacts to beneficial uses (which include habitat and biological resource value). Project-specific environmental review for future
projects will evaluate direct and indirect impacts, including permanent and temporary impacts, and identify appropriate locations for stormwater management BMPs on a site and project-specific basis.

**B-22**
Wildlife movement is addressed in detail in the Biological Resources Section 4.4.1.4. Culvert maintenance and specific design details will be addressed on a project-by-project basis through project-level CEQA documentation and follow-on permitting. Mitigation Measure BIO-N also addresses the movement of wildlife and requires that bridges and other undercrossing that allow continued movement of wildlife be incorporated where roads or transit features would create barriers to wildlife movement. The following language has been added to Mitigation Measure BIO-N to address maintenance needs, “All new culverts or modifications to existing culverts shall be designed to avoid erosion or sediment deposition that would reduce the function of the culvert as a wildlife crossing, and regular maintenance of all undercrossings shall be implemented to ensure the intended functions of the crossing remain present.”

**B-23**
See Master Response 18 for a discussion risks associated with sea level rise. Although the extent of flooding due to climate change in the San Diego region is uncertain, primary areas of impact are expected to be in coastal and wetland areas. Impact analyses for Impacts WQ-3 and WQ-4 include consideration of increased flood hazards associated with climate change. Both analyses appropriately determine that compliance with regulations would result in less than significant impacts. Per CEQA guideline 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant.
between mitigation measures that have been evaluated per CEQA Guideline § 15126.1(f), as opposed to the current conclusions that solely defer to applying existing engineering design standards that would include evaluating the potential flooding events, which include flooding as a result of climate change impacts.

The guidance provided by the California State Coastal Conservancy (2009 Climate Change Policy) stresses the need for climate-sensitive projects to include robust adaptation measures and strategies for addressing climate change and sea level rise. This includes adaptive management and monitoring of ecosystems and physical processes to support implementation of management actions that will achieve project objectives under rapidly-changing climatic conditions. The Coastal Conservancy Board also emphasizes that for new projects located in areas vulnerable to future sea level rise (Consistent with Executive Order S-13-08), planning shall consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. The Department believes that a comprehensive sea level rise adaptation strategy should be provided in the analysis, accompanied by proposed measures for ensuring that sea level rise is integrated into the design of all coastal structures.

Land Use

20. The regulatory setting discussion provided in the introduction to Section 4.11.2 of the PEIR should include a cross-reference to the regional and local overview of the habitat conservation planning process that was included in Section 4.4.2 of the PEIR.

Recreation

21. The Department is concerned that the PEIR does not list any of the 28 Department properties that occur in the San Diego region (Section 4.15, Recreation, subsection 4.15.1.2, Federal and State Parkland and Open Space, subheading of State Land). Although most of the properties are indicated on Figure 4.15-1 as Open Space Parks, we consider this a significant oversight, as many of the lands have roadway alignments or railway routes with proposed expansions passing through or in close proximity to our lands holdings. Most significant are the coastal Ecological Reserves (ER) such as Buena Vista Lagoon ER, Batiquitos Lagoon ER, San Elijo Lagoon ER, and San Dieguito Lagoon ER with numerous state and federal listed endangered or threatened species and sensitive habitats. In addition, there are numerous inland ERs, and the San Felipe Valley and Hollebeck Canyon Wildlife Areas which may be affected by future transit projects.

Department lands provide recreational opportunities including nature study, wildlife viewing, fishing and hunting which could be affected by various transportation projects. Noise, encroachment, habitat loss and reduced viability of remaining habitat for wildlife and wildlife related uses are all concerns related to expanded transportation corridors and activities. Although most of the biological issues related to project impacts are to be addressed by the biological mitigation measures provided in Section 4.4 Biological.

B-24

Please refer to Master Response 18 for discussion of sea level rise and associated risks, and adaptation strategies.

B-25

Language cross-referencing the habitat conservation planning process as described in Section 4.4.2 has been added to the introduction of Section 4.11.2 (Land Use).

B-26

The section referenced by the commenter is within the recreation section of the Draft EIR and focuses on the regional facilities that offer significant recreation opportunities. While offering some recreational experiences, many of the CDFG properties are key ecological and biological reserves. Text has been added to Section 4.15.1.2 under the State Land heading referencing the CDFG properties throughout the region.

Section 4.4.4 of the Draft EIR Biological Resources chapter analyzes impacts to vegetation, special status species, and movement corridors regardless of underlying land ownership/management. Though those impacts are not summarized specifically for CDFG ecological reserves, the impacts are addressed in the EIR. Section 4.4.4 also analyzes conflicts between RTP/SCS implementation and various plans targeting conservation of biological resources. CDFG ecological reserves that lie within adopted NCCP planning areas are incorporated as preserves in those plans, and impacts to such plans are quantified to the extent they are currently known. The analysis also makes clear that any conflicts with a local, state, regional, or federal regulation, policy, ordinance or plan, even if not specifically named in the EIR, would be considered significant impacts. Additionally, mitigation measure BIO-Q requires that designs be modified to ensure the maximum feasible level of consistency with adopted plans and that project-level coordination with USFWS and CDFG be initiated when full compliance is not feasible.
SANDAG 2050 RTP/SCS EIR
G-89
October 2011

Resources, the Department is additionally concerned that potential loss of wildlife related recreational opportunities has not been adequately addressed in the PEIR. Please refer to the Department’s website (http://www.sandag.org) for information on our landholdings in the San Diego region, or contact Karen Minner, Supervisor, Land Management Program (kminner@sandag.org), for additional information on our lands program.

Alternatives Analysis

22. The alternatives described in the 2605 RTP/SCS involve various combinations of the “Modified Funding” and “Modified Land Use” strategies, and includes an increased transit services proposal that would provide more frequent buses, light rail and rail service. The Department believes that a planning strategy for consideration should include concentrating development, phasing transit projects earlier, and providing some transit service, thereby reducing the need to expand existing infrastructure (i.e., freeways) and consequently leading to the retention of a larger amount of undeveloped land. The 2605 RTP/SCS PEIR has identified Alternative 5, Slow Growth as the environmentally preferred alternative, based on the assumption that impacts to resources would be delayed by 5 years for each element. This alternative does not seem to remove the impacts as they are still expected to occur, just at a slower rate. Although this reduces the impacts for the purpose of the 2605 outlook, it does not eliminate those impacts but defers them to a later date. The Department believes that this may not be the most environmental superior alternative. Based on the above criteria, by utilizing modified funding, modified land use and increased transit services, the actual impact to biological resources would be reduced. The draft PEIR identifies a modified funding proposal to construct transit projects earlier to reduce the need for highway expansion projects, which would reduce impacts on significant coastal resources. The analysis identifies modified land use as a method to concentrate development under a Smart Growth Concept and provides funding to agencies which employ this strategy of infill and redevelopment, thereby reducing the need to develop up to 86,156 acres of undeveloped land by 2050. It also identifies increased transit services to further reduce the need to expand roadways by increasing the capacity of the existing regional transit system.

29. The Department is concerned that with expanded roadways and new transit systems, regional wildlife and habitat conservation planning and preserves may be negatively affected. Under the proposed project, the 2605 RTP/SCS transportation project planning is based on the Regional Growth forecast, which expects continued expansion into undeveloped areas, extending the road system and requiring continued expansion of the capacity of existing highways. The 2605 RTP/SCS impacts existing preserve systems and wildlife corridors by encroaching on existing preserve areas, narrowing wildlife movement corridors and disrupting these areas during construction (and long-term operational phases). Although roadway and railway improvements are allowed within the preserve areas if they are preexisting, an alternative which reduces the need to expand them is a preferable one and should be at the forefront in planning design.

SANDAG concurs that CDFG properties offer unique wildlife-related recreation opportunities in the region, specifically focused on the enjoyment of the natural environment and wildlife. As noted in the comment, the potential impacts to biological resources have been fully addressed in Draft EIR Section 4.4, Biological Resources and significant impacts were identified. The potential for loss of wildlife-related recreation would be minimized through required adherence to Section 4(f) of the Department of Transportation Act of 1966, as described in Section 4.15.2 (Recreation). The review process for federally funded facilities under Section 4(f) requires planning to minimize harm to the parks, recreation areas, and wildlife and waterfowl refuge that would be impacted by the transportation projects. Agencies within the U.S. Department of Transportation, including Caltrans and SANDAG, would be responsible for applicability determinations, evaluations, findings, and overall compliance. Adherence to Section 4(f) requirements, in conjunction with biological mitigation measures, would minimize the potential concern identified within the comment letter regarding loss of wildlife-based recreation.

Please refer to Master Response 16 for discussion of the reasonable range of alternatives analyzed in the Draft EIR. In addition, please see Draft EIR Section 6.4 for an explanation of the selection of the environmentally superior alternative. It is correct that many of the impacts identified for Alternative 5, Slow Growth would be similar to those incurred with the proposed 2050 RTP/SCS, but would be delayed. However, in comparison to the other alternatives, some of which have increased impacts relative to the 2050 RTP, the Slow Growth Alternative is still considered to be the environmentally superior alternative. The delay in timing of impacts under the Slow Growth Alternative would also result in lessened impacts due to improved technology or the approval and implementation of plans and policies (such as habitat conservation plans, emission restrictions, etc.) within the extended timeframe. Please see Master Response 16 for additional discussion addressing the selection of Alternative 5, Slow Growth as the environmentally superior alternative.

The commenter is correct that the Draft EIR identifies multiple alternatives that have the potential to reduce impacts to biological resources through modified funding, modified land use, or transit emphasis. Chapter 6 of the Draft EIR provides a clear comparison of those alternatives and their potential to reduce impacts to biological resources (such as the reduced need to develop up to 86,156 acres) as well as any increased impacts that may result to biological or other resource areas as compared to the 2050 RTP/SCS. This alternative comparison gives decisions-makers and the public the ability to consider each alternative and the resulting impact for individual resources in comparison to the proposed 2050 RTP/SCS. (See DEIR pp. 6-32 through 6-184.) Please see Master Response 10 for additional discussion of constraints affecting transit project phasing.

SANDAG acknowledges the commenter’s concerns regarding impacts to preserve and conservation areas due to expanded roadway and transportation systems. Section 4.4.4, Biological Resources (Impacts BIO-3 and BIO-4) provides analysis of the project’s potential impacts to preserve and conservation areas and the conflicts with wildlife and habitat conservation planning efforts that may result from the 2050 RTP/SCS. The language in Section 4.4 has been revised to include information regarding conflicts with hardline preserves. As stated in Section 4.4.6, Mitigation Measures BIO-Q and BIO-R are intended to reduce conflicts with all...
conservation planning to a level less than significant through requiring biologically equivalent or superior compensation when and if such conflicts arise at the project level.

Similarly, the alternatives analysis presents a comparison of the potential conflicts with preserved areas and biological planning efforts and identifies multiple alternatives that would result in less significant impacts than the 2050 RTP/SCS. Please see Table 6.4-1, including Alternatives 2a, 2b, 3b, 4 and 5. All alternatives are considered equally to provide an unbiased comparison analysis to decision-makers and the public. Please see Master Response 16 for additional discussion regarding the selection of alternatives for analysis.
Mr. Rob Rundle  
July 27, 2011  
Page 10 of 10

We appreciate the opportunity to comment on the draft PEIR for this project and to assist SANDAG in further minimizing and mitigation project impacts to biological resources. If you have questions or comments regarding this letter, please contact Paul Schilt at (858)637-5510 or Tim Dillingham (858)467-4250.

Sincerely,

[Signature]

Edmund Perl  
Regional Manager  
South Coast Region

cc: State Clearinghouse, Sacramento  
Sally Brown, U.S. Fish and Wildlife Service, Carlsbad  
Tim Dillingham, CDFG, San Diego  
Paul Schilt, CDFG, San Diego

B-31  
Closing statements are noted and no additional response is required.
August 15, 2011

Gary Gallegos  
Executive Director  
San Diego Association of Governments  
401 B Street  
San Diego, CA 92101

Dear Mr. Gallegos:

The Governor's Office of Planning and Research (OPR) appreciates this opportunity to provide input on the San Diego Association of Governments' (SANDAG) 2050 Draft Regional Transportation Plan (RTP) and draft RTP Environmental Impact Report (EIR). We hope that these comments will be helpful as SANDAG completes and adopts its final RTP this fall.

We congratulate SANDAG on developing California's first draft Sustainable Communities Strategy (SCS) prepared under California Senate Bill 375 (Chapter 728, Statutes of 2008.) (SB 375). The draft SCS describes how the SANDAG region will reduce greenhouse gas (GHG) emissions from passenger vehicles to meet 2020 and 2035 targets. We believe the SCS represents an enormous opportunity for the San Diego region to improve livability and sustainability and to take a critical first step forward in reducing greenhouse gas emissions from better-integrated planning for transportation, land use, and housing.

OPR is directed by statute to "coordinate the technical assistance provided by state departments and agencies in regional and local planning to assure that such plans are consistent with statewide environmental goals and objectives." (Gov. Code Section 85040(i).) Regional transportation plans, including Sustainable Communities Strategies, affect regional land use. OPR has, therefore, reviewed the draft SCS in light of the environmental goals and objectives stated in SB 375. We appreciate the significant effort reflected in the SCS and have identified the following areas where we believe additional discussion or explanation would benefit both SANDAG and the public.

Quantify Greenhouse Gas Reductions Resulting From Individual RTP Strategies

Section 1(g) of SB 375 states: "Current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning

C-1 This comment provides introductory remarks. No further response is required.

C-2 Please refer to Master Response 23 for a discussion on why the RTP/SCS did not provide the individual GHG reduction contribution of individual 2050 RTP/SCS strategies.
Please refer to Master Response 11 and Master Response 20 for an explanation of the relationship between per capita GHG emissions and per capita VMT.

The RTP Guidelines criterion of acceptance of +/- 20 percent between actual counts and model results by mode group is a recommendation of "possible transit assignment validation criteria that can be applied to transportation models." The guidelines do not require any validation targets be met. In addition, the guidelines do not provide guidance for passenger mile metrics, only boardings. Estimated total transit boardings of the 2050 RTP/SCS are within 15 percent of observed boardings, which is within the RTP Guideline criterion of acceptance.

Further, the 102.4 percent difference referenced is between observed and actual passenger miles for express bus service not boarding counts as referenced in the guidelines. While the calibrated variation in passenger miles is large, express bus passenger miles account for a relatively small portion of transit passenger revenue miles in 2008. Overall, the variation between total observed and modeled transit passenger miles is 19.2 percent in the Draft 2050 RTP/SCS.

In response to the comment regarding the implications of model accuracy on performance measure accuracy, it should be noted that since the performance measure outputs reflect information for future years, and their accuracy depends on the accuracy of the base year. As described in the Travel Demand Model Validation Report (Validation Report), the model was accurately calibrated to reflect the base year assumed for the 2050 RTP/SCS (Validation Report available on the SANDAG Regional Models website: http://www.sandag.org/models). As determined in the Validation Report, the model accurately reflects the base year; therefore, it is reasonable to assume the model can provide a reliable estimate of future conditions as reflected in the 2050 RTP/SCS performance measures (see Technical Appendix 3).
The Sensitivity Report provides the results of a number of tests, which shed light on the sensitivity of the model and thereby help inform decision-makers and others of the reliability of the model for scenario planning and assessment of GHG reduction strategies. However, the RTP Guidelines recommend that the model “should, as applicable to the region, be sensitive to a number of additional factors or acknowledge limitations” with respect to those factors (p. 55, Recommendation 2). Again, we acknowledge SANDAG’s current and planned efforts to improve its model, and we anticipate that model sensitivity and utility in planning will improve with those efforts.

SANDAG provided sensitivity analysis of a number of variables relevant to the Draft 2050 RTP/SCS including auto operating costs, parking pricing, transit fares, transit wait times, and roadway capacity. In each of the sensitivity scenarios, one model input variable was changed in isolation to observe the elasticity to certain model outputs such as mode share and vehicle miles traveled. The sensitivity analysis is a time-consuming and detailed process resulting in more than 60 additional model runs for the RTP. While the recommendations from the CTC are only suggestions, SANDAG is committed to expanding the scope of its validation and sensitivity analysis in future RTP/SCSs.

Provide an Explanation for Decreasing GHG Reductions in Later Years of the Plan

The SCS states that “greenhouse gas emissions reductions from compact land use, and alternative transportation modes will be outpaced by regional growth.” (p. 3-3). Emissions reduction targets assigned to SANDAG under SB 375 are per capita targets, and therefore cannot be outpaced by population growth. Land use planning, the focus of SB 375 and the central tool by which the law intends for GHG reductions to be achieved, can manage spatial growth. Therefore we recommend that the SCS provide a detailed explanation of what factors cause ‘regional growth’ to “outpace” GHG reductions.

Without clarification, we are concerned that the SCS implies that future growth will be unavoidably less transportation efficient, which counters SB 375’s underlying purpose. (See SB 375, § 1(c) (“It will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation.”)) With careful regional planning, the reverse would be true; greater transportation efficiency would be gained over time as compact and mixed-use development is spurred by well-planned transit infrastructure. In the long run, intensification of transit priority areas and modeled mode shares for different transit modes. The RTP Guidelines criterion of acceptance, however, is ±20 percent between actual counts and model results by mode group (RTP Guidelines p. 54). If SANDAG corrected the differences between modeled and measured values by off-model post processing, it would be useful to provide a discussion of that post processing. Additionally, a discussion of the implications of model accuracy on performance measure accuracy, including GHGs, would more clearly characterize the capability of the model to decision-makers and the public.

Also, please note that CARB (2011) has accepted SANDAG’s transportation model as an appropriate methodology to demonstrate that the 2050 RTP/SCS meets SB 375’s regional GHG reduction targets.

SANDAG provided sensitivity analysis of a number of variables relevant to the Draft 2050 RTP/SCS including auto operating costs, parking pricing, transit fares, transit wait times, and roadway capacity. In each of the sensitivity scenarios, one model input variable was changed in isolation to observe the elasticity to certain model outputs such as mode share and vehicle miles traveled. The sensitivity analysis is a time-consuming and detailed process resulting in more than 60 additional model runs for the RTP. While the recommendations from the CTC are only suggestions, SANDAG is committed to expanding the scope of its validation and sensitivity analysis in future RTP/SCSs.

Details of SANDAG’s transportation modeling methodology and assumptions have been made publicly available, and are provided in Final EIR Appendix F. Appendix F provides substantial evidence supporting the Final EIR’s conclusions about the significance of transportation, air quality, and GHG impacts. The Final RTP Technical Appendix 15 includes the travel demand model documentation, the off-model methodology, the travel demand model validation report and the sensitivity analysis report. 2050 RTP/SCS Appendix B includes a summary of model documentation to support the Air Quality conformity analysis.

Also, as explained in Master Response 23, because the 2050 RTP/SCS is a regional plan, the regional land use pattern and transportation system were evaluated in its entirety in order to analyze the full interaction of projects. It was infeasible for SANDAG’s transportation model to provide information on the effects of individual land use and transportation strategies requested because it is dynamic, and looks at land use and transportation strategies and projects as an integrated whole. CEQA does not require an EIR for an integrated project to analyze the impacts of individual project components, just the project as a whole. This is especially the case for a Program EIR, which is prepared for a series of actions that can be characterized as one project. (CEQA Guidelines §15168(a).)

The SANDAG transportation model has been accepted by CARB (2011) as an appropriate methodology for demonstrating the SB 375 regional GHG reduction targets have met (p. ES-2). CARB has found that using SANDAG’s transportation model, SANDAG has demonstrated implementation of Draft SCS described in DEIR would achieve GHG reduction targets, without the need to evaluate individual project components (pp. 43-44).

SANDAG is actively pursuing improvements to its transportation model for the next version of the RTP/SCS including the development of an Activity Based Transportation Model (ABM) and an improved subregional land use model called PECAS. These new models are being developed under “open source” licenses (Apache License, Version 2 <http://www.apache.org/licenses/LICENSE-2.0.html>), which will allow stakeholders to evaluate
C-6
Please refer to Master Response 20 for a discussion of why per capita GHG reduction rather than VMT reduction is a more appropriate measure of the SCS’ climate change benefits. The SANDAG modeled VMT is independent from the Caltrans highway monitoring systems (HPMS) VMT calculations. SANDAG estimates VMT based on model inputs such as land use, travel preferences, local street counts, and performance monitoring systems (PeMS) using logit utility functions to calculate trip distribution and mode choice. The Caltrans HPMS data collection is solely an accounting and extrapolation exercise based on observed traffic counts.

C-7
Please see Master Response 20 for a discussion of why per capita GHG emissions increase between 2035 and the later years of the plan.

C-8
The 2050 RTP/SCS land use plan incorporates demographic and economic changes as indicated by the Series 12 Regional Growth Forecast. The Regional Growth Forecast developed for the 2050 RTP/SCS consists of a number of components modeled to assess demographic and economic factors; housing and employment densities; housing capacity; transit investments; land use patterns; and other topic areas. The Regional Growth Forecast is an integral part of SANDAG’s regional planning process and the 2050 RTP/SCS.

The Regional Growth Forecast includes assumptions about how local plans and policies may evolve over time in response to the region’s continuing growth. This forecast looks out forty years to the year 2050, while the horizon year of current local plans is typically ten or twenty years (i.e. out to 2020 or 2030). To bridge this gap, SANDAG began the forecast with adopted general plans and policies from the 18 incorporated cities. Then local jurisdictions were asked to provide detailed feedback on how land use plans might change in the future. Hence, the 2050 Regional Growth Forecast provides an assessment of where change may occur in the coming decades.

With careful regional planning efforts underway, the future growth forecasted in the 2050 RTP/SCS is anticipated to be more transportation efficient, not less. As described in Chapter 3.0 of the 2050 RTP/SCS, the SCS land use pattern calls for most of the region’s future residential and employment growth to occur near existing and planned public transit facilities in the urbanized western third of the region. Transit Priority Projects (TPP) should increase the feasibility of densification, with the intention that neighborhoods will become more walkable and transit-accessible.

Also, please see Master Response 12 for further discussion of the Regional Growth Forecast.

C-9
Please see Master Response 20 for a discussion of why per capita GHG emissions increase between 2035 and the later years of the plan.

C-10
The commenter is correct in stating that the 2050 RTP/SCS GHG reduction emissions goals were not quantified or measured in context with the GHG reduction goals set forth in Executive Order S-03-05 (EO-S-03-05). The 2050 RTP/SCS complies with SANDAG’s SB 375 emissions directly the transportation (and therefore GHG) impacts of alternative land use and transportation strategies.
captures the cause and effect relationship between, for example, land use and transportation demand management strategies and VMT and GHG outcomes. This is consistent with the spirit and letter of the 2010 California Regional Transportation Plan Guidelines (RTP Guidelines) which require that “A MPO shall disseminate the methodology, results, and key assumptions of whichever models it uses in a way that would be useable and understandable to the public.” (p. 52).

Discuss Induced Travel Resulting From Highway Capacity Increases

Including a discussion of induced travel in the RTP would provide decision-makers and the public with a better understanding of this important issue. Because the RTP includes a number of freeway capacity increases, including managed and mixed flow lanes, it would be helpful to include a discussion of shifts in travel patterns expected to result from these projects. The RTP should also clarify the assumptions in the model with respect to freeway capacity expansion. This discussion should shed light on which aspects of induced travel can be explained by the travel demand model and which aspects cannot. Capacity expansion projects will relieve congestion in early years but that benefit may be eroded over time and the overall result will likely be an increase in vehicle travel and GHGs.

SANDAG’s Sensitivity Analysis characterizes the model’s response to large increases in freeway and arterial capacity. However, informing decision-makers and the public on how completely the model characterizes induced demand requires a companion of the magnitude of the model’s response to empirical research on the phenomenon. Further, a discussion of which components of induced travel the model can estimate, and which components it would ignore, would shed light on the ability of the model to accurately characterize future scenarios.

Discuss Re-prioritizing of Project Delivery to Align with GHG Emissions Reduction Goals

Many of the projects planned for the earlier years of the RTP time horizon were chosen before the Air Resource Board established regional GHG reduction targets under SB 375. The SCS provides an opportunity to rethink project prioritization in the RTP. Presently, for example, the RTP prioritizes a number of highway expansion projects in the periphery of the region that would likely contribute to less compact land use and increased GHG emissions.

We suggest that the RTP include a discussion on the prioritization of its projects and identify how each project is aligned with current goals, including GHG emissions reduction. A discussion of options and constraints in reordering the project delivery schedule, to deliver projects in earlier years to support the growth of transportation-efficient communities to achieve long-run GHG reductions and livability benefits, could shed light on opportunities for further GHG reductions.

reductions targets, which in turn are based on AB 32 implementation. SANDAG recognizes the EO S-3-05 2050 goal, but the 2050 RTP/SCS emissions reductions are not legally required to be consistent with this goal; therefore, they were not compared to the EO S-3-05 2050 goal. As modeling capacities improve in future iterations of the RTP/SCS, SANDAG will consider quantifying the role of the RTP/SCS in helping the state achieve the EO S-3-05 2050 goal, if feasible. Also, see Master Response 2 for a discussion of the relationship between AB 32, SB 375, and EO S-3-05 2050.

SANDAG has provided comprehensive model documentation for the 2050 Draft RTP/SCS including technical methodologies, model input assumptions, model validation, and model sensitivity reports (see 2050 RTP/SCS Technical Appendices). SANDAG will continue to expand this portion of its process in future RTPs. Also, please note that based on existing model documentation, CARB (2011) has accepted SANDAG’s transportation model as an appropriate methodology to demonstrate that the 2050 RTP/SCS meets SB 375’s regional GHG reduction targets.

See response C-12. Further discussion on induced travel and model estimates is provided in Master Response 8.

See Master Response 7 for an explanation of how the 2050 RTP/SCS emphasizes transit, and Master Response 10 for an explanation of financing constraints on funding additional transit projects. Also, Alternatives 2a, 2b, 3a, and 3b all place greater emphasis on transit projects than the RTP/SCS, and GHG emission reductions from these alternatives are described in Draft EIR section 6.3. The Draft 2050 RTP/SCS includes a discussion of project priority and how projects meet the goals of the Plan. A brief discussion is included in Chapter 2 as part of the vision, goals, and performance measures discussion. Additionally, Technical Appendix 4 includes the SANDAG Board approved transportation project evaluation criteria that was updated to reflect the 2050 RTP/SCS goals. SANDAG established a working group to update the evaluation criteria. This group met for more than a year to propose new project evaluation criteria that would take into account new issue areas, such as SB 375, including whether the project serves smart growth areas, facilitates carpool and transit mobility, provides access to jobs, provides time competitive and reliable transit service, serves peak period transit trips, cost effectiveness, GHG emissions, and accessibility to communities of concern (i.e. low income or minority communities), seniors, and Indian reservations.
The 2050 RTP/SCS seeks to guide the San Diego region toward a more sustainable future and proposes to advance multiple environmental, economic, and health benefits of integrated land use and transportation planning. A more focused review of the benefits and accomplishments of the plan has been added to the SCS as suggested. In addition, please see the 2050 RTP/SCS Goals and Policy Objectives highlighted in Chapter 2.

No Growth Alternative Not Necessarily “Environmentally Superior”

While the No Growth alternative may displace environmental impacts to locations adjacent to the San Diego County, such as Riverside County, Imperial County and Baja, California, if growth that would otherwise occur in San Diego County is deflected by such policies. The location, magnitude and timing of environmental impacts caused by this displaced growth are speculative and do not require further review in the EIR, as indicated by CEQA Guidelines §15145. Further discussion on the selection and detail of alternatives is provided in Master Response 16.

Providing Tiering Opportunities under CEQA Guidelines Section 15168(d) for Future Projects

As stated in CEQA Guidelines Section 15168(d), “a program EIR can be used to simplify the task of preparing environmental documents on later parts of the program.” The ability to tier from a programmatic EIR is one of the primary benefits of preparing a robust programmatic environmental analysis. We see an opportunity to support the streamlining of future projects through the reliance on the analysis included in the EIR for projects that are consistent with the RTP/SCS. Providing a programmatic EIR will allow local governments to more easily approve projects consistent with the SCS. In fact, the Sustainable Community Planning Grant awarded to SANDAG by the Strategic Growth Council (SGC) anticipates that SANDAG will “work with local jurisdictions to implement procedures and enable them to benefit from CEQA streamlining.” Because tiering is an important part of CEQA streamlining, we encourage SANDAG, consistent with the SGC grant, to explore the use of a program EIR.

We again commend SANDAG for producing the inaugural SCS under SB 375. We hope that our comments are helpful and that SANDAG can expand on the SCS’s content as it is integrated into the next Regional Comprehensive Plan and in future iterations of the regional transportation planning process. We appreciate the
opportunity to submit these comments, and offer our assistance in the RTP
development process through the completion and implementation of the 2050 RTP. If
you have any questions, please do not hesitate to contact me at 916-324-9236 or
chris.ganson@opr.ca.gov.

Sincerely,

Chris Ganson
Senior Planner

For:  Kon Alex
Director

cc:
Heather Fargo, SGC
James Goldstein, CARB
Lynn Terry, CARB
Doug Ito, CARB
Terry Roberts, CARB
Lucille Van Ommering, CARB
Garth Hopkins, Caltrans
Letter D
City of Coronado

Please note that this comment was received after the close of the Draft EIR public review period, and pertains to non-environmental concerns about the 2050 RTP/SCS, rather than to significant environmental issues. Responses are nevertheless provided below.

19 August 2011

SANDAG
401 "B" Street, Suite 800
San Diego, CA 92101

Attn.: Rob Rundle, Principal Regional Planner
Re: Draft Regional Transportation Plan 2050

Dear Mr. Rundle:

Kindly accept this letter to address the draft Regional Transportation Plan 2050 (RTP 2050).

First, this letter hereby incorporates by reference my prior comment letter in its entirety, attached hereto for your quick reference.

Second, unfortunately the draft RTP 2050 presents a major problem for the people of Coronado, as well as the people of all of our South Bay communities, because it fails to designate resources toward expanded and extended ferry service on San Diego Bay. This failure to address public transportation needs through an obvious and relatively inexpensive transportation mode on the water is both surprising and indicative of a less than world-class transportation system. The people of our

D-1
The 2050 RTP/SCS focuses on providing ways for people to get to and from jobs and activities throughout the region. The Urban Area Transit Strategy that was done in conjunction with the 2050 RTP/SCS specifically considered where people lived and worked in proposing new and expanded transit service. The Urban Area Transit Strategy evaluated and considered a variety of transit modes based on best practices in other large metropolitan areas. Seventy-nine percent of all housing and 86 percent of all jobs will be located within the areas where the greatest investments in public transit are being made (within the Urban Area Transit Strategy Study Area). While all transportation modes were considered in the development of the Plan, ferry service did not perform as well as other transit services that were eventually recommended for inclusion in the 2050 RTP/SCS.
The 2050 RTP/SCS was developed based in part on when projected revenues would be available in the region. Chapter 5 of the 2050 RTP/SCS outlines the revenue sources that are expected to be available in the region through the horizon year of the plan and how those revenues are proposed to be allocated. The allocation of the funds to build the proposed projects in the plan are based on serving the region's existing and future projected population. Please see Master Response #7 for a discussion of the 2050 RTP/SCS transportation network improvements.

As always, I am available at telephone number 619-302-2274.

Respectfully,

Barbara Denny
Coronado City Councilwoman
Dear Mr. Rundle:

Kindly accept this letter for inclusion in the 2011 Regional Transportation Plan (RTP).

As an elected official from Coronado entrusted with land use decision-making in my jurisdiction, it is my goal to request that regional resources be managed by SANDAG in such a way as to aggressively reduce carbon emissions by reducing vehicle trips to Coronado.

Due to our unique geographic location, size and demographics, Coronado is a key factor in the regional plan for aggressive carbon emissions reduction in order to balance new growth in other areas of our region.

Here is a partial list of what makes Coronado uniquely positioned to contribute to a major reduction in carbon emissions:

- Two transportation clusters: tourism and military
- Proximity to Lindberg and Brown Field airports
- Proximity to San Diego Bay and the ferry service
- Proximity to downtown San Diego and train, trolley, bus service
- Proximity to Interstates 5, 15, 8 and other routes amenable to HOV lanes.
With regard to our two transportation clusters, Coronado has three large resorts, many hotels and two military bases. There is an exceptionally great potential to reduce carbon emissions by focusing on these clusters and supporting them with regional resources.

While I am aware of the current SANDAG HOV program, I request that HOV lanes be added to the above-mentioned Interstate routes nearer to Coronado as soon as possible where feasible and reasonable. For example, currently there are few to no HOV lanes on I-5 from south of La Jolla to Coronado to the Mexican border.

Furthermore here is a partial list of the resources that have the great potential to aggressively reduce carbon emissions in our region, if supported with increased service and increased ridership to Coronado:

- Commuter and other Ferry Service
- Park & Ride
- Slugging (casual carpooling)
- Mass transit
- MTS-Navy Express Buses
- Navy Van Pools.

Regarding ferry service, as a land use decision-maker I would like to see increased ferry service on the San Diego Bay, both in frequency and location. For example, there is a need for more frequent commuter ferry service from San Diego to Coronado. Also, if and only if our neighboring cities are amenable, I would like to see commuter and other ferry service to all of the other cities along the Bay where feasible and reasonable.

Regarding Park & Ride, there are about 75 existing spots around the region which have great potential to reduce carbon emissions by reducing vehicle trips to Coronado. In addition, I have been working hard with elected officials and government agency officials to locate new and innovative spaces to use as Park & Ride spots.

The 2050 RTP/SCS includes proposed HOV or Managed Lanes on I-5 from the SR 905 SR 15 interchange and from I-8 to La Jolla Village Drive. These projects are phased throughout the 40 year Plan. The segment from Palomar St. to SR 15 is phased for 2021-2030.

There is a new Rapid Bus service in the 2050 RTP/SCS that goes from Coronado to Downtown San Diego to serve commuters. Ferry services are not included in the 2050 RTP/SCS. Please see Response to Comment D-1.

The 2050 RTP/SCS includes funding for park and ride improvements and parking stations at key transit stations around the region.
The 2050 RTP/SCS includes 130 miles of Managed Lanes that could support a slugging type program. Also included in the 2050 RTP/SCS is a robust carpool incentive program provided by iCommute.

Please see Master Response #7 for a discussion of the 2050 RTP/SCS transportation network improvements. The key to the Draft 2050 RTP/SCS is a balanced approach that provides many choices for people to get to work, school, or play. The 2050 RTP/SCS includes the most investment in transit and alternative modes compared to any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are 5 new light rail transit lines, new express bus services, and increased frequencies. The 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs.

Chapter 8 (Transportation Demand Management) of the 2050 RTP/SCS recommends significantly expanding the military buspool program and the regional vanpool program. The pilot buspool service, "Murph Express", will be evaluated and an expansion plan will be developed in partnership with the Navy. iCommute collects data on a monthly basis and reports each quarter on the results of staff's work to promote and establish TDM programs. Some of those results were reported in the TDM chapter of the RTP to include the number of vanpools, Guaranteed Ride Home participants and iCommute members. Targets were established for vanpool, carpool, buspool and telework as part of the Sustainable Communities Strategy.

SANDAG has not reviewed the referenced cost-benefit analysis conducted by the City of Coronado and therefore cannot comment on the results.

Barbara Denny
Coronado City Councilwoman
June 29, 2011

SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Subject: Response to Notice (SCH #2010041061)
San Diego Association of Governments
Draft 2050 Regional Transportation Plan, Sustainable Communities Strategy and Draft Environmental Impact Report

Dear Sirs and Madams:

The City of Lemon Grove appreciates the opportunity to have reviewed the Draft 2050 RTP, including the SCS and the associated EIR. These documents represent significant advancements to improving the region as a whole and the City congratulates the SANDAG Board of Directors, staff, consultants and numerous committees that have made significant contributions to that end. The documents are extraordinarily comprehensive and present a thorough approach to solving problems and creating an outstanding diverse region.

The City of Lemon Grove forwards the following list of comments and comments regarding these documents.

1. Express LRT / Orange Line

Express trolley lines are recommended along the LRT Orange and Blue Lines at the 2050 year milestones. Lemon Grove is served by the Orange Line and two trolley stations. Based on the limited information in the plan, it appears that this service is an express service from El Cajon to downtown San Diego and does not stop in Lemon Grove. What this may mean (although the information is not available in the documents) is that there needs to be a bypass rail at the two stations at a minimum or a complete second set of rails.

The EIR is deficient in that it does not include any discussion on the Express Lines and how it might be achieved or what those impacts might be (e.g., double-tracking, alternate routes or alignments from the existing alignment, grade separations, etc).

Staff is also concerned that the EIR states that where there is existing rail infrastructure, the expansion of that infrastructure does not create a significant impact. This EIR states that rail expansion for communities that are currently suffering impacts from the existing systems — to state that because a jurisdiction is familiar with a rail system and therefore an expansion of that system would not generate a significant impact is erroneous.

In addition, mitigation measures should be included that discuss design concepts that balance local transportation systems such as: signal priorities, underground tunnels, cut, cut & cover. These mitigation measures may reduce the impacts below a level of significance.

Letter E
City of Lemon Grove

E-1
This comment provides introductory remarks. No further response is required.

E-2
The City of Lemon Grove would be served by the express Orange Line service. A bypass track would be needed only at stations which are not currently served and is included in the 2050 RTP/SCS capital cost.

E-3
This comment misunderstands the purpose of and legal requirements for the Program EIR prepared for the 2050 RTP/SCS. The Program EIR analyzes the impacts of the overall 2050 RTP/SCS transportation network, including express trolley lines, at a programmatic level; however, it is not intended to analyze the impacts of individual projects. It is acknowledged in the EIR that subsequent project-level analysis would be necessary before any projects are implemented. Please see Master Response 1 for more detail about the purpose of a program EIR and the difference between programmatic and project-level analysis.

E-4
It is unclear as to which statement in the EIR the commenter is referring; impacts from existing transportation facilities are built into the baseline for impact analysis. The EIR addresses, at a programmatic level, the impacts of all projects including transit and rail extensions that will be built over the horizon of the plan. Programmatic impacts and mitigation measures associated with these transit/rail extensions are identified for multiple issue areas. Further, individual project-level impacts and mitigation measures will be addressed as each project in the Plan undergoes environmental review. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1.
As discussed in previous responses, the Draft EIR is a Program EIR for a regional plan that analyzes the broad environmental effects of the 2050 RTP/SCS, and acknowledges that project-specific impacts and mitigation measures will be analyzed in future project-specific CEQA documents. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1. See also Response to Comment E-6 below.

The Draft EIR identifies programmatic Mitigation Measure VIS-B, which recommends (but does not require) at-grade crossings for future projects "wherever possible." This language gives individual jurisdictions the flexibility to take different project-specific alternative mitigation and design concept approaches. Each individual project CEQA document will evaluate project-specific mitigation measures and design alternatives where significant impacts are identified. In some instances, visual impacts associated with grade separations may be outweighed by the congestion relief afforded by the grade separation project. However, these issues will be addressed as specific transportation projects are proposed and designed. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1.

The Draft EIR's conclusion that the broad aesthetic and visual impacts of the 2050 RTP/SCS are significant and unavoidable does not preclude a later finding by a lead agency that project-specific mitigation measures, such as below grade concepts, can reduce project-specific aesthetic and visual impacts to less-than-significant levels. The programmatic mitigation measures for aesthetic and visual impacts presented in the EIR are intended to be refined in project-specific CEQA documents. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1.

The programmatic mitigation measures for land use impacts presented in the EIR are intended to be refined in project-specific CEQA documents. At such time as the expansion of SR 94 is proposed as a project, project-level analysis will be required to identify significant land use impacts of this project and appropriate mitigation measures to reduce these significant physical impacts. These will include measures to address any physical impacts resulting from the conversion of land uses within the City of Lemon Grove. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1.

The 2050 RTP/SCS discusses the need to improve freight movements and applies a set of evaluation criteria in order to prioritize those improvements. As there is limited funding for freight improvements, specific funding criteria will determine how dollars will be invested (for example, funding may be available for truck/roadway improvements only or along the border only). In the case of investing limited rail dollars on the LOSSAN Rail corridor vs. the Orange Line, a key consideration would be rail carload volume. Although at this time the specific freight improvements to be undertaken have not been identified, for order of magnitude comparison, the LOSSAN corridor carries about 50 times the annual carloads as the Orange Line carload volume.
Adjustments have been made throughout the Draft EIR to more accurately describe the different types of rail improvements analyzed, and to clarify the use of the term “rail.” In general, the programmatic EIR analysis primarily focused on the proposed improvements to commuter and light rail described in the Draft EIR Project Description.

E-11
The EIR figures were revised to more accurately depict the location of Lemon Grove. This change does not affect the analysis or conclusions of the EIR.

E-12
The comment notes that stations symbols are not aligned with the rail alignment in the 2050 RTP/SCS Figure 3.25. This figure is the same as Figure 2.0-21 in the EIR. Both figures have been updated for the Final 2050 RTP/SCS and EIR.

E-13
Draft EIR Figures 4.6-3 and 4.6-4 legibly depict impacts to communities of concern. The half-mile buffer shading is an important feature of the maps and is not proposed to be removed. The location of the label for Lemon Grove was adjusted on all maps.

E-14
Draft EIR Figures 4.9-2, 2.9-3, and 6.2-1 through 6.2-8 were revised to more accurately depict the location of Lemon Grove.

E-15
All figures in the Draft EIR were revised to more accurately depict the location of Lemon Grove.

E-16
It is not the intent of the Program EIR to identify project-level localized impacts. As specific projects are proposed and designed, project-level CEQA review will disclose the significant impacts of these projects. Mitigation measures and alternatives, including alternative project components and design solutions, will be identified where significant impacts result from a proposed project. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1.

E-17
This comment addresses the replacement of parkland lost within the City of Lemon Grove to improvements or changes made by the 2050 RTP/SCS. Section 4.15 of the EIR analyzes impacts to parkland associated with regional growth/land use change and transportation network improvements. As described in Section 4.15, minimal impacts to existing parkland would occur. Any impacts to parklands from transportation network improvements would require adherence to the detailed review processes of Section 4(f) of the Department of Transportation Act of 1966, which will further minimize parkland impacts. Any localized impacts to parkland, and measures to mitigate such impacts, would be refined in project-specific CEQA documents. The difference between programmatic and project-level analysis is further discussed in greater detail in Master Response 1.
The City of Lemon Grove looks forward to reviewing the SANDAG's comments and revisions that address our concerns. City Staff is available to discuss these comments in further detail.

Sincerely,

Graham Mitchell
City Manager

Cc: Mayor Sessom
Mayor Pro Tem England
Council Member Cook
Council Member Gaddis
Council Member Jones
James Lough, City Attorney
State Clearinghouse

E-18
This comment provides closing statements. No further response is required.
Comment noted. The NC01 project title has been corrected in Chapter 2.0, Project Description, in the 2050 RTP/SCS EIR as indicated in Table 2.0-7.
Letter G

City of San Diego - Development Services and attached RTP letter

August 1, 2011

Rob Bandin, Principal Regional Planner
SANDAG
410 W Beech, Suite 800
San Diego, CA 92101

Subject: City of San Diego Comments on the Draft Environmental Impact Report for the 2050 Regional Transportation Plan/Sustainable Communities Strategy

G-1

The City of San Diego is not a responsible agency for the 2050 RTP/SCS EIR because it does not directly carry out or have discretionary approval over the 2050 RTP/SCS; see Response to Comment H-28 for a detailed explanation. As such, the 2050 RTP/SCS EIR is not required to comply with the City’s significance thresholds and mitigation requirements.

G-2

Clarifications and modifications were made to the Draft EIR as a result of comments received during the Draft EIR’s public review period and a subsequent re-review of the data presented in the Draft EIR. However, these revisions from the Draft EIR to the Final EIR do not represent significant new information that requires recirculation of the EIR. Please refer to Master Response 3 for discussion of CEQA’s requirements for recirculation and Master Response 5 regarding attachments to Draft EIR comment letters.

G-3

The comment is noted. Chapter 4.4 of the EIR provides an analysis of the Plan’s conflicts with applicable conservation plans/natural community conservation plans. Mitigation Measures BIO-Q and BIO-R reduce these impacts to a less than significant level.

G-4

This comment correctly observes that local agencies such as the City of San Diego would be responsible for mitigating project-specific significant impacts resulting from impacts from the construction of expanded or new public services and utilities projects needed to serve growth. See Master Response 4 for an explanation of why this approach to mitigation complies with CEQA. In summary, CEQA provides that an EIR can include feasible mitigation measures that are within the responsibility and jurisdiction of another agency. The appropriate CEQA finding in such instances is that such mitigation measures have been or “can and should be” adopted. (Public Resources Code §21081(a)(2); CEQA Guidelines §15092(a)(2).)
G-5
Please see Response to Comment G-4 above.

G-6
We are unsure which table this comment refers to as this page references transportation impacts, not hazards, and no anomalies were detected.

G-7
The SR 905/SR 125/SR 11 freeway connectors are included in the 2050 RTP/SCS to facilitate the anticipated freeway to freeway travel in the Otay Mesa area.

G-8
The SR 125/Lone Star Road interchange is included in the 2050 RTP/SCS to support anticipated growth in the City of San Diego and East San Diego County areas.
G-9

Growth on SR 905 is tempered in 2050 due to the assumed removal of tolls on SR 125 at the end of the franchise agreement in 2042. Traffic growth on SR 125 is expected to more than double from today’s level, absorbing some of the demand from alternate routes like SR 905. In addition, SANDAG has improved the truck modeling methodology in the 2050 RTP/SCS, resulting in more accurate calibration on major truck routes like SR 905 compared to the 2007 RTP. Short term trade and housing growth along the border is tempered due to the current economic recession resulting in lower overall projections for traffic volumes in the 2050 RTP/SCS.

Moreover, it is inaccurate to compare the current, Series 12, forecast with the decade-old Series 10 forecast. Series 10 was completed in December 2003, long before the nationwide recession that began in 2007. The recession resulted in lower job growth projections regionwide, including in Otay Mesa. As a result of economic conditions at the time, the Series 10 forecast predicted approximately 41,000 jobs in Otay Mesa by 2030. In the Series 12 forecast the prediction is now 31,000 jobs by 2030, and 51,000 by 2050. While slower than the prior forecast, the Series 12 forecast reflects robust growth in Otay Mesa, showing an increase in jobs of 250% by 2050 and ADT projections within the RTP reflect that trend.

G-10

Two additional general purpose lanes are proposed for SR 905 between I-805 and SR 125 in the Unconstrained Transportation Network. The full improvement to 8 general purpose lanes did not rank well in the SANDAG Board approved project evaluation criteria so only the six general purpose lanes were included in the Revenue Constrained Network. This corridor was evaluated for potential HOV lanes as part of the Regional HOV/Managed Lanes Study conducted by SANDAG. It was determined that general purpose lanes rather than HOV lanes was a better fit for this corridor.

G-11

The comment is noted. The 2050 RTP/SCS Draft EIR was revised to reflect Caltrans and the Federal Highway Administration’s recent selection of the Express Lane Only (8 + 4 with Buffer/Striping) alternative as their Preferred Alternative for the I-5 North Coast Corridor Project, rather than the 14 lane alternative configuration assumed in the Draft 2050 RTP DEIR. Additionally, the document should be revised to reflect SANDAG’s reallocation of local funds from the I-5 North Coast Corridor Project.

G-12

The phasing for highway projects was based on quantitative rankings compared with all the highway projects in the 2050 RTP/SCS. Funding is limited by phasing period. Please see Master Response 7 for a discussion of the selection of the proposed transportation network components.

G-13

This comment references Trolley Route 562. Please see Response to Comment G-4. While the referenced project is part of the program evaluated by the Draft EIR, it has not undergone project-level analysis, and therefore the level of detail requested by the commenter is not yet available. Please also see Master Response 1 for a general discussion of programmatic vs. project-level environmental review. An action is included in the 2050 RTP/SCS that commits SANDAG to “develop/implement Five- and Ten-Year Transit Project Phasing Plans to facilitate progress toward designing and building the transit projects included in the 2010-2020 phasing...
years of the 2050 RTP. Similar work would be required for projects identified in other RTP phases (2020 – 2030, and beyond) as projects in the first phase of the plan are completed.

G-14

Although the analysis indicates that impacts to solid waste disposal from construction of transportation network improvements identified in the 2050 RTP/SCS for the years 2020, 2035, and 2050 would be less than significant, the overall conclusion reached in the Draft EIR is that for the years 2020, 2035, and 2050, "direct and indirect impacts related to being served by landfills with insufficient permitted capacity to accommodate the project's solid waste disposal needs would remain significant and unavoidable" (See page 4.14-63).

The majority of waste generated by the construction of transportation network improvements would be C&D materials processed in C&D facilities and inert debris facilities and would be diverted from landfills, whether or not specialized or non-specialized C&D and inert debris processing facilities are used. (The definition of "inert debris facilities" can be found in Title 14, Division 7, Chapter 3, Article 5.95, Section 17388). Because the transportation network improvements are characteristically different than general construction projects and municipal solid waste, diversion rates are assumed to be higher than overall diversion rates because they would be processed in specialized facilities and therefore would not significantly reduce available landfill capacity, which would create a less than significant impact. However, the overall conclusion of the EIR acknowledges that unless new landfills are permitted and operational by 2020, the region would be served by landfills with insufficient permitted capacity.

The Draft EIR includes Mitigation Measure US-D to reduce impacts associated with solid waste disposal; however, these impacts remain significant and unavoidable. Additional mitigation measures including a requirement for all projects to verify sufficient landfill capacity for their 20-year solid waste disposal needs, and a requirement that projects construct a solid waste disposal facility to meet their solid waste disposal needs, were both found to be infeasible due to substantial negative factors.

G-15

This comment provides closing statements. No further response is required.
The comment is noted.

The phasing for these projects was based on their quantitative rankings compared with all the transit projects in the 2050 RTP/SCS. While it would be desirable to advance the phasing of these projects, sufficient funding to implement and operate them is not available in earlier phases of the plan. All available transit funding is utilized in each phase and so advancing one project would mean that another transit project would have to shift to a later phasing period. Please see Master Response 7 for a discussion of project phasing, prioritization, and the 2050 RTP/SCS transportation network improvements.

Funding toward the transportation components of the San Ysidro Intermodal Transportation Center (ITC) is included in the 2010-2020 phasing period of the 2050 RTP/SCS.

The San Ysidro Port of Entry is described in the International Border Crossings section in Chapter 6. Some of the suggested language is proposed to be included in the Final 2050 RTP/SCS. Completion of the City of San Diego’s analysis of the ITC concept should provide more information to further update the description of the San Ysidro ITC in the next RTP update.
SANDAG has reviewed the potential for one of the peak period BRT commuter services (Routes 688 and 689) to serve San Ysidro; it is proposed that the Final 2050 RTP/SCS re-route Route 688 to operate south on I-805 to directly serve the San Ysidro border trolley station.

It is proposed that Route 688 be re-routed in the Final 2050 RTP/SCS to operate on I-805 to directly serve the San Ysidro border trolley station, and Route 562 service be extended to San Ysidro border trolley station in the final RTP.

The I-15 BRT is scheduled to open in early 2013, and Route 680 BRT is included in the 2020 phasing period.

Funding is limited by phasing period. In order to move a project up earlier in the Plan, another project must be moved later. Please see Response to Comment G-17 and Master Response 7 for a discussion of the 2050 RTP/SCS transportation network improvements, project phasing and prioritization.

This comment is noted.

The current update of the Smart Growth Concept Map is considered a Technical Update for the purpose of issuing the Call for Projects for the Smart Growth Incentive Program. During the update of the Regional Comprehensive Plan, a policy update of the Smart Growth Concept Map will be conducted, where regional prioritization issues can be considered. SANDAG agrees that employment uses should be encouraged in joint development and transit oriented development (TOD) opportunities and other regional uses. SANDAG will also be considered in the discussion to update the project selection criteria. An action has been added regarding SB 375 streamlining provisions and opportunities for regional coordination.

The SANDAG Board of Directors is considering RHNA incentives as part of the RHNA process and in coordination with the 2050 RTP/SCS.
9. The SR-905/SR-125/SR-11 freeway connectors should be included in the 2050 RTP to facilitate the anticipated freeway to freeway travel in the Otay Mesa area.

10. The SR-125/Lone Star Road interchange should be included in the 2050 RTP to support anticipated growth in the City of San Diego and East San Diego County areas.

11. Figure A.10 of Appendix A of the draft 2050 RTP shows the forecast volume on SR-905 as 131,000 ADT. 131,000 ADT seems unreasonably low given the anticipated growth in the mainly vacant areas of Otay Mesa and East San Diego County. Also, the Series 10 Year 2030 forecast for this same freeway is 118,000 ADT, so the forecasted 131,000 ADT for 2050 indicates only a small amount of growth (13,000 ADT) between Year 2030 and Year 2050. This small amount of growth in ADT over a 20 year period does not seem realistic given the large amounts of undeveloped land in the area.

12. Figure A.1 of Appendix A shows the 2050 Modeled Level of Service of SR-905 just east of I-805 as LOS F. Additionally, recent City of San Diego forecasts indicate that additional freeway mainlines or HOV lanes on SR-905 would be needed before Year 2050 to provide acceptable levels of service. The installation of HOV lanes, as mentioned in the FEIR for SR-905, or additional freeway mainlines, should be included in the RTP 2050 to facilitate the movement of people and goods between the U.S. and the Mexican border.

13. A Regional Master Plan for signal communications, possibly by fiber optic communications, along freeways and major streets should be identified as a goal in the RTP.

14. The RTP should provide a source of funding for local agencies to experiment on new technology specifically for signal timing and/or interconnection of a City’s entire signal system.

15. Technical Appendix 13: In general, the plan should emphasize the construction of wide (14 feet) bike paths, which serve the needs of not only the bicyclists but also serve pedestrians and joggers as well. Where sufficient right of way exists, two separate paths in the same corridor, one for pedestrians and one for bicyclists, should be constructed. As the region moves forward with implementation of planned rail and Freeway projects, bike paths should be incorporated into the designs. This would

G-26
Cont.

G-27
These connectors are included as part of the SR 905 and SR 11 project.

G-28
This interchange is included in the 2050 RTP/SCS.

G-29
See Response to Comment G-9.

G-30
Two additional general purpose lanes are included in the Unconstrained Transportation Network.

G-31
Employing new technologies is identified as a policy objective of the 2050 RTP/SCS Reliability Goal and is a key component of the region's Transportation Systems Management initiatives, described in Chapter 7. Under the TSM chapter, six program areas are identified that provide benefits across modes as means to improve overall traffic flows on local streets and highways. Improving the operation of traffic signals is key to maintaining mobility and reducing emissions and ensuring they work together requires a reliable communications network.

The 2050 RTP/SCS identifies the high level concept and benefits of TSM initiatives but does not list the various supporting elements, such as communications networks, that would be part of the project plan. As the region works to improve TSM capabilities and makes improvements to the traffic signal system, addressing communication needs is a priority. The determination of whether to use fiber, copper or wireless technologies will be based on specific need, opportunities, and budget capacity.

G-32
Enhancements to traffic signal timing including interconnect are fundamental components for improving arterial management throughout the region. Under the TSM chapter of the RTP, approximately $1.3 billion in funding has been identified for the six TSM program areas including Arterial Management. The exploration of new technologies and innovative concepts is a key objective of the TSM program and applies to all the program areas. SANDAG will continue to work with local jurisdictions to identify and evaluate new solutions through ongoing TSM efforts.
The optimal configuration of Class I bicycle facilities will be determined during the design phase of a project. Where possible this configuration will be considered.

It is SANDAG’s goal to coordinate the integration of bike paths into transit and highway projects wherever possible.

Table 3.3 in Technical Appendix 13 shows the minimum design standards prescribed by the Highway Design Manual. Every jurisdiction is encouraged to adopt best practice design dimensions for these facilities which would be similar to those provided in this comment. SANDAG’s Bicycle-Pedestrian Working Group could consider recommending the development and adoption of regional design standards as part of the next update to the Regional Bicycle Plan.

The specific street chosen for the regional bikeway network in this corridor will be studied during the implementation phase. Should the implementation of this corridor not take place before the next update to the Regional Bicycle Plan, this suggestion can be considered at this time.

Amendments to the Regional Bicycle Network can be considered when individual projects are in the planning and design phase or when the Regional Bicycle Plan is updated.

Please refer to Response to Comment G-37.

This is the current minimum standard included in the Manual of Uniform Traffic Control Devices (MUTCD). The MUTCD also allows traffic engineers to use their professional judgment in placement of the sharrow which would allow for the placement suggested. Context should be considered in the design of all facilities.
July 29, 2011

Mr. Rob Rundie
Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Re: Draft Environmental Impact Report for 2050 Regional Transportation Plan/Sustainable Communities Strategy

Dear Mr. Rundie:

Thank you for the opportunity to comment on the Draft Environmental Impact Report for the 2050 Regional Transportation Plan/Sustainable Communities Strategy. The City of Solana Beach (City) greatly appreciates the hard work SANDAG has invested in preparing a program environmental impact report (DEIR) which examines the potential impacts of the 2050 Regional Transportation Plan (RTP) and implementation of SB 375’s requirement for a Sustainable Communities Strategy (SCS).

In the interest of assisting these efforts, City staff and consultants carefully reviewed the draft DEIR and identified a number of issues which should be addressed in the final DEIR to ensure that it is adequate, complete and defensible. These issues are set forth in detail in the comment matrix which is enclosed with this letter as Attachment 1. Additional issues are identified in the City’s letter to you regarding the draft RTP, dated July 7, 2011, and the City’s letter in response to the Notice of Preparation of the EIR, dated June 9, 2010, copies of which are enclosed as Attachment 2 and Attachment 3, respectively. Among the issues identified in the attached materials, the following are of particular concern to the City:

1. The Large Number of Unmitigated Significant Impacts Aged Out of the Goal of Creating Sustainable Communities. As indicated in the DEIR, SB 375 requires the RTP to include an SCS to guide the region toward a more sustainable future by integrating land use, housing and transportation planning to create more sustainable, walkable, transit-oriented, compact development patterns and communities that meet GHG emissions targets for passenger cars and light trucks. However, the DEIR determined that the proposed RTP/SCS will have unmitigated significant impacts on numerous environmental resources, including Aesthetics and Visual Resources, Agricultural and Forest Resources, Air Quality, Biological Resources, Geology, Soils and Mineral Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Land Use, Noise, Population and Housing, Public Services, Utilities and Energy, Recreation,

H-1

This comment represents introductory statements and no further response is required.

H-2

SANDAG has read and responded to the documents attached to this comment letter. Please refer to Response to Comments H-10-H-80 for responses to Attachment 1. Please refer to Response to Comments H-82-H-109 for responses to Attachment 2, and Response to Comment H-110 for responses to Attachment 3.

H-3

Please refer to Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies, Master Response 6 for a discussion of significant unavoidable impacts, and Master Response 9 for a discussion of the Plan’s consistency with the intent and goals of SB 375.
2. The Large Number of Unmitigated Significant Impacts Indicates That Additional Efforts Should Be Made to Identify Feasible and Effective Mitigation Measures. The DEIR’s determination that there will be unmitigated significant project and cumulative impacts in nearly every environmental resource area suggests that additional work is necessary to identify feasible and effective mitigation measures. Even though a “program” EIR is by nature more general in its analysis and mitigation of potential impacts, it still must comply with the basic CEQA requirement to identify mitigation measures that can reduce or avoid significant impacts. It is unclear why viable programmatic mitigation measures or performance standards are not included in the DEIR to reduce impacts below significance thresholds. The DEIR’s approach places a heavy burden on SANDAG to structure Findings (CEQA Guidelines §15009) and the Statement of Overriding Considerations (CEQA Guidelines § 15003) so as to defend the contents and conclusions of the DEIR while acknowledging the numerous unmitigated significant environmental impacts detailed in the DEIR.

3. The City of Solana Beach Strongly Supports Construction of an Underground Parking Structure at the Solana Beach Train Station. The DEIR discusses substantial improvements to the region’s coastal rail corridor such as double tracking the rail lines between Orange County and Downtown San Diego, construction of selected grade separations, improvement of at-grade crossings, establishing quiet zones, building a new station adjacent to the Del Mar Fairgrounds complex and improving existing stations. It also discusses the construction of parking structures at most existing stations. The City welcomes all such measures and strongly supports construction of a new underground parking structure at the Solana Beach Train Station, which is one of the most prominent public transit stations in this region. The City recommends that the construction of this underground parking structure be given the highest priority of SANDAG’s near term project list.

4. The DEIR Should Be Updated to Reflect Caltrans’ Identification of the “8+4 with Buffer” As the Preferred Alternative for the I 5 Widening Project. The DEIR refers throughout to the 10+4 Alternative for the Interstate 5 North Coast Corridor Project. However, on July 7, 2011, Caltrans issued a press release identifying the 8+4 with buffer as the preferred alternative for the highway expansion project. The City supports this option

H-4 Please refer to Master Response 6 for a discussion of significant and unavoidable impacts and Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation measures. SANDAG has made a good faith effort to describe feasible, effective mitigation measures for each significant impact, and to explain why other mitigation measures suggested by the public are infeasible. Comments correctly observe that the SANDAG Board will make final decisions about the feasibility of mitigation measures when it adopts CEQA findings. If a large number of significant unavoidable impacts remain when the SANDAG Board considers adopting the Statement of Overriding Considerations, it will decide whether the benefits of the 2050 RTP/SCS outweigh its significant environmental impacts.

H-4 Cont.

H-5 The comment is noted. A parking structure at the Solana Beach Train Station is included and prioritized as requested in the 2050 RTP/SCS.

H-6 As suggested by the commenter, the 2050 RTP/SCS and Final EIR will reflect the Caltrans and FHWA-preferred alternative for the I-5 North Coast Corridor as an 8F+4ML facility (express lanes only alternative).
Please refer to Response to Comment H-4. In addition, as stated in Section 4.13.5 of the Draft EIR, mitigation of impacts on population growth inducement would be infeasible. The commenter suggests not only moratoriums, but also “other development controls” to lessen impacts of population growth inducement. Moratoriums on development and other development controls would be difficult if not completely infeasible to implement for economic, political, and legal reasons, especially over an extended period of time. Development controls may also impede the ability of the region to implement the RHNA. Additionally, a moratorium would cause potential residents to reside in neighboring regions and commute into the region, which would increase GHG emissions and counter sustainability goals included in the 2050 RTP/SCS. A regionwide restriction on public services and utilities would also serve to limit population growth but would be difficult, if not completely infeasible, to implement for the reasons described above.

Furthermore, failing to accommodate the region’s forecasted population growth would be inconsistent with a fundamental objective of the 2050 RTP/SCS. As discussed in Draft EIR Section 4.13.2, Government Code Section 65080(b)(2)(B)(ii) requires the RTP/SCS to house the population of the region, including all economic segments, over the course of the RTP planning period. A building moratorium would impede the ability of local jurisdictions to construct a sufficient housing supply for the forecasted population growth.

Please refer to Master Response 1 for a discussion of programmatic mitigation, and Master Response 4 regarding mitigation measures within the jurisdiction and responsibility of agencies other than SANDAG.
As a responsible agency under the California Environmental Quality Act (CEQA), the City hopes that its comments will help to improve the Final EIR. The City trusts that SANDAG will provide meaningful responses to the City's comments and looks forward to working with SANDAG to provide the region with a thorough assessment of the potential environmental effects of the proposed RTP and SCS. Thank you for your consideration.

Sincerely,

David Ott
City Manager

City of Solana Beach

H-9

The City of Solana Beach is not a responsible agency for the 2050 RTP/SCS EIR because it does not directly carry out or have discretionary approval over the 2050 RTP/SCS; see response to comment H-28 for a detailed explanation. The remainder of this comment consists of conclusion statements for which no further responses are required.

cc: Solana Beach City Council
Laurie Borman, District Director, Caltrans – District 11
Gary Gallegos, Executive Director, San Diego Association of Governments
Hon. Christine Kehoe, State Senator
Hon. Mark Wyland, State Senator
Hon. Martin Garlick, State Assembly
Hon. Pam Slater-Price, Chair, District 3 Supervisor, County of San Diego
Hon. Bill Horn, Vice Chair, District 5 Supervisor, San Diego County
Deborah Lee, California Coastal Commission
Dennis Ridz, Chair, Torrey Pines Community Planning Board
Matthew Tucker, Executive Director, North County Transit District
All pagination errors in the Draft EIR will be corrected in the Final EIR.

See Master Response 7 for discussion of the 2050 planning horizon and Master Response 12 for discussion of the regional growth forecast.

The 2050 RTP/SCS and EIR will streamline future CEQA compliance in two basic ways. First, as discussed in Draft EIR Section 2.0.6 (pages 2-63 to 2-64), the EIR for the 2050 RTP/SCS is a Program EIR which will streamline CEQA compliance for specific second-tier projects. Subsequent projects may be examined by the lead agency to determine whether they are within the scope of the Program EIR, and whether additional environmental documentation such as a subsequent or supplemental EIR, negative declaration, or addendum is required.

Second, as discussed in Draft EIR Section 2.0.6 (pages 2-65 to 2-67), SB 375 also includes specific CEQA streamlining provision for residential and mixed use projects consistent with the SCS, and for TPPs. A TPP may be eligible for a CEQA exemption, a Sustainable Communities Environmental Assessment (SCEA), or an EIR with a reduced content requirement. Draft EIR section 2.0.6 sets forth the information on TPP eligibility for CEQA streamlining that is requested by the commenter.

Neither the 2050 RTP/SCS nor the EIR includes a list of projects that would potentially be subject to SB 375 CEQA streamlining, and SB 375 contains no requirement to do so. The decision as to whether a future project qualifies for SB 375 CEQA streamlining will be made by the relevant lead agency with jurisdiction over the project. To assist in this process, SANDAG will be issuing guidance for lead agencies on determining consistency of projects with the SCS.
Please refer to Master Response 6 for a discussion of the Draft EIR's conclusions regarding significant and unavoidable impacts and how they relate to the project's sustainability goals. Please also refer to Master Response 9 for a discussion of the 2050 RTP/SCS's overall consistency with the intent and goals of SB 375 and AB 1358.

### SANDAG 2050 RTP/SCS DEIR

<table>
<thead>
<tr>
<th>Topic or Page</th>
<th>SANDAG 2050 RTP/SCS DEIR</th>
<th>City of Solana Beach Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-12 Cont.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H-13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4. DEIR General Comment

**Significant Unavoidable Adverse Environmental Impacts**

Sustainable development is often defined as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The DEIR concludes that implementation of the 2050 RTP/SCS will result in Significant Unavoidable Adverse Environmental Impacts for many resource topics including biological resources, air quality, land use and transportation. After review of the DEIR, the document is not clear how significant adverse environmental effects associated with the 2050 RTP are consistent with SANDAG's goal to create and implement a "Sustainable Communities Strategy" for the San Diego Region through.

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City of Solana Beach
SANDAG 2050 RTP/SCS DEIR Comments
July 28, 2011
Page 2 of 22

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October 2011
Please refer to Response to Comment H-4.

Please refer to Response to Comment H-12. As noted in Response to Comment H-12, the project eligibility criteria for SB 375 CEQA streamlining are contained in Public Resources Code section 21155.1. These criteria are to be applied by local lead agencies, and not by SANDAG. SANDAG will not be issuing any additional criteria, though it will be issuing guidance for lead agencies on determining consistency of projects with the SCS.

As stated in Draft EIR Section 4.16.5, the term "when feasible" in Mitigation Measure T-A is defined within the mitigation measure itself. Within the mitigation measure, the term "when feasible" is directly tied to the statement of "availability of funding programs". Project implementation is often dependent on project funding. The state and federal government provide funding for transportation projects that is allocated and distributed annually across the state and/or country. There are restrictions on how funds can be used and flexibility is further constrained by the annual allocation of most funds, which cannot be advanced. Please see Master Response 7 for a discussion of the 2050 RTP/SCS transportation network improvements.

Mitigation Measure T-A has been revised in Section 4.16.5 as follows to further define what will be re-evaluated in future iterations of the RTP/SCS and how often this re-evaluation will occur:

T-A SANDAG, working with local jurisdictions and other transportation planning agencies, including Caltrans, shall reevaluate regional travel times, land use changes, and regional growth in interim years prior to 2035 and 2050 during the development of each every RTP/SCS, occurring every four years. When feasible, SANDAG shall in future RTP/SCSs modify the timing and priority of transportation network improvements to be consistent with available funding programs to most quickly implement those improvements that would reduce impacts T-3 and T-4 to less than significant levels.

Please refer to Master Response 1 for a discussion of EIR's approach to programmatic mitigation measures, and Master Response 4 regarding mitigation measures within the jurisdiction and responsibility of agencies other than SANDAG.
The Draft EIR Project Description was developed in concert with, and accurately reflects, the Draft 2050 RTP/SCS. There have been modifications to certain transportation network improvements in response to comments received on the Draft 2050 RTP/SCS and EIR. Please refer to Master Response 13 for a discussion of Project Description modifications from the Draft EIR to the Final EIR.

Please refer to Master Response 4 for a discussion of SANDAG's commitment to mitigation within its responsibility and jurisdiction, and implementation of other mitigation measures that are within the responsibility and jurisdiction of other agencies. SANDAG regularly coordinates with MTS, NCTD, Caltrans, and other regulatory agencies on the development of regional transportation projects in the project planning, design, and implementation stages.

Please refer to Master Response 12 for a discussion of regional growth projections.
H-22

Please refer to Response to Comment H-6.

H-23

The commenter correctly notes that the listing of significant and unavoidable impacts starting on page ES-3 of the Draft EIR is a summary.

H-24

Please refer to Master Response 20 for a discussion of the Draft EIR’s GHG emissions impact analysis. Several significance criteria were used. GHG-2 addressed conflicts with SB 375 regional targets, and concluded this impact was less than significant because the 2050 RTP/SCS meets these targets. However, GHG-1 addressed whether the 2050 RTP/SCS would cause a net increase in GHG emissions, and concluded this impact was significant and unavoidable for 2035 and 2050.

H-25

As described in Table TA 3.1 in the 2050 RTP/SCS, SANDAG estimates average travel speeds will increase in the Revenue Constrained scenario for drive alone and transit modes compared to the No Build scenario. In addition, by 2050 SANDAG estimates that 70 percent of jobs will be within a 30 minute commute for San Diego residents driving alone compared to 67 percent in the No Build alternative. Further, the Revenue Constrained scenario reduces peak period congestion by 11 percent compared to the No Build alternative in 2050. Finally, the travel times noted in Table TA 3.2 are reduced in nearly every corridor by 2050 compared to the No Build alternative. Given these anticipated reductions in travel time, the 2050 RTP/SCS does demonstrate the operational benefits to the region. Regarding the financial cost of the project, out-of-pocket user costs per trip increase in the Revenue Constrained scenario due to the significant investment in pay-as-you-go infrastructure including transit, managed lanes, and toll lanes.

H-26

Please refer to Response to Comment H-25 and Master Response 6. The commenter correctly notes that the Draft EIR Transportation and Traffic section (4.16) identifies significant and unavoidable impacts to:

• average work trip travel time;
• non-work related trips accessible within 15 minutes; and
• congested vehicle miles travelled in peak periods

While SANDAG evaluated project alternatives and mitigation measures that could reduce or avoid significant and unavoidable transportation impacts, not all potential mitigation measures are feasible or within the authority of SANDAG to impose. The commenter is correct that the SANDAG Board of Directors will make CEQA findings regarding the feasibility of mitigation measures and consider adopting a statement of overriding considerations that considers whether operational and other project benefits outweigh its significant unavoidable impacts.
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<th>Section</th>
<th>SANDAG 2050 RTP/SCS DEIR Topic or Page</th>
<th>City of Solana Beach Comment</th>
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<tr>
<td>12.</td>
<td>Executive Summary</td>
<td>Page ES-47</td>
<td>Statement of Overriding Considerations (CEQA § 15093) that SANDAG will be required to adopt if when it adopts the 2050 RTP/SCS.</td>
</tr>
<tr>
<td>13.</td>
<td>Introduction</td>
<td>Page 1-2</td>
<td>SANDAG indicates that there are no Responsible Agencies under CEQA for this project (CEQA § 21016). SANDAG is the MPO for the region and is the entity charged with long-term transportation planning and funding management and allocation. The NCTD, Caltrans and FHWA each are public agencies responsible for carrying out of approving portions of the RTP. In addition, each City (as a SANDAG member agency) that has RTP-related planned transportation improvements within its jurisdiction needs to be identified as a Responsible Agency under CEQA. Please also see our Comment #7 above which raises a similar concern. The DEIR document needs to be revised to identify other Responsible Agencies under CEQA.</td>
</tr>
<tr>
<td>14.</td>
<td>Project Description</td>
<td>Page 2-31 and 2-32</td>
<td>Table 2.0-3 SCS Implementation Actions, lists several proposed actions that require SANDAG and local jurisdictions to implement. There is no description or discussion of how and when the local jurisdictions will be required to implement these actions. The DEIR needs to be revised and include a discussion on this issue.</td>
</tr>
<tr>
<td>15.</td>
<td>Project Description</td>
<td>Page 2-40</td>
<td>The DEIR discusses substantial improvements to the region’s coastal rail corridor such as double tracking the rail lines between Orange County and Downtown San Diego, construction of selected grade separations, no other public agencies directly carry out or have discretionary approval over the 2050 RTP/SCS, as explained in Draft EIR Section 1.3 (p. 1-12). SANDAG is the lead agency because it is responsible for approving the RTP/SCS through its role as the MPO which has discretionary approval under CEQA Guidelines §15381.1. Responsible agencies, with a few limited exceptions, must use the lead agency’s EIR when they decide to carry out or approve their portion of the project. (CEQA Guidelines §15381.1(e).)</td>
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The double tracking of the LOSSAN corridor is a high priority in the 2050 RTP/SCS, with all double tracking projects (except the Del Mar tunnel) scheduled for completion by 2030. SANDAG recognizes Solana Beach’s request to ensure double-tracking is constructed concurrent with the first phase of I-5 north coast expansion. While both of these projects are in the planning and design stage, the timing of both are planned as stated in Response to Comment H-31. H-32

The double tracking of the LOSSAN corridor and the Del Mar tunnel project are included as part of the overall project as indicated in the Draft EIR, Chapter 2.0, Project Description in the subsection titled “Transportation Network Improvements.” In addition, the phasing (i.e., timeframe as it relates to the project horizon years of 2020, 2035, and 2050) for the COASTER double tracking is indicated in Table 2.0-5 titled “Phased Transit Services.” As such, the program level analysis provided throughout the Draft EIR does assume these important projects.

Please refer to Response to Comment H-6.
SANDAG 2050 RTP/SCS EIR

City of Solana Beach Comment

18. Project Description

Page 2-64

The "List of Environmental Review and Information Requirements" section of the DEIR briefly mentions federal consultation with USEPA and USDOT, as well as, local and state agencies. However, the DEIR does not include a description of how compliance with the National Environmental Policy Act (NEPA) will be achieved. Because implementation of the RTP involves both federal funding and federal permits, a responsibility to comply with NEPA is therefore triggered. SANDAG needs to describe in the Final EIR how compliance with the requirements of NEPA will be satisfied. Please also see our Comments #7 and 12 above which raise similar concerns.

19. Biological Resources

Table 4.4-5 Current Status of MSCPMHCP Subareas Plans in the San Diego Region

In 2003, the City of Solana Beach became a signatory to the implementing agreement for the San Diego Multiple Habitat Conservation Program. (http://www.dfg.ca.gov/hab/mon/mcpp/status/SanDiegoMHP/). This table needs to be revised to include the City of Solana Beach, and consistent with the MHCP statement on page 4.4-41 of the DEIR; whereas it states: "The subregional plan for the northeastern portion of the County (cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista) was approved by the SANDAG Board of Directors on March 28, 2003."

20. Biological Resources

Table 4.4-6 Biological Resource Protection Ordinances in San Diego County by Local Jurisdiction

This table does not include Solana Beach's Municipal Code (SBMC) ordinances or the City's ESHA policies as contained in the City's adopted draft Local Coastal Program (LCP) Land Use Plan (LUP). Please refer to SBMC 13.10 and 13.30.230 B2 regarding conserving natural areas, soils and vegetation and SBMC 13.10 which defines ESHA. Please also refer to Chapter 3 of the Solana Beach LUP for specific policies regarding resource protection.

"Appendix C summarizes the project-by-project impact on vegetation communities for each horizon year. This information is essential to

H-34

Cont.

H-35

H-36

H-37

H-38

Federal decisions related to RTPs are not considered actions subject to NEPA. (23 CFR 450.336). The Caltrans 2010 RTP Guidelines clearly explain that NEPA compliance is not required for an RTP, but only for federally-funded or permitted projects that implement an RTP. The Guidelines explain on p. 79 that only CEQA applies to the RTP, whereas both NEPA and CEQA may apply to the individual projects that implement the RTP during the project delivery process.

Table 4.4-6 has not been revised to include the City of Solana Beach. The intent of the statement on page 4.4-41 is to note that Solana Beach is included in the subregional plan, but the City is not expected to require take authorizations and is therefore not expected to submit a plan.

A discussion of the City of Solana Beach Draft Local Coastal Program - Land Use Plan has been added under "Local Plans and Policies" in Section 4.4.2. This plan has yet to be approved by the California Coastal Commission (http://www.coastal.ca.gov/meetings/coming.html; http://www.ci.solana-beach.ca.us/csite/cms/339.htm) and there are no ordinances in place to implement the policies within this plan, so it has not been referenced in Table 4.4-6.

Tables 4.4-7 thru 4.4-9 are intended to provide region wide summaries of the anticipated impacts. In order to focus the text within the Draft EIR on the region wide impacts, which is the focus of a Programmatic EIR, the detailed project by project breakdown was placed in Appendix C. This table does not contain the information noted in the comment. SBMC 13.10 relates to storm water management and although "Environmentally Sensitive Areas" are defined, conservation is not discussed. In regards to Table 4.4-5, summary of the current status of subarea plans, the table does not include jurisdictions that have not started preparation of a subarea plan. Per Section 5.3 of Volume 3 of the Final MHCP, "Solana Beach does not expect to require take authorizations and is therefore not expecting to submit a plan."
As noted in Response to Comment H-38, Tables 4.4-7 thru 4.4-9 are intended to provide summaries of anticipated impacts only. Arterials are organized by jurisdiction because the entire project typically occurs within one jurisdiction whereas highway and transit projects often span across multiple jurisdictions.

22. Biological Resources

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<th>SANDAG 2050 RTP/SCS DEIR Topic or Page</th>
<th>City of Solana Beach/Comment</th>
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| 4.4-9   | understanding the biological resource effects of the RTP/SCS and must be included, organized by jurisdiction, in the body of the DEIR. The intent of CEQA is to provide meaningful public disclosure of potential environmental effects of implementing a project. DEIR Tables 4.4-7 through 4.4-9 are not organized by jurisdiction and as such make it difficult to understand whether or not there are impacts to the City's sensitive vegetation communities including identified ESAs. These tables need to be revised consistent with the format of DEIR Table 4.4-10 which lists both the species and location(s) in which they occur. This format is preferred as it is most useful in communication and understanding potential biological impacts.

23. Biological Resources

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<th>SANDAG 2050 RTP/SCS DEIR Topic or Page</th>
<th>City of Solana Beach/Comment</th>
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| 4.4-100 | The DEIR states that for each biological impact (BIO-1 through BIO-4): "...there is no assurance that the proposed mitigation would reduce impacts of all development and transportation network improvement projects to a less than significant level..." The DEIR concludes that impacts would remain significant and unavoidable.

24. Cultural Resources

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<th>City of Solana Beach/Comment</th>
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| 4.5-21  | The DEIR states: "Given that the geographic area assumed as part of the..."
As provided in Section 4.5.2 of the Draft EIR, an extensive discussion of the existing regulatory environment as it pertains to the protection of cultural, paleontological, and unique geologic resources. However, the Draft EIR does not just rely on existing regulations to assure impacts to cultural resources are less than significant. Section 4.5.5 includes several mitigation measures to mitigate impacts to cultural and paleontological resources.

Mitigation Measure CULT-A has included suggested language, with new text shown in bold:

CULT-A: During CEQA review of development projects and transportation network improvement projects implementing the 2050 RTP/SCS, SANDAG and other implementing agencies can and should conduct a review of literature and historic maps and a records search to determine whether the project area has been previously surveyed and whether cultural resources were identified. In the event that the records indicate that no previous survey has been conducted, the project implementing agency shall have a qualified cultural resource specialist conduct a survey of the project area. Specifically, the report shall explicitly state the results of the literature study and site survey. In addition, SANDAG and other implementing agencies can and should consult the Native American Heritage Commission and any and all area tribes that have filed a claim in the Sacred Lands Inventory to identify potential places of cultural and/or religious importance or sites that may contain other cultural resources. Resources that cannot be avoided will need to be evaluated, and if found significant, will require project-level mitigation.

Please refer to Master Response 1 for a general discussion of the role of mitigation measures in a program EIR.

In response to this comment, Mitigation Measure CULT-F was created to include the following language: “If human or nonhuman remains are found, construction shall be immediately suspended in the in the vicinity of the discovery and determine if the remains discovered are human or nonhuman. For human remains, the archeologist and Tribal monitor, if present, shall protect discovered remains and/or burial goods remaining in the ground from additional disturbances. In the event that the human remains are discovered to be Native American, project implementation agencies shall contact the NAHC so that a Most Likely Descendent can be identified as required under California Public Resources Code §5097.98. Through coordination with SANDAG (or other implementing agencies), the Most Likely Descendent will determine the ultimate disposition of the human remains in compliance with all applicable local, state, and federal laws. Whenever possible, areas in which Native American remains and/or burial goods are discovered shall be avoided and placed into protected open space.” This mitigation measure is now included in Section 4.6.5 of the EIR.
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<th>SANDAG 2050 RTP/SCS DEIR Topic or Page</th>
<th>City of Solana Beach Comment</th>
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<td></td>
<td>Paleontology</td>
<td>and regulations discussed above and listed in Section 4.5.2. Therefore, impacts associated with the disturbance of human remains would be less than significant because existing laws and regulations would reduce the potential for encountering human remains and ensure the appropriate disposition of any human remains that are encountered.</td>
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<td>Adherence to laws and regulation is not considered mitigation as they are mandates of the State or of resources agencies. The City of Solana Beach suggests the following mitigation:</td>
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<td>1. In the event that unanticipated cultural resources are encountered during Proposed Project construction, all earthmoving activity shall cease until the services of a qualified archaeologist are retained. The archaeologist shall examine the findings, assess their significance, and offer recommendations for procedures deemed appropriate to either further investigate or mitigate adverse impacts to those cultural resources that have been encountered (e.g., excavate the significant resource). These additional measures shall be implemented.</td>
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<td>2. If human bone or bones of unknown origin is found during project construction, all work shall stop in the vicinity of the find and the County Coroner, SANDAG, and the City shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission who shall notify the person it believes to be the most likely descendant. The most likely descendant shall work with SANDAG and the City to develop a program for reinterment of the human remains</td>
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City of Solana Beach

SANDAG 2050 RTP/SCS DEIR Comments
July 26, 2011
Page 11 of 22
The geographic scope and complexity of the 2050 RTP/SCS played an important role in determining the appropriate level of detail to include in the EIR. The SANDAG region encompasses 4,200 square miles and includes 18 cities, as well as unincorporated San Diego County. The 2050 RTP/SCS is highly diverse, consisting of many transit, highway, and phased arterial projects, as well as a comprehensive Sustainable Communities Strategy. The environmental justice evaluation provided in Section 4.6 of the Draft EIR provides as much quantitative detail as feasible regarding the regional environmental impacts of the 2050 RTP/SCS. See also Master Response 1 regarding the appropriate level of detail in Program EIR impact analyses.

Consistent with the requirements of CEQA, SANDAG conducted an extensive outreach process during the preparation of the Draft EIR to contact affected agencies, organizations, and individuals who may have an interest in the 2050 RTP/SCS, as discussed in Section 1.4 of the Draft EIR. The Draft EIR was released for a 55-day public review period, which ended on August 1, 2011. All comments received during this public review period were responded to and will be included in the Final EIR. While no additional public outreach is required by CEQA, SANDAG’s board hearings are open to the public and interested parties may attend those meetings to gather information and comment publicly if they so desire. A meeting schedule can be found online at: http://www.sandag.org/index.asp?fuseaction=meetings.home. In addition, all published documents are available online at: http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail. Paper copies of the 2050 RTP/SCS and associated EIR documents are also available at public libraries across the region.

Per the commenter’s request Table 4.6-1 has been revised to include Solana Beach.

This comment has been noted; however, descriptions of the transportation network improvements included in the 2050 RTP/SCS were included in Tables 2.0-5, 2.0-6, and 2.0-7 in the Draft EIR’s Project Description. In addition, each impact discussion begins with a discussion of the forecasted population, housing, and job growth for each horizon year analyzed. Additionally, based on forecasted land use, anticipated areas of growth are also identified in this discussion. For an example of this, please refer to Section 4.11.4, Impact LU-1. The comment regarding additional tables that include land use and regional growth measures/plans is noted; however, these issues are discussed as necessary within each topical analysis and additional tables containing this information are not considered necessary.

The comment accurately quotes the statement from Section 4.6, Environmental Justice, of the Draft EIR. However, the information presented in Section 4.6 is in error, and not consistent with the discussion in Section 4.8, Greenhouse Gas Emissions. The analysis in Section 4.6 relies on the information presented in Impact GHG-3, which concludes that the 2050 RTP/SCS does not impede the SANDAG Climate Action Strategy and therefore would constitute a less than significant impact. Section 4.6 of the Final EIR will be revised to remove this language. It will appear as follows in strikeout underline text:
Impacts Present in 2020 Only

GHG-3: Greenhouse Gas Emissions – Applicable Plans

The anticipated increase in GHG emissions would conflict with applicable plans in the region. Mitigation measures proposed would reduce the level of GHG emissions, but it cannot be determined whether the proposed mitigation would reduce all potential impacts to a less than significant level. This impact is related to conflicts with a regulatory standard, however, and is not associated with an environmental or human health impact with a specific location or dependent on the presence of sensitive receptors or uses. Therefore, this impact is a less than significant environmental justice impact.

Conclusion

This impact is not anticipated to accrue disproportionately to communities of concern and is a less than significant impact. No mitigation measures are required.

This revision would make the sections of the EIR consistent with the analysis discussed in Impact GHG-3. See also Response to Comment H-24 for a discussion of the project’s significant and unavoidable GHG impact, and the relationship to SB 375.

H-51

Please refer to Master Response 1 for a discussion on the EIR’s approach to programmatic mitigation. In addition, environmental justice impacts are not considered physical environmental impacts under CEQA, and therefore CEQA does not require adoption of mitigation measures for environmental justice impacts

H-52

For several impacts, e.g., GEO-1 and CULT-2 the EIR appropriately concludes that adherence to existing laws and regulations would ensure impacts would be less than significant. Case law has supported the use of regulatory requirements to avoid significant impacts. (See Oakland Heritage Alliance v. City of Oakland (2011) 195 Cal.App.4th 884, 908-910 [compliance with seismic safety and building codes is adequate mitigation for seismic safety risks]; City of Long Beach v. Los Angeles Unified School District (2009) 176 Cal.App.4th 889, 913, 914 [discussing compliance with Safe School Plan requirements under Education Code Sections 32282 et seq. to help avoid hazardous material impacts]; Sundstrom v. County of Mendocino (1988) 202 Cal.App.3d 296, 308 “compliance [with environmental regulations] would indeed avoid significant environmental effects”]; see also CEQA Guidelines Sections 15002(h)(3), 15064(h)(3), and 15130(c).) SANDAG is entitled to rely on existing environmental laws and regulations that are effective and enforceable to determine that an impact subject to these laws and regulations is less than significant. Nevertheless, given the nature of the resource and the suite of existing regulations, for some impacts, e.g., GEO-3, the EIR took a highly conservative approach and found that compliance with existing regulations would not always guarantee that impacts would be less than significant. For example, Impact GEO-3 pertains to soil erosion. The potential for erosion generally increases as a result of human activity, primarily through development of structures and impervious surfaces and the removal of vegetative cover. These activities are highly regulated to minimize the potential for substantial soil erosion or loss of topsoil; however, soil erosion can also occur through unregulated activities occurring in nature, such as heavy storm and flood events where the potential for erosion and other drainage pattern alterations increases. The EIR then used this opportunity to present additional mitigation measures, e.g., GEO-A, to further reduce soil erosion impacts.
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<th>Section</th>
<th>SANDAG 2050 RTP/SCS DEIR Topic or Page</th>
<th>City of Solana Beach Comment</th>
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<td>and Mineral Resources</td>
<td>Measure MR-A since this mitigation measure relies on other public agencies for implementation: “MR-A: The 19 incorporated cities and the County of San Diego, when updating the Conservation Element of their General Plans, can and should identify locations with known mineral resources and adopt policies and objectives to conserve the land most suitable for mineral resource extraction from development of incompatible land uses. Local jurisdictions shall pay particular attention to lands with known aggregate supply sources, as identified in the 2011 San Diego Region Aggregate Supply Study, with the intention to manage the region’s aggregate resources during the lifespan of the 2050 RTP/SCS.”</td>
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<td>32. Geology, Soils, and Mineral Resources</td>
<td>Page 47-42</td>
<td>Please confirm references to Mitigation Measures GEO-3 and MR-1 are intended to be labeled GEO-A and MR-A. It is unclear how encouraging Responsible Agencies to conduct certain measures is consistent with CEQA requirement that mitigation measures be “unforeseeable” and within the power of the agency to feasibly implement. In addition, earlier in the DEIR, the document states there are no Responsible Agencies. SANDAG needs to revise the DEIR and also accurately disclose all of the agencies that are considered Responsible Agencies under CEQA (CEQA § 21069) in the Final EIR.</td>
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<td>33. Hazards and Hazardous Materials</td>
<td>General Comment</td>
<td>As noted in the City’s comment letter on the RTP (Attachment #2), the rapid bus system proposed for Solana Beach’s portion of Highway 101 is inconsistent with local transportation planning and would create a new pedestrian and vehicular public safety hazard. The Highway 101 corridor through San Diego’s coastal communities is considered a major bicycle and pedestrian route. All of the cities along the coast, through which this A Rapid Bus service is consistent with the aims of calming traffic operations on these streets. The key travel benefit in terms of “travel speed” to the passenger is through limited stop service. Additional measures such as transit signal priority and use of queue jump lanes can work in concert with traffic calming measures. SANDAG will work with the City to identify specific capital improvements at the project development stage.</td>
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<td>roadway travels, are considering various traffic-calming projects such as incorporation of roundabouts, traffic circles, mid-block pedestrian crossings, road diets, reverse-angle parking and other pedestrian and bicycle-friendly features. The RTP needs to recognize the local planning efforts underway to improve reduced travel speeds, &quot;calm&quot; traffic flow along Highway 101 and improve pedestrian and bicycle travel on this roadway. Local goals and efforts to implement traffic-calming programs will result in speed reductions, which may not lend themselves to development of a &quot;rapid&quot; bus system in this corridor. While coastal cities support the increased use of public transportation on Highway 101 (i.e. more frequent direct or express bus service), the traffic &quot;calming&quot; improvements that coastal cities are implementing along the Highway 101 corridor would not accommodate high speed transit systems such as a rapid bus system described in the RTP. SANDAG needs to evaluate the local plans for road improvements in this area and revise and clarify the DEIR document as appropriate.</td>
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<tr>
<td>34.</td>
<td>Hazards and Hazardous Materials</td>
<td>Mitigation Measure</td>
<td>HMA states: &quot;SANDAG shall and other implementing agencies can and should require the implementation of bank stabilization improvements and erosion control measures near transportation infrastructure, such as major highways and transit centers, after wildfires.&quot; The DEIR document needs to be revised to include a complete description of needed improvements and measures. Without any specifics to this measure it is unlikely that these improvements would be constructed and impacts avoided or lessened. These improvements need to be included in the project design of the RTP projects if they are essential to avoid or lessen environmental impacts. Including these specific design features will ensure they are constructed and not left as vague mitigation measures for some other agency to implement at some undetermined point decades</td>
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City of Solana Beach
SANDAG 2050 RTP/SCS DEIR Comments
July 28, 2011
Page 15 of 22
As requested by the commenter, Mitigation Measure HM-B has been modified to more clearly state specific climate change adaptation measures that could help reduce and avoid wildland fire risks. Mitigation Measure HM-B, as found in Section 4.9.5, now reads as follows:

"HM-B states: "SANDAG shall and other implementing agencies can and should consider additional wildfire risks caused by climate change, and adaptation measures, in the design and environmental review of development projects and transportation network improvements implementing the 2050 RTP/SCS."

The DEIR concludes the projects will result in significant impacts associated with wildland fires in all three planning horizon years. SANDAG needs to describe in the Final EIR how this measure is intended to reduce or avoid such impacts, as currently stated it is unclear.

Tables 4.10-2 would be more useful if the table listed all RTP project elements were described and numbered where 303(c) listed water bodies are crossed this information was available. As currently listed, the RTP improvements are generally categorized in this chapter and do not match the project list that is contained in other EIR chapters. A consistent project list would provide for a more concise and consistent DEIR.

In various places throughout the DEIR, the document states that: "By 2020, population within the region is expected to increase by 310,666 people; housing by 113,062 units; and employment by 118,536 jobs." SANDAG needs to clarify where these sources of data (since SANDAG has no land use jurisdiction or discretionary permit approval authority) and provide the percentage change (+) over the existing numbers. The same comment applies to planning horizons 2035 and 2050.

The data for projection years 2020, 2035, and 2050 are drawn from the SANDAG Series 12 Regionwide Growth Forecast, which was accepted by the SANDAG Board of Directors for use in the 2050 RTP/SCS in April 2011. As explained in RTP/SCS Technical Appendix 2: "These forecasts represent the best assessment of the changes we can anticipate for the region and its communities based on the best available information and well-proven and verified computer models. The forecasts are meant to help policy-makers and decision-makers develop plans for the future and are not an expression of what will happen. The forecasts are developed through a collaborative effort with experts in demography, housing, the economy, and other disciplines, and the close cooperation of the local planning directors and their staffs."

It is also important to note that SANDAG completed the forecast with extensive input from local authorities including each city, the County of San Diego, tribal governments, the Department of Defense, and others. See Master Response 12 for further discussion of the regional growth forecast.

Consistent with the commenter's suggestion, updates have been made in Section 4.10.4 to Tables 4.10-2, 4.10-3, 4.10-4, 4.10-6, 4.10-7, and 4.10-8 to reflect the project revisions.
The EIR for the 2050 RTP/SCS is a program level document. SANDAG recognizes that project-level environmental documentation is at various stages for projects set to move forward by 2020. The purpose of the Draft EIR is to analyze the implementation of these projects at the regional scale; see Master Response 1 for a discussion of the appropriate level of impact analysis detail in a Program EIR. Chapter 6.0 provides an analysis of the “No Project Alternative” which looks at the impacts of not implementing projects which are included in the 2050 RTP/SCS.

H-62
Please refer to Master Response 1 for a discussion of the EIR’s approach to mitigation, and Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement.

H-63
Mitigation Measure LU-B requires SANDAG to review and reevaluate the SCS land use pattern in future years as growth occurs to consider whether continued increased density in urban areas or continued expansion of spaced rural residential use into existing undeveloped lands would be necessary. This measure applies to Impacts LU-1 and LU-2. Mitigation Measure LU-B is not intended to mitigate the project’s growth inducing effect.

H-64
Please refer to Master Response 11 for a discussion of how the SCS was developed and the limits of SANDAG’s land use regulatory authority. As described in this Master Response, the SCS was based on more than existing land use and local general plan land use maps.

H-65
The commenter is correct that not all of the resource chapters in the Draft EIR include a discussion of infeasible mitigation measures. CEQA does not require EIRs to discuss mitigation measures that are found to be infeasible. These discussions were added to resource topics for which an impact was found to be significant and unavoidable. The discussions of infeasible mitigation were added in order to demonstrate SANDAG’s good faith efforts to identify mitigation measures to reduce and/or avoid significant impacts.
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<th>SANDAG 2050 RTP/SCS DEIR, Topic or Page</th>
<th>City of Solana Beach Comment</th>
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<td>42.</td>
<td>Noise</td>
<td>Mitigation Measures</td>
<td>Use of the passive terms &quot;should&quot; and &quot;can&quot; are not enforceable and give the appearance that the mitigation is an option rather than a requirement. The City recommends revising the mitigation language to use the term &quot;shall&quot; in order to offset impacts to the City and elsewhere where environmental impacts require mitigation. In addition, mitigation measures directing future projects to study project impacts at the project-level are essentially deferred mitigation measures which are not allowed under CEQA.</td>
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<td>43.</td>
<td>Population and Housing</td>
<td>Page 4.13-50</td>
<td>Mitigation Measure PH-1: Mitigation is stated as infeasible and none is offered. CEQA requires mitigation for effects which are found to be significant. The DEIR needs to be revised to describe what, if any, mitigation measures were considered by SANDAG but not carried forward in the DEIR as the basis for the decision.</td>
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<tr>
<td>44.</td>
<td>Population and Housing</td>
<td>Page 4.13-50</td>
<td>Mitigation Measure PH-2: Deferred mitigation is proposed in the form of developing design strategies for application at the project level. While it is understood future projects may require additional project-level subsequent CEQA analysis, the intention of the DEIR is to provide broad analysis of individual activities that have similar environmental effects and which can be mitigated in similar ways. Where significant impacts are identified in the DEIR, feasible programmatic mitigation measures must be described and will be required to be adopted when SANDAG adopts the RTP and certifies the DEIR. Mitigation monitoring and reporting will also be required and mitigation measures in the DEIR will be required to be implemented as project mitigation measures for all relevant subsequent RTP projects that &quot;tie-off&quot; of the DEIR for purposes of CEQA compliance.</td>
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<tr>
<td>45.</td>
<td>Public Services, Utilities, and</td>
<td>General Comment</td>
<td>Mitigation Measures PS-A states: During the CEQA review process for individual facilities, San Diego region cities, the County of San Diego, and all school districts, colleges, and universities with responsibility for</td>
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<td>City of Solana Beach Comment</td>
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<td>Energy</td>
<td>construction of new public service facilities or the expansion of existing facilities, including those of police and fire protection services, libraries, and schools, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of new public or expanded public service facilities.</td>
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<tr>
<td>Recreation</td>
<td>General Comment</td>
<td>This chapter concludes that the RTP/SCS would have a significant impact (REC-1: Substantial Physical Deterioration Of Existing Parks Or Other Recreational Facilities) on regional growth/land use for the years 2020, 2035 and 2050. Sustainable development is often defined as &quot;Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.&quot; It is not clear how significant adverse environmental effects, identified in the DEIR document, are consistent with development of the RTP and SANDAG's goal to create and implement a &quot;Sustainable Communities Strategy&quot; for the San Diego Region through 2050.</td>
<td></td>
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<tr>
<td>Recreation</td>
<td>Page 4.15-27</td>
<td>Impact REC-1 Substantial Physical Deterioration Of Existing Parks Or Other Recreational Facilities is assigned mitigation (REC-A) directing the</td>
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<td>Section</td>
<td>SANDAG 2050 RTP/SCS DEIR Topic or Page</td>
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<td>48.</td>
<td>Recreation</td>
<td>Page 4.15-27 Impact REC-2 Construction Of Expansion Of Recreation Facilities is assigned mitigation (RE2-B) which in part states the cities should “...apply mitigation measures to avoid or substantially reduce construction and operational impacts or air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology, and water quality, and other resources.” As noted above, mitigation that is unenforceable is not in fact mitigation and should not be identified as such in the DEIR. Refer to Master Response 4 for a discussion of the EIR’s approach to programmatic mitigation, and Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation and Master Response 4 for a discussion of the EIR’s approach to programmatic mitigation and Master Response 4 for a discussion of the EIR’s approach to programmatic mitigation and Master Response 4 for a discussion of the EIR’s approach to programmatic mitigation. The numbers on the far left column of Table 6.2-3 are internal project identification numbers that correspond to information used for modeling purposes, and not relevant for the alternative discussion. As such, these have been deleted in Section 6.2 of the EIR. These numbers have also been deleted from Tables 6.2-4, 6.2-6, and 6.2-7. Refer to Master Response 16 for a discussion related to the Slow Growth Alternative and the idea that the EIR fails to address impacts rather than reduce impacts.</td>
<td></td>
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<td>49.</td>
<td>Alternatives</td>
<td>General Comment Alternative 2a: Modified Funding Strategy/2050 Growth Forecast Land Use results in six fewer highway improvements overall with some of the improvements phased in at a later time. Although improvements to the I-5 North Coast Widening Project through the City would remain, SANDAG needs to revise the DER and clarify the criteria that were used to define the list of improvements included in this alternative.</td>
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<tr>
<td>50.</td>
<td>Alternatives</td>
<td>Table 6.2-3 Modified Funding Strategy Highway Projects This table omits listing the highway projects along the I-5 expected to affect the City of Solana Beach. Please revise the DEIR and clarify or correct. This table is numbered on the far left column. What do these numbers correspond with? For example #9 is labeled Vandegrift Boulevard to Orange County which presumably relates to the proposed I-5 widening project. Please correct the error in the DEIR.</td>
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<tr>
<td>51.</td>
<td>Alternatives</td>
<td>Slow Growth Alternative 5: Slow Growth, as well as, Alternatives 2b, 3b, and 4 suggest</td>
<td></td>
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</table>
The commenter is correct in stating that Alternative 5 fails to meet the cited project objective, which is “Accommodate the region’s future employment and housing needs, and protect sensitive habitat and resource areas”. Alternative 5, the Slow Growth Alternative, restricts growth in a way that impedes and/or does not allow for the adequate accommodation of regional housing or employment needs as it presents regional growth barriers by definition. Therefore, it does not meet the entire project objective as stated.

The commenter is correct in its assertion that the Impact GHG-1 impact analysis relies on reductions associated with the Low Carbon Fuel Standard and Pavley Regulations. However, these regulations are not considered to be mitigation measures in the Draft EIR, rather, they are incorporated into the analysis. The analysis appropriately uses methodology developed by the ARB to estimate GHG emissions in future years. Models such as EMFAC, currently and for several years, have incorporated regulations and reduced emission factors for criteria pollutants in future years. While no model can exactly predict future emissions, EMFAC and the Pavley I + LCFS Postprocessor referred to have been developed by ARB and used in numerous CEQA analyses. The analysis includes reduced GHG emission factors consistent with adopted state laws and regulations to conclude that impacts are less than significant. No revisions to the EIR are necessary.

Please refer to Master Response 4 regarding mitigation measures that are within the jurisdiction and responsibility of other agencies to implement, and Master Response 21 for a discussion of the effectiveness of Mitigation Measure GHG-B, as revised.
As requested by the commenter, the text in Section 4.14.3 has been modified to include a reference to the City of Solana Beach Construction and Demolition Ordinance.

The commenter is correct in stating that the Draft EIR does not analyze the potential impacts to individual city's AB939 diversion requirements. As discussed in Section 4.14.3, the significance criterion used to analyze solid waste impacts is as follows:

The 2050 RTP/SCS would have a significant impact on public services, utilities, and service systems if implementation were to be served by landfills with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

Section 4.14.4 provides a thorough analysis of the project's impact on solid waste disposal and provides appropriate program-level mitigation to address the impact as framed by the significance criterion. It is recognized that construction- and demolition-related solid waste will be generated as transportation improvement projects included in the 2050 RTP/SCS are implemented. Because the transportation network improvements are characteristically different from general construction projects and municipal solid waste, diversion rates are assumed to be higher than overall diversion rates because they would be processed in specialized facilities and therefore would not significantly reduce available landfill capacity. In addition, as discussed in Section 4.14.2, several jurisdictions, including Solana Beach, implement construction and demolition (C&D) ordinances which usually require construction or demolition projects meeting certain thresholds to prepare a waste management plant that must demonstrate how the project applicant will meet diversion goals through reuse and recycling. However, C&D ordinances are not required by AB 939 and the decision to implement these ordinances is made at the jurisdictional level. Please refer also to Master Response 1 which discusses the appropriate level of impact analysis for a Program EIR.
July 7, 2011

Mr. Rob Rundle
Principal Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Re: Draft 2050 Regional Transportation Plan (RTP) Public Comments

Dear Mr. Rundle:

Thank you for the opportunity to comment on the draft 2050 Regional Transportation Plan (RTP). The City of Solana Beach (City) is most appreciative of SANDAG’s efforts to prepare a comprehensive and useful document to guide the region's transportation planning and to implement SB 375. In the interest of assisting these efforts, City staff and consultants carefully reviewed the Draft RTP and identified a number of remaining concerns. The City’s primary concerns are summarized below. On behalf of the City, we ask SANDAG to address the following concerns in the final RTP:

1. The Use of a 2050 Horizon Year Exceeds Accepted Planning Practices and Leads to Speculation. The City is concerned that developing an RTP with horizon year of 2050 is overly ambitious and leads to unhelpful speculation, despite the fact the RTP will be updated every three to four years. Other planning documents and analytical tools are not nearly so ambitious. For example, the previous RTP was approved in 2007 and had a 2030 horizon year. SB 375 sets a greenhouse gas (GHG) emissions reduction horizon year of 2035. The Emissions Factor air quality model (EMFAC 2007), which is the best currently available air quality emissions modeling program for estimating mobile source emissions, uses a 2040 maximum horizon year for estimating future emissions. Most local General Plans include horizon years of 2030 and the fifth cycle of Housing Element updates has a horizon year of 2020.

Also, the value and benefit associated with extending the RTP vision and forecast beyond the reach of land use and housing plans, as well as exceeding the practical limitations of existing best available air quality models, provides dubious benefit and may be regarded by some as highly speculative and not truly meaningful. For example, a key assumption underlying the 2050 Regional Growth Forecast (RGF) and the RTP is that current land use patterns and development begin to "...change in alignment with those plans in 2030 or 2035." (Appendix D, Sustainable Communities Strategy Background Data, Chapter 2, Demographic and Economic Forecasting Model) The RTP must provide additional clarification and supporting details underlying land use planning assumptions for

ATTACHMENT 2

H-82
This attachment is a previously submitted letter from the City of Solana Beach on the contents of the 2050 RTP/SCS. For clarification and ease of reading, SANDAG’s responses on these previously submitted comments are repeated here as needed. If the comment has already been responded to in a Master Response, or a Response to Comment above, then a cross-reference to the appropriate response is provided.

H-82

Refer to Master Response 7 for discussion of the 2050 planning horizon.
plans particularly beyond the mostly unplanned 2030 horizon. Given these concerns, SANDAG needs to provide greater justification of the basis for selecting 2050 as the horizon year for the RTP.

2. The RTP Must Use the Most Up-to-Date Census Information Available to Ensure Accurate Growth Forecasts. The RTP clarifies that the 2050 Growth Forecast utilizes the 2000 U.S. Census as well as 2008 Dept. of Finance estimates for its “base”. (See Appendix D, Sustainable Communities Strategy Background Data, Chapter 2, Demographic and Economic Forecasting Model, p. 14.) As SANDAG is aware, the 2010 Census Information has recently been released by the U.S. Census Bureau that includes region and place-level data. In the RTP, SANDAG has not described any rationale for not utilizing the 2010 Census Information in order to capture the most recent data available. Further, the City is concerned that there may be significant differences between the 2008 population estimates and the 2010 Census population data which may result in projection errors. SANDAG needs to evaluate the recent 2010 Census data to determine differences in region, sub-region and place level-data to reconcile the correlation between projected growth sub-regions and jurisdictions and funding objectives.

In light of issuance of the draft RTP, which is based on 2050 population growth forecast adopted by SANDAG, it is imperative that SANDAG coordinate with Caltrans and FHWA to ensure that any and all regional roadway improvement projects are consistent with regional growth forecasts for travel demand and average daily trip forecasts. Because growth will occur at a slower rate than previously anticipated, the City is concerned that SANDAG has included projects in the RTP that are based on previous growth forecasts (not the 2050 Growth Forecast adopted by SANDAG in 2010), which would result in an overbuilt project (I-5) that substantially exceeds demand based on the new and more current ADT projections. SANDAG needs to verify and disclose that all project elements in the RTP are based on current population and traffic demand forecasts.

3. The Anticipated Operational Benefits of Certain Scenarios Are Not Commensurate with Their Estimated Financial Costs. In Chapter 2, Vision, AB 32, SB 375 and GHG Reduction, the average work trip travel time shows no change between the “No-Build” Scenario and the “Revenue Constrained” 2030 Scenario and the average trip length under both scenarios is 29 minutes. In addition, the out-of-pocket user costs are greater under the RTP 2050 Scenario, changing from $2.18 to $2.23 per mile travelled. These essential “performance measures” under the 2050 RTP do not show measurable improvements that should result from the $100+ billion dollar RTP implementation costs. SANDAG needs to demonstrate the need for financial or operational benefit to the City of Solana Beach, as a SANDAG member agency, and the region given the expense of the project.

Similarly, Appendix A, Transportation and Network Scenarios, shows a projected total cost escalation from $3.863 billion (Table A.1) to $8.382 billion (Table A.4) for the I-5 North

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H-84

Refer to Master Response 12 for discussion of the regional growth forecast and 2010 Census information.

H-85

Refer to Master Response 12 for discussion of the regional growth forecast and 2010 Census information. In addition, the statistical differences in the early years of the forecast are negligible over the planning horizon of the RTP. The SANDAG selection of projects is not based on a single criterion. On May 28, 2010, the SANDAG Board of Directors approved 15 evaluation criteria to measure the benefits of potential highway investments including impacts on goods movement, usage, and servicing RCP Smart Growth Centers.

H-86

The average travel times do not shift due to modal shifts to transit and longer trip lengths due to improved infrastructure. In Table TA 3.1, SANDAG estimates average travel speeds will increase in the Revenue Constrained scenario for drive alone and transit modes compared to the no build scenario. In addition by 2050, SANDAG estimates 70 percent of jobs will be within a 30 minute commute for San Diego residents driving alone compared to 67 percent in the No Build alternative. Out-of-pocket user costs per trip increase due to the significant investment in pay-as-you go infrastructure in the Revenue Constrained scenario including transit, managed lanes, and toll lanes. Further, the revenue constrained scenario reduces peak period congestion by 11 percent compared to the no build alternative in 2050. Finally, travel times by corridor noted in Table TA 3.2 note reduced travel times in nearly every corridor by 2050 compared to the no build alternative.

H-87

Federal guidelines require that the costs and revenues be shown in year of expenditure. Appendix A includes tables for projects in both 2010 dollars and year of expenditures dollars. Cost estimates are continually reviewed and updated as appropriate.
Coast Corridor widening project from SR 56 to Vandegrift Boulevard. Table A.1 shows a cost of $3.883 billion in 2010 dollars associated with the cost of widening I-5 from SR-56 to Vandegrift Boulevard to 10 freeway lanes + 4 managed lanes. Table A.2 shows the cost for this project to be $5.399 billion in "year of expenditure" dollars. Table A.3 shows this project being partially implemented by 2018 (I-5 from Manchester north is shown as H-2) then the full project by 2030. SANDAG needs to clarify if the costs identified in Table A.3 are included in Tables A.1 and A.2. Further, SANDAG also needs to clarify the basis for the significant cost increases for this project.

The Regional Performance Measures in Table TA 3.1 of Technical Appendix-G, Goals and Performance Measurement, do not show progress but show a deterioration of performance even at 2050 compared to existing conditions. Performance Measures include System Preservation and Safety, Mobility, Prosperous Economy, Reliability, Healthy Environment, Social Equity. The performance measures included in Table TA 3.1 indicate one or more performance failures for System Preservation and Safety, Mobility, and Reliability including an increase in vehicle injury/fatal collisions, pedestrian/bicycle injury/fatal collisions, increase an average work travel trip time and increased user costs. As a result, the RTP has the appearance of a regional economic stimulus spending plan and loss of an efficient or effective long term transportation plan.

The SANDAG performance measures show that the anticipated time delays and level of service fail to keep pace commensurate with the amount of expenditures identified for the I-5 widening projects. SANDAG needs to disclose the benefit cost analysis and economic justification for key project elements in the RTP. SANDAG has not described the benefits that should reasonably be expected to accrue from such a massive expenditure of public funds. As such, the City continues to be concerned with the current I-5 project description contained in the RTP and urges SANDAG to provide a balanced transportation network between highway projects and transit improvements.

4. The City Supports the System Management and Transportation Demand Management Components of the Draft RTP. In general, the City is in support of the efforts proposed for system management of the region's transportation plan and specifically those related to arterial roadway and freeway management. The City would support the increased efforts for utilization of traffic detection technologies, cameras, ramp metering, electronic message signs and the advanced transportation management system. With respect to ramp metering, the RTP document needs to include a new element promoting close coordination between Caltrans and local agencies for time synchronization between arterial signals and freeway ramp metering systems.

The City also supports various Transportation Demand Management (TDM) programs such as ridesharing initiatives, promoting alternative work schedules and teleworking, and promoting bicycling, walking, and use of public transportation. In Chapter 8, Transportation Demand Management, the RTP specifically encourages the concept of construction-
As stated in the Demand Management chapter (Chapter 8) of the 2050 RTP/SCS, iCommute studies and implements program based first and last mile solutions to transit to include carsharing, bikesharing, and shuttle services.

The subregional land use maps for 2020 and 2035 in Appendix D will be modified to include the phased transit networks during the same years. The transit stops for each route are not shown because while SANDAG assumes certain station locations for modeling purposes, actual stops will need to be identified more specifically during the project development phase of each new transit project working in conjunction with local jurisdictions and communities. Our experience and experience nationwide shows walking distances of up to 1/2 mile are reasonable if the pedestrian environment is well designed and safe—to that end, the 2050 RTP/SCS includes a Safe Routes to Transit capital improvement program.

The methodology and assumptions related to TDM programs is proposed to be added to Technical Appendix 15 in the Final 2050 RTP/SCS.

Please refer to Response to Comment H-6.
North Coast Corridor Project to ensure that the RTP is consistent with the preferred alternative selected by Caltrans.

The proposed widening of I-5 also is inconsistent with other regional transportation planning and needs. For example, the peak period bus rapid transit (BRT) use on I-5 does not allow for flexibility or placement of multi-modal transit centers. In addition, the City does not support utilizing or expanding the I-5 freeway corridor for the purpose of increased goods, passenger, and freight movement because it only increases adverse impacts such as vehicle emissions, noise, traffic congestion and other environmental impacts on the region. Indeed, the City supports increased goods, passenger, and freight movement through additional use of the LOSSAN corridor by expanding the capacity of this rail line. Further, the enhanced benefits of increased rail use is dependent on double tracking in this corridor and therefore the City encourages SANDAG to elevate the priority of double tracking along the coast by ensuring that it is included the Early Action Phase in the RTP and is constructed concurrent with the first phase of the I-5 expansion project.

6. **The Rapid Bus on Highway 101 is Inconsistent with Local Transportation Planning.** Highway 101 through San Diego's coastal communities is considered a major bicycle and pedestrian route. All of the cities along the coast through which this roadway travels are considering various traffic-calming projects such as incorporation of roundabouts, traffic circles, mid-block pedestrian crossings, road-diets, reverse-angle parking and other pedestrian and bicycle-friendly features. The RTP needs to recognize the local planning efforts underway to reduce travel speeds, "calm" traffic flow along Highway 101 and improve pedestrian and bicycle travel on this roadway. Local goals and efforts to implement traffic-calming programs will result in speed reductions, which may not lend themselves to development of a "rapid" bus system in this corridor. While coastal cities support the increased use of public transportation on Highway 101 (i.e., more frequent direct or express bus service), the traffic "calming" improvements that coastal cities are implementing along the Highway 101 corridor would not accommodate high speed transit systems such as a rapid bus system as described in the RTP.

7. **The RTP Needs to Address the Need for Del Mar Fairgrounds Seasonal Train Platform and Direct Access Ramps.** The Del Mar Fairgrounds (Fairgrounds) is considered a regional facility attracting several thousand average daily trips (ADT) to the facility. The events at this facility currently create significant traffic congestion and other environmental impacts to this part of the region. The Fairgrounds has proposed a significant redevelopment and expansion of its activities on a year-round basis. During review of the Draft EIR for the Fairgrounds expansion project, SANDAG specifically noted that a seasonal train platform would be included as a long range facility in SANDAG's planning effort. However, the RTP fails to include the identified seasonal train platform proposed for the Del Mar Fairgrounds. The RTP needs to include this facility which would provide significant traffic congestion relief to the region.

Please refer to Response to Comment H-31 and H-32.

Please refer to Response to Comment H-56.

The Del Mar Fairgrounds rail station is included in the COASTER capital improvements and is shown in Table A.1 in Appendix A. The improvements for the I-5 North Coast Corridor do not include a DAR to the fairgrounds.
The Draft 2050 RTP/SCS does include a DAR at Manchester Avenue. All DARs are individually listed in Technical Appendix 5.

Comment noted.

In preparation for the 2050 RTP/SCS, SANDAG worked closely with each jurisdiction to produce the 2050 Regional Growth Forecast. The SANDAG Board accepted the 2050 Regional Growth Forecast for use in the 2050 RTP/SCS on February 26, 2010, and a technical update on April 22, 2011, with the release of the draft RTP. Because local and regional planning processes happen concurrently and often within overlapping timeframes, we may not always capture the exact status of local and regional coastal program updates. The City of Solana Beach's new LCP/LCU will be reflected in the Series 13 Regional Growth Forecast. The technical update of the Smart Growth Concept Map will occur after the adoption of the 2050 RTP/SCS.

Year of expenditure costs are only determined for the phased Revenue Constrained network that the 2050 RTP/SCS is based on. The Unconstrained Network is not phased so therefore year of expenditure revenues/costs are not included.

Appendix D, Figures D.1 through D.8 all contain legends that explain the land uses for each future timeframe.

The City of Solana Beach is located within the "North County West" polygon.
Each jurisdiction's land use inputs to the 2050 Regional Growth Forecast were thoroughly vetted by the Regional Planning Technical Working Group, the SANDAG Regional Planning Committee, and Board of Directors, in addition to review by local planning staffs, city councils, and the County Board of Supervisors. The planning assumptions for 2030 and beyond include only those approved or draft plans that were recommended by the local land use agency. Moreover, of the draft plans included, several have been (or soon will be) approved. The quote above simply implies that the forecast presumed adoption of the draft plans (many of which have been, or soon will be, approved) and that the planned redevelopment occurs in the future. Details on these land use inputs can be found in the maps provided earlier in Appendix D, as well as in Chapter 3.

Please refer to Response to Comment H-94.

Comment noted.

The 2050 RTP/SCS does reflect the latest planning information provided by the City of Solana Beach. Technical Appendix 9 has been updated accordingly.

Comment noted.

In addition to the above concerns, the City, as a responsible agency under the California Environmental Quality Act (CEQA), will provide comments on the environmental issues raised in the Draft EIR for the RTP. The City trusts that SANDAG will thoroughly address the above concerns in the final RTP and will provide meaningful responses to the City's comments on the Draft EIR. Thank you for your consideration.

Sincerely,

David Ols
City Manager

cc: Solana Beach City Council  
Laurie Berman, District Director, Caltrans – District 11  
Gary Gallegos, Executive Director, San Diego Association of Governments
Hon. Christine Kehoe, State Senator
Hon. Mark Wyland, State Senator
Hon. Martin Garrick, State Assembly
Hon. Pam Slater-Price, Chair, District 3 Supervisor, County of San Diego
Hon. Bill Horn, Vice Chair, District 5 Supervisor, San Diego County
Deborah Lee, California Coastal Commission
Dennis Ridz, Chair, Torrey Pines Community Planning Board
Matthew Tucker, Executive Director, North County Transit District
June 9, 2010

Mr. Rob Rundle
Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Re: Notice of Preparation of Programmatic Environmental Impact Report for 2050 Regional Transportation Plan

Dear Mr. Rundle,

Thank you for extending the opportunity to respond to the Notice of Preparation (NOP) of the Programmatic Environmental Impact Report (PEIR) for the 2050 Regional Transportation Plan (RTP). On behalf of the City of Solana Beach (City), we ask SANDAG to address the following concerns in the PEIR.

The staff report for Agenda Item No. 10-05-4 for the meeting of the SANDAG Board of Directors on May 14, 2010, indicates that "staff is proposing to include only the level of detail in the EIR necessary for a programmatic analysis, which means that all of the projects within the 21SU KP will still require project level CEQA analysis at a future point in time." However, SB 375 provides that some Transit Priority Projects (TPP) may be eligible for CEQA streamlining, including an exemption from any CEQA review under Public Resources Code section 21155.1. The staff report acknowledges there are conflicting legal opinions as to whether or not a city has the authority to require any environmental review at all of a TPP which meets the statutory requirements for an exemption.

To ensure that the PEIR's review of the potential environmental effects of the 2050 RTP and its Sustainable Communities Strategy element is adequate and complete, we request that the PEIR include a comprehensive analysis of potential traffic impacts for all potential TPP sites. The traffic analysis should consider a worst-case scenario under the local zoning ordinances applicable to each site for both commercial and residential portions of the project.

The in-depth traffic analysis of potential TPP sites which the City asks to be included in the PEIR will promote the GHG emission reduction goals of SB 375 and is consistent with the policy goals of the recently adopted CEQA Guidelines for the analysis and mitigation of GHG emissions, which state that "the effects of GHG emissions resulting from individual projects are best addressed and mitigated at a programmatic level." (Cal. Natural Resources Agency, Final Statement of Reasons for Regulatory Action (December 2009), p. 17.) The City’s request also is consistent with CEQA’s basic objectives that environmental impacts should be considered at the earliest possible stage and program EIRs should not be used to avoid analyzing reasonably foreseeable effects or to defer such analysis to a later stage.

ATTACHMENT 3

H-110
This attachment is a previously submitted letter from the City of Solana Beach on the Notice of Preparation (NOP) for the Draft EIR. Please refer to Response to Comment H-12 for a response.
We understand that, as committed to by the Executive Director at the meeting on May 14, 2010, SANDAG staff will work with the cities to obtain the information necessary to perform a comprehensive traffic analysis of potential TPP sites. The City looks forward to working with staff and to providing the information from its land use plans and zoning ordinance needed to accomplish this task. Thank you for your consideration.

Sincerely,

David Edt
City Manager

cc: Solana Beach Councilmembers
July 28, 2011

Rob Rundie, Principal Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, California 92101
Via email to: mrgs@sandag.org and jcurtis@sandag.org

RE: COMMENTS ON THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE REGIONAL 2050 TRANSPORTATION PLAN/ SUSTAINABLE COMMUNITY STRATEGY

Dear Mr. Rundie,

The County of San Diego (County) has received and reviewed the Draft Program Environmental Impact Report (PEIR) for the Regional 2050 Transportation Plan (RTP) and Sustainable Community Strategy (SCS) dated June 2011 and prepared by SANDAG. We appreciate this opportunity to comment. Our previous letter on the Draft RTP and SCS has already relayed the County’s overarching issues and specific recommended modifications. To avoid redundancy, the County’s previous comment letter is attached and incorporated by reference. In response to the PEIR, the County has comments that identify potential issues that may have an effect on the unincorporated lands and transportation planning of San Diego County.

County Department of Planning and Land Use (DPLU) and Department of Public Works (DPW) staff have the following comments regarding the content of the above documents:

TRAFFIC / TRANSPORTATION PLANNING

1. Table 4.16-5 on page 4.16-4 notes that 78% of daily trips and 75% of peak period trips are located within 0.5 mile of a transit stop while transit trips only account for 10% of the overall trips. Vehicular proximity to transit is an important factor related to transit ridership, the frequency and quality of transit service are also important factors. In order to increase transit ridership, the frequency of transit service must be increased and, as a result, operating costs will also increase.

This comment provides introductory remarks and refers to previously submitted comments to the 2050 RTP/SCS. Please note that responses to comments on the 2050 RTP/SCS have been prepared and are available on SANDAG’s website, (http://www.sandag.org/uploads/meetingid/meetingid_3025_13298.pdf accessed 1 September 1, 2011.) Please also refer to Master Response 5.

Operating costs for transit projects are factored into the long-term funding strategy for transportation improvements identified in the 2050 RTP/SCS. Further discussion of project funding is provided in Master Response 10.
increase. Efforts should be made to identify and obtain additional sources of revenue to finance the anticipated future transit operating costs.

2. Under Congestion Management Plan on page 4.16-15, the document notes that SANDAG is still required to comply with federal congestion management provisions; however, there is no assessment or verification that the proposed RTP is consistent with these provisions. An assessment and verification of consistency should be provided as per CEQA Guidelines Appendix G Section XVI(b).

3. The Transportation and Traffic section (section 4.16) includes maps for the Existing Highway Network, Transit Network, and Bike Network. Section 4.16 should also include a map of the existing Regional Arterial Network.

4. A summary of the mileage of regional facilities that are operating at LOS E or F should be provided as has been included in previous RTPs.

5. Table 4-4-10, "Listed Plant Species Impacted by Proposed 2050 RTP/SCS Transportation Improvements and Land Use Changes up to the year 2020," incorrectly states that the South Santa Fe Avenue South Improvements Project would impact thread-leaved brodiaea (Brodiaea filifolia). The 2004 EIR that analyzed this project concluded that no listed plant species were present within the project area, therefore no impacts would occur. Biological studies conducted in 2010 confirmed this finding; therefore, the table should be corrected.

The County of San Diego appreciates the opportunity to continue to participate in the review process for this project. We look forward to providing additional assistance at your request. If you have any questions regarding these comments, please contact LeAnn Carmichael at (858) 604-3730 or email at leann.carmichael@sdcounty.ca.gov

Sincerely,

[Signature]

DEVON MUTO, Chief of Advance Planning
Department of Planning and Land Use

ATTACHMENT

cc: Megan Jones, CAO Staff Officer, DCAO (via email)
    Nick Ortiz, Department of Public Works (via email)
    Bob Goraika, Department of Public Works, Transportation Division (via email)
    Bob Citrano, LUE Planning Manager, DPLU (via email)
    LeAnn Carmichael, LUE Planning Manager, DPLU (via email)

I-3
The Final 2050 RTP will be revised to clarify that the RTP/SCS is consistent with federal congestion management requirements. The SANDAG process to document compliance with the federal congestion management process was documented in the 2008 CMP and included in that document as Appendix G. The 2008 CMP and appendices are available at http://www.sandag.org/uploads/projectid/projectid_13_8907.pdf (accessed September 1, 2011.) In addition a new Technical Appendix (Congestion Management Process) has been added to the Final 2050 RTP.

I-4
A map of the Regional Arterial System (RAS) is included in Chapter 2 of the DEIR. (Figure 2.0-18, p. 2-56.) (See also 2050 RTP/SCS Chapter 6, Figure 6.8, and a project listing in Technical Appendix 4.) The "existing" and "future" RAS are nearly identical. Nearly all of the regional arterials are already in existence and only improvements or modifications are proposed. There are only a few partial segments not already in operation.

I-5
Regional facilities in the San Diego transportation system connect to the larger transportation systems beyond the San Diego region. Within San Diego County, these facilities include railways, airports and highways. The performance measures for each RTP update are reviewed and revised. Updated performance measures were developed in a process that included public input. (Draft EIR, p.2-7.) The 2050 RTP/SCS includes additional metrics to evaluate goods movement, transportation investment, social equity, environmental concerns and the relationship between land use and transportation. (See 2050 RTP/SCS Technical Appendix 3, p. TA 3-2.) Overall, nearly 40 performance measures were developed for the 2050 RTP/SCS; several of these were selected as the best indicators of the significance of transportation impacts based on travel time. (Draft EIR, p. 4.16-16.) A summary of mileage operating at LOS E or F was not included in the updated performance measures for the 2050 RTP. The new metric measures congestion vehicle miles of travel. This information can be found in Chapter 2 and Technical Appendix 3 of the Draft 2050 RTP. Additionally, LOS maps are included in Appendix A.

I-6
In Table 4.4-10, thread-leaved brodiaea (Brodiaea filifolia) has been removed as a species impacted by the South Santa Fe Avenue South Improvements project. This change does not affect the conclusions for BIO-2.

I-7
This comment provides closing statements. No further response is required.
I-8

The following comments are from the attachment originally submitted on the RTP on July 8, 2011. For convenience, the responses below repeat those provided on the RTP.

July 8, 2011

Rob Rundle, Principal Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, California 92101
Via email to: rru@sandag.org and 2050tp@sandag.org

COMMENTS ON THE REGIONAL 2050 TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGY

Dear Mr. Rundle:

The County of San Diego (County) has received and reviewed the Regional 2050 Transportation Plan (RTP) and Sustainable Community Strategy (SCS) prepared by SANDAG dated April 2011 and appreciates this opportunity to comment. In response to the document, the County has comments that identify potential issues that may have an effect on the unincorporated lands and transportation plans of San Diego County.

The County’s Mission Statement is to efficiently provide public services that build strong and sustainable communities. To further our mission, the County has developed goals and strategies which reflect our external priorities. The comments in this letter reflect the County’s Strategic Initiatives, which consists of three goals that inform the work of all County departments:

- **Kids** – Improve opportunities for children and families
- **The Environment** – Manage the region’s natural resources to protect quality of life and support economic development
- **Safe and Livable Communities** – Promote safe and livable communities

County Department of Planning and Land Use (DPLU) and Department of Public Works (DPW) staff have completed their review and have the following comments regarding the content of the above documents:
TRAFFIC / TRANSPORTATION PLANNING

1. **Appendix A, Table A.3** – The RTP should provide an explanation for how the phased highway projects plan by year/decade (Appendix A – Table A.3) was developed and what are the criteria for determining by which year a highway project will be completed. For example, according to the Transportation Evaluation Criteria and Rankings (Technical Appendix 4) the SR-67 improvement project between Mapleview Street and Dye Road ranks 8th out of 46 on the Highway Corridor Evaluation Ranking (Table TA-4.4). Though the SR-67 project was ranked relatively high among Highway Corridor Projects, it is not expected to be built until 2030.

2. **Phasing** – The RTP should provide discussion on the potential for projects to proceed earlier than the currently planned phasing (“Year Built By”) in the Revenue Constrained Plan (Appendix A – The Scenarios). Projects previously ranked high in the Transportation Evaluation Criteria and Rankings (Technical Appendix 4) should be provided the opportunity to maintain their priority/ranking in the Revenue Constrained Plan’s Phasing.

3. **Figure 6.7 and Table 6.3** – The proposed improvements to SR-76 from I-15 to Couser Canyon Road should be clarified. Figure 6.7 and Table 6.3 indicate SR-76 from I-15 to Couser Canyon Road will be improved to a combination of a 4 and/or 6-lane highway with operational improvements. Please provide a more specific description of the planned improvements to SR-76 east of I-15 in the RTP.

4. **Table A.3** – This table states that SR-11 is projected to be built by 2018 in the Revenue Constrained Scenario when the preliminary EIR for the SR-11 project indicates that it will be constructed by 2015. Page 6-62 of the RTP also identifies that Otay Mesa East Port of Entry and SR-11 will be constructed by 2015. Please modify the document to remove the inconsistency.

5. **Table A.3** – This table indicates that SR-76 from Melrose Drive to I-15 is projected to be built by 2018 in the Phased Highway Projects Table. However, the highway widening project is in the final stages of its EIR and is projected to go to construction soon. Please clarify the discrepancy.

6. **Table 5.1, Page 5-9** – The RTP should provide clarification on the 14 footnotes in Table 5.1. In addition, the RTP should clarify if “local” funds include contributions from the Tribal governments located in San Diego County.

7. ** Expedite Environmental Review** – The County would like to coordinate with SANDAG on the feasibility and potential benefits of expediting the environmental review of future projects to facilitate and streamline future project construction and better enable projects to compete for state and federal funding.

I-9

The SANDAG Board spent many months (July 2010 to January 2011) discussing the potential alternative networks for the Draft 2050 RTP/SCS. This information is included on the SANDAG Web site and also is included in Appendix D. The “year built by” designation in Appendix A is for air quality conformity purposes. For example, even though the SR 67 project is shown as built by 2030, the project may actually be open to traffic from 2021 to 2030. Additionally, the project’s rank is used as a tool to assist with phasing but it is not the sole factor considered. Other factors include project readiness and funding.

I-10

Please see Response to Comment I-9.

I-11

Proposed improvements to SR 76 east of I-15 include widening to 6-lanes to just east of the interchange. Operational improvements such as curve straightening, aux lanes, etc. also are proposed for this corridor.

I-12

The widening of SR 56 from I-5 to I-15 is included in the 2040 phasing period. This project did not rank as high as other highway projects using the SANDAG Board approved project evaluation criteria. Early Action Program projects, roadway improvements that support transit services, and higher ranked highway projects are included in earlier phasing periods of the 2050 RTP.

I-13

Table A.3 lists all projects in the air quality conformity analysis years. The first year for such analysis is 2018.

I-14

The footnote markers were included in error, and will be removed for the final version. Local funds do not include tribal contributions.

I-15

SANDAG appreciates the opportunity to coordinate more closely with the County of San Diego to streamline the environmental review process, where feasible.
I-16 Comment noted. The Board approved SANDAG's modified approach to only include the two revenue scenarios.

I-17 The 2050 RTP/SCS Unconstrained Network was accepted by the SANDAG Board of Directors in July 2010. The RTP is updated every four years. This recommendation could be considered in future RTP updates.

I-18 A 6-lane facility is only proposed for the SR 76 corridor near the I-15 interchange. Operational improvements such as curve straightening, aux lanes, etc. are the predominant improvements proposed for this corridor.

I-19 Please see Response to Comment I-17.
11. **SR-67: Magnolia Avenue to Mapleview Street** — Under the GP Update, this segment of road is forecast to operate at LOS E (96,000 ADT) and F (107,000 ADT).

   **Recommendation** — Full interchange at Winter Gardens Boulevard

12. **SR-67: Overpass at Mapleview Street** — Concur with the improvements shown in the 2050 RTP Unconstrained Revenue scenario for 6 and 8 freeway lanes. If appropriate, include the proposed improvements in the 2050 RTP.

13. **SR-67: Mapleview Street to Dye Road** — At 4 lanes, two segments are forecast to operate at LOS E/F from the City of Poway to Sycamore Park Drive (46,000 to 36,000 ADT) and from Johnson Lake Road to San Vicente Avenue is forecast to operate at LOS E (47,000 ADT). In addition, an overpass for a realigned Willow Road is recommended.

   **Recommendation** — The General Plan Update is recommending that these segments be accepted to operate at LOS E and F and finds that additional travel lanes are not justified. If appropriate, include the recommended improvements in the 2050 RTP.

14. **SR-188** — A 4-lane road is necessary under the GP Update, which has applied the existing General Plan land use plan for Tecate; however, neither the Revenue Constrained nor Unconstrained 2050 RTP networks designate 4 lanes.

   **Recommendation** — Modify the 2050 RTP Unconstrained Revenue scenario from 2 to 4 lanes.

15. **Oat Mesa** — Staff requests that the proposal by others to redirect funding from the La Media truck route extension from Britannia Boulevard be directed to La Media Road and the La Media Road/Arroyo Road intersection be evaluated and considered.

16. **Recent Changes** — The 2050 RTP road network for the unincorporated county reflects the Planning Commission/Staff Recommended Network that was presented to the Board of Supervisors for approval as part of the General Plan Update in October 2010. In April 2011, the Board directed County staff to make changes to the network and bring it back in August for discussion. The County is requesting that these same road network changes be made to the 2050 RTP road network. The specific changes are identified below:

   - Remove Road 3 from the network (Valley Center: Old Highway 395 to West Lilac Road)
   - Change Old Highway 395 [Bonsall: I-15 interchange to West Lilac Road] from a two-lane Community Collector to a four-lane Boulevard with a design speed of 35 mph and intermittent turn lanes.

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I-20
Local interchange improvements are the responsibility of the local jurisdictions. Please refer to Master Response 22 for a discussion of the 2050 RTP/SCS’s approach to arterials.

I-21
This improvement is only included in the 2050 RTP/SCS Unconstrained Network.

I-22
The comment recommendation is consistent with the 2050 RTP/SCS. Only four travel lanes are included for this segment of SR 67.

I-23
Please see Response to Comment I-17.

I-24
Amendments to Project SD 102A included in the 2010 Regional Transportation Improvement Program (RTIP) should be initiated by the City of San Diego. The 2050 RTP/SCS includes the Otay Mesa Southbound Truck Route Improvements (City of San Diego local streets and roads) under Projects of Interest in Technical Appendix 4, Table 4.23.

I-25
The changes requested have been made in the Final 2050 RTP/SCS networks. Please refer to Master Response 22 for a discussion of regional arterials included in the 2050 RTP/SCS.
This comment provides closing statements. No further response is required.
Letter J
Endangered Habitat League

August 1, 2011

San Diego Association of Governments
ATTN: Rob Rundle, Principal Regional Planner
401 B Street, Suite 800
San Diego, CA 92101

RE: Draft Programmatic EIR for the 2050 RTP/SCS

Dear Mr. Rundle:

The Endangered Habitats League (EHL) respectfully submits its comments on the Draft 2050 Regional Transportation Plan (2050 RTP) and Sustainable Communities Strategy (collectively the RTP/SCS) and the Draft Programmatic Environmental Impact Report (DPEIR) for the 2050 RTP. SANDAG should be commended for planning innovations and for leveraging transit investment in already planned-for infill opportunities in the urbanized southwestern portion of the region. However, patterns of automobile-dependent job and housing growth that are unsustainable still define the great majority of SANDAG’s geographic area, particularly in the North County cities.

These growth patterns were carried over into the 40-year RTP/SCS planning exercise. By and large, existing plans were used to build the land use component of the plan.\(^1\) SB 375, 2003-2006: San Marcos – EP; Santee – EP, plus proposed housing element rezoning sites; final forecast will only include approved housing element rezoning sites; Solana Beach – EP (incl. Cedros Ave approved plan redevelopment and Stevens Ave redevelopment site); Vista – EP (to 2030), and draft GP update; Oceanside – EP (incl. now-approved Coast Hwy Vision Plan); Poway – EP; San Diego – EP for most communities, draft plans for Otay Mesa, Barrio Logan, Granville, Carol Canyon; more intensive redevelopment presumed within existing plans in some urban core communities for years 2013-2050: Del Mar – EP, La Jolla – EP, Solana Beach – EP (incl. Ensenada EP rezoning), plus approved housing element rezoning sites; final forecast will include approved housing element rezoning sites; Oceanside – EP (incl. coastal development areas); Vista – EP (to 2030), and draft GP update; Oceanside – EP (incl. now-approved Coast Hwy Vision Plan); Poway – EP; San Diego – EP for most communities, draft plans for Otay Mesa, Barrio Logan, Granville, Carol Canyon; more intensive redevelopment presumed within existing plans in some urban core communities for years 2013-2050: Del Mar – EP; La Jolla – EP; Solana Beach – EP (incl. Ensenada EP rezoning); Vista – EP (to 2030), and draft GP update.

\(^1\) The SCS/RTP states as follows: “The summary below provides of the land use assumptions by jurisdiction. If a jurisdiction’s existing plans were assumed in the 2050 Growth Forecast, it is indicated with an “EP”. If other planned development was assumed, it is noted in parentheses.

1. The Endangered Habitats League respectfully submits its comments on the Draft 2050 Regional Transportation Plan (2050 RTP) and Sustainable Communities Strategy (collectively the RTP/SCS) and the Draft Programmatic Environmental Impact Report (DPEIR) for the 2050 RTP. SANDAG should be commended for planning innovations and for leveraging transit investment in already planned-for infill opportunities in the urbanized southwestern portion of the region. However, patterns of automobile-dependent job and housing growth that are unsustainable still define the great majority of SANDAG’s geographic area, particularly in the North County cities.

These growth patterns were carried over into the 40-year RTP/SCS planning exercise. By and large, existing plans were used to build the land use component of the plan.\(^1\) SB 375, 2003-2006: San Marcos – EP; Santee – EP, plus proposed housing element rezoning sites; Solana Beach – EP (incl. Cedros Ave approved plan redevelopment and Stevens Ave redevelopment site); Vista – EP (to 2030), and draft GP update; Oceanside – EP (incl. now-approved Coast Hwy Vision Plan); Poway – EP; San Diego – EP for most communities, draft plans for Otay Mesa, Barrio Logan, Granville, Carol Canyon; more intensive redevelopment presumed within existing plans in some urban core communities for years 2013-2050: Del Mar – EP; La Jolla – EP; Solana Beach – EP (incl. Ensenada EP rezoning); Vista – EP (to 2030), and draft GP update.

J-1
Introductory comments are noted. No further response is necessary.

J-2
The comment is correct in summarizing the land use assumptions as provided by individual jurisdictions and used by SANDAG to establish the growth pattern in the 2050 RTP/SCS. It is necessary to consider general plans and other planning assumptions prepared by local jurisdictions in developing the SCS land use pattern to provide an accurate account of what the future development of the region looks like as planned by the local jurisdictions. Federal air quality conformity law requires RTPs to be based on the “most recent planning assumptions” at the time the conformity analysis begins. (40 CFR 93.110(a).) If the 2050 RTP/SCS provided a land use pattern than was substantially different from local general plans and planning assumptions, the RTP would be inconsistent with air quality conformity law, and the Draft EIR’s analysis of future conditions and impacts would not be realistic.

However, many local jurisdictions are planning for future growth with implementation of more sustainable and smart-growth-based development plans and policies, consistent with the intent of SB 375. Since adoption of the Regional Comprehensive Plan (RCP) in 2004, several local jurisdictions have updated their land use plans to reflect the smart growth and sustainable development principles outlined in the RCP. See Master Response 21 for further discussion of how local jurisdictions are updating their land use plans.

The SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region as envisioned by SB 375. Much of the San Diego region will remain undeveloped in the future because of the designated park, open space, national forest, and habitat lands. More than 80 percent of new housing will be higher density. Seventy-nine percent of all housing and 86 percent of all jobs will be located within the areas where the greatest investments in public transit are being. Meanwhile, the Plan will maintain more than 50 percent of the region’s land area as open space and parkland.

Additionally, to further facilitate, encourage, and guide local jurisdictions to make more sustainable land use decisions at the local level as envisioned by SB 375, Mitigation Measure
LU-B requires that SANDAG shall, and San Diego region cities and the County of San Diego can and should, review and reevaluate the SCS land use pattern in future years as growth occurs to consider whether continued increased density in urban areas or continued expansion of spaced rural residential use into existing undeveloped lands would be necessary.

Please refer to Master Responses 9 and 11 for additional discussion regarding how the SCS land use pattern achieves the intent of SB 375.

SANDAG concurs that early pro-active coordination in the local planning processes would be beneficial in positively changing planned land use to achieve environmental and economic benefits, as is the intent of SB 375. Mitigation Measure LU-B provided in the Draft PEIR, as described in response to comment J-2 above, requires SANDAG, San Diego region cities, and the County of San Diego to review and reevaluate the SCS land use pattern in future years.

In preparation for the next iteration of the RTP/SCS, SANDAG should therefore follow the lead of other MPOs in the state by including as a feasible mitigation measure in the current PEIR its commitment to work with local jurisdictions on the land use scenario planning SB 375 intended. SANDAG should commit to focus in particular on those local jurisdictions anticipating a comprehensive update to the land use element of their General Plans over the next several years.

Sands a measure might provide in substance something like the following:

for 2030: 2050 (which is now approved – so is now EPJ). Unincorporated – draft GP, similar to Referral Alternative, but with staff guidance on development constraints

J-2

J-3

LU-B SANDAG shall, and San Diego region cities and the County of San Diego can and should, review and reevaluate the SCS land use pattern in future years as growth occurs to consider whether continued increased density in urban areas or continued expansion of spaced rural residential use into existing undeveloped lands would be necessary. SANDAG shall revise the SCS land use pattern in future RTP updates to be consistent with the latest updates to local general plans, and to reduce the potential for long-term impacts on community character. SANDAG shall continue to coordinate with the local cities and the County of San Diego to update the Smart Growth Concept Map and identify areas of the region where additional growth could be accommodated to coincide with the increased investment in transit.

Please refer to Master Responses 9 and 11 for additional discussion regarding how the SCS land use pattern achieves the intent of SB 375.
As noted in the comment, the PEIR identifies a significant impact (BIO-4) regarding conflict with the requirements of an adopted approved HCP/NCCPs or other approved local, regional, or federal regulations, policies, ordinances, or plans targeting the protection of biological resources. In response to this impact, SANDAG has included Mitigation Measures BIO-Q and BIO-R to address the need to modify designs to ensure the maximum feasible level of consistency with the policies in adopted HCPs, NCCPs, or other approved local, regional, or state conservation plans and minimize impacts to MSCP and MHCP covered species.

This pro-active coordination with local jurisdictions will permit SANDAG to develop scenarios early on in a “bottoms-up” fashion that dovetails with local planning processes. Such a measure would also further SB 375’s intent to employ changes in planned land uses as a key driver of additional environmental and economic benefits, including reduced GHG emissions, more efficient use of infrastructure, and reduced consumption of open space. EHL strongly urges SANDAG to embrace this “win-win” solution.

SANDAG should also better define and disclose, and then avoid any potential conflicts between planned transportation infrastructure and conservation commitments in both adopted and draft regional wildlife protection plans. The PEIR acknowledges that conflicts with such plans are a significant impact. (See BIO-4, at p. 4.4-49 [Impact significant where “[implementation will conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, state, or federal regulations, policies, ordinances, or plans].] Yet it overlooks what appear to be serious conflicts between these plans and several planned arterial projects in the RTP.

For example, the proposed extension of Melrose Drive (Project 006) in the City of Carlsbad, scheduled for completion in 2018, would pass through Guajome Regional Park. Similarly, the construction of Cannon Road in the City of Carlsbad (Project CB 11), scheduled for completion in 2020, will impact the Calaveras Natural Reserve. These projects should not move forward through RTP/RTIP process until these apparent conflicts have been resolved and avoidance strategies have been developed. Furthermore, the PEIR for the 2050 RTP should not be certified until the significance of these conflicts is disclosed and addressed and adequate mitigation and/or avoidance strategies have been developed.

The commenter requests disclosure and mitigation of conflicts with draft as well as adopted regional wildlife protection plans. However, the Draft EIR chose to use conflicts with adopted or approved plans as a significance criterion because draft plans are subject to change; this approach is consistent with CEQA Guidelines Appendix G, Question IVf, from which the significance criterion language was derived. Further, CEQA case law has confirmed that “in the case of draft or proposed regional conservation plans, there is no express legislative or regulatory requirement under CEQA that a public agency speculate as to or rely on proposed or draft regional plans in evaluating a project.” (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App. 4th 1134,1145.)

The comment notes two examples of arterial projects that are in conflict with adopted HCP/NCCPs. The first project noted is the proposed extension of Melrose Drive (006) that passes through Guajome Regional Park. Portions of this project lie within the North County MSCP planning area including Guajome County Park, Rancho Guajome Adobe, and other nonincorporated lands. The Draft North County MSCP Subarea Plan has been circulated for public review, but it has not yet been approved. Projects are only considered significant under BIO-4 if implementation will conflict with the provisions of an adopted HCP/NCCP. The second project noted is the construction Cannon Road (CB 11) in the City of Carlsbad. This project has been removed from the 2050 RTP/SCS and is no longer being evaluated for impacts. Two
arterial projects that are in conflict with adopted HCP/NCCPs include the widening of El Camino Real from La Costa Avenue to Arenal Road (CB 31) and the College Boulevard and Palomar Airport Road intersection improvements (CB 24). The text has been revised to note these conflicts in Section 4.4.4 of the EIR. These revisions will not change the impact significance conclusion for BIO-4.

At a programmatic level of analysis and with many projects not far along in the design stage, all potential impacts to regional wildlife and habitat protection plans cannot be fully identified. Please see Master Response 1 for a discussion of the appropriate level of detail in a Program EIR’s impact analysis.

Additionally, SANDAG has limited authority to approve individual second-tier transportation network improvement projects in the 2050 RTP/SCS. Most individual transportation projects in the RTP will be implemented by Caltrans, local transit agencies, and local governments. These agencies will be responsible for full analysis of potential impacts to resource protection plans applicable to each specific project and implementation of any necessary mitigation or avoidance strategies.

Please see Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement. Regarding the commenter’s specific mitigation request, that SANDAG not fund transportation projects unless conflicts with conservation plans were eliminated or substantially reduced, when SANDAG is a pass-through agency for funding, it is the funding agency’s responsibility to place conditions on grant funding. When SANDAG is the direct source of funding (versus a pass-through agency), SANDAG will require as a grant condition the implementation of those 2050 RTP/SCS mitigation measures, including Mitigation Measure BIO-R, that are applicable to, and feasible for, the project type being funded.

Finally, EHL is concerned that the respective obligations of SANDAG and other implementing agencies to implement proposed mitigation for biologic impacts is not made sufficiently clear. (See 4.4.94 to 4.4.98.) For example, proposed mitigation measure BIO-R provides that “[d]uring the design and CEQA review of individual projects implementing the 2050 RTP/SCS, SANDAG shall and other implementing agencies co and should modify designs to ensure the maximum feasible level of consistency with the policies in adopted HCPs, NCCPs, or other approved local, regional, or state conservation plans. What does this mean? Which agency is going to do what?”

It is well settled that CEQA does not expand a lead agency’s power to implement mitigation. (Pub. Res. Code § 21004.) It is also true, however, that to the extent mitigation is relied upon to lessen a project’s impacts, substantial evidence must support finding that the mitigation is incorporated into the Project so that it may not proceed without it. (See Federation of Hillside and Canyon Associates v. City of Los Angeles (2000) 83 Cal. App. 4th 1252, 1261.)

Here, it is unclear whether SANDAG is assuming any responsibility to implement biological mitigation or whether it is wholly deferred to “other implementing agencies.” If it is the latter, then SANDAG must state, and also disclose that it is not valid mitigation because its implementation is purely speculative. If it is the former, then SANDAG must commit in the measure to make it part of the project, that is, to show how SANDAG will use its existing authority to ensure that the project will not go forward without the mitigation. For example, SANDAG could stipulate that road projects in the RTP will not proceed to funding through the RTP process (over which SANDAG has authority) unless the implementing agency has demonstrated to SANDAG that any conflicts with conservation plans have been eliminated, or reduced to the maximum extent feasible and compensated for as specified in the PEIR’s biological mitigation measures. The mitigation measures must therefore be revised to make SANDAG’s responsibilities transparent.

Thank you for your attention to our concerns.

Very truly yours,

Dan Silver, MD
Executive Director
August 1, 2011

VIA EMAIL AND HAND DELIVERY

Rob Rundell, Principal Regional Planner
SANDAG
461 B Street, Suite 800
San Diego, CA 92101
Email: rrw@sandag.org

Re: Move San Diego Comments on the 2050 Regional Transportation Plan Draft Environmental Impact Report

Dear Mr. Rundell:

We appreciate the opportunity to respond to the 2050 Regional Transportation Plan Draft Environmental Impact Report (DEIR) dated June 2011. Move San Diego is a non-profit organization devoted to advocating sustainable transportation systems and land use policies. As such, we support SANDAG’s efforts to integrate land use, transportation systems, infrastructure needs, and public investment strategies within a regional smart growth framework. We submit this letter with the aim of providing SANDAG with useful comments to ensure that preparation of the DEIR reflects SANDAG’s goal to plan for a smart growth transportation network and that it fully complies with CEQA. Thank you for this opportunity to provide valuable feedback on this essential component of the 2050 Regional Transportation Plan.

Move San Diego demonstrated support in December 2010 for the 2050 RTP Preferred Scenario, or the Hybrid scenario. However, after having reviewed the DEIR, we are concerned that that draft 2050 RTP does not go far enough to mitigate overall impacts from single passenger automobile travel.

We appreciate the alternatives evaluated by SANDAG in the EIR, and think they offer valuable lessons learned about density, urban infill, and strategies on how growing smarter will benefit the region from reduced emissions and acres conserved.

Move San Diego requests SANDAG review the newly revised FAST Plan, prepared independently by Move San Diego’s team of expert consultants. (See Attached, FAST plan dated June 30, 2011). It contains ideas and strategies on how to think differently about the future of regional and local transit options that will save money, reduce operating costs and help SANDAG meet long term sustainability goals by increasing transit ridership in urban corridors. The revised 2011 FAST plan summary is attached for your convenience and for the public record. The tight timeline

K-1
This comment provides introductory statements and no further response is required.

K-2
Comment noted.

K-3
Comment noted.

K-4
SANDAG staff has met on several occasions with Move San Diego to discuss their FAST Plan and was aware of the FAST Plan as they developed their recommendations. Refer to Master Responses 17 for further discussion on the FAST plan and why it is considered to be infeasible to implement.
The reduction of greenhouse gas (GHG) emissions over the next 40 years serves as the backbone of the 2050 Regional Transportation Plan’s Sustainable Communities Strategy (SCS) in order to comply with Senate Bill 375 (SB 375). The Plan implies that the San Diego region will either meet or exceed the GHG reduction targets in both 2020 and 2035 with the understanding that a 2050 target is not yet available. However, a concerning discrepancy exists in reviewing Section 4.68 of the DEIR as it states that increased GHG emissions are actually expected to occur in horizon years 2035 and 2050 (a significant and unavoidable impact). DEIR at 4.8-23 and 4.8-26. This is unacceptable given the fact that specific targets have been set by the California Air Resources Board not only to ensure compliance with state law, but also to improve the quality of life for all San Diego County residents.

All mitigation measures that have been identified to reduce impacts related to increased GHG emissions over 2010 levels in 2035 and 2050 fail to provide a mechanism to actually guarantee emission reductions long term. It is well understood that the region will experience significant growth in population, housing, and employment. However, both new and existing communities can be advanced to better promote infill, smart growth, transit-oriented developments, and a more efficient and extensive transit and active transportation network – factors that will significantly reduce GHG emissions in the region.

In addition, on-road transportation emissions account for approximately 40.6% of San Diego County’s total emissions in comparison to the state of California’s average rate of 37%. DEIR at 4.8-4 to 4.8-5. Unless more effective methods of reducing emissions are implemented, this regional value will only increase thereby increasing the risk for future air quality violations. In addition, only a 2005 per capita transportation emissions value is provided in this report. Therefore, a more current per capita estimate, in addition to projected values, is needed for adequate comparison.

B. Vehicle Miles Traveled

Both the 2050 RTP/SCS and DEIR lack the transparency necessary to show whether all planned transportation projects are fully compliant with SB 375. It is also worrisome to see that in the 2050 RTP, investments in transit only exceed that of highways by three percent. Given that the region is required to plan for a more sustainable future, the fact that any capital investments in transit only slightly exceed that of highways is contrary to what is at the heart of SB 375: a significant reduction in GHG emissions over time that is a direct result of smarter land use and transportation planning and implementation. Greater efforts must be made on the part of

K-4
K-5
K-6
K-7
K-8
K-9

The year 2005 is included in the analysis since it is considered the baseline year for SB 375. Per capita emissions for future years are discussed in Impact GHG-2, which are compared to the baseline year to determine whether the project has a significant impact related to SB 375. No additional information is necessary.

K-9

Refer to Master Response 9 discussions on the project’s overall consistency with the intent and goals of SB 375 and AB 1358. In addition, it should be noted here that the 2050 RTP/SCS transit phasing strategy maximizes the use of the transit funding as it is expected to become available to emphasize transit. It includes significant transit projects to be implemented in early years of the plan, including modernization of the Blue and Orange trolley lines, Mid-City Rapid, South Bay BRT, I-15 BRT, Mid-Coast Trolley Extension to UTC/UCSD, double tracking of the
SANDAG and local jurisdictions to foster a transit-first strategy in order to ensure proper compliance with this landmark measure.

Reduction in total vehicle miles traveled (VMT) is one of the crucial means by which GHG emissions can be significantly reduced, as expressed in SANDAG’s Climate Action Strategy (CAS). The DEIR states, “implementation of the 2050 RTP/SCS would not impede the CAS and would constitute a less than significant impact.” DEIR at 4.8-30. However, a 1% decrease in VMT between 2010 and 2050 as stated in the RTP should in no way be considered a less than significant impact by the Plan’s DEIR. In addition, the congested vehicle miles traveled will experience a 4% net increase between 2010 and 2050. This is counterintuitive, considering that VMT reduction is repeatedly stated throughout the 2050 RTP/SCS as a means by which to reduce GHG emissions. Are there any other methods that can have a larger impact on reducing GHG emissions over the next 40 years?

Transit is a proven means of reducing Vehicle Miles Traveled. The 2050 RTP EIR should evaluate strategies that within the range of expected capital resources, and further explore innovative ideas on how to design dedicated transit infrastructure better matched to market demand.

C. Air Quality

A review of Section 6.0 of the DEIR reveals that all plan alternatives except the No Build Scenario each display air quality impacts that are either significant but less than the 70%/50% RTP/SCS or less than significant but less than the 2050 RTP/SCS. Is there any way to incorporate measures taken in one or more of these alternatives into the 2050 RTP in order to lessen the negative impact the region’s growth over the next 40 years will have on overall air quality? Areas of particular concern include: obstruction to the implementation of the applicable Air Quality Attainment Plans (AQ-1), violations of air quality standards or substantial contributions to existing or projected air quality violations (AQ-2), cumulatively considerable net increases of emissions of any criteria pollutant for which the project region is in nonattainment under applicable NAAQS or CAAQS (AQ-3), and exposure of substantial pollutant concentrations to sensitive receptors (AQ-4). The RTP falls short with regards to the air quality criteria in comparison to most alternatives. Can the 2050 RTP incorporate measures from these other plan alternatives which further reduce the negative impacts on air quality?

D. Transportation

It is disappointing to see that only one mitigation measure is proposed for all significant impacts associated with transportation travel times and trip accessibility. This measure, TRANS- A, merely calls for a reevaluation of regional travel times prior to 2035 and 2050. We feel that more frequent evaluation is needed in order to better assess how the network can be improved in order to coincide with each occasion a new RTP is adopted. Additionally, we request that more innovative mitigation measures be proposed and included in future RTP updates in order to convert all impacts associated with the transportation network to less than significant. Transit should not merely support future land use development in the region (i.e., "Smart Growth"), but it also support existing urban form, particularly in dense nodes and other areas of high demand.

K-9

The Draft 2050 RTP/SCS includes the most investment in transit and alternative modes compared to any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are 5 new light rail transit lines, new express bus services, and increased frequencies. The Draft 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs. While this plan provides more transit than any previous plan, people will still have the choice to drive if they desire. Please refer to Master Responses #7 and #10 for a more detailed description of project components, funding and phasing.

K-10

Please refer to Master Response 20.

K-11

The commenter is correct that those alternatives calling for a modified, more compact land use pattern would substantially reduce a number of the proposed project’s significant impacts, including air quality, because they call for less development in the eastern two-thirds of the County, and reduce the amount of development-related ground disturbance Countywide. While the land use changes in the alternatives were included to demonstrate the effect of modifying land use to achieve different outcomes in the performance indicators, it is not known how each individual transportation improvement (which are often made up of several phases the get built over time) influences the outcome. Also, some alternatives reduce some of the proposed project’s air quality impacts, but increase others. The SANDAG Board of Directors will be responsible for final “selection” and adoption of the Final 2050 RTP/SCS, which includes weighing the impacts of the alternatives and assessing the feasibility of implementing the alternatives analyzed in the EIR. The evidence supporting selection of the 2050 RTP/SCS over the alternatives is provided in the Findings of Fact and Statement of Overriding Considerations.

K-12

Please see Response to Comment K-12 above.

K-14

The RTP/SCS will be updated every four years. With each update of the RTP/SCS, reevaluation of regional travel times is conducted. Language in Mitigation Measure T-A has been revised as follows to refine the statement that suggests that reevaluation of travel time would only occur “prior to” 2035 and 2050.

T-A SANDAG, working with local jurisdictions and other transportation planning agencies, including Caltrans, shall reevaluate regional travel times, land use changes, and
regional growth during the development of each RTP/SCS, occurring every four years. When feasible, SANDAG shall in future RTP/SCSs modify the timing and priority of transportation network improvements to be consistent with available funding programs to most quickly implement those improvements that would reduce impacts T-3 and T-4 to less than significant levels.

Further, SANDAG has made a good faith effort to describe feasible, effective mitigation measures for each significant impact, including transportation. SANDAG will continue to strive to create and implement meaningful mitigation measures in future iterations of the RTP/SCS in an effort to reduce environmental impacts to the transportation network as a result of project implementation.

K-15

SANDAG also supports the idea of focusing transit improvements in existing urban areas. The SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region.

K-16

SANDAG had modeled each of the project alternatives to provide the level of analysis in the draft EIR. As with the project, the 2050 RTP/SCS alternatives represent a network of transportation improvements overlaid on the same land use assumed in the 2050 RTP/SCS and an intensified land use. While the land use changes in the alternatives were included to demonstrate the effect of modifying land use to achieve different outcomes in the performance indicators, it is not known how each individual transportation improvement (which are often made up of several phases the get built over time) influences the outcome. Further, see Master Response 16 regarding the range of alternatives and the detail provided in the alternatives analysis.

K-17

This statement has been corrected in the Section 6.3. In addition, this discussion focuses on the differences in significant transportation impacts in the horizon year of 2035. Impacts for T-2 are not discussed here because the neither the 2050 RTP/SCS nor any of the proposed alternatives would result in significant impacts (i.e., cause a substantial decrease in the percentage of work and higher education trips accessible within 30 minute peak periods).

K-18

Since adoption of the Regional Comprehensive Plan (RCP) in 2004, several local jurisdictions have updated their land use plans to reflect the smart growth and sustainable development principles outlined in the RCP. Continuing that trend, the SCS land use pattern does demonstrate that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region. While land use inputs for the 2050 RTP/SCS came directly from local government plans and policies, it should be noted that SANDAG does work closely with local jurisdictions to provide incentives and tools to encourage smart growth. Further, the Technical Update of the Smart Growth Concept Map is currently underway and will be completed upon adoption of the 2050 RTP/SCS. The updated map will include the final transportation network included in the adopted 2050 RTP/SCS. Refer to Master Response 11 for a further discussion on SANDAG’s efforts to support a compact land use pattern in the San Diego region.
First, this comment confuses the terms “San Diego County” and “the County of San Diego”. The term “San Diego County” refers to the physical boundary of the region, which includes lands within the 18 incorporated cities and the unincorporated lands governed by the County of San Diego. The “County of San Diego” refers to the jurisdictional entity that governs the unincorporated lands within the San Diego region.

Because of this confusion, this comment makes an inaccurate comparison between the existing land use conditions presented in the 2050 RTP/SCS Draft EIR and the existing land use conditions presented in the County of San Diego’s General Plan Update as they relate to the amount of developed land. The 2050 RTP/SCS Draft EIR discusses the amount of developed land within the San Diego region as a whole, including all incorporated and unincorporated lands within the physical boundary of the region. The County of San Diego’s General Plan discusses the amount of developed land solely within the unincorporated portion of the region (governed by the County of San Diego).

Given this clarification, there is no need to correct the baseline conditions related to developed lands discussed in the Draft EIR.

While SANDAG is in agreement that the 2050 RTP/SCS will have a positive effect on community cohesion and character, the appropriate place to discuss this is in the 2050 RTP/SCS itself as the planning document, and not the EIR.

Refer to Master Response 12 for a discussion on the population projections used in the 2050 RTP/SCS Draft EIR.

The SANDAG Four-Step Transportation Model is considered state-of-the-practice by a peer review panel held under the Federal Highway Administration’s Transportation Model Improvement Program. SANDAG uses an enhanced Four-Step Transportation Model, which includes sensitivity to 4D measures like accessibility and urban form. It also includes a truck model, pricing sensitivity, and a feedback loop to further account for congestion. While concern over middle income groups is noted, current transit system (using the $1999 income breakpoints above and the 2009 on-board survey) usage by income is 72.9% low-income ridership, 15.8% mid-income ridership, and 11.1% high-income ridership. The SANDAG model is based on current travel behavior and responds appropriately to changes in system makeup, travel times, and costs; however, large shifts in cultural values cannot be forecasted, as shifts occur they can be accommodated in the model and reflected in the next RTP 4 years later.

Value of Time

SANDAG models three household income categories ($1999): less than $30,000, $30,000 to $60,000, and greater than $60,000. If you take the median range of each category ($15k, $45k, infinity), the ratio is 1:3:∞. The value of time associated with commute trips is typically around 1/3 the average hourly rate. Using the three income categories specified above, the value of
times in the mode choice model should range between $0-$4.80 for low-income, $4.80-$9.60 for mid-income, and $9.60+ for high-income. SANDAG’s commute value of times are $2.20 for low-income, $5.40 for mid-income, and $12.90 for high-income.

The SANDAG model does not add a Coaster adjustment factor by income. The 2009 On-Board Survey indicates Coaster ridership for the income brackets listed above were approximately 22.9%, 22.9%, and 54.2%. The SANDAG model forecasted the ridership to be more evenly split between the income brackets: 39%, 32%, and 29%. The model is either showing a slight bias for Coaster ridership towards lower income brackets or correct low to mid income ridership but a lack of high income ridership.

**Ratio of Coefficients**

The average travel time ratio between low-income and non-low-income is nearly 1:1. Income-based market segmentation of in-vehicle time coefficients in the SANDAG mode choice model was eliminated during the FTA New-Starts model review process. FTA frowns upon the use of income stratified in-vehicle time coefficients. Coefficients are also segmented by trip purpose.

**Bus Modes**

The SANDAG model includes three bus modes (local, express, and bus rapid transit) in addition to two rail transit modes (commuter rail and light rail). Each transit mode has its own utility constants based on observations from regular household travel surveys and transit on-board surveys. As a related example to the comment, SANDAG codes the South Bay Bus Rapid Transit as a bus rapid project similar to the Orange Line in Los Angeles. This project has a different utility than an express bus route like the MTS Route 120.

During the Urban Area Transit Strategy process, consideration was given to the overall type of BRT that would be developed in the plan to help choose an appropriate mode choice constant for BRT. New mode types are difficult to project as they can vary between regions. Better estimates can be used when detailed planning and engineering are completed and also once the mode type is on the ground behavior can be surveyed and adequate parameters can be estimated.

**Calibration Portion**

In the Regional Models Validation Report (SANDAG Regional Model Validation Report, June 2011), Section 1.1 states, “This report provides a guide to the accuracy of the SANDAG transportation model compared to observed data in and around 2008. With every statistic, the SANDAG model estimates provide comparable results to observed data. This report confirms that the SANDAG model is properly calibrated and suitable for use in evaluating the impacts of the Draft 2050 RTP.

In this report, the SANDAG model is compared to a variety of observed data sources from the last two decades. The data sources include:

- 1995 SANDAG Household Travel Survey (SDHTS);
- 2006 SANDAG Household Travel Surveys (SDHTS);
- 2009 SANDAG Onboard Transit Passenger Survey (OBS);
- 2001 Caltrans Statewide Household Travel Survey (CHTS);
- 2009 National Household Travel Survey (NHTS);
- 2000 U.S. Census;
- American Community Survey (ACS);
- SANDAG Passenger Counting Program; and
- State and local traffic counts.
The report provides detailed technical information on how the transportation model was used to support the development and decision-making process for the Draft 2050 RTP and its Sustainable Communities Strategy, and the Draft 2050 RTP/SCS Environmental Impact Report.”

Section 4 (pg 17) of the CARB (2011) staff report on the Status of SANDAG’s SCS states: “SANDAG validated their model following CTC and FHWA guidelines to test the capability of SANDAG’s travel demand model to predict future travel behavior. The validation process involves comparing model outputs for the base year with observed or empirical travel data. The CTC 2010 RTP guidelines, which include both requirements and recommendations, direct large MPOs like SANDAG with rapid growth, large population centers, and established transit systems to employ enhanced modeling capabilities and validation procedures. SANDAG’s travel model meets these requirements.”

Underemployment

It is unclear what the commenter is comparing to the SANDAG employment projections. The SANDAG base year employment is based on site-level employer records from the California Employment Development Department. An explanation of future growth and allocation methodology is discussed in the 2050 Regional Growth Forecast: Process and Model Documentation included as part of Appendix D in the Draft 2050 Regional Transportation Plan.
The experience of transit projects across the US and in other highly-developed countries reflects this pattern. For example, Los Angeles has developed an express bus network Metro Rapid, that differs little from their bus system except that it uses specially-painted buses, stops only about once every mile, and that buses communicate with traffic signals to ensure that the bus doesn’t fall behind schedule. The improvement in travel speeds—about 15-25%, depending on corridor—have been matched by a similar increase in corridor ridership.

In the case of San Diego, Move San Diego contracted with a highly-regarded modeling specialist to review published documentation on SANDAG’s Regional Travel Model in order to assess the effectiveness of the model at projecting ridership on new transit modes or other significant improvements to the regional travel network. To be sure, the model is constantly evolving, and SANDAG has worked hard to improve the model over the years.

The Regional Travel Model is composed of many sub-models, as well as base data. Among its many fine features, the model stands out for its granularity; namely, SANDAG breaks the region down into many Transportation Analysis Zones (TAZs), more than one would normally find, and these allow for more accurate assessment of traffic and transit ridership.

At the same time, our modeling specialist identified a set of improvements which could not merely “fine-tune” model results, but produce rather striking improvements in transit ridership for a significantly improved transit network. In other words, the model, as then documented, was not set up to accurately project ridership uptake of transit among the lower- and upper-middle income market. As a result, the model seemed to underproject ridership on exactly these kinds of transit improvements that could make serious inroads in these markets. The region, in effect, was leaving tens and perhaps hundreds of thousands of potential transit trips “on the table,” transit trips that would relieve serious pressure on our roadway network and that would provide stronger support for the many Smart Growth initiatives adopted by the region’s municipalities.

To be more specific, our modeling expert identified these specific issues:

- The “dollar value of time” for the upper income group (this group includes households with only modest incomes, as well as wealthier households) far exceeded expected values for this group, as well as Federal guidelines. The exceedingly high base value meant that the value placed on waiting time and access time (walking or driving to/from transit) exerted much too great an influence on model results. As an example of the impact of this, it was discovered that the model projected a ridership on the Coaster Commuter Rail would be drawn from lower income groups than was actually observed. To correct this, a Coaster adjustment factor was added, but this kind of correction is at best a patch; it doesn’t get at the underlying factors driving ridership, and it doesn’t allow you to project ridership on other transit projects that promise similar travel speeds and customer experience.

- The same “ratio of coefficients” was applied to each of the three income groups modeled, meaning that the relative importance of in-vehicle time, wait time, access time, etc., was
kept for all groups. Market research in San Diego and other cities has found that the relative importance of each of these attributes is not static across groups, but varies based on other behavioral or attitudinal factors.

- The model seemed biased in favor of light rail over other modes. It’s true that light rail is a relatively attractive transit mode, but the weight given to it was out of proportion to the other factors. Bus Rapid Transit (BRT) was assigned an attractiveness value at just half of LRT, regardless of the mode of BRT employed. There is a vast difference in the relative attractiveness of, say, LA’s Metro Rapid (what some describe as “BRT Lite”) versus LA’s Orange Line (which operates in a dedicated busway in the San Fernando Valley), to use a nearby example; this difference can make a big difference when evaluating projects.
- The model relied too heavily on “calibration” for its results. Normally, “calibration” implies fine-tuning, but in the case of the model, calibration factors could range from 0.5 to 2.0, meaning that the model would convert the projected ridership of two trips, each of which was initially projected to attract 100 riders each, to 50 riders and 200 riders. While this calibration might permit the model to produce reasonably accurate projections of ridership on the current system, it would tend to distort, often significantly, ridership projections for a very different transit network.
- The model appeared as well to under-project employment in several key sites where employment density has increased (such as Sorrento Mesa), leading to lower ridership projections for these zones.

To be fair, modeling is an extremely intricate and difficult task, and SANDAG is to be commended for its commitment to continuous model improvement. Nonetheless, it was apparent to us that, as was earlier noted, the current model, as documented, was likely to discount the potential of a highly improved transit system, particularly among middle income groups, leading to the selection of slower and less-well-integrated transit projects and placing that much more pressure on the road network. The model was, in effect, pushing the region’s decision-makers to spend more dollars dealing with auto congestion, when a more optimized transit plan could by itself reduce the need or timeline of many of those road projects.

Closing Thoughts

The 2050 RTP/SCS and DEIR represent a unique opportunity to substantially alter the land use and transportation landscape of this region in order to achieve a more sustainable future. Reducing greenhouse gas emissions through the development of smarter, more compact communities, in addition to expanded transit networks, serves as the primary method for realizing this goal. While there has been significant advancement toward the goal of building sustainable communities with world class public transit, land use and transportation projects will need further refinement in order to accommodate the future projected population growth of the region in a way that maximizes our investment, and provides the least impact on the environment all while increases the standard of living for all.

- Ideally, the RTP EIR would have present an alternative that has such a robust transit plan, that overall transit ridership would be increased to 10%, not just transit commute trips.
Robust, rapid transit improvements will likely encourage residents to switch from driving single occupant vehicles to riding transit, thereby contributing to the necessary ridership rates that will redefine transit as a primary mode of travel while also fulfilling one of the essential goals of the RTP: “to develop an ambitious and far-reaching transit network that significantly expands the role that transit plays in meeting the region’s mobility needs.” RTP at 6-6. Thank you for the opportunity to comment.

Sincerely,

ELYSE W. LOWE
Executive Director
Move San Diego
SANDAG has read and acknowledges the submission of the attachment “The FAST Plan”. In compliance with the provisions of CEQA, SANDAG has responded to all significant environmental issues raised in this attachment not otherwise addressed in the response to the primary comment letter. Please see Master Response 17 and Reponses to Comments K-2 through –K-51 below.
1. **INTRODUCTION:**

**THE FAST Plan and the Future of San Diego**

The FAST Plan is not a proposal for a single line, a single mode, or a single project, nor is it an abstract call for any particular technology. Rather, it suggests that an integrated set of a variety of modes and projects could, if designed together as a single network, significantly outperform current plans for regional transit.

**WHAT MAKES THE FAST Plan DIFFERENT FROM OTHER PROPOSALS?**

Over the years, many individuals and groups have proposed different transit “solutions” for the San Diego region. These have ranged from large-scale expansion of the trolley or development of High-Occupancy Vehicle (HOV) lanes on the freeways to proposals for monorails, subways, linear induction streetscar, and high-speed commuter rail.

**FIGURE 1.1**

90’s-era proposal for a San Diego Metropolitan Subway System. Such proposals are often superficially attractive, as they appear to link many of a region’s key nodes, but in practice may simply increase costs and poor linkage to actual land uses.

**K-27**

This comment is a summary of the Fast plan. No response is required.
It is not that these proposals are without merit; many are often imaginative and suggest new possibilities for connecting the region together. More San Diego’s concern, rather, is to develop a plan for a fully integrated transit system that can serve the greatest number of the region’s residents and visitors at costs which are consistent with expected resources. Put another way, any creative group of individuals with an intimate knowledge of the working of a metro area can develop a reasonably good $100 billion transit plan, but the trick is to develop an equally good—or better—plan for $15 billion.

The FAST Plan builds on a lot of previous work, including the ground-breaking market research conducted on behalf of the then-MTDB (the forerunner of today’s Metropolitan Transit System) and the ongoing planning efforts of the San Diego Association of Governments. The FAST Plan pushes ahead by its focus on improving the convenience, speed, and seamlessness of major transit investments already anticipated for the region.

**GOALS OF THE FAST PLAN**

The FAST Plan was designed with one overarching goal that of attracting a significantly larger share of choice riders to transit within the San Diego Metropolitan Area. Choice riders are those who have access to automobiles for their trips, but choose instead to use transit for all or part of their trip-making needs. By attracting choice riders, transit can produce a direct impact on roadways, reducing traffic and hence congestion, and it can also enable people to access zones of the region that are parking impacted.

A secondary but nonetheless important goal of the FAST Plan is to not merely support future land use development in the region (i.e., “Smart Growth”), but to support existing urban form, particularly in dense nodes and other areas of high demand. We have learned from UC Berkeley professor Robert Cervero1 that for many American cities, the ability of transit to shape the future of that city depends in great measure on the extent to which transit adapts to and serves the city as it already exists. Rather than locate transit away from where market demand is concentrated (due to the availability of easier, cheaper alignments), the FAST Plan proposes a cost-effective strategy for targeting these very areas, and so converting transit into a preferred transportation mode.

Whenever possible, More San Diego sought to integrate its approach to transit planning into other efforts aimed at preserving and enhancing regional quality of life. We have met with many different stakeholders and community members so that we could understand how to avoid negative impacts and so that the FAST Plan could reinforce other major efforts (such as proposals for a regional Canyonslands park).

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1. Cervero’s seminal study, *The Transit Metropolis*, describes the relationship between transit and urban form.
2. **Why Develop an Alternative Transit Plan?**

Why would a small nonprofit organization devote such considerable resources to developing a new set of transit alternatives for its region? Most San Diego and many of its members had participated in and contributed to various long-range planning efforts across the region in the late 1990s and early 2000s, and through that experience came aware of the need to better learn from Global Best Practices in transit planning.

**Current Transit System**

San Diego's current transit system is multimodal, consisting of a light rail spine in both the MTS and NCTD service areas, “premium” express buses for commuters in the I-15 corridor, a commuter rail line in the coastal corridor, and an extensive web of local and express bus services.

Though both MTS and NCTD have been recognized for their many innovations and their dedication to operational excellence, even a casual observer would note that travel by transit in San Diego County is often a time-consuming and inconvenient task. The problem is a complex one, and much of it has to do with how the region has grown and developed, the disposal of both origins and destinations, and the impacts of topography on street connectivity and building location.

**Why Not Just Extend the Trolley?**

For many in San Diego, the issue of transit expansion is one of how and where to extend the current Light Rail Trolley system.

While there is no question that the Trolley has proven popular and useful to the region, it has also demonstrated in practice several important limitations:

1. Given the way many people “leapfrog” about the region, travel times by Trolley for many trips have proven too long to attract significant numbers of choice riders.

2. Incremental investments in the Trolley have not been able to duplicate the cost- or ridership-performance of the original line between Downtown and the border.

3. Given regional land uses and urban form, the Trolley is often unable to effectively serve many of the important destinations in its service area. For example, though the...
K-30
Freeway based BRT uses dedicated Managed Lanes facilities that are separated from general purpose lanes/traffic congestion and give priority access to BRT and carpools/vanpools to ensure high-speed operations. Locations and designs of stations are individualized based on the characteristics of the community being served, and includes both off-line and in-line station designs; in addition, both all-stop services and express, limited stop services can be provided to match the travel needs of riders in a given corridor.

There are other issues with freeway-based BRT:

1. Stations are difficult to locate and properly configure to best support surrounding land uses (see Figure 2.2).

2. Transit vehicles lose considerable travel time exiting and re-entering the freeway from off-line stations, leading to lower ridership and higher operating costs.
The 2050 Regional Transit Plan

The 2050 Regional Transportation Plan developed by the San Diego Association of Governments attempts to significantly expand the role that transit plays in the region. It includes nearly $20 billion worth of new transit capital projects, including major expansion of the San Diego Trolley, many new freeway-based BRT routes, many new arterial Rapid Bus routes, new streetcar lines for the urban core, and improvements as well to the Sprinter DMU (Diesel Multiple Unit) Light Rail and the Coaster Commuter Rail.

SANDAG is to be commended for its commitment to improving regional transit, and the transit component of the RTP contains many innovative elements that will surely prove useful to the region. Just the same, more San Diego sees room for continuing to enhance the conception of a regional transit system and for adding to the convenience and usefulness of a system. The FAST Plan is more San Diego's contribution to that effort.

Improving Local Transit Planning

Expanding Our Imagination

Mass transit systems have been part of our consciousness since the 1800s, to the point where we naturally expect transit systems to behave in very specific ways. The most common of these is the “pearls on a string” concept, in which a transit route—be it BRT, light rail, or a subway system—travels along a linear corridor, stopping at stations which are generally spaced between 1/4 and 1 mile apart. The San Diego Trolley, certainly, is an expression of this service concept.

K-32

The 2050 RTP/SCS transit plan also builds on best global practices on creating an enhanced transit system that improve transit travel speeds, directness of travel to key regional destinations, and increased service frequencies that are well integrated with existing and future planned smart growth areas that will maximize access to transit. Finally, the plan recognizes the realities of many areas of the region that are not conducive to cost-effective transit due to existing densities and auto-oriented land uses.
The network has a mixture of rail, BRT, and Rapid Bus. Managed Lanes were a concept developed for San Diego and have been designed specifically around the provision of BRT and carpooling/vanpooling to provide high-speed travel. The plan does not try and force people to give up their cars or assume that people won’t give up cars, but rather works on the premise outlined in the 2000 market analysis conducted for MTDB that seeks to design a transit system that is competitive with auto travel for many trips that will encourage new rider markets into transit because it best meets their travel needs for many of their daily trips. No monorails are proposed in the transit plan. The RTP plan has a significant investment in local buses, Rapid Bus and BRT services.

OVERCOMING PRE-CONCEPTIONS
The EAST Plan is based on a sophisticated understanding of how people actually choose to use transit in cities like San Diego. We have especially learned a lot from cities that have had to innovate in order to create the kinds of transit systems that would attract new riders; in many cases, they had to overcome doubters and naysayers who clung to any of a number of pre-conceptions about transit and what it is that would attract riders.

San Diego has experienced these doubts in the past. Back in the late 1970s, when former State Senator James Mills and former mayor Pete Wilson first promoted light rail (LRT) for San Diego, there were many who doubted that light rail would work in San Diego, for a variety of reasons. The very real success of that first Trolley line put many of those doubts to rest.

Today, many people are still not sold on the benefits of transit, or on the potential of new transit modes to accomplish what transit investments to date have not accomplished.

“Trains Are Superior to Buses”
The most common pre-conception about transit is that buses, even “Bus Rapid Transit” is just a stepping stone to rail (light rail or heavy rail), and that, given a choice between developing a rail line or a BRT Line, rail is inherently better. The argument often continues to discuss the operating cost merits of LRT versus buses; that since trains can carry far more passengers per car, and since labor costs are the largest component of transit costs, then by definition one train is more affordable to operate than four or five buses.

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The EAST Plan was also the author of a major study, commissioned by the Federal Transit Administration, on Advanced Network Planning for Bus Rapid Transit, which reviewed Global Best Practices in service and infrastructure design.
Most trains are certainly more comfortable or nicer than most buses, but a new breed of buses have certainly narrowed that gap considerably (see Figure 2.3). More to the point, vehicle design and comfort are just one of several factors that induce someone to choose transit. Of equal or even greater importance are travel time, wait time, station or stop location, and a host of other considerations. What’s more, most trips in a region like San Diego don’t involve large numbers of people all traveling just between just a few key points (a situation that would certainly take advantage of a train’s capacity), but among many disparate points. In such cases, it’s entirely possible that a well-designed bus-based network can attract a larger number of riders because it can give more people a faster, more direct, and more frequent trip, with stations or stops located closer to their origin and destination.

The point is not that any one mode is necessarily better than the other; it’s that the transit problem you are trying to solve should dictate the solution, not the other way around. The FAST Plan proposes improvements to both our rail and bus networks precisely because of that. Just as there are circumstances where investments in rail are warranted, there are circumstances where bus infrastructure can pay greater dividends to the region than rail projects, especially in certain high-ridership locations. This fact runs counter to the pre-conception.

“We Can’t Afford to Run All Those Buses”

The FAST Plan relies heavily on the use of an upgraded BRT network to move large numbers of people rapidly through the region. Some have wondered whether we can “afford all those buses.” As Move San Diego has demonstrated, the creation of a dedicated and primarily grade-separated transit network will allow the region to vastly improve the productivity of its transit fleet, moving far more passengers per vehicle than is possible today. As the operating cost analysis of the FAST Plan has concluded, the right set of service and infrastructure can lead to lower, not higher, operating costs.

“Transit Should Lead Land Use”
Some argue that transit should be built where it is cheapest or most politically feasible to build, then land uses should “catch up.” But three decades of experience with light rail in San Diego have demonstrated that land uses respond to a broader set of market concerns than merely the presence of transit. Transit can certainly add value to real estate—but it does so the best when it is truly more useful to potential riders.

“People Won’t Give Up Their Cars”
It is not Move San Diego’s goal to force anyone out of their car, if anything, the automobile is and will likely remain the primary means for getting around the region. But we also understand that an effective transit alternative can contribute immensely to the region, and the experience of cities all over the globe and even within the U.S. is that people can and will ride transit when it is convenient to do so. The FAST Plan attempts to create the kind of transit system that more San Diegans would choose to ride.

“We Should Force People to Use Transit”
There are those who believe that people should be forced to use transit, or rather, that the costs and inconveniences of driving should be amplified by public policy. All too often, these measures are called for after investments have been made in transit infrastructure or services that are ill-designed to meet the needs of the traveling public. The FAST Plan is all about creating the kind of transit system that many will want to use because it provides a competitive alternative to driving—and parking—a car, not because people are forced out of their cars.

“Managed Lanes Are the Best We Can Do for Transit”
It is not the purpose of the FAST Plan to evaluate the potential or performance of the region’s Managed Lane program, just to point out that, within the range of expected capital resources, it will be possible for this region to build dedicated transit infrastructure better matched to market demand.

“Monorails Will Solve Our Problems”
Monorails are a fun mode that offer potential benefits in certain applications. They also tend to be expensive to build and maintain and also tend to be slower than many imagine, especially for longer trips. Their use within any transit system should depend on their being the right mode for the transit task on hand.

“We Need to Build Transit in the Center of Our Freeways”
Over the years, some voices have called for transit—meaning rail lines—should be built into the center of our freeways, much as can be observed in regions such as Washington, D.C. and San Francisco. While there are locations where this might make sense, freeways are not always located in places that make sense for transit. The FAST Plan tries to strike the right balance by providing infrastructure where it makes the most sense, not where it’s necessarily the cheapest to build (but then disappoints in terms of ridership or land use impacts).
IMPROVING TRANSIT RIDERSHIP MODELING

It is one thing to conceive of an effective transit system; it is another to ensure that its impacts can be properly and fairly modeled. Indeed, for any transit project to make it into the Regional Transportation Plan, it must be backed-up by modeling results that show that the investment required to build the project can generate enough ridership to justify the investment.

Transit ridership modeling is an arcane field that approaches rocket science in many aspects. At its root, though, is a simple premise: the more competitive a transit trip is relative to a person’s other options, the more likely a person is to use transit. If 100 people need to make a trip from Zone \( X \) to Zone \( Y \) and transit is significantly slower and more inconvenient than driving, then the probability of someone making that trip by transit is very low; say, 2%. So out of that 100 people, we would expect 2 people to choose transit. As transit becomes faster, more direct, better located, easier to use, and even just ‘feels better,’ we would expect more people to use it.

The experience of transit projects across the US and in other highly-developed countries reflects this pattern. For example, Los Angeles has developed an express bus network Metro Rapid, that differs little from their bus system except that it uses specially-painted buses, stops only about once every mile, and that buses communicate with traffic signals to ensure that the bus doesn’t fall behind schedule. The improvement in travel speeds—about 15.25%, depending on corridor—have been matched by a similar increase in corridor ridership.

In the case of San Diego, Move San Diego contracted with a highly-regarded modeling specialist to review published documentation on SANDAG’s Regional Travel Model in order to assess the effectiveness of the model at projecting ridership on new transit models or other significant improvements to the regional travel network. To be sure, the model is constantly evolving, and SANDAG has worked hard to improve the model over the years.

The Regional Travel Model is composed of many submodels, as well as base data. Among its many fine features, the model stands out for its granularity, namely, SANDAG breaks the region down into many Transportation Analysis Zones (TAZs), more than one would normally find, and these allow for more accurate assessment of traffic and transit ridership.

At the same time, our modeling specialist identified a set of improvements which could not merely “fine-tune” model results, but produce rather striking improvements in transit ridership for a significantly improved transit network. In other words, the model, as then documented, was not set up to accurately project ridership uptake of transit among the lower- and upper-middle income market. As a result, the model seemed to underestimate ridership on exactly those kinds of transit improvements that could make serious inroads in these markets. The region, in effect, was leaving tens and perhaps hundreds of thousands of potential transit trips “off the table,” transit trips that would relieve serious pressure on our...
In addition, in the Final Comparative Evaluation of Alternatives Report for the Mid-Coast Corridor Transit Project (http://www.sandag.org/midcoast) report for FTA NewStarts, SANDAG compared light rail alternatives to bus rapid transit and expanded express bus service in the Mid-Coast corridor. The SANDAG model and alternatives analysis was reviewed extensively by the Federal Transit Administration to ensure adequate sensitivity to alternatives. In November, 2010, the Federal Transit Administration certified the Technical Methods of the SANDAG Mid-Coast analysis. The Draft 2050 RTP/EIR/SCS uses the same modeling methodologies included in the Mid-Coast Analysis.

Value of Time

SANDAG models three household income categories ($1999): less than $30,000, $30,000 to $60,000, and greater than $60,000. If you take the median range of each category ($15k, $45k, infinity), the ratio is 1:3:∞. The value of time associated with commute trips is typically around 1/3 the average hourly rate. Using the three income categories specified above, the value of times in the mode choice model should range between $0-$4.80 for low-income, $4.80-$9.60 for mid-income, and $9.60+ for high-income. SANDAG’s commute value of times are $2.20 for low-income, $5.40 for mid-income, and $12.90 for high-income.

The SANDAG model does not add a Coaster adjustment factor by income. The 2009 On-Board Survey indicates Coaster ridership for the income brackets listed above were approximately 22.9%, 22.9%, and 54.2%. The SANDAG model forecasted the ridership to be more evenly split between the income brackets: 39%, 32%, and 29%. The model is either showing a slight bias for Coaster ridership towards lower income brackets or correct low to mid income ridership but a lack of high income ridership.

Ratio of Coefficients

The average travel time ratio between low-income and non-low-income is nearly 1:1. Income-based market segmentation of in-vehicle time coefficients in the SANDAG mode choice model was eliminated during the FTA New-Starts model review process. FTA frowns upon the use of income stratified in-vehicle time coefficients. Coefficients are also segmented by trip purpose.

Bus Modes

The SANDAG model includes three bus modes (local, express, and bus rapid transit) in addition to two rail transit modes (commuter rail and light rail). Each transit mode has its own utility constants based on observations from regular household travel surveys and transit on-board surveys. As a related example to the comment, SANDAG codes the South Bay Bus Rapid Transit as a bus rapid project similar to the Orange Line in Los Angeles. This project has a different utility than an express bus route like the MTS Route 120.

During the Urban Area Transit Strategy process, consideration was given to the overall type of BRT that would be developed in the plan to help choose an appropriate mode choice constant for BRT. New mode types are difficult to project as they can vary between regions. Better estimates can be used when detailed planning and engineering are completed and also once the mode type is on the ground behavior can be surveyed and adequate parameters can be estimated.
To be fair, modeling is an extremely intricate and difficult task, and SANDAG is to be commended for its commitment to continuous model improvement. Nonetheless, it was apparent to us that, as was earlier noted, the current model, as documented, was likely to discount the potential of a highly improved transit system, particularly among middle income groups, leading to the selection of slower and less-well-integrated transit projects and placing that much more pressure on the road network. The model was, in effect, pushing the region's decision-makers to spend more dollars dealing with auto congestion, when a more optimized transit plan could by itself reduce the need or timeline of many of those road projects.

Calibration Portion

Please refer to Response K-22 Calibration Section.

Under Projected Employment

It is unclear what the commenter is comparing to the SANDAG employment projections. The SANDAG base year employment is based on site-level employer records from the California Employment Development Department. An explanation of future growth and allocation methodology is discussed in the 2050 Regional Growth Forecast: Process and Model Documentation included as part of Appendix D in the Draft 2050 Regional Transportation Plan. Please also see Master Response 12.
3. THE CHALLENGE: ATTRACTING NEW RIDERS

What does transit need to do to attract a broader share of the market? From market research, we learn that the market for transit is not monolithic nor is it entirely a product of household income (the primary means by which transit ridership models split the market in the USA); rather, people fall into clusters of shared attitudes or behaviors, and what is important in one market may be of little concern to another.

Though differences in how different market segments value different aspects of transit are very real, there are three primary design factors which shape the decision to use or not use transit for any particular trip (a fourth factor, cost, is every bit as important, but is as much a product of external support as it is of system design):

1. **Network Structure.** How is your network structured? What is it like to get from any likely point “A” to any likely point “B”? How direct is that trip? How much out-of-direction travel is implied? How many transfers? Where are the access points (i.e., stations and/or stops) and how convenient are they to origin and destination?

2. **System Performance.** Essentially, how quickly and conveniently can the transit system move you from your origin to your destination? How much wait or transfer time is involved?

3. **Customer Experience.** What does it feel like to use the transit system? How safe is it? How confusing? What is the social experience? What about the role of information? Are you protected from the elements?

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**NETWORK STRUCTURE: THE CHALLENGE OF CONNECTIVITY**

For a transit system to be truly useful to the life and functioning of a metropolitan area, it must link together the places that matter (essentially, take people from where they mostly are to where they are likely going) as directly and conveniently as possible. What’s more, it must place access to that system—stations or stops—in places convenient to both origins and destinations.

In the case of San Diego, we face a network challenge known as dispersed origins to multiple destinations. “Dispersed origins” means that people in this region are rarely clumped into areas...
of identifiably high residential density; rather, residences are spread all over (there are certainly areas of higher density, but most of the population lives in this more dispersed pattern). “Multiple destinations” means that employment and commercial centers do tend to be more concentrated, but not in a single center or along coherent corridors. Rather, there are about a dozen or so major employment clusters, each covering an area that can reach several square miles, which account for nearly half the region’s total employment.

A “traditional” transit network—pears-on-a-string rail or bus service going into and out of a dense center along dense corridors—doesn’t match the kind of urban area we are. Rather, many people tend to leapfrog about the region for work or play; to attract these riders to transit, you need to create a set of services that likewise leapfrogs about the region and targets multiple zones in the process.

It is no less a challenge to place transit access in locations that are convenient to the areas served. For example, if transit access to a regional shopping mall is farther from that mall than the fastest parking spot, choice riders are far more apt to view that transit as peripheral and a less desirable option (see Figure 3.1). This is backed-up by intensive market research in San Diego, which found that most market segments penalize longer walks for shopping trips than for work trips.

![Diagram showing transit access locations]

**FIGURE 3.1**

While there may have been or currently are good reasons for locating rapid transit stations in far from mall entrances, the end result is still a peripheral system that is less convenient for potential users.

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*The FAST Plan*
The situation doesn't only apply to shopping malls; it applies equally to entire commercial zones. Mission Valley, for example, is the region's second largest office market, and was hence viewed as ripe for service by light rail (Figure 3.2).

![Map of Mission Valley](image)

**FIGURE 3.2**
Mission Valley (including Grantville)

The decision was made to run the Trolley down the center of the Valley, criss-crossing the San Diego River so as to serve the Valley's principal destinations (Figure 3.3).

![Trolley stations in Mission Valley](image)

**FIGURE 3.3**
Trolley stations in Mission Valley, showing a quarter-mile radius. The distance most planners consider the "walking shed" of a rapid transit station.

The problem, of course, is that a good portion of the land area within a quarter-mile radius of a station wasn't actually accessible to that station because of lack of road or pedestrian links (Figure 3.4).

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1 Sources differ, depending on how one defines a particular office market and whether one includes research or manufacturing space.
The 2050 RTP/SCS transit plan did a detailed analysis of existing and future trends regarding travel demand and travel patterns, population and employment densities, minority and low-income communities, and other factors to assess where potential transit services are needed today and into the future. This analysis also included an assessment of where potential smart growth development would be located in order to maximize the integration of land use and transit planning. The transit plan also defined an Urban Core Area that defines those areas in the region where there are existing or future transit supportive land uses that can support a high investment in transit infrastructure and services.
The two key centers of the County, according to this data, are Downtown San Diego and the Greater Golden Triangle (including Sorrento Mesa and Valley and Tierrasanta), with major secondary centers in Carlsbad (Fletcher's Airport Road corridor), Miramar, and Kearny Mesa; with zones such as Mission Valley, the I-15 corridor, South Bay waterfront, Otay Mesa, East County, the College Area, San Marcos, and portions of Escondido, not far behind.

At the residential end, far more dispersion is evident (Figure 3.7). Commute trips (to work or college) come from all over the region. When looked at in greater detail, however, several important patterns emerge.
While Downtown San Diego is the densest employment zone in the region, work trips to Downtown come predominantly from within about a 15 mile radius (Figure 3.8).
The lesson Move San Diego drew from this map was the importance of providing a time-competitive one-seat ride to Downtown from the communities surrounding it. We also noted how relatively few trips came from North County communities into Downtown; though still important, the popular conception of “all that travel” between places like Rancho Bernardo and Downtown is out of scale with the reality. In contrast, Mission Valley seems to attract the bulk of its work trips from south of I-8 (Figure 3.9), suggesting the importance of building direct links between Central San Diego communities and employment sites within Mission Valley (both on and off the Trolley line).
Keamy Mesa and the Poway Business Park exhibit major differences; whereas Keamy Mesa attracts the bulk of its commuters from the south, the PBP attracts from the north (Figure 3.10).
The 2050 RTP/SCS transit plan addresses the goals in the FAST Plan as follows:

Competitive travel times – through new express trolley lines, BRT services utilizing Managed Lanes facilities, and Rapid Buses using arterial transit priority measures, the 205 RTP/SCS transit plan aims at creating competitive travel times;

Access to communities – the 2050 RTP/SCS transit plan provides access into communities in a variety of ways, including enhanced frequencies on local bus services, shuttles and streetcars in...
1. Helps people leapfrog about the region at competitive travel times;
2. Reaches into many communities and delivers people to multiple destinations;
3. Minimizes the need to transfer;
4. Gets closer to more destinations; and
5. Does all of this at reasonable cost.

**Improving System Performance:**

**The Challenge of Saving People Time**

Time is the single most critical variable for a transit system, for two primary reasons:

1. It is the factor that most contributes to whether or not the choice market would actually choose to use transit over driving and
2. It is the primary factor driving the cost of producing a transit trip.

It is not enough to measure the speed of a single transit trip (for example, from Escondido Transit Center to Broadway and Fifth Avenue in Downtown San Diego) when considering system speed, though obviously the faster the trip, the better. Rather, it is important to look at the door-to-door trip a person actually makes. If a resident of Escondido finds that the trip to their transit center either takes too long or is inconvenient, and that they must then face an equally long or tedious trek from where the transit leaves them off to where their job is actually located, then that resident is far less likely to use the transit, even if any single component of that trip is, by itself, fast.

There are several factors which make a transit trip faster:

1. **Routier make fewer stops.** Since every stop adds a time penalty, the fewer stops between an origin and a destination, the faster the trip.
2. **Routes avoid traffic.** Traffic-induced delays are a major cause of slowing down transit and eroding the reliability of transit schedules. If transit routes can avoid traffic-induced delays, they can be both faster and more reliable.
3. **Routing avoid signal delays.** Traffic signals are necessary to regulating traffic flows, but when they work against transit, they end up delaying potentially large numbers of passengers and adding to the costs of operating transit, costs which are ultimately borne by taxpayers.
4. **Routing board faster.** Transit services that rely on either level or near-level boarding through wide, multiple doors can move more people on and off a vehicle faster than otherwise would be possible. The use of off-board fare payment in which people purchase their fare from a machine at the station platform or by using some form of

K-39 Cont.

urban centers, Rapid Bus services along key arterial corridors, and in lower density communities, park-and-ride facilities;

Minimizes need to transfer – in many cases, access to key employment areas in key travel corridors can be accomplished through one-seat ride services, but given the region’s dispersed land use patterns, one-seat rides to all destinations is not feasible. In these cases, while transfers would be needed for many trips, the high service frequencies of 10 minutes or better throughout the day in the urban core areas and upgraded stations transit center facilities makes transfer connections easy and convenient;

Get Closer to Destinations – SANDAG works closely with local jurisdictions and developers to locate transit stations and facilities adjacent to key destinations to provide “front door access” to the degree possible;

Reasonable Cost – the 2050 RTP/SCS uses realistic cost assumptions for capital costs that includes all soft costs, assumptions about right of way and environmental mitigation costs, and realistic operating cost assumptions based on current MTS NCTD cost effective practices.

K-40

The 2050 RTP/SCS transit plan aims to improve transit travel times through a variety of measures: express trolley services that have limited stop service (in addition to the all-stop local trains) for passengers making longer distance trips; BRT commuter services that offer limited stop service in the peak commute period to key regional job centers (in addition to the all-stop BRT services); Rapid Bus services that provide limited stop service/use of transit priority measures along key arterial corridors for longer distance tripmaking (in addition to the all stop local bus services); consideration to off-board fare payment on BRT and Rapid Bus where appropriate; some one-seat ride services for high demand travel in key corridors, and high frequency services (10 minutes throughout the day) that make transfer connections easier and more convenient where transfers are needed.
Please see response K-40.

Designing the Customer Experience

There are many individual factors that go into creating a great customer experience. Central to all of them is end result: does a passenger, having made a transit trip, look back at their trip and say to themselves that they made the right choice using transit?

The following are just some of the dimensions of the customer experience that the FAST Plan has tried to anticipate in its specification of services and facilities.

The Station

The station is the primary point where the passenger interfaces with a rapid transit system, and is also among the most important elements for branding a system (see Figure 3.12).

FIGURE 3.12

San Diego County’s Community Transit’s Swift BRT line uses colorful stations, compatible with lighted station signage, to effectively brand the service and give it a corporate identity.

The FAST Plan
Stations are about more than branding, though; they need to provide adequate shelter from the elements as well as both the feeling and the reality of safety for the customer of the service (see Figures 3.13-14).

**FIGURE 3.13**
Platform shelter at Old Town Transit Station offers minimal protection from the elements, and heavy posts impede easy movement, with opportunities for the visually-impaired to hide.

**FIGURE 3.14**
Transit center in Springfield, Oregon (by Ewing), provides far more protection from the elements and fewer impediments to passenger movement, though shelter from the wind is still limited.

In addition to shelter from the elements, stations can be designed to offer passengers protection from moving vehicles. Market research has found this an especially important issue for mothers traveling with their children, but it has so far not been an element of
American station design, except in a few cases (Figure 3.15), international designs have been more advanced, featuring sliding gates (Figure 3.16) or sliding doors (Figure 3.17). In the case of a number of international cities, transit stations—particularly for Bus Rapid Transit (BRT)—feature modular, semi-enclosed stations, with vehicles docking level with the station much like most city metro systems (Figures 3.18-19).

**FIGURE 3.15**
The Emerald Express (EExX) BRT line in Eugene, Oregon, has decorative fencing to separate passengers from moving vehicles. Openings in the fencing are matched with the doors on the vehicle.

**FIGURE 3.16**
Sliding gates at BRT station in Xi’an, China.
FIGURE 3.17
"Tube" station in Cartagena, Colombia, features sliding glass doors triggered by the bus driver.

FIGURE 3.18
Station for Jahanpur's Raa Vaya BRT system is typical of advanced global transit systems.

FIGURE 3.19
Interior of BRT station in Johannesburg. Vehicles dock level with stations and passengers board through sliding glass doors.
VEHICLE BOARDING
The passenger/vehicle interface is another essential element of the customer experience. Vehicles with wide doors (Figure 3.20), and level or near-level boarding (Figure 3.21) make it easier and faster for passengers, especially those with baby carriages or bicycles or those in wheelchairs, to board.

![Vehicle Boarding Image](image)

**Figure 3.20**
Wide doors allow for passengers to enter and exit simultaneously.

**Figure 3.21**
Level boarding in Bay Area's TransMilena BRT system. The wide doors also facilitate large passenger flows.

VEHICLE INTERIORS
Market research among choice riders indicates a preference for interiors that are open and “uncumbered” (Figure 3.22).
Innovative bicycle racks (Figure 3.23) and “back-in” wheelchair stations allow passengers to ride safely without causing undue delay in operations.

These bicycle racks were developed especially for one city’s BRT service. They allow cyclists to safely lock in their bicycles without needing to lift them.

There are many other dimensions to the customer experience, but even this representative sampling should drive home the point: the customer experience of a transit system should not be based on the “same-old, same-old” approach to transit if the goal is to broaden the base of ridership. Rather, every element of a service must be tailored to generate value for the market. A clear and concise “theory of the customer” can prevent many of the mistakes that...
otherwise may be made when it comes to investing in San Diego's transportation future (Figure 3.25).

**FIGURE 3.18**

"Bucket" wheelchair station allows those in wheelchairs to securely position themselves without the requirement that drivers lift them in (though driver assistance is always available to those who need it), contributing to the independence of those who rely on wheelchairs.

**FIGURE 3.19**

Old Line BRT Station in Escondido. Narrowed shelter and pedestrian/bike conflicts contribute to the perception that the service provided here is not designed for the broader market.
4. FASTPlan: Elements

The FAST Plan is a proposal for a more fully integrated transit system for the San Diego region. The key to integration is to make the system easier to use for potential riders by simplifying the process of moving through the system so that people can more effortlessly get from their origin to their destination.

Just as computers can be thought of in terms of hardware and software, the FAST Plan includes proposals for physical infrastructure (the "hardware") as well as an innovative service plan (the "software") that takes advantage of that hardware to produce faster, more direct transit trips for potential users.

Services

The FAST Plan is distinguished by its emphasis on creating a regional network of integrated services that make it easier and faster to move by transit throughout the region. At the heart of the plan is the MetroXpress system: a network of regional express routes that operate partially on dedicated rights of way, partially on roads, that is designed to reduce the number of transfers as well as the travel time of many transit trips. Underlying the MetroXpress is an expansion of the San Diego Trolley network, with its "pears on a string" network concept (i.e., stations are spaced approximately a mile apart, and all vehicles stop at all stations along a route) using BRT (Bus Rapid Transit) vehicles operating nearly entirely within dedicated rights of way (which are shared with the MetroXpress network). Streetcar services are reintroduced to the region. Local bus routes still fill the gaps and reach into many neighborhoods, and the Coaster Commuter Train is maintained in the Plan. Finally, a new service, the Fun'n'Sun Line, is introduced; it is a special bus route, operating partly in dedicated right-of-way, that ties together the region's principal tourism sites.

Trolley Service

The San Diego Trolley has served as the region's transit backbone for many years. Trolley service—the standard image of "rapid transit," with widely-spaced stations arrayed along a trunk line—is extremely useful, but alone is not sufficiently rapid or direct to meet the "leapfrogging" nature of many trips within the region. The FAST Plan proposes a number of new Trolley services, but relies primarily on BRT (Bus Rapid Transit) vehicles operating in mostly exclusive right-of-way to produce this service. There are numerous good reasons for doing so, but primarily because a flexible bus-based infrastructure (both Quickway and T-Way) is more adaptable to the region's needs and able to support both MetroXpress as well as Trolley services.
Light Rail
The current San Diego Trolley plays an important role in the FAST Plan. Three major changes to the existing Trolley system are contemplated, though, in the Plan.

1. The Green Line is merged into the existing Blue Line, eliminating a transfer at Old Town. This change has long been dependent on the incorporation of new, low-floor trolley cars into the fleet, which is anticipated as well in the FAST Plan.

2. The Orange Line is re-routed at America Plaza away from the Bayside Alignment and instead directed north, through the Santa Fe Depot, to an anticipated new Airport Intermodal Terminal located in the vicinity of Washington Street.

3. The Bayside Alignment’s final disposition is not explicitly dictated in the FAST Plan. There are two options: have it be served by a revamped Coaster service, particularly if future regulatory changes permit some form of self-propelled light rail (DMR) to operate in the Coaster corridor; alternatively, the existing plan to operate an historic tramway on the alignment, together with other services, is an option.

BRT
BRT Trolley Lines are an essential part of the FAST Plan. They take advantage of the proposed regional Quickway network, along with other dedicated transit right-of-way, and hence help enhance the usefulness of such infrastructure. BRT Trolley Lines operate identically to LRT Trolley Lines: vehicles stop at all stations en route, board at all doors, and require off-board fare payment.

![FIGURE 4.1 Modern BRT vehicle](image)

METROXpress
The MetroXpress network is the regional express system. Many MetroXpress routes operate as local bus service in a particular neighborhood or community, then enter the regional Quickway network where they proceed with limited stops to a major destination zone. Compared to a traditional “trunk and feeder” network, MetroXpress is designed to reduce

The FAST Plan
the number of transfers and reduce travel times to principle destinations and employment zones. MetroXpress routes cross at a series of regional SuperStations, permitting easy transfers across the region. It is estimated that the MetroXpress network can reduce transit travel times by up to 60-70% compared to traditional transit trips, offering large numbers of the region’s residents a competitive alternative to driving and parking.

**Streetcar**
Modern streetcars are enjoying a renaissance in the US as cities are discovering their utility. Though superficially similar to light rail, streetcars tend to be narrower, much lighter, don’t achieve high speeds, and are cheaper to build and operate. The FAST Plan contains no specific recommendation as to streetcar technology (there are rubber-tired and steel-wheeled options) outside of support for proposals to restore historic streetcars along historically-appropriate corridors, where such vehicles are available.

**Commuter Rail**
The FAST Plan continues to rely on the Coaster Commuter Rail, but recommends that consideration be given to the conversion of the corridor to a more appropriate technology should regulatory frameworks become open to piloting such a proposal. Though the Coaster has proven popular with the middle-income market (among local transit services, only the Commuter Express buses on the I-15 corridor attract the bulk of their riders from this middle-income, auto-available market), its relatively high subsidy levels (especially when including “free” shuttle buses that are required to distribute workers to employment sites in the Sorrento Valley area) call into question the sustainability of current Coaster service, given all of the other demands on transit resources.

**Local Bus**
Local bus services are the workhorses of any city’s transit system. Local buses play an important role in the FAST Plan, but the development of so many parallel services, including the local component of MetroXpress routes and new Streetcar services means that many local services could be scaled back, giving residents faster, more frequent, and even cheaper access to their destinations.

**Fun’n’Sun Line**
The Fun’n’Sun Line is a tourism-focused line which connects many of the region’s tourist facilities. Though classed with the MetroXpress network, it relies on special stops in those areas where it operates off-infrastructure. These stops are envisioned to be more substantial than traditional bus stops, and feature information displays and enhanced lighting, seating, and security measures in order to satisfy the needs of visitors to our region.
RIGHT OF WAY INFRASTRUCTURE

Infrastructure is at the core of the FAST Plan. In addition to the traditional elements which go into transit, the FAST Plan calls for the development of an innovative network of Quickways - grade-separated Transways - based on their appropriateness for the region and on the substantial success that other cities have had with this kind of infrastructure.

LIGHT RAIL CORRIDORS

The FAST Plan anticipates extensions to the Sprinter light rail line in North County in order to better connect residents with the many employment opportunities along the Sprinter alignment.

QUICKWAYS

Quickways are at the heart of the FAST Plan. They are completely grade-separated Transways that allow vehicles to travel primarily non-stop. Stations are spaced at intervals appropriate to the area being served, and all stations feature passing lanes so that express vehicles can pass through without being unduly delayed by local services. In order to maintain grade separation, Quickways may rely on tunnel segments (either cut-and-cover or bored tunnel) and elevated or bridged segments, again depending on circumstances and context. Quickways are designed to support high-speed operation; with top speeds ranging from 50 to approximately 60 mph, depending on corridor circumstances (though speeds are generally reduced to 30-35 mph through stations when operating in passing lanes). In some circumstances, Quickways are built parallel to existing freeways; in other circumstances, Quickways may branch off an existing freeway.
Because of their expense, Quickways are mostly built where volumes of bus traffic warrant the investment.

**FIGURE 4.3**
Quickway tunnel segment in Brisbane.

**T-WAYS**
T-Ways are Transitways but do not feature grade separation. The Orange Line Busway in Los Angeles is a good example of a T-Way. While slower than Quickways, they are much cheaper to build, and can provide measurable benefits to a transit service, particularly where that transit would otherwise need to deal with road congestion. T-Ways may be built in a completely dedicated right-of-way or within an existing roadway; unlike transit lanes, though, they are usually separated physically from adjacent traffic (see Figure 4.5).

**FIGURE 4.5**
T-Way within major arterial, Richmond, British Columbia (Vancouver region). The two bus lanes are physically separated from adjacent car lanes, but is subject to street and pedestrian crossings.
Transit Priority Corridors

Transit Priority Corridors are those which incorporate a variety of measures to improve the speed and reliability of transit services. They may include the use of mild or aggressive Transit Signal Priority systems (traffic signals that can detect an approaching bus and adjust signal timing to increase the likelihood that the bus will have a green signal), transit-only lanes, business access and right turn (BART) transit lanes, and enhanced or improved transit shelters.

Streetcar Lines

Modern streetcar lines typically run within existing roads and feature overhead wires. Some systems rely on rubber-tired vehicles with a single track for vehicle guidance; others rely on various technologies for burying power wires so as to avoid visual clutter.

Figure 4.4

Streetcar infrastructure in Portland, as seen from streetcar

Stations

Stations are a critical part of the FAST Plan, and they form a considerable part of the budget for different transit projects.

Market research into transit markets in the US consistently demonstrates the importance of station design, yet in practice passenger facilities are often lacking in terms of basic design elements. For example, scant attention is paid to providing effective protection from the elements (even in San Diego, rain or cold winds occur throughout the winter, and strong sun can make waiting in mid-day a very unpleasant experience).
The Station Concept underlying the FAST Plan was inspired by Brisbane’s stations along its Quickway network. Brisbane planners saw their stations as their chief “branding” opportunity and attempted to create stations that provided effective protection to customers from the elements and that added to the customer experience (see Figures 4.6-7).
SuperStations
A select group of stations in the FAST Plan are termed SuperStations. These SuperStations serve not just Trolley routes but are also stopping points for all MetroXpress routes, essentially permitting easy transfer from one MetroXpress route to another. As in Brisbane, these transfers typically take place on the same platform, minimizing customer inconvenience and contributing to the perception of tight network integration.

Stations
Quickway stations in the FAST Plan are modeled and budgeted along the lines of SuperStations, only with shorter platforms due to the limited transferring and limited number of routes serving them. In the case of offline stations, the use of iconic and customer-centric stations is still recommended (Figure 4.8).
Figure 4.9
Brisbane's underground Busway stations separate passengers from the bus tunnel. Passengers board vehicles through sliding glass doors.

Figure 4.10
Passenger platforms in underground (subway) Busway station in Brisbane.
TOURIST STOPS

The Park’n’Can Line is a tourism-focused route supporting one of San Diego’s major industries. Outside of Quickway and T-Way stations, the FAST Plan recommends special stops, tailored to the needs of tourists, with enhanced informational and security provisions as well as enhanced shelter from the elements.

![Image of a bus stop]

While the design of this shelter stop in Colorado may not be appropriate for San Diego, the basic concept of an enhanced stop for the tourism-serving Park’n’Can line is highly recommended.

THE ROLE OF THE STATION

The attention paid to the role of stations is a distinguishing feature of the FAST Plan. Many of the transfers that would be required by transit patrons—from a BRT Trolley line to a MetroXpress route, or from one MetroXpress route to another, for example—now take place not only within the same station, but generally along the same platform. For customers, the process of transfers is simplified, made more convenient, and even seamless. In contrast, a transit network that depends on multiple Intermodal transfers where stop locations can feature widely varying degrees of amenity and shelter is less likely to appeal to the broader market.
5. **FAST Plan: Projects**

The FAST Plan includes a range of Rail and Quickway projects that together create a coherent and viable regional rapid transit system.

**Rail Projects**

The FAST Plan includes five major rail projects.

**Sprinter Extension**

Consistent with the 2050 RTP, a Sprinter extension south to the North County Fair Mall is recommended in the FAST Plan, as well, a branch extension east, essentially behaving as a modified streetcar, is further recommended so as to reach into that densely populated community.

![Figure 5.1](image)

**Central Streetcar System**

A network of five streetcar routes, connecting urban neighborhoods in the City's urban core, is recommended. In addition to serving localized movement, the proposed streetcar network will also extend access to regional Trolley and MetroXpress services.
A network of two streetcar lines is proposed for the Mission Bay communities of Mission Beach and Ocean Beach. The two lines together connect the principal shopping districts with the denser residential districts, the beaches, and the Quickway infrastructure, greatly enhancing the reach of rapid transit services.

**GOLDEN TRIANGLE / UCSD STREETCAR SYSTEM**

A streetcar line is proposed to take the place of the existing SuperLoop bus shuttle. It is expected to greatly extend the reach of the Quickway investments in the Golden Triangle and provide significantly faster travel times than the SuperLoop.

**LOSSAN UTC TUNNEL**

While a rail tunnel for the LOSSAN corridor has long been a component of the Regional Transportation Plan, the FAST Plan recommends that this tunnel be oriented along the Towne Centre Drive alignment, due to the ability to then serve a joint UTC Quickway/Train station. As it was considered desirable for all northbound MetroXpress and Trolley routes to serve this UTC SuperStation, a location as close to I-805 as possible was indicated in order to minimize out-of-direction travel.
QUICKWAY AND T-WAY PROJECTS

Quickway—grade-separated Transitways—and T-Ways—at-grade Transitways—are at the heart of the EAST Plan. Together, these allow the region to operate not merely a collection of express routes and a collection of Trolley routes, but instead a fully-integrated network of services that reach deep into communities and deliver people quickly and conveniently to multiple destinations.

THE URBAN SPINE

The Urban Spine is the core Quickway in the EAST Plan. Ridership projections show that it will be, by far, the busiest transit link in the entire system, moving tens and possibly hundreds of thousands of riders every day through the region.

South of Mission Valley, the Urban Spine operates much as a bus subway, within Mission Valley it is mostly elevated; north of Mission Valley, it relies on a combination of elevated, surface, and underground operations.

The Urban Spine direct links to the East County Quickway, the North Park Quickway, the Mid-County Jobs Loop, the Fairs Road T-Way, and the South Bay Quickway.
THE MID-COUNTY JOBS LOOP
The Mid County Jobs Loop provides direct access to the largest concentration of jobs in the County. Five BRT Trolley Lines and multiple MetroXpress routes use at least some portion of this project.

FIGURE 5.6
The Mid-County Jobs Loop

MID-COAST LINKS
The Mid-Coast Links are a set of subprojects that reach into the beach communities and link them with the rest of the region. They include a Mount Soledad tunnel to reach into the heart of La Jolla as well as infrastructure for the heart of Claremont. As a parallel project, a road tunnel, taking Rosecrans Street beneath Sports Arena Boulevard and Midway Drive, is recommended in order to free up surface space for a transit T-Way as well as a means of dealing with perennial congestion in this zone.
EAST COUNTY QUICKWAY

The East County Quickway, and its related projects, creates a pipeline for express services to/from East County. At its heart is an underground (west of Montezuma) Quickway beneath El Cajon Boulevard, projected to carry about the number of passengers as there are cars on the surface. A branch up to SDSU consolidates the linkage to that school and its Trolley Station, and MetroXpress services radically slash travel times between SDSU and Downtown.

SANDAG’s 2050 RTP contains the proposal for a light rail line connecting SDSU with Downtown along roughly the same alignment as much of the East County Quickway. Though such a proposal is not part of the FAST Plan, it is not an either/or option given the wide station spacing anticipated along the East County Quickway, a more tightly-spaced streetcar-like surface rail line may in fact provide a viable complement to the higher-speed, longer-distance services below, much as is anticipated in the Banker’s Hill zone.

Two other subcomponents of the East County Quickway project are the Lemon Grove T-Way, which includes a flyover on College Avenue over University Avenue and SR 54, and the North Park Quickway along University Avenue. Both of these subprojects significantly increase the travel speed of transit services flowing through them and provide the anchors for transit-oriented development.

The FAST Plan
Finally, the Centerline Project is an essential element of the East County Quickway, and in fact should be the first to be implemented. It provides a necessary north/south link, connecting the South Bay with job sites in the north, and Mid-City with job sites in the South Bay.

**SOUTHBAY LINKS**

The South Bay Links build on the success of the Blue Line of the San Diego Trolley to reach deeper into the South Bay and provide effective linkages across that zone and with other zones in the region.

Of special note is the Chula Vista Quickway and T-Way, a Transitway proposed for the 3rd Avenue corridor in Chula Vista. Ridership modeling shows tremendous potential of this zone to generate transit riders.

The Plaza Bonita SuperStation is a primary lynchpin of the South Bay Links, with services radiating into and out of it along the Quickway and surface networks.
NORTH COUNTY INFRASTRUCTURE

Within North County, various infrastructure projects are proposed. The primary north/south project is a dedicated Quickway along I-5 between Sorrento Mesa and Manchester Road, and then inner transit lanes along a grade-separated El Camino Real north to Palomar Airport Road.

This latter project is unusual in that the transit project is suggested as a component of a much more intensive road project, but there are important reasons to consider grade-separating the intersections of El Camino Real:

1. It would provide significant travel time savings to people in that corridor, more so than freeway expansion by itself;

2. It frees up the lane capacity to dedicate toward transit;

3. It would improve travel times not merely along El Camino Real, but also along intersecting roads.

4. It would almost double the carrying capacity of El Camino Real, all while shortening travel times along the road.
In addition to the El Camino Real Expressway, a similar treatment is recommended for Palomar Airport Road between I-5 and San Marcos.
**I-15 PROJECTS**

Several small but significant projects are recommended for the I-15 corridor. Particularly in the area of Carmel Mountain Ranch, two flyovers are specified which can help support a more effective zonal movement system.

These projects are specific in much greater detail in the companion FAST Plan Alignment Study.
6. FAST Plan: Routes

The FAST Plan is built around several different kinds of routes, all of which work together to create a seamless transit system as is possible for as dispersed a region as is San Diego. These include Trolley routes (including the Sprinter), a new MetroXpress network, "Go Shuttles," the Park'n'Ride line, local bus services, and the Coaster rail.

SAN DIEGO TROLLEY

The existing San Diego Trolley is a core element of the FAST Plan. To the existing rail-based Trolley are added a number of new routes using BRT vehicles operating mostly within dedicated infrastructure, much of it grade-separated. Trolley routes are characterized by all-stops service and station spacing typically ranging from ¼ to 1 mile apart (though wide variance is possible, depending on the corridor).

Naming Convention

Following existing practices, Trolley routes are named using colors. Trolley routes all share a common user interface and map, regardless of underlying mode (see Figure 6.1).  

---

4 This is the approach taken in Boston; the famous T combines three different heavy rail modes, two different light rail modes, commuter rail, and both surface and underground BRT into a common system map.
BLUE LINE
The Blue Line is today’s existing Blue Line Trolley combined with today’s existing Green Line. It connects the border with Santee via Downtown and Mission Valley. It is projected to carry over 55,000 daily passengers using 2006 trip tables.

ORANGE LINE
The Orange Line is today’s existing Orange Line, only rerouted away from the Bayride alignment so that it can serve the proposed new Airport Intermodal Terminal. It is projected to carry nearly 23,000 daily passengers using 2006 trip tables.

RED LINE
The Red Line is a new BRT Trolley route that connects Downtown with Escondido via Kearny Mesa. It is projected to carry nearly 15,000 daily passengers using 2006 trip tables.

GREEN LINE
The Green Line is a new BRT Trolley route that also connects Downtown with Escondido, but via Mira Mesa, the Golden Triangle, and the Mid-Coast alignment. It is projected to carry over 35,000 daily passengers using 2006 trip tables.

PURPLE LINE
The Purple Line is a new BRT Trolley route that connects the Otay Mesa border with Campus Point Drive in the Golden Triangle via Mid-City and Kearny Mesa. It is projected to carry over 24,000 daily passengers using 2006 trip tables.

SKY LINE
The Sky Line is a new BRT Trolley route that appropriately connects the new Airport Intermodal Terminal with San Diego State University via Hillcrest and Mid-City. It is projected to carry over 11,000 daily passengers using 2006 trip tables.

TAN LINE
The Tan Line is a new BRT Trolley route that links UCSD with Carlsbad via I-5 and El Camino Real. It is expected to carry nearly 10,000 daily passengers using 2006 trip tables.

VIOLET LINE
The Violet Line is a new BRT Trolley route that links La Mesa with the San Ysidro border via Mid-City San Diego, Downtown, and the heart of the South Bay cities of National City and Chula Vista. It is projected to carry nearly 70,000 daily passengers using 2006 trip tables, making it potentially the busiest of all Trolley lines in the system.

OLIVE LINE
The Olive Line is the shortest of the new BRT Trolley routes, connecting coastal Carlsbad with San Marcos via the Palomar Airport Road alignment. It is projected to carry over 4,000 daily passengers using 2006 trip tables.
Along with Sprinter service, all Trolley routes are expected to carry nearly 275,000 passengers a day using 2008 trip tables, a more than doubling of existing Trolley ridership.

**FIGURE 6.2**
Schematic of Trolley lines in the FAST Plan, along with additional core infrastructure.
<table>
<thead>
<tr>
<th>Mode</th>
<th>Trolley Line</th>
<th>Weekday Ridership</th>
</tr>
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<tr>
<td>BRT</td>
<td>Gold</td>
<td>10,522</td>
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<td>DMU</td>
<td>Sprinter</td>
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<td>BRT</td>
<td>Tan</td>
<td>9,862</td>
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<tr>
<td>BRT</td>
<td>Violet</td>
<td>9,862</td>
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<tr>
<td></td>
<td>Total Trolley Ridership</td>
<td>274,285</td>
</tr>
</tbody>
</table>

**Figure 6.3**  
Projected ridership by Trolley Line

**MetroXpress**

The 2050 Regional Transportation Plan contains proposals for a large number of express bus routes operating on freeway Managed Lanes but then relying on local roads to serve key destinations; it would also rely on feeder services at both the origin and destination ends of trips to connect many passengers. The FAST Plan moves in a slightly different direction by creating a regional express network, the MetroXpress, which relies primarily on a dedicated Quickway infrastructure and an innovative network plan so that more people have a one-seat ride to their destinations, transfers are minimized and improved, and travel across the region—not merely to a few destinations—is made competitive with driving, especially at peak commuting hours.

**Naming Convention**

MetroXpress routes are grouped by the primary destination they serve. Most MetroXpress routes are identified first by a letter representing the destination and then by a number (usually, a multiple of 10). As an example, all M routes serve the Mira Mesa SuperStation. These include the M10, the M20, the M30, etc. The use of mnemonic letter helps transit riders “remember” routes or quickly identify if a route serves their trip needs.

**A and Z Routes: Airport Express**

The San Diego International Airport connects San Diegans with everywhere in the world, from A to Z. Hence, Airport Express routes are lettered with either A (routes traveling north of the Airport) or Z (routes traveling south). Three A routes are anticipated. One connects
major employment sites in Sorrento Mesa, UTC, and Kearny Mesa with the airport; one connects Escondido and the I-15 corridor with the airport; the final one connects Palomar Airport and key North County stations with the airport. Other zones served by one of more of these routes include Mission Valley (including Hotel Circles North and South), Hillcrest, and University City. Daily ridership on these three routes was projected at over 24,000 using 2006 trip tables.

Two Z routes are contemplated. One connects downtown Chula Vista and National City with the airport; the other connects a proposed cross-border terminal for the Abelardo Rodríguez International Airport in Tijuana with Lindbergh Field via Otay Ranch, Bonita, and National City. Over 4,000 daily riders were projected using 2006 trip tables; as a high growth area, future ridership could be expected to improve significantly.

The FAST Plan anticipates a new Intermodal terminal on the east side of Lindbergh Field, which would be served by all LRT Trolley lines, the Coaster Rail, the Sky Line BRT Trolley, and MetroXpress routes A and Z. This Intermodal center is anticipated in SANDAG’s 2050 RTP and is budgeted there apart from transit right guideway projects.

B ROUTES: BONITA EXPRESS
The Bonita Express links various locales with the Plaza Bonita SuperStation. Three full-time routes and one seasonal route (serving the Otay River Valley recreation centers). Nearly 7,000 trips were projected using 2006 trip tables.

C ROUTES: CHULA VISTA EXPRESS
Chula Vista Express routes all serve the City of Chula Vista, but not necessarily any single station within Chula Vista. Four routes are anticipated, serving, using 2006 trip tables, over 19,000 daily trips.

F AND E ROUTES: SANTA FE EXPRESS
F and E Express routes (F+E = Fe) serve the Santa Fe Depot downtown from the north and south respectively. Together, the six F and four E routes were projected to move over 52,000 daily passengers using 2006 trip tables.

J ROUTE: LA JOLLA/CORONADO EXPRESS
The single J route, along with the Fair ‘n’ Sun line, is oriented primarily at supporting San Diego’s major tourism industry, though both routes will also be of great value for residents. Daily ridership is projected at over 5,300 using 2006 trip tables.

K ROUTES: KEARNY MESA EXPRESS
Kearny Mesa Express Routes are more oriented to connecting disparate parts of Kearny Mesa into the express network than they are about reaching across the region, but Kearny Mesa’s Quickway stations are well served by many other routes criss-crossing the region. Five K routes, serving over 7,400 daily passengers, are projected using 2006 trip tables.
I ROUTES: LINDA VISTA/MORENA EXPRESS
Linda Vista/Morena Express routes all serve the Linda Vista/Morena SuperStation, a below-grade Quickway station linked to the existing nearby LRT Trolley station. The three proposed L routes are expected to carry over 6,200 daily passengers using 2006 trip tables.

M ROUTES: MIRA MESA EXPRESS
Mira Mesa Express routes all serve the Mira Mesa SuperStation, connecting that station with the surrounding area in a seamless fashion. The six routes are projected to carry over 8,400 daily passengers using 2006 trip tables. The Mira Mesa SuperStation is also proposed for three “horizontal elevators” linking it with its surrounding area, extending the useful range of the station and removing more traffic from this highly-demanded zone.

O ROUTES: OCEANSIDE EXPRESS
Oceanside Express routes all serve the new San Luis Rey Transit Center in the northern portion of the City of Oceanside. The two routes are projected to carry over 11,000 daily passengers using 2006 trip tables.

P ROUTES: POINSETTIA EXPRESS
Poinsettia Express routes serve the Poinsettia Coaster Station in Carlsbad, which though today is not among the Coaster’s heaviest-use stations, becomes an important SuperStation in the FAST Plan. The four routes are projected to carry over 14,000 daily passengers using 2006 trip tables.

R ROUTES: RANCHO BERNARDO EXPRESS
Rancho Bernardo Express routes tie the Rancho Bernardo I-15 station to major employment and residential sites in that zone. As much of the growth in this zone may not be reflected in the 2006 trip tables that were used for ridership projections, it can be expected that future ridership numbers would grow disproportionately to other routes. The five R routes nonetheless generated over 5,000 daily trips using 2006 trip tables.

S ROUTES: SDSU EXPRESS
SDSU Express routes all serve the SDSU SuperStation. The four routes were projected to serve over 19,000 daily passengers using 2006 trip tables.

T ROUTES: TECHNOLOGY EXPRESS
Technology Express routes all serve the Tech Center SuperStation in Sorrento Mesa, at the heart of the region’s technology clusters. The three routes generated about 3,000 daily trips using 2006 trip tables; further intensification of this zone could result in significant ridership gains over time.

U ROUTES: UTC EXPRESS
UTC Express routes are among the most important in the system, connecting as they do the far corners of the region with the hub of its most important job and educational sector. Nine U routes are anticipated, with combined ridership exceeding 52,000 daily trips using 2006 trip tables.

**V Routes: Fashion Valley Express**
Fashion Valley Express routes connect neighborhoods and destinations with the Fashion Valley SuperStation, arguably among the top five such stations in the FAST Plan network. The six V routes are projected to carry over 15,000 daily riders using 2006 trip tables. An additional shuttle route is also proposed, linking this station with the northeast quadrant of the intersection of Freeways 80/805, and with the southeast quadrant of this intersection as well.

**W Routes: Flower Fields Express**
Flower Fields Express routes closely complement Poinsettia Express Routes, and it is possible that future refinement of the FAST Plan might combine these into a single collection of routes. Four routes, moving over 4,600 daily passengers using 2006 trip tables, are anticipated. Among these are shuttle routes serving Legoland and the Carlsbad Outlet Center. The Legoland station and route in particular represent a significant ridership opportunity if developed sensitively.

**X Routes: Extra Express**
Extra Express routes target single stations with single express routes that otherwise don’t fit into the express naming nomenclature. Two such routes (one serving the Escondido Transit Center and the other the Santee Transit Center) are anticipated. They are expected to carry 4,300 daily riders using 2006 trip tables.

**Y Routes: San Ysidro Express**
San Ysidro Express routes serve the border crossing at San Ysidro. Two regular routes and one seasonal (serving the Otay River Valley recreational zone) are anticipated. The two regular routes are projected to serve over 5,600 daily riders using 2006 trip tables.

**Fun’n’Sun Line: Tourist Line**
Though not a true express line, the Fun’n’Sun Line makes use of proposed Quickway and T-Way infrastructure, as well as specially-designed shelters, to connect many of San Diego’s principal tourist destinations with more of the region’s hotel rooms and multimodal transportation centers. It functions together with the La Jolla/Coronado Express to serve the needs of the tourism industry and enhance visitors’ experience of San Diego.

The Fun’n’Sun Line connects the Cabrillo National Monument (and Fort Rosecrans National Cemetery) with Loma Portal, Shelter Island, America’s Cup Harbor, Liberty Station, Harbor Island and the western terminals of San Diego International Airport, the County Center, The Maritime Museum, the Cruise Ship and Santa Fe Depots, the Midway...
Carrier Museum, Tuna Harbor, Seaport Village, the Convention Center, the Gaslamp Quarter, Petco Park, Horton Plaza, Broadway, the San Diego Civic Center and Symphony Hall, Balboa Park, Hillcrest Center, Hotel Circle North and South, Fashion Valley, Old Town, the Sports Arena, SeaWorld, Quivera Basin, Belmont Park, Mission Beach, Pacific Beach, Bird Rock, downtown La Jolla, La Jolla Shores, the Scripps Institution of Oceanography, the Birch Aquarium, the Mandell Weiss Theatre complex, UCSD campus, and the UTC area.

The Fun'n'Sun line was projected to serve over 11,000 daily trips using 2006 trip tables. It was unclear as to whether those tables capture tourism ridership; if not, actual ridership could be expected to be significantly higher.

<table>
<thead>
<tr>
<th>MetroXpress Line</th>
<th>Weekday Ridership</th>
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</thead>
<tbody>
<tr>
<td>G 8 Shuttles</td>
<td>1,166</td>
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<tr>
<td>A Airport North Express</td>
<td>24,417</td>
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<tr>
<td>B Bonita Express</td>
<td>6,942</td>
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<tr>
<td>C Chula Vista Express</td>
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<tr>
<td>E Santa Fe South Express</td>
<td>20,462</td>
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<tr>
<td>F Santa Fe North Express</td>
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<td>FrS Fun'n'Sun Line</td>
<td>11,116</td>
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<tr>
<td>J La Jolla/Coronado Express</td>
<td>5,375</td>
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<td>K Kearny Mesa Express</td>
<td>7,415</td>
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<tr>
<td>L Linda Vista Express</td>
<td>6,210</td>
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<tr>
<td>M Mira Mesa Express</td>
<td>8,422</td>
</tr>
<tr>
<td>N Navy Express</td>
<td>4,865</td>
</tr>
<tr>
<td>O Oceanside Express</td>
<td>11,110</td>
</tr>
<tr>
<td>P Palomar Express</td>
<td>14,267</td>
</tr>
<tr>
<td>R Rancho Bernardo Express</td>
<td>5,148</td>
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<tr>
<td>S SDSU Express</td>
<td>19,093</td>
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<tr>
<td>T Technology Express</td>
<td>2,985</td>
</tr>
<tr>
<td>U UTC Express</td>
<td>52,436</td>
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<tr>
<td>V Fashion Valley Express</td>
<td>14,833</td>
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<tr>
<td>W Ponder Point Express</td>
<td>4,617</td>
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<tr>
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<td>Y San Ysidro Express</td>
<td>5,834</td>
</tr>
<tr>
<td>Z Airport South Express</td>
<td>4,092</td>
</tr>
</tbody>
</table>

Total MetroXpress Ridership: 285,596

FIGURE 64
Projected ridership for MetroXpress routes using 2006 trip tables
@ SHUTTLES

"@ Shuttles" ("At Shuttles") are a part of the MetroXpress network. Unlike other MetroXpress routes, @ Shuttles generally make point-to-point connections only (though occasionally may make one or two interstitial stops at key nodes). They tie major destinations on corridors with a SuperStation on the system.

@ Shuttles are proposed to connect several community colleges (Mesa, Cuyamaca, and Grossmont) with nearby SuperStations, as well as connecting the Kensington neighborhood with the Centerline SuperStation.

COASTER

Though the Coaster remains in the FAST Plan, its generally poor performance on most measures (ridership and cost) lead us to suggest that this service be reevaluated in light of the rest of the FAST Plan. At the very least, serious consideration should be given to whether or not it might make economic sense to shift from traditional commuter rail to some form of DMU (self-propelled light rail) service.

DMU service on an active freight and passenger corridor is not something which can be undertaken lightly. Sprinter DMU cars, for example, are considered “non-FRA compliant,” meaning they may not be used on rail lines where they might conceivably need to share the tracks with other vehicles.

There are two possibilities which can be pursued.

1. FRA-compliant DMU cars are finally being introduced into the U.S (see Figure 6.5 for an example). Though heavier and costlier than lighter Sprinter-like vehicles, they represent a new option that should be explored.

![Figure 6.5](image)
2. Given that "Positive Train Control," a set of technologies intended to significantly reduce the possibilities of collisions, is planned for the LOSAN rail corridor, it might be worth exploring with the FRA whether some form of pilot program could be undertaken to assess the safety of using non-compliant vehicles on corridors so equipped. In the case that this is not a possibility, there is still the first option to consider, as well as the option of phasing out the Coaster should costs prove out of line with benefits.

**Streetcars**

Streetcar lines form an integral part of the FAST Plan. They are appropriate in dense communities where trip patterns favor short trips throughout the day, and where parking options are limited relative to demand.

Streetcar lines are proposed for three different zones in the Metro area: Central, Pacific Beach, and the Golden Triangle. The FAST Plan does not rule out the possibilities for streetcar or shuttle routes in other zones, nor does the FAST Plan dictate any particular streetcar technology.

![Streetcar](image)

**Figure 6.6**
Portland Streetcar

Streetcar headways generally range from 3 minutes to 15 minutes, depending on route and time of day.

**Naming Convention**

Streetcar lines in the FAST Plan have been named either for a corridor they travel on or a neighborhood they serve.

**Market St/Broadway Line**

This streetcar line forms a loop connecting Downtown with Golden Hill and Sherman Heights. It runs on both Broadway and Market Street, Downtown’s two principal east/west streets.
PARK BOULEVARD LINE
The Park Boulevard Line is envisioned as an "L" shaped, linking Cortez Hill with Little Italy and the waterfront (Embarcadero) before proceeding down Broadway to Park Boulevard, passing through Balboa Park and terminating in University Heights. A major portion of this route follows the original alignment of the historic streetcar line between the Santa Fe Depot and Balboa Park; it would be a strong candidate for historic treatment as a result.

NORTH PARK LINE
The North Park Line connects the Santa Fe Depot with Normal Heights via Golden Hill, South Park, and North Park, following the old 30th Street alignment of the original streetcar line.

HILLCREST LINE
The Hillcrest Line connects the Gaslamp/Convention Center SuperStation with Hillcrest via the Gaslamp Quarter and Park West. It essentially parallels the Urban Spine Quickway, filling in local stops along this dense route.

LAUREL STREET LINE
The Laurel Street Line is the shortest of the streetcar lines, linking the Laurel SuperStation with the Plaza de Panama in Balboa Park.

Combined ridership on the five Central lines was expected to exceed 80,000 trips a day using 2006 trip tables. It is also worth pointing out that the Move San Diego ridership model was not able to assess ridership on the Laurel Street Line due to the structure of the trip tables used, so additional ridership could likely be expected.

TOURMALINE LINE
Two streetcar lines are proposed for Pacific Beach. The Tourmaline Line connects the proposed Turquoise Station with the PB Central Station via Garnet Avenue, then connects down Crown Point.

MISSION BEACH LINE
The Mission Beach Line connects the central PB shopping district on Garnet Avenue east of Ingraham Street with lower Garnet Avenue and the Mission Beach peninsula, terminating at South Mission Beach.

Ridership on the two PB lines was projected to be relatively modest at 2,600 daily trips, but seasonal, tourist, and special events ridership would be expected to be higher.

UCSD LINE
The UCSD Line replaces the existing SuperLoop bus route in the UTC/UCSD area. It runs partially through the proposed UTC/UCSD Quickway to connect to the UTC SuperStation, does a unidirectional (clockwise) loop by Judicia and Towne Center Drive, then connects...
residentially dense areas of the Golden Triangle with the Nobel shopping district and then the UCSD campus, extending service to the west side of campus and terminating across Torrey Pines Road north of the glider port. Over 15,000 daily riders are projected using 2006 trip tables.

**Towne Center Line**

Though proposed as a line, the Towne Center Line was not modeled as part of the FAST Plan analysis. It is recommended for further study.

All told, streetcar ridership on the eight proposed lines is projected to near 100,000 daily trips.

<table>
<thead>
<tr>
<th>Streetcar Zone</th>
<th>Weekday Ridership</th>
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<tbody>
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<tr>
<td>P9 Streetcars</td>
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<tr>
<td>UTC Streetcar</td>
<td>15,029</td>
</tr>
<tr>
<td><strong>Total Streetcar Ridership</strong></td>
<td><strong>97,852</strong></td>
</tr>
</tbody>
</table>

**FIGURE 6.7**

Projected Streetcar Ridership

**LOCAL BUS ROUTES**

The combination of MetroXpress and streetcar services in the FAST Plan means that many existing local bus routes can be scaled back or eliminated entirely (Figure). This allows for the significant repurposing of resources to faster, better connected services.
| Local Bus Routes (MTS, NCTD, and MTS Contract) Replaced in the FAST Plan |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2  | 105  | 210  | 301  | 444  | 709  | 810  | 901  |           |           |            |
| 7  | 115  |           | 309  | 445  | 712  | 815  | 904  |           |           |            |
| 8  | 120  |           | 310  | 820  | 923  |           |           |            |            |            |
| 9  | 150  |           | 320  | 850  | 936  |           |           |            |            |            |
| 10 |           |           | 322  | 851  | 960  |           |           |            |            |            |
| 11 |           |           | 325  | 854  | 962  |           |           |            |            |            |
| 13 |           |           | 332  | 855  | 966  |           |           |            |            |            |
| 15 |           |           | 344  | 856  | 971  |           |           |            |            |            |
| 18 |           |           | 347  | 860  | 972  |           |           |            |            |            |
| 20 |           |           |       | 970  | 973  |           |           |            |            |            |
| 25 |           |           |       | 878  | 974  |           |           |            |            |            |
| 27 |           |           |       |       | 975  |           |           |            |            |            |
| 28 |           |           |       |       | 976  |           |           |            |            |            |
| 30 |           |           |       |       | 977  |           |           |            |            |            |
| 31 |           |           |       |       | 978  |           |           |            |            |            |
| 35 |           |           |       |       | 992  |           |           |            |            |            |
| 44 |           |           |       |       |       |           |           |            |            |            |
| 48 |           |           |       |       |       |           |           |            |            |            |
| 49 |           |           |       |       |       |           |           |            |            |            |
| 50 |           |           |       |       |       |           |           |            |            |            |
| 89 |           |           |       |       |       |           |           |            |            |            |

**FIGURE 68**
Local bus routes discontinued in the FAST Plan

K-43
Cont.
7. The FAST Plan by Zone

The FAST Plan represents an integrated network approach to transit planning. Care was taken to ensure that individual neighborhoods and communities would be effectively connected to principal employment, recreational, commercial, and educational destinations throughout the metropolitan area.

South Bay

FIGURE 7.1

South Bay components of FAST Plan. Dashed lines represent Trolley service (LRJ or BRJ) and/or transit guideways; blue lines show regular bus components of MetroXpress routes; red lines show proposed arterial routes.
FIGURE 7.2

South Bay service plans, showing Trolley routes (BRT and LRT) in thick lines, MetroXpress routes in express operation in thin lines, and MetroXpress routes in local mode in medium lines.

FIGURE 7.3

The Central component of the FAST Plan, showing routes and infrastructure in the urban core. Dashed lines represent Trolley service (LRT or BRT) and/or transit guideways; blue lines show off-guideway components of MetroXpress routes; red lines show proposed stimulus routes.

THE URBAN CORE

K-43
Cont.
FIGURE 7.4
Service plan for Downtown

FIGURE 7.5
FAST Plan service map for Mid-City and portions of Mission Valley, Downtown, and East County. Services are tightly integrated; local and express services share a common infrastructure.
FIGURE 7.4
FAST Plan service map for Point Loma

FIGURE 7.7
The East County component of the FAST Plan, showing routes and infrastructure. Dashed lines represent Trolley service (ART or BRT) and/or transit guideways; blue lines show off-gateway components of MetroXpress routes. The heavy pink line indicates new transit guideways.
FIGURE 7.8
FAST Plan service map for East County
FIGURE 7.9
The Mission Bay component of the FAST Plan, showing routes and infrastructure. Heavy pink lines represent new transit guideways; dashed blue lines show off-guideway components of Metro/Nypro routes; dashed red lines show existing bus lines. The thin black line is the Coaster rail corridor.

FIGURE 7.10
FAST Plan service map for Mission Bay and La Jolla
FIGURE 7.11
The Miramar Bay component of the FAST Plan, showing modes and infrastructure. Heavy pink lines represent new transit guideways; dashed blue lines show off-guideway components of MetromTrolley; dashed red lines show streetcar lines.

FIGURE 7.12
FAST Plan corridor map for the Coaster Golden Triangle and Kearny Mesa.
1-15 Corridor
FIGURE 7.13
Service plan for the I-15 corridor
FIGURE 7.14
Lower North County component of FAST Plan. Dashed lines represent Trolley service (DMU or BRT) and/or transit guideways; blue lines show off guidance components of MetroSprint routes.

FIGURE 7.15
Upper North County component of FAST Plan. Dashed lines represent Trolley service (DMU or BRT) and/or transit guideways; blue lines show off guidance components of MetroSprint routes.

The FAST Plan
FIGURE 7.17
Service plan for North County Inland route
8. Measuring the Impact of the FAST Plan

MATCH TO POPULATION

A central goal of the FAST Plan was to better match rapid transit to urban form. As the maps below indicate (Figures 8.1 and 8.2), core infrastructure (which includes both LRT and BRT Trolley lines and additional dedicated transit infrastructure serving MetroXpress routes) is well located to serve the bulk of population density in the core of the region, and MetroXpress services, which use this infrastructure but then branch out onto local roads and arterials, then cover much of the remaining zones of population density. In short, many more residents of the region will have walking or near-driving access to rapid transit services.

FIGURE 8.1
Match of VAS Plan rapid transit services to existing population density in the South Bay

K-44

The 2050 RTP/SCS transit plan will have high percentages of various population groups within ½ mile walk access to mix of expanded and new local bus, Rapid Bus, BRT, and rail services (Table 4-5 of the 2050 RTP/SCS), especially within the Urban Core Area.
Ridership projections for the FAST Plan were made using a 2006 dataset provided by the San Diego Association of Governments (SANDAG) showing projected trips among the many thousand TAZs (Transportation Analysis Zones) in the region by trip purpose (e.g., home-to-work, home-to-school, etc.). It is important, when comparing these results to projections for the 2050 RTP (Regional Transportation Plan), to understand that the 2050 RTP will base ridership projections on a region expected to have over a million additional residents and significant development around planned transit stations (from the 2050 RTP transit component).

As a baseline, we were able to tabulate average weekday transit ridership for FY 2008, which is slightly higher than ridership in 2006 but still a good point of comparison (Figure 8.3).

Move San Diego had attempted to obtain a copy of SANDAG’s Regional Travel Model so as to perform ridership projections using the same set of assumptions as was used in the 2050 RTP. SANDAG was unwilling to share the model during the timeframe of the current study, so Move San Diego contracted with Smart Mobility, Inc., a respected modeling firm based in Vermont, to develop a sketch model that would fairly project the scale of ridership impacts the FAST Plan could have in the region.

K-45

Without a detailed review of the Move San Diego model, SANDAG cannot fully respond to this comment. Presumably the Move San Diego model is based on the SANDAG travel demand model, but it is impossible to derive from model outputs what input variables or networks may have changed. SANDAG would need to verify the empirical evidence of any model adjustment. As a point of reference, the SANDAG travel models undergo an extensive peer review process to validate assumptions (e.g., ARB SCS Methodology Review, 2005 FHWA TMIP Peer Review). Please see the Informational Report on the San Diego Association of Governments’ Draft SB 375 Sustainable Communities Strategy, California Environmental Protection Agency, Air Resources Board, September 13, 2011 as an example of this process. Any changes that might have been made for the Fast Plan would not have gone through the same peer review process. SANDAG would also have to compare service frequency and fare assumptions (it appears that there are significant differences), and would need to understand the underlying highway network that was used. By way of comparison, Fast Plan Figure 8.4 indicates projected daily highway network ridership is 789,000. The 2050 RTP/SCS daily boardings ridership figure (when the full transit improvements have been implemented) is 851,000.
<table>
<thead>
<tr>
<th>Mode</th>
<th>Weekday Ridership</th>
<th>% of Daily Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coaster Commuter Rail</td>
<td>6,488</td>
<td>1.9%</td>
</tr>
<tr>
<td>Trolley (LRT)</td>
<td>116,213</td>
<td>33.7%</td>
</tr>
<tr>
<td>Local Bus (MTS &amp; NCTD)</td>
<td>214,783</td>
<td>62.2%</td>
</tr>
<tr>
<td>Premium Express Bus</td>
<td>1,232</td>
<td>0.4%</td>
</tr>
<tr>
<td>Sprinter (LRT)</td>
<td>8,580</td>
<td>1.0%</td>
</tr>
<tr>
<td><strong>Total Transit Ridership</strong></td>
<td><strong>345,275</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**FIGURE 8.3**  
FY 2008 transit ridership in San Diego County, by mode  
(source: SANDAG Passenger Counting Data)

There are a number of important caveats to take into account when considering the outputs of this sketch model.

- As stated previously, since the model relied on 2006 data, it would not capture likely new ridership coming from further development within the existing urbanized region.

- It still relies on household income level as the means of splitting the potential market for transit services. More sophisticated models rely on a combination of attitudinal and behavioral factors to more accurately gauge market response to a set of transit improvements. In general, these models are more sensitive to specific design factors (such as quality of station design, traffic-induced delay as opposed to general travel time, etc.) that can, if built into the transit service, significantly increase ridership beyond numbers expected from standard models.

- At a fine-grain (route) level, the model will be less accurate than at the macro (network) level.

- The model used was not particularly sensitive to wait time, which in the case of the FAST Plan was more likely to result in under-projections, rather than over-projections, of ridership, given the relatively high base frequencies for many routes.

Different model runs for the FAST Plan were run, testing different assumptions about route frequency and fares. In general, base headways for Trolley routes, LRT or BRT, were established at 7.5 minutes peak, and 15 minute off-peak; these were then adjusted based on projected demand, with many routes bumped up to 10 minutes off-peak. Base headways for MetroXpress routes were set at 10 minutes peak and 20 minutes off-peak then adjusted as well, final headways ranged from 5 to 30 minutes peak and 10 to 60 minutes off-peak.
Coaster headways were set at 30 minutes peak and 40 minutes off-peak, though ridership remained weak under all scenarios, due to the implementation of other, more competitive services in North County. Sprinter headways were set at 15 minutes peak and 20 minutes off-peak, though since each rail branch of the Sprinter was served by two routes, it meant that effective headways were 7.5 minutes peak and 10 minutes off-peak. Streetcar headways were first established as 5 minutes peak and off-peak, then adjusted based on observed demand, with final headways ranging from 3 to 10 minutes peak and 5 to 15 minutes off-peak. Local bus routes were paired down in cases where MetroXpress or Streetcar services now served those corridors; remaining routes were maintained at existing headways, then adjusted based on projected ridership.

Fares for modeling purposes were set at $2.00 for Trolley (LRT and BRT), Sprinter, and MetroXpress services; $2.50 for local bus; $1.00 for Streetcar; and $3.00 for Coaster. In practice, we would recommend that, along with Smart Card integration, fares be priced based on a particular trip, with longer trips paying a higher fare than shorter trips. The fares we chose were only for modeling purposes.

Under the final adjusted scenario, in 2006, had the FAST Plan been in operation, we estimate that total transit ridership would have nearly reached 800,000 weekday trips (789,614), or approximately 229% of observed ridership in 2008, a gain of 129% or nearly 440,000 new transit trips.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Weekly Ridership</th>
<th>% of Daily Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coaster Commuter Rail</td>
<td>4,149</td>
<td>1%</td>
</tr>
<tr>
<td>Trolley (LRT)</td>
<td>77,996</td>
<td>10%</td>
</tr>
<tr>
<td>Local Bus (MTS &amp; NCTD)</td>
<td>127,648</td>
<td>16%</td>
</tr>
<tr>
<td>Trolley (BRT)</td>
<td>179,718</td>
<td>22%</td>
</tr>
<tr>
<td>Streetcar</td>
<td>97,936</td>
<td>12%</td>
</tr>
<tr>
<td>MetroXpress</td>
<td>288,596</td>
<td>38%</td>
</tr>
<tr>
<td>Sprinter (LRT)</td>
<td>16,571</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total Transit Ridership</strong></td>
<td><strong>789,614</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**FIGURE 8.4**
2006 Projected Ridership for FAST Plan (i.e., ridership projection using 2006 dataset)

When specific services are compared, the results are even more impressive. New BRT services—BRT Trolley and MetroXpress—are projected to carry 460,000 riders alone, far more than ride all transit services together in 2008. Coaster ridership declines, due to the availability of faster/better options for travel in that corridor (calling into question the necessity of maintaining commuter rail service in the LOSSAN corridor); likewise, some ridership is shifted off the existing LRT Trolley and onto other services, projected ridership declining from approximately 116,000 to about 78,000. Local bus services—which are
notably inefficient—see ridership dropping nearly in half, from 215,000 to about 128,000, commensurate with the reduction in local service made possible by the FAST Plan. New Streetcar services account for nearly 100,000 new transit trips, and improvements to the Sprinter account for an increase in ridership from 6,560 in 2008 to 16,571 in the FAST Plan.

Since the FAST Plan’s service (route) plan involves several routes operating through the same right of way, corridor flows are a better measure of projected activity than specific routes. Flow maps (Figures 8.6-8.9) were created showing projected daily transit flows along key components of the FAST Plan. By means of comparison, the busiest stretch of transit infrastructure in San Diego in 2008 was the segment of the Trolley between the 12th & Imperial Station and the Park & Market Station, where both Blue Lines and Orange Lines converge. Ridership in 2008 along that segment just exceeded 30,000 passengers. In the FAST Plan, the busiest segment is the Urban Spine Quickway, with projected daily flows exceeding 76,000 passengers at the busiest point, over 2.5 times the volume of 2008’s busiest segment. Flows along the South Bay Quickway approach 50,000 passengers; flows along the East County Quickway build up from 15,000 passengers in the eastern segment to 45,000 passengers as it approaches the Urban Spine. Even the Pier’s Road T-Way is expected to move close to 20,000 passengers a day. Again, by means of comparison, in 2008, total flows along the Trolley segment between Old Town and Fashion Valley were 9,266 passengers, and total flow along the segment of the Orange Line along Commercial Avenue—the busiest segment of that line before joining with the Blue Line—totaled 12,400 passengers. It is no exaggeration to say that the projected passenger uptake for the FAST Plan would dramatically change the role that transit plays in the San Diego region.
Even in North County, passenger flows were respectable for many segments of FAST Plan infrastructure; and thus using trip tables based on 2006 land uses. Segments of the Palomar Airport Road Transitway, the El Camino Real Transitway, and the Escondido Flyover are all projected to carry ridership loads at the scale of much of 2008’s San Diego Trolley lines.
Overall ridership in North County is boosted significantly, with many auto trips now being replaced by transit trips, particularly at peak hours.

More information on modeled ridership is found in Appendix A: Ridership Modeling.

FIGURE 8.7
FAST Plan projected transit flows along select corridors, North County
SANDAG capital cost estimates are based on accepted Federal Transit Administration (FTA) guidelines, the basis of which is a detailed Standard Cost Category format and unit cost assumptions for each cost categories and cost elements. Included in these cost categories are contingencies that reflect that these are high level capital cost estimates. From these construction cost estimates are added “soft costs” (planning, engineering, environmental, design, construction management) based on actual SANDAG Caltrans project experience (and used in project level estimates). An overall network-level unallocated contingency reserve of 20% was added to the total cost to reflect additional system-wide unknowns for new projects. The cost estimates used for the Fast Plan are based on “costs from recently built or under construction projects in the English-speaking world”. How well these cost assumptions compare to our cost methodology would require an extensive analysis of their cost methodology which is not provided in their documentation.
In these cases, we were pleased to see that the Cost Model either over-projected or almost exactly projected capital costs for comparable infrastructure projects. While this is no guarantee of future costs, it satisfies us that we are not falling prey to the tendency to significantly low-ball costs. Then, too, as a community-based organization, Move San Diego has built into the FAST Plan many of the elements that we have heard are important to different community members and stakeholder groups, elements that are often left off of the projections for capital projects and added in only after the negotiation process.

For purposes of costing out the elements of the FAST Plan, we used a baseline costs per foot of two-lane infrastructure. We also developed baseline cost figures for stations based on station type. To these base costs we added 35% for contingencies as well as to cover any additional expenses for land purchase (where required) and supporting elements (such as fiber cable). We then added an additional 25% to the sum of base costs and contingency for Legal, Administrative, and Engineering and costs.

<table>
<thead>
<tr>
<th></th>
<th>Base Cost per foot</th>
<th>Contingency</th>
<th>LAC</th>
<th>Installed per foot</th>
<th>Installed per Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge</td>
<td>$13,000 $</td>
<td>$4,550</td>
<td>$4,388</td>
<td>$21,938 $</td>
<td>$115,830,000</td>
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<tr>
<td>Elevated</td>
<td>$8,000 $</td>
<td>$2,800</td>
<td>$2,700</td>
<td>$15,500 $</td>
<td>$71,280,000</td>
</tr>
<tr>
<td>At Grade (New)</td>
<td>$1,800 $</td>
<td>$630</td>
<td>$606</td>
<td>$3,038 $</td>
<td>$16,038,000</td>
</tr>
<tr>
<td>At Grade (Existing)</td>
<td>$300 $</td>
<td>$105</td>
<td>$101</td>
<td>$506 $</td>
<td>$2,073,000</td>
</tr>
<tr>
<td>Cut &amp; Open</td>
<td>$15,000 $</td>
<td>$5,250</td>
<td>$5,063</td>
<td>$28,313 $</td>
<td>$173,850,000</td>
</tr>
<tr>
<td>Cut &amp; Cover</td>
<td>$20,000 $</td>
<td>$7,000</td>
<td>$6,750</td>
<td>$33,750 $</td>
<td>$178,200,000</td>
</tr>
<tr>
<td>Tunnel</td>
<td>$25,000 $</td>
<td>$8,750</td>
<td>$8,438</td>
<td>$42,188 $</td>
<td>$222,750,000</td>
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<tr>
<td>Streetcar</td>
<td>$2,500 $</td>
<td>$675</td>
<td>$644</td>
<td>$4,219 $</td>
<td>$22,275,000</td>
</tr>
<tr>
<td>Trailwork</td>
<td>$3,800 $</td>
<td>$1,330</td>
<td>$1,283</td>
<td>$6,413 $</td>
<td>$33,858,000</td>
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</tbody>
</table>

**FIGURE 8.9**
Capital cost assumptions by guideway type

<table>
<thead>
<tr>
<th></th>
<th>Regular Station</th>
<th>SuperStation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base Costs</td>
<td>Installed</td>
</tr>
<tr>
<td>Below Grade</td>
<td>$15,000,000</td>
<td>$25,312,500</td>
</tr>
<tr>
<td>At Grade</td>
<td>$3,750,000</td>
<td>$6,328,125</td>
</tr>
<tr>
<td>Elevated</td>
<td>$15,000,000</td>
<td>$25,312,500</td>
</tr>
<tr>
<td>T-Way</td>
<td>$1,000,000</td>
<td>$1,687,500</td>
</tr>
<tr>
<td>Streetcar</td>
<td>$600,000</td>
<td>$843,750</td>
</tr>
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</table>

**FIGURE 8.10**
Capital cost assumptions by station type

The FAST Plan
<table>
<thead>
<tr>
<th>Project Name</th>
<th>Subproject</th>
<th>Subproject Costs</th>
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</thead>
<tbody>
<tr>
<td>Urban Spine</td>
<td>$2,162,478,296</td>
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<tr>
<td>Gaslamp Connector</td>
<td>$234,826,763</td>
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<tr>
<td>Airport Connector</td>
<td>$200,085,019</td>
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<tr>
<td>Horton Quickway</td>
<td>$615,263,513</td>
<td></td>
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<tr>
<td>Uptown Connector</td>
<td>$281,481,075</td>
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<tr>
<td>Hillcrest Connector</td>
<td>$248,790,488</td>
<td></td>
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<tr>
<td>163 Quickway</td>
<td>$201,249,405</td>
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<tr>
<td>Sharp Connector</td>
<td>$290,782,035</td>
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<tr>
<td>Mid-County Jobs Loop</td>
<td>$2,019,146,778</td>
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<tr>
<td>University City Quickway</td>
<td>$377,513,960</td>
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<tr>
<td>UTC/UCSD Quickway</td>
<td>$361,638,871</td>
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<tr>
<td>Sorrento Quickway</td>
<td>$335,242,287</td>
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<tr>
<td>Mira Mesa Quickway</td>
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<td>Scripps Connector</td>
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<tr>
<td>Miramar Connector</td>
<td>$9,408,960</td>
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<tr>
<td>Kearny Mesa Quickway</td>
<td>$312,237,781</td>
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<tr>
<td>Mid-Coast Links</td>
<td>$1,911,255,156</td>
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<td>UCSD Connector</td>
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<td>La Jolla Connector</td>
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<tr>
<td>I-5 Connector</td>
<td>$202,220,753</td>
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<tr>
<td>PB Connector</td>
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<tr>
<td>Morena T-Way</td>
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<tr>
<td>Friars Rd T-Way</td>
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<td></td>
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<tr>
<td>Pt. Loma Connector</td>
<td>$220,056,906</td>
<td></td>
</tr>
<tr>
<td>Clairemont Stations</td>
<td>$334,829,700</td>
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<tr>
<td>East County Quickway</td>
<td>$2,247,422,234</td>
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<tr>
<td>East County Quickway</td>
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<tr>
<td>College Connector</td>
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<td>Grossmont Connector</td>
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<td>Lemon Grove T-Way</td>
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<tr>
<td>Centerline</td>
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<tr>
<td>North Park Quickway</td>
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</tr>
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</table>

K-46
Cont.
<table>
<thead>
<tr>
<th>Project</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Bay Transitway</td>
<td>$1,987,765,650</td>
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<tr>
<td>South Bay Quickway</td>
<td>$1,066,427,613</td>
</tr>
<tr>
<td>47th St Transfer Ctr</td>
<td>$107,380,688</td>
</tr>
<tr>
<td>Southwestern Connector</td>
<td>$116,850,020</td>
</tr>
<tr>
<td>Otay Ranch T-Way</td>
<td>$144,355,500</td>
</tr>
<tr>
<td>Chula Vista Quickway</td>
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</tr>
<tr>
<td>Chula Vista T-Way</td>
<td>$32,679,450</td>
</tr>
<tr>
<td>Offline Stations</td>
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</tr>
<tr>
<td><strong>Regional Streetcars</strong></td>
<td><strong>$788,316,638</strong></td>
</tr>
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<td>Central Streetcars</td>
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<tr>
<td>Mission Bay Streetcars</td>
<td>$144,975,150</td>
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<tr>
<td>UTC/UCSD Streetcar</td>
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<tr>
<td><strong>Tourism (Fur'n'Sun)</strong></td>
<td><strong>$189,164,295</strong></td>
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<tr>
<td>Fur'n'Sun Line</td>
<td>$189,164,295</td>
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<tr>
<td><strong>North County Coastal</strong></td>
<td><strong>$1,275,758,843</strong></td>
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<tr>
<td>I-5 Quickway</td>
<td>$519,977,502</td>
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<tr>
<td>El Camino Real Xpressway</td>
<td>$361,597,878</td>
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<tr>
<td>PAR Xpresswy</td>
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<tr>
<td>Plaza Camino Real Flyover</td>
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<tr>
<td>Tri-City</td>
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<tr>
<td><strong>Sprinter</strong></td>
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<tr>
<td>Sprinter</td>
<td>$519,007,230</td>
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<td><strong>I-15</strong></td>
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<tr>
<td>Escondido Flyover</td>
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<tr>
<td>Offline</td>
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<tr>
<td><strong>Coaster Rail</strong></td>
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<tr>
<td>UTC Rail Tunnel</td>
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</tr>
<tr>
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<td><strong>Related Road Projects</strong></td>
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<td>Rosecrans</td>
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<tr>
<td>El Camino Real</td>
<td>$337,972,840</td>
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<tr>
<td>Palomar Airport Rd</td>
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<tr>
<td>Otay Lakes/La Mesa Rd</td>
<td>$59,231,250</td>
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</table>

**Figure K-48**
Projected capital costs of infrastructure components
By means of comparison, SANDAG's 2050 RTP projects over $19 billion in capital spending on new transit projects plus over $7.4 billion in other transit capital items (such as new vehicles, transit signal priority systems, maintenance facilities, etc.). While much of that additional spending would apply as well to the FAST Plan, the FAST Plan's projected $13.8 billion price tag is over $5 billion less than the RTP 2050 Revenue Constrained Plan, yet appears to generate higher ridership at lower cost.

<table>
<thead>
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<th>Mode</th>
<th>Millions</th>
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<tr>
<td>BRT</td>
<td>$1,028</td>
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<tr>
<td>Heavy Rail</td>
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<td>Light Rail</td>
<td>$14,416</td>
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<tr>
<td>Rapid Bus</td>
<td>$997</td>
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<tr>
<td>Streetcar</td>
<td>$87</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$19,125</strong></td>
</tr>
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</table>

Two issues of significance arise when the FAST Plan's capital program is compared with the RTP 2050 program.

1. SANDAG projects only $67 million in capital costs for building streetcar lines in the urban core; though many of these lines are present in the FAST Plan as well, Move San Diego's capital cost model projects capital costs a full order of magnitude greater than SANDAG. While Move San Diego preferred to err on the side of caution, it is likely that costs for streetcar lines will significantly exceed the budget established by SANDAG.

2. SANDAG costs for light rail alone exceed the entire capital program of the FAST Plan. Especially because the FAST Plan obviates the need to radically increase capacity of the existing light rail system, many billions of dollars in trolley reconstruction will no longer be needed. Some rehabilitation of existing lines may yet be warranted; these costs have not been included in the FAST Plan but would be a legitimate addition.

The commenter cites disagreements in some of the costing (e.g. streetcar operating costs), but doesn’t provide any specific information on why the commenter believes the cost estimates are incorrect. No further response is required.
OPERATING COSTS

Operating Costs for the FAST Plan were estimated using route frequencies which were optimized to a 2006 trip table dataset. Obviously, if the Plan were to be adopted and implemented, frequencies would adjust in significant ways. Just the same, the dataset gives us a good idea of the approximate scale of costs—and fare revenues—that might be expected from the Plan.

The issue as to what it costs to operate transit services has produced very different numbers in the context of San Diego. For example, MTS reports light rail operating costs of $141 per revenue hour ($60.9 million in operating costs divided into approximately 431,000 vehicle revenue hours; source: MTS Comprehensive Annual Financial Report for the Fiscal Years Ended June 30, 2010 and 2009), yet SANDAG uses the figure of $328/hour (likely, the cost to operate a multi-car train). SANDAG uses the same figure of $328/hour for streetcar, but other sources cite costs that are only a fraction of that amount.

For purposes of this analysis, operating costs were calculated using an operating cost model developed by Move San Diego. We also calculated operating costs using SANDAG’s cost model. We then developed a hybrid model that used SANDAG’s costs except for Streetcar service, LRT service, and Coaster service (for which we used DMU costs in an effort to reduce the exceptionally high subsidy level that otherwise would be required).

For purposes of comparison, operating costs for FY 2010 were compiled from MTS and NCTD published reports.
### FIGURE 8.14
Basic operating cost data from FY 2010, MTS & NCTD

These costs could then be compared to different pricing scenarios for the FAST Plan.

### FIGURE 8.15
Operating costs using MTS Coaster’s operating cost assumptions

### FIGURE 8.16
Operating costs using SANDAG’s operating cost assumptions

Under SANDAG's cost scenarios, the cost of rail service rises dramatically compared to MTS Coaster's cost model, causing overall costs (subsidies) to increase over $100,000,000 a year at build-out. A closer inspection of these numbers calls some of these assumptions into question, since revenue hours in the FAST Plan for Light Rail Transit are generally comparable to current hours, it is not clear how operating costs could rise from $61 million to $112.6 million. Likewise, as previously discussed, SANDAG treated light rail and streetcar costs as virtually identical, when in experience streetcar has been cheaper to operate. What’s more, the intensely high cost of operating the Coaster commuter rail suggests either that a lower cost rail mode be pursued, subject to FRA regulations, or that passengers be shifted to other modes, assuming those modes can be competitive.

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**The FAST Plan**

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<table>
<thead>
<tr>
<th>Weekday Revenue Hours</th>
<th>7,615</th>
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</thead>
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<td>2010</td>
<td></td>
</tr>
<tr>
<td>FAST Plan Cost/HR</td>
<td></td>
</tr>
<tr>
<td>Annual Operating Cost</td>
<td>$285,800,362</td>
</tr>
<tr>
<td>Annual Ridership</td>
<td>90,885,820</td>
</tr>
<tr>
<td>Annual Subsidy</td>
<td>$183,640,515</td>
</tr>
</tbody>
</table>

**SANDAG 2050 RTP/SCS EIR**

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K-47 Cont.

K-48

Please see response K-47.

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K-48 Please see response K-47.
To correct for these deficiencies, Move San Diego developed a hybrid cost model that uses SANDAG cost assumptions except in the cases enumerated above.

### Table 8.7

<table>
<thead>
<tr>
<th>Operating Costs Using a Hybrid Set of Cost Assumptions</th>
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<tr>
<td><strong>Rideshare</strong></td>
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<tr>
<td>----------------</td>
</tr>
<tr>
<td>Using the FAST Plan's Operating Cost Model:</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Using the SANSAD's Operating Cost Model:</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
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<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Using a Hybrid Operating Cost Model:</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
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<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
<tr>
<td>Rail</td>
</tr>
</tbody>
</table>

### Figure 8.8

Comparison of operating cost scenarios

In any of these cases, operating costs of the FAST Plan are projected to be significantly less than the operating costs of the transit component of SANDAG's RTP 2050, with savings ranging from 30% to 44%.

### Figure 8.9

Comprehensive operating subsidies under different cost assumptions

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**FAST Plan Cost Model**

- **Baseline Subsidy (2010)**: $183,640,515
- **2050 Annual Subsidy**: $395,484,562
- **Subsidy through 2050**: $11,582,501,529

**SANDAG Cost Model**

- **SANDAG RTP Subsidy**: $19,615,000,000
- **FAST Plan Savings**: $8,032,496,471
- **FAST Plan Cost Difference**: 41%

**Modified FAST Cost Model**

- **Baseline Subsidy (2010)**: $183,640,515
- **2050 Annual Subsidy**: $498,247,223
- **Subsidy through 2050**: $13,637,754,756

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**The FAST Plan**

92

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SANDAG 2050 RTP/SCS EIR

G-262

October 2011
9. CONCLUSIONS

The FAST Plan demonstrates the power of a fully-integrated regional transit strategy to dramatically change the performance of transit in the region. It is projected to very significantly increase transit ridership in the region, all while costing more than a quarter less to build and about a third less to operate than the transit plan proposed in the 2050 RTP. Over the life of the RTP, it is projected to save the region somewhere between $10 and $20 billion, all while reducing traffic congestion and better supporting “Smart Growth” and sustainability goals.

10. **APPENDIX A: CAPITAL COSTS**

Capital costs for the FAST Plan were developed using a cost model developed for Move San Diego in 2005 by a respected transportation engineering firm. Given the great fluctuation in construction costs, it is impossible to accurately project the costs of projects that might not be built until two or three decades into the future. Just the same, Move San Diego has attempted to be transparent in its methodology and to use reasonable assumptions.

Capital cost tables are presented for alignment (guideway) costs, station costs, and then project costs, factoring in contingencies and LEA (Legal, Engineering, and Administrative) costs.

K-51

Please see responses K-46 and K-47.
## ALIGNMENT BASE COSTS PER PROJECT (FAST PLAN)

### GDWYs

<table>
<thead>
<tr>
<th>Project</th>
<th>Grade</th>
<th># of Sections</th>
<th>Length (ft)</th>
<th>Cost per Foot</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Spine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge</td>
<td>8</td>
<td>13,668</td>
<td>2.77</td>
<td>$13,000</td>
<td>$190,418,840</td>
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<tr>
<td>Thruroad</td>
<td>0</td>
<td>-</td>
<td>0.00</td>
<td>$8,000</td>
<td>$64,000</td>
</tr>
<tr>
<td>A Grade (Over)</td>
<td>9</td>
<td>17,118</td>
<td>2.48</td>
<td>$13,000</td>
<td>$234,618,840</td>
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<td>A Grade (Turning)</td>
<td>4</td>
<td>1,697</td>
<td>0.32</td>
<td>$300</td>
<td>509,510</td>
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<td>Out &amp; Open</td>
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<td>3,754</td>
<td>0.70</td>
<td>$15,000</td>
<td>$55,600,000</td>
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<tr>
<td>Out &amp; Over</td>
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<td>24,018</td>
<td>4.55</td>
<td>$20,000</td>
<td>490,259,000</td>
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<tr>
<td>Tunnel</td>
<td>2</td>
<td>5,122</td>
<td>0.97</td>
<td>$25,000</td>
<td>125,041,000</td>
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<tr>
<td>Structure</td>
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<td>-</td>
<td>0.00</td>
<td>$2,500</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>44</td>
<td>69,934</td>
<td>12.80</td>
<td>$878,688,800</td>
<td></td>
</tr>
</tbody>
</table>

| Mid County Lakes |       |               |             |               |        |
| Bridge          | 18    | 17,896        | 3.30        | $13,000       | $303,641,350 |
| Thruroad        | 6     | 32,368        | 6.13        | $9,000        | $298,849,600 |
| A Grade (Over)  | 97    | 31,687        | 5.96        | $18,000       | $566,440,050 |
| A Grade (Turning) | 10   | 30,138        | 5.71        | $300          | 904,041,840 |
| Out & Open      | 5     | 1,606         | 0.27        | $15,000       | $21,000,000 |
| Out & Over      | 8     | 6,633         | 1.20        | $20,000       | 122,000,000 |
| Tunnel          | 0     | -             | 0.00        | $25,000       | -      |
| Structure       | 0     | -             | 0.00        | $2,500        | -      |
| **TOTAL**       | 76    | 133,004       | 24.62       | $812,985,424 |

| Mid County Links |       |               |             |               |        |
| Bridge          | 6     | 8,970         | 1.64        | $13,000       | $117,716,940 |
| Thruroad        | 0     | -             | 0.00        | $8,000        | -      |
| A Grade (Over)  | 8     | 15,308        | 2.73        | $18,000       | 251,640,000 |
| A Grade (Turning) | 7   | 40,878        | 7.74        | $300          | 32,400,000 |
| Out & Open      | 26    | 9,976         | 1.81        | $15,000       | 243,600,000 |
| Out & Over      | 17    | 28,243        | 4.78        | $20,000       | 594,960,000 |
| Tunnel          | 3     | 5,004         | 0.96        | $35,000       | 177,500,000 |
| Structure       | 0     | -             | 0.00        | $2,500        | -      |
| **TOTAL**       | 65    | 200,825       | 39.66       | $571,595,648 |

| East County GDWYs |       |               |             |               |        |
| Bridge          | 3     | 4,372         | 0.82        | $13,000       | $53,316,080 |
| Thruroad        | 4     | 12,587        | 2.33        | $8,000        | 48,477,600 |
| A Grade (Over)  | 6     | 8,972         | 1.64        | $13,000       | 116,100,248 |
| A Grade (Turning) | 5   | 8,128         | 1.56        | $300          | 1,187,640 |
| Out & Open      | 10    | 6,384         | 1.08        | $15,000       | 95,100,000 |
| Out & Over      | 8     | 34,160        | 6.65        | $20,000       | 671,600,000 |
| Tunnel          | 0     | -             | 0.00        | $25,000       | -      |
| Structure       | 0     | -             | 0.00        | $2,500        | -      |
| **TOTAL**       | 53    | 70,663        | 33.42       | $614,105,768 |

| South Bay Transitway |       |               |             |               |        |
| Bridge          | 9     | 17,245        | 3.27        | $13,000       | 229,183,800 |
| Thruroad        | 7     | 9,799         | 1.65        | $8,000        | 70,308,040 |
| A Grade (Over)  | 10    | 28,537        | 4.81        | $18,000       | 539,960,960 |
| A Grade (Turning) | 2   | 43,022        | 6.15        | $300          | 13,000,060 |
| Out & Open      | 8     | 2,991         | 0.51        | $15,000       | 45,000,000 |
| Out & Over      | 8     | 18,805        | 3.77        | $20,000       | 377,600,000 |
| Tunnel          | 0     | -             | 0.00        | $25,000       | -      |
| Structure       | 0     | -             | 0.00        | $2,500        | -      |
| **TOTAL**       | 44    | 147,379       | 26.29       | $714,120,260 |

| Regional Streetcar |       |               |             |               |        |
| Bridge          | 1     | 825           | 0.15        | $13,000       | 127,775,000 |
| Thruroad        | 0     | -             | 0.00        | $8,000        | -      |
| A Grade (Over)  | 0     | -             | 0.00        | $1,800        | -      |
| A Grade (Turning) | 0   | -             | 0.00        | $300          | -      |
| Out & Open      | 0     | -             | 0.00        | $15,000       | -      |
| Out & Over      | 0     | -             | 0.00        | $20,000       | -      |
| Tunnel          | 0     | -             | 0.00        | $25,000       | -      |
| Structure       | 0     | -             | 0.00        | $2,500        | -      |
| **TOTAL**       | 11    | 139,700       | 26.29       | $436,120,260 |

Note: These are base costs and do not include cost engineering/LAD costs.

The FAST Plan

G-265

SANDAG 2050 RTP/SCS EIR

October 2011
### ALIGNMENT BASE COSTS PER PROJECT (FAST PLAN)

<table>
<thead>
<tr>
<th>Project</th>
<th>Name</th>
<th>Length (ft)</th>
<th>Length (m)</th>
<th>Cost per Front</th>
<th>Total Cost</th>
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<tr>
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<td>0</td>
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**North County Coastal**

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<td><strong>TOTAL</strong></td>
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</table>

**Spencer**

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<td>M Gantry (Red)</td>
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<td>Out &amp; Open</td>
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<td>$16,000</td>
<td>-</td>
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<tr>
<td>Out &amp; Over</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>$20,000</td>
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</tr>
<tr>
<td>Tunnel</td>
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<td>0.00</td>
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**K-51**

<table>
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<th>Length (m)</th>
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**Corridor 41**

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<tbody>
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<td>Traffic</td>
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<td>$13,000</td>
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<td>0.00</td>
<td>$8,000</td>
<td>-</td>
</tr>
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<tr>
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</tr>
<tr>
<td>Out &amp; Over</td>
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<td>0</td>
<td>0.00</td>
<td>$20,000</td>
<td>-</td>
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<tr>
<td>Tunnel</td>
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<td>0</td>
<td>0.00</td>
<td>$26,000</td>
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</tr>
<tr>
<td>Steeple</td>
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<td>0.00</td>
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<tr>
<td><strong>TOTAL</strong></td>
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**FAST Plan Total**

<table>
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<tr>
<th>Project</th>
<th>Name</th>
<th>Length (ft)</th>
<th>Length (m)</th>
<th>Cost per Front</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic</td>
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**Non-Transport Related Projects**

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<tbody>
<tr>
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<tr>
<td>K-51 Expressway</td>
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<tr>
<td>Palomar Airport Rd</td>
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<td>Otay Lakes Rd (Phase II)</td>
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<td>$3,01,041,250</td>
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**Note:** These costs include and do not reflect any contingencies or CEA costs.

---

**The FAST Plan**

56
<table>
<thead>
<tr>
<th>Stations</th>
<th>Number of Stations</th>
<th>Cost per Station</th>
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<tbody>
<tr>
<td></td>
<td>Grade</td>
<td>Local</td>
<td>Superstations</td>
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<td>Urban Spine</td>
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<tr>
<td>Below Grade</td>
<td>7</td>
<td>10</td>
<td>$10,000,000</td>
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<tr>
<td>Surfaced</td>
<td>4</td>
<td>-</td>
<td>$3,750,000</td>
</tr>
<tr>
<td>Elevated</td>
<td>4</td>
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<tr>
<td>4-way Station</td>
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<tr>
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<td>TOTAL</td>
<td>18</td>
<td>11</td>
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<tr>
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<td>3</td>
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<td>$10,000,000</td>
</tr>
<tr>
<td>Surfaced</td>
<td>11</td>
<td>2</td>
<td>$8,750,000</td>
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<tr>
<td>Elevated</td>
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<td>-</td>
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<tr>
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<tr>
<td>Surfaced</td>
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<td>1</td>
<td>$3,750,000</td>
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<tr>
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<td>4</td>
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<tr>
<td>Surfaced</td>
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<td>Elevated</td>
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</tr>
<tr>
<td>4-way Station</td>
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<td>Surfaced</td>
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<td>$3,750,000</td>
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<tr>
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<td>-</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>4-way Station</td>
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<td>-</td>
<td>$1,000,000</td>
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<tr>
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<tr>
<td>TOTAL</td>
<td>118</td>
<td>-</td>
<td></td>
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</tbody>
</table>

Notes: (1) Streetcar stops are per side.

Abbreviations: RTP = Regional Transportation Plan; SCS = Sustainability and Community Standards; EIR = Environmental Impact Report.
## Station Base Costs per Project (Fast Plan)

<table>
<thead>
<tr>
<th>Project</th>
<th>Stations</th>
<th>Number of Stations</th>
<th>Cost per Station</th>
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</thead>
<tbody>
<tr>
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<td>$1,800,000</td>
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<tr>
<td>1- Way Station</td>
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<td>$1,000,000</td>
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<tr>
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<td>$500,000</td>
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**K-51 Cont.**

### Sprinter (2)

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</tr>
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<tr>
<td>Surfline</td>
<td>5</td>
<td>$15,000,000</td>
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<tr>
<td>Elevated</td>
<td>2</td>
<td>$15,000,000</td>
</tr>
<tr>
<td>1- Way Station</td>
<td>10</td>
<td>$15,000,000</td>
</tr>
<tr>
<td>Streetcar Stop</td>
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<td><strong>Total</strong></td>
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### I-58 Projects

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<th>Cost per Station</th>
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<tr>
<td>Surfline</td>
<td>6</td>
<td>$15,000,000</td>
</tr>
<tr>
<td>Elevated</td>
<td>2</td>
<td>$15,000,000</td>
</tr>
<tr>
<td>1- Way Station</td>
<td>15</td>
<td>$1,800,000</td>
</tr>
<tr>
<td>Streetcar Stop</td>
<td>10</td>
<td>$500,000</td>
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### Coaster /Rail (3)

<table>
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<th>Cost per Station</th>
</tr>
</thead>
<tbody>
<tr>
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<td>10</td>
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<tr>
<td>Elevated</td>
<td>2</td>
<td>$1,800,000</td>
</tr>
<tr>
<td>1- Way Station</td>
<td>15</td>
<td>$1,800,000</td>
</tr>
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### FAST Plan Total

<table>
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</tr>
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<tr>
<td>Surfline</td>
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<td><strong>Total</strong></td>
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</table>

**Notes:**
- (2) Sprinter stations priced as 3 1-way stations due to additional length
- (3) UTC rail station priced as 2 underground stations

*Note: Figures and costs are subject to change based on final project scope.*
## INSTALLED COSTS PER PROJECT (FAST PLAN)

### Summary

| Project                        | Length (ft) | # of Railcars | Sidewalks | Stations | Total | Comp/# of
|-------------------------------|-------------|---------------|-----------|----------|-------|-----------
| Urban Alpine                  | 31.8        | 26            | $476,868,430 | $416,090,000 | $1,893,958,430 | **2,281,470,039** | 8,039,009,949 |
| Mil-Gatty Jumbo Loop          | 24.5        | 39            | $562,221,424 | $263,250,000 | $1,295,471,424 | **1,590,700,799** | 8,039,009,949 |
| Mil-Gatty Links               | 22.7        | 33            | $1,081,205,840 | $205,000,000 | $1,534,788,880 | **2,026,200,710** | 8,039,009,949 |
| East Gatty Quietway           | 13.4        | 34            | $364,935,760 | $197,500,000 | $1,231,431,760 | **1,534,788,880** | 8,039,009,949 |
| James Ring Transportation     | 21.2        | 27            | $571,450,093 | $4,729,140,000 | $5,300,590,093 | **5,831,231,083** | 8,039,009,949 |
| Regional Freeways             | 30.3        | 16            | $496,529,000 | $96,000,000  | $1,487,529,000 | **1,984,058,209** | 8,039,009,949 |
| Transon (Pfeiffer Blvd.)      | 13.8        | 42            | $187,387,500 | $58,000,000  | $245,387,500 | **305,135,000** | 8,039,009,949 |
| N San Diego Freeway Projects  | 26.6        | 37            | $502,205,290 | $294,000,000 | $796,405,290 | **1,195,810,290** | 8,039,009,949 |
| Sypher Extension              | 7.7         | 12            | $21,020,840  | $58,000,000  | $239,020,840 | **362,040,840** | 8,039,009,949 |
| I-80 Projects                 | 2.4         | 36            | $204,177,752 | $58,750,000  | $262,937,752 | **358,937,752** | 8,039,009,949 |
| Consolidated Rail (1)         | 2.0         | 3             | $209,009,500 | $42,000,000  | $251,009,500 | **353,009,500** | 8,039,009,949 |
| FAST Wide Total               | 17.1        | 418           | $4,029,000,862 | $2,113,700,000 | $6,142,700,862 | **6,956,600,862** | 8,039,009,949 |
| Non-Transit Road Projects     | -           | -            | $181,783,730 | $181,783,730 | $363,567,460 | **435,351,200** | 8,039,009,949 |

### Notes:
- Sidewalk costs are only for RTC arterial.

---

The FAST Plan

SANDAG 2050 RTP/SCS EIR  
G-269  
October 2011
These introductory comments are noted and no further response is required.

L-1

The following are our specific comments on the RTP DEIR:

L-2

The SCS land use pattern assumes that more than half of the region’s land area will be preserved as open space, habitat preserve, and environmentally constrained lands. Meanwhile, several local jurisdictions, including the City of San Diego, are considering the development of park master plans to address urban park needs at a local level. The comprehensive update to the Regional Comprehensive Plan will further the discussion about the importance of parkland. The land use inputs that underlie the 2050 RTP/SCS are based on input provided by the local agencies that have land use control. While SANDAG’s TransNet Environmental Mitigation Program includes $850 million for mitigation of biological impacts from projects identified in MOBILITY 2030 (the RTP that was adopted when the TransNet measure was passed in 2004), it is recognized that additional regional funding will be necessary to fully implement the habitat conservation plans in the region.

L-3

The key SCS implementation actions along with tasks and timelines for these actions are included in the FY 12 Overall Work Program (OWP) and budget, adopted by the SANDAG Board of Directors. One of the key actions is to refine the indicators that SANDAG currently uses to monitor SCS implementation progress. This work is being done with input from other California Metropolitan Planning Organizations so that progress among RTPs and SCSs throughout California can be measured.
The comment is noted. While SANDAG provides guidance to local jurisdictions on designing streets for all types of users through its pedestrian and smart growth design guidelines, it does not have jurisdiction over arterial streets nor does it directly fund them. However, because SANDAG is engaged in on-going efforts to support smart growth and healthy and sustainable communities, it supports “complete streets” initiatives in local jurisdictions.

Consistent with this objective, the Final 2050 RTP/SCS has been revised to discuss existing efforts that SANDAG is undertaking to support Complete Streets. In addition, a new action is proposed for inclusion in the Final 2050 RTP/SCS to consider development of a regional Complete Streets policy. SANDAG’s existing programs that support Complete Streets include the Active Transportation and Smart Growth Incentive grant programs, Complete Streets Education Program from the Regional Bicycle Plan, and the TransNet Routine Accommodations policy (Rule 21 of Policy 031).

Also, Rule 21 of Policy 031 is currently under review and will be presented to SANDAG policy makers for potential revision in FY 2012. Rule 21 states that, “Adequate provisions for bicycle and pedestrian travel is determined within the context of the roadway type, its existing and planned surrounding land uses, existing bicycle and pedestrian plans, and current or planned public transit service. When addressing the access needs dictated by land use, the responsible agency must consider demand created by current and expected land uses (as determined by the local general plan) within the useful life of the TransNet project.”

The improvements listed in Table 2.0-7 are simply a summary of near- and mid-term arterial projects, and therefore do not include the level of detail requested by the commenter. These descriptions are provided by each jurisdiction and are consistent with their circulation elements. Furthermore, the 2050 RTP/SCS is a long range plan and not a programming document. Please refer to the 2010 Regional Transportation Improvement Program for specifics about the projects’ revenues.

Figure 2.0.18 depicts all arterials in the region, both existing and improvements that will occur through the life of the plan.

Figure 2.0.18 uses color codes to identify bicycle routes that are numbered in the legend. The different colors simply identify the different bicycle routes that are numbered in the legend.

Please refer to Master Response 23 for a discussion of why GHG reductions attributable to individual transportation strategies were not included in the 2050 RTP/SCS or Draft EIR. In addition, SANDAG does publish two reports which explain/describe/provide support for a Travel

Aesthetics and Visual Resources

- Page 4.1-11 includes the statement “When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, no substantial differences occur in the land use patterns, types or areas of development.” It is not possible to make such a sweeping conclusion based on a comparison of the two maps. For example- there are hundreds of acres of land just north of Centennial Mountain that show as vacant in 2010 but are changed to Parks and Recreation- undevelopable natural land in 2020. The fact that large areas are now designated an un suitable developable means that development is being

- Table 2.0-7 Phased Regional arterial projects. The EIR has not assessed the relationship between many of these phased arterials and the plans for transit expansion and mode shift from driving to transit. Several of the proposed road projects are in the same location as planned public transit improvements and in fact will compete with them and likely result in lower transit use than if the road expansion were not provided. For example, several of the projects listed are along the Palomar Airport Road and El Camino real corridors- major transit focus areas, high job concentrations and areas where a reasonable shift to public transit is possible. Several years ago north county cities worked together on an objective cost/benefit assessment of highway and arterial projects- the North County Parkway Plan. This old evaluation system did not put enough emphasis on conflicts with public transit- but it looked at cost/benefits and provided a way to make choices among competing projects. We find nothing in the RTP or the EIR that assures that these arterial projects are consistent with the GO6, are not competing with transit, and are fundable.

- Costs were provided for highway and transit projects but not for the arterials. Please provide reasonable cost estimates for each of the arterial projects so it is possible to verify that these are within the funding limits of the revenue constrained RTP- and that they are fundable within the time periods shown on Table 2.0-7.

- Table 2.0-7 Melrose Drive extension on page 2-53 does not indicate either beginning/end points or length of the extension- nor do several of the other projects. Please provide a better description of this- and the other road segments that have no termini specified. This also is important to verify the validity of the list and that it is fundable within the revenue constrained plan.

- Figure 2.0.18 is described as the 2011 Regional Arterial System- but it looks like it includes the expansion projects shown on Table 2.0-7, and the other Figures are showing systems as of 2050 (like 2.0-19). Please revise this figure to show the regional arterial system as of 2050, and distinguish existing from planned projects.

- Figure 2.0-19 Please add a key that explains the colors used on the map.

- TDM p 2-62 and others. There seems to be nothing that quantifies the number of peak hour trips or VMT that are reduced as a result of the identified TDM measures. Presumably these are being done in order to do “something”, and that “something” should be quantified. There also needs to be some analysis as to how these trips are distributed across the network. Back in the 90’s when TDM was mandated there were huge reductions in peak hour trips. Please provide further clarification as to the impact of the TDM programs in a way that relates to thresholds of significance. In the absence of such information it is not possible to determine if such programs cause adverse impacts, or reduce such impacts.

- Page 4.1-11 includes the statement “When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, no substantial differences occur in the land use patterns, types or areas of development.” It is not possible to make such a sweeping conclusion based on a comparison of the two maps. For example- there are hundreds of acres of land just north of Centennial Mountain that show as vacant in 2010 but are changed to Parks and Recreation- undevelopable natural land in 2020. The fact that large areas are now designated an un suitable developable means that development is being

L-10
While there are many local land use changes that would occur between the existing conditions and 2020, there are limited areas that would experience substantial changes in use on a regional scale. The example noted by the commenter describes a large vacant area that has been re-designated as undevelopable natural lands in 2020. While it is true that the land use designation on the map has changed, the key point for the Draft EIR’s visual analysis is that the land remains undeveloped and therefore would not result in visual changes to the aesthetic environment.

SANDAG agrees with the commenter that specific visual analysis is based on sight-lines and key view points. However, on a regional scale, expansive timeframe, and within this programmatic-level document, it is not possible to assess every visual change that would occur in conjunction with implementation of the 2050 RTP/SCS. Please see Master Response 1 for a further discussion of the purposes of a program EIR and the role of future project-specific environmental review.
The commenter is correct that increasing height is one way to increase density in existing developed areas; however, density may also be increased by other means such as reuse or infill development, reduced setbacks, etc. At a programmatic level, it is not possible to know precisely where higher density may be achieved through increased structure height or other means in order to provide specific visual analysis. However, because building height can be an important visual characteristic as noted in the comment, an acknowledgment of increased structure height in urban settings and the resulting visual change has been added to Section 4.1.4 throughout the discussion pertaining to impact VIS-1. However, the added discussion of structure height does not change the significance conclusions as stated Section 4.1.6 of the Draft EIR. Please see Master Response 1 for a further discussion of the purposes of a program EIR and the role of future project-specific environmental review.

SANDAG agrees with the commenter that visual changes will occur on a local level as land uses are modified and transportation improvement projects are developed as anticipated in the 2050 RTP/SCS. However, as described in response L-10 above, given the regional scale and expansive timeframe, it is not possible to assess the specific visual changes that would occur on a local level in a program-level EIR. Therefore, the visual analysis presented in Draft EIR Section 4.1.4 describes specific areas throughout the region that would experience visual impacts based on anticipated land use changes and transportation improvement projects. At the regional level, the Draft EIR’s visual analysis is appropriately based on the general type of visual impact which is anticipated. Furthermore, the Draft EIR imposes visual mitigation measures which are to be implemented during the appropriate planning, design, and CEQA review of development projects and transportation projects implementing the 2050 RTP/SCS. Please see Master Response 1 for further discussion of the purposes of a program EIR and the role of future project-specific environmental review.

There are a number of different categories of “parkland” discussed in the Draft EIR. Parkland can be in active recreational use, passive use or located in open space preserves and reserves. Draft EIR Figure 4.11-3 includes three categories of parks and recreation land use designations. They are as follows: undevelopable natural area, open space parks, and recreation. The “undevelopable natural area” designation shown on Figure 4.11-3 includes land that is currently designated as “vacant” and is primarily under the jurisdiction of the County of San Diego (refer to Figure 4.11-1). This category includes areas that have been determined to be undevelopable because of environmental or other constraints by the County of San Diego. Therefore, these areas are not necessarily suitable for use as active or passive park or recreation land. In response to updates made to the county of San Diego’s General Plan, many of these same “vacant” areas are now designated as “undevelopable natural areas” in the 2050 RTP/SCS land use maps to be consistent with the County of San Diego planned land use. Because this category does not necessarily represent “new” parks or “new” constrained areas, as they were called “vacant” previously, they are already captured in the acreages presented in Table 2.0-2 within the 2010 acreage for “Parks and Constrained Land”.

Please refer to Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement.
Mitigation Measure VIS-B specifically encourages the development of interchanges and transit lines at-grade because these are the types of facilities that are typically elevated, such as a flyover type of interchange design or grade-separated trolley crossing. Generally, roadways are not highly elevated above existing grades. However, in response to the comment, language has been added to Mitigation Measure VIS-B to expand the consideration of at-grade facilities beyond interchanges and transit lines as shown in bold text below:

VIS-B During planning, design, and CEQA review of development projects implementing the 2050 RTP/SCS growth forecast, and transportation projects included as part of the 2050 RTP/SCS, SANDAG shall and other implementing agencies can and should ensure that projects use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, the implementing agency should design transportation improvements, included highway expansions, extensions, and interchanges; transit lines; and arterial improvements at the grade of the surrounding land to limit view blockage to the extent feasible. Project designs should contour the edges of major cut-and-fill slopes to provide a more natural-looking finished profile.

Natural landscaping does not necessarily mean only native plantings. While native landscaping is typically desired, natural landscaping might also include specific species that can hold soil in place, are quick to establish, have low water needs, or have other traits appropriate for the specific needs of the landscaped area. In an aesthetic sense, natural landscaping would relate to blending with the surrounding environment of the specific area being landscaped.

The description of a major cut and fill slope is left undefined within the Mitigation Measure VIS-B to provide flexibility as the measure is implemented over future years, in many different locations, and by many different agencies as projects are developed. Even with implementation of this mitigation measure, the potential visual impacts were found to remain significant and unavoidable as described in Draft EIR Section 4.1.6

When SANDAG is a pass-through agency for funding, it is the funding agency’s responsibility to place conditions on grant funding. When SANDAG is the direct source of funding (versus a pass-through agency), SANDAG will require as a grant condition the implementation of those 2050 RTP/SCS mitigation measures, including Mitigation Measure BIO-R, that are applicable to, and feasible for, the project type being funded.

All cost estimates for the project in the 2050 RTP/SCS assume the projects would be mitigated where environmental impacts have been identified and would be landscaped to the according to standards implemented by Caltrans, SANDAG, or the agency responsible for construction of the improvements. Specific costs for these project features are a percentage of the total project cost and have not been determined on a project by project basis for this level of analysis.

SANDAG agrees that alternatives to sound walls are desirable and can be effective when used in appropriate locations. While Mitigation Measure VIS-E was drafted specifically to address visual mitigation of sound walls, it does not preclude the use of other noise reduction methods.
Therefore, additional language has been added to Mitigation Measure VIS-E to encourage the consideration of alternative noise reduction methods other than sound walls, as shown in bold text below:

**VIS-E**

During construction of development projects implementing the 2050 RTP/SCS growth forecast, and transportation projects included as part of the 2050 RTP/SCS, SANDAG shall and other the implementing agencies can and should ensure sound walls, berms or alternative noise reduction mechanisms, such as creating buffer zones, planting vegetation, or alternative pavement types, are constructed of materials whose color and texture complement the surrounding landscape and development. Design of the sound walls or alternative noise reduction mechanisms should use color, texture, landscaping, and alternating façades to “break up” large façades and provide visual interest.

L-21

The commenter correctly states that visual impacts were found to be significant and unavoidable. Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation, and Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement.

L-22

The commenter correctly states that visual impacts were found to be significant and unavoidable. Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation, and Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement.

L-23

The comment is noted. The 2050 RTP/SCS relies upon the information within general plans and other planning documents at a local level to provide a realistic future land use plan as envisioned by the local jurisdictions. However, SANDAG cannot control nor ultimately predict how a particular local government will interpret and implement its own policies and guidelines. As noted in the comment, consistent with information provided by local jurisdictions, the 2050 RTP/SCS shows a substantial decline in the amount of agricultural land within the region.

L-24

Draft EIR Table 4.2-2 provides a brief summary of agricultural policies adopted by local jurisdictions. The table is not intended to provide a full and complete description of each policy and does not, as suggested by the commenter, erroneously exclude information specific to the City of Oceanside. Furthermore, the Draft EIR does not judge how strong a particular local policy may or may not be; rather, it summarizes those adopted policies that are currently in place. The Draft EIR shows that even with agricultural land preservation policies, agricultural land conversion within the region is expected to continue, and identifies two significant and unavoidable impacts related to agricultural resources as described in Section 4.2.6.

L-25

SANDAG acknowledges that conservation easements are not commonly used for protection and preservation of agricultural lands throughout the region. However, CEQA requires all feasible mitigation to be considered even if it would not reduce an impact to below a level of significance. Though conservation easements are rarely used, they could serve as viable mitigation for the protection of agricultural land and thus, have been included as an option within Mitigation Measure AG-A. Please note that even with implementation of this measure, a significant impact to agricultural resources was identified as detailed in Section 4.2.6.

L-26

The lead agency is the public agency with the principal responsibility for carrying out or approving a project. (Pub. Res. Code § 21067, CEQA Guidelines §15367.) SANDAG, as the lead agency for the 2050 RTP/SCS EIR, is responsible for making findings on this mitigation...
The discussion of farmland impacts failed to evaluate the indirect impacts on wildlife from farmland conversion. Farmland provides important forage, cover, and movement for wildlife, both terrestrial and avian. The DEIR needs to specifically evaluate the potential indirect impacts on wildlife and proposes appropriate MM.

Air Quality

- AQ-A dust control does not include a comprehensive list of mitigation measures for fugitive dust. Several agencies have conducted comprehensive studies to reduce fugitive dust and bring their areas into compliance with PM10 standards. For example SCAQMD published guidelines, Clark County Nevada “Construction Activities Dust Control Handbook”, and the Arizona Dept of Environmental Quality “PM10 Best Available Control Measures.” Additional feasible measures included in these materials include the following which should be added to AQ-A: pretreat surface soils where equipment will be operated; grade each phase separately timed to coincide with construction, or if grading entire apply chemical stabilizers or vegetation to all area where construction will not start for 60 days or more; date out and fill prevater to allow time for penetration; dig a test hole to determine if soil is moist to depth of cut; apply water or dust palliative to form crust on soil following fill and compaction; limit size of staging areas and limit equipment speed to 15 mph; maintain moisture content of stockpiles, remove material from downwind side, avoid steep faces; empty loader bucket slowly and minimize drop height from loader bucket; clean wheels and undercarriage of haul trucks prior to leaving the site; install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; pave construction roads as early as possible; when cleaning forms use single stage pours where allowed and avoid the use of high pressure air to blow soil and debris from the form; require a project specific dust control plan and record these provisions with final map; post a publicly accessible sign with number to call for dust compliancy with corrective action required within 24 hours. These are all feasible measures and various combinations of them are routinely used in other areas. Because PM10 remains a significant impact after mitigation further mitigation should be required.

- AQ-B does not include sufficient mitigation for construction diesel exhaust. In addition to the measures included the following are routinely required by other air quality districts in CA for construction projects and should also be added here: Implementation of activity management techniques including equipment scheduling, limitation on construction workday, limiting numbers of pieces of equipment in use to minimize the number of vehicles and equipment operating at the same time; buffer zone between facility and sensitive receptors; emission offsets if ROG or NOX emission exceed 6.0 tons/quarter. Furthermore the submission of an equipment inventory does not reduce air quality impacts. The objective is to reduce the emissions so the required actions need to be directly linked to that. As written there is no assurance that on a project by project basis that the person signing off on the equipment inventory has determined that there will be any significant reduction in emissions.

- The MM do not address operational area emissions from such things as landscaping equipment, emissions from natural gas combustion for heating/cooling, increased ozone from the heat island effect, and indirect emissions from electricity generation. CEQA guidelines and regulations of CA air districts include numerous feasible mitigation measures that are routinely included in EIRs and should be considered here particularly for large scale industrial/commercial projects including: orient buildings to maximize heating and cooling.

L-26
As noted by the commenter, the phrase “adequate buffers, setbacks, and project design” in Mitigation Measure AG-B is left undefined in order to provide flexibility as projects within the program are developed in future years and in different locations. Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation, and Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement. Please note that even with implementation of this mitigation measure, the impact to agricultural resources were found to remain significant and unavoidable as described in Section 4.2.6

L-27
SANDAG agrees with the commenter that farmland mitigation banks could be a feasible mitigation measure for preservation of agricultural land. Language to this effect has been included in Mitigation Measure AG-A, as shown in bold and strikethrough text below:

<table>
<thead>
<tr>
<th>AG-A</th>
</tr>
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<tbody>
<tr>
<td>For jurisdictions with FMMP-designated lands or agricultural resources, local governments can and should support the acquisition or voluntary dedication of agriculture conservation easements and other programs that preserve agricultural lands, including the creation of farmland mitigation banks. Local governments would be responsible for encouraging the development of agriculture conservation easements or farmland mitigation banks, purchasing conservation agreements or farmland for mitigation, and ensuring that the terms of the conservation easements agreements are upheld.</td>
</tr>
</tbody>
</table>

L-28
The commenter is correct that the loss of farmland as open space habitat for many wildlife species is not discussed within Section 4.2. Please refer to Section 4.4, Biological Resources, for a discussion of this issue. Though not considered to be sensitive habitat, Figure 4.4-1 (Listed and Sensitive Species Habitat) includes agricultural lands for context.

L-29
Mitigation Measure AQ-A is required to reduce the significant PM10 and PM2.5 impacts anticipated from the implementation of the 2050 RTP/SCS in 2020, 2035, and 2050, and by contributing substantially to the existing state nonattainment for PM10 and PM2.5 in 2020, 2035 and 2050. While Mitigation Measure AQ-A provides a general and non-project-specific list of fugitive dust measures; appropriate project-specific measures, which may include additional specific measures mentioned in the comment but not listed in Mitigation Measure AQ-A, would be identified at the time of project-level environmental review. In Section 4.3.5, Mitigation Measure AQ-A has been modified to recognize that the list of fugitive dust mitigation measures is non-exclusive. Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation.

L-30
Mitigation Measure AQ-B is required to reduce the significant ozone, PM10 and PM2.5 impacts anticipated from the implementation of the 2050 RTP/SCS in 2020, 2035, and 2050, and by contributing substantially in 2020, 2035, and 2050 to the existing federal nonattainment of ozone and the state nonattainment of PM10 and PM2.5. While Mitigation Measure AQ-B provides a
general and non-project-specific list of measures to reduce ozone precursors such as NOX emissions, appropriate project-specific measures, which may include additional specific measures mentioned in the comment but not listed in Mitigation Measure AQ-B would be identified at the time of project-level environmental review. In Section 4.3.5, Mitigation Measure AQ-B has been modified to recognize that the list of particulate mitigation measures is non-exclusive. Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation.

L-31
This comment refers to mitigation of operational area emissions from land growth and land use. In response to this comment, a new mitigation measure has been added to Section 4.3.5 of the Final EIR, as follows:

AQ-A1 For land use plans and projects, cities in the San Diego region and San Diego County can and should assess increases in ozone precursors during project-specific design and CEQA review, and mitigate significant increases to the extent feasible. Measures described in Mitigation Measure GHG-B would generally be applicable to ozone precursors, since most measures reducing GHG emissions also reduce ozone precursor emissions.

Specifically, at the plan level, land use plans should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, they should also incorporate, when appropriate, policies to encourage implementation of the Attorney General’s list of project specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf, including, but not limited to measures from the web page such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
• Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following web page: http://ag.ca.gov/globalwarming/ceqa/resources.php.
use energy efficient controls for air conditioning, lighting and appliances; install solar heating; install solar water heater for at least 25% of building floor area; reduce standard parking by 20% and use concrete or other non-asphalt materials for parking lots; pay an air quality mitigation fee, secure emission offsets, or contribute to off-site TDM projects.

L-31

### Biological Resources

- Table 4.4.1 and the text describing how existing sensitive habitat acres were determined has overstated the existing numbers in all areas where an entire parcel was added to the conserved lands database but only part of the parcel actually contains sensitive habitat. Please provide an estimate of the amount of such land included and clarify what habitat type it was recorded as.

- The paragraph on page 4.4-5 explains the basis for determining what is identified as a sensitive wildlife habitat. While this listing includes the narrow endemic species which are included for coverage in the MHCP/MSCP, it is not clear how these narrow endemics are treated on the detailed maps. Since these species have extra protection under the adopted regional conservation plan this is a category that needs to be clearly identified and impacts analyzed. Since their distribution is much more limited than many of the other species failing this could result in differential impacts to these narrow endemic species that have not been analyzed or mitigated.

- Page 4.4-5 includes the statement “Riparian and wetland habitats are considered sensitive due to extensive historic losses of wetlands nationwide and the value of these habitats for sensitive species and wildlife movement.” The key issue for the purposes of the project are that San Diego County is estimated to have lost 95% of its historic wetlands. It is this close to catastrophic local loss that results in the need to greatly protect the few such resources that are remaining. This statement needs to be revised to reflect the historic local losses.

- Figure 4.4-4 does not seem to show the protected vernal pool area in Carlsbad near the Poinsettia coaster station.

- Figure 4.4-9 and throughout. There are several figures/tables that extend on two or more adjacent pages where the orientation of alternate pages are reversed instead of going the same direction. This is not user friendly on either printed or electronic copies and makes it very difficult to determine the big picture or identify potential cumulative impacts. In future reports please print adjacent pages the same direction.

- The wildlife corridor linkages described on pages 4.4-34 to 4.4-36 are key to assessing impacts to wildlife movement—yet these are only described in the text and no figure is provided that shows where they are located. Appendix C includes Figures 3 of the projects that identified linkages— but two of these are on such a small scale (multiple counties) it is impossible to determine local impacts and there is nothing that shows the combination of all three sets of wildlife corridors. This is particularly important because new studies evaluating the impacts of global warming are putting increased emphasis on the need for wildlife corridor linkages to support natural migration. Please add a figure that shows all of these identified wildlife corridor linkages in San Diego county on a single map—with proposed roadways where there will be impacts added as a layer.

L-32

The comment incorrectly interprets the table and text. Table 4.4.1 aggregates vegetation communities in San Diego into general types, and lists the approximate acreages for these types in San Diego County. The text describes the methodology used to determine approximate acreages. As discussed in Section 4.4, existing conditions for biological resources were determined based on information from existing databases and literature, and evaluation by qualified biologists. Conserved lands data was used to note that portions of parcels were known to not be developed. Conserved lands data was not used to change the habitat designations themselves. Some data sources did not identify conserved acreage at the parcel level; to compensate for these instances, SANDAG’s HABitrak data layer was used to identify permanently conserved portions of parcels. HABitrak data is not available for all such parcels and there is no other feasible means to identify permanently conserved portions of developed parcels. However, the methodology for determining baseline conditions, which takes into consideration data from a variety of reliable, available sources produces reasonable results appropriate for a program level analysis. The text has been further refined to clarify this distinction.

L-33

The maps (see Figures 4.4-1 and 4.4-3 through 4.4-9) display federally or state listed species. There are an additional 339 special status species in addition to the federally or state listed species, which includes Narrow Endemic species, however it would be unwieldy to place all these on maps; the resulting map would be visually confusing. The maps are meant to provide a broad overview of the distribution of species and current and proposed habitat conservation areas (see, e.g. Figures 4.4-14 and 4.4-15) in the SD region. Appendix C-2 and C-3 list all special status plant and wildlife species including narrow endemic species along with their habitat affinities. A review of these appendices in combination with Appendix C-5, which includes additional details regarding the amount and location of vegetation impacts, provides information regarding which species would be impacted by the proposed project. As specified in revised mitigation measures BIO-F and BIO-G stated in Section 4.4.5 of the EIR, during the design and CEQA review for projects, special status species surveys will be required to identify the presence of special status species, including narrow endemic species, in order to ensure any potential impacts are avoided or minimized.

L-34

The comment states that San Diego County has lost an estimated 95% of its historic wetlands; however, this percentage cannot be confirmed in the literature. The text has been modified to reflect historical loss of wetlands in the context of southern California as follows: “It’s estimated over half of wetland habitats were lost nationwide between the 1780’s and 1980’s (Dahl 1990; Dahl and Johnson 1991; NRC 1995). In California, at least 90 percent of wetland habitat has been destroyed (Ambrose et al. 2006). In southern California, it’s estimated that 90%-95% of riparian wetlands and over 70% of coastal wetlands have been lost (CCC 1995; Faber et al. 1989)."
The map does show this vernal pool habitat. The polygon is mostly hidden by the Riverside Fairy Shrimp point on top of the habitat polygon. Figure 4.4-4 is intended to display the general locations of populations of federally and/or state listed invertebrate species and the species locations are therefore made visible by displaying these points over the known vernal pool habitat locations in situations where both types of data are present.

The figure orientation must change on printed copies due to the different size (8.5 X 11 vs. 11 X 17) of paper figures are printed on. The commenter’s suggestion to consider page orientation for figures in future, print reports is noted.

SANDAG acknowledges the importance of preserving wildlife linkages to support natural migration due to many different factors, including global warming as noted in the comment. Each of the three sources of wildlife corridor mapping were intentionally kept separate to facilitate a clear understanding of which corridor is being discussed within the text and maintain a clear connection to the original analysis represented on each figure. Please note that each of the sources approach wildlife corridor mapping differently, and thus provide different information, all of which is used to inform the analysis in the EIR. These figures were created by 3rd party sources and thus were included in the appendix of the document. No changes were made to the location of these figures and no additional figures have been added.

The Natural Community Conservation Plan Act is described in Section 4.4.2 (Regulatory Setting) at page 4.4-38. CDFG is the agency that approves Natural Communities Conservation Plans (NCCPs), such as the SDG&E Subregional Plan discussed in the Draft EIR at pages 4.4-41 and 4.4-45. The information within the text of the Draft EIR is from the CDFG NCCP plan summary web page and not the SDGE Subregional Plan. The plan summary can be found on line at http://www.dfg.ca.gov/habcon/nccp/status/SanDiegoGE/. A citation for this information has been added to the references in Chapter 8 to note the CDFG citation.

Figure 4.4-14 provides an overview map of regional conservation planning areas. As shown on this map, most of the County is covered by habitat conservation programs. The MHCP and MSCP are Subregional Plans that serve as umbrella documents for the Subarea Plans. The Subregional Plans document the legal processes and other features common to all Subarea Plans and each Subarea Plan area is independent of each other. Within Subregional Plans, participating jurisdictions (i.e., cities) prepare, and implement approved Subarea Plans which do not typically overlap. Approved Subarea Plans are components of the Subregional Plans – it is not necessary to depict the Subarea Plans within the Subregional Plans. The only adopted plans that overlap would be the SDGE Subregional NCCP and the San Diego County Water Authority NCCP/HCP. These two plans cover such large areas it would not be useful to display them on the figure to determine the “local” overlap the comment notes.

1 Including military installations, all of San Diego County is covered under some type of resource management plan. Military installations, under the Sikes Act (16 U.S.C. §§670a – 670o), develop Integrated Natural Resources Management Plans.
Analysis in the Draft EIR appropriately addresses impacts of the proposed project at a program level; see Master Response 1. CEQA allows SANDAG to make reasonable assumptions about future impacts, such as the assumption that habitat plans would be largely funded and implemented over the long-term. (See City of Long Beach v. Los Angeles Unified School District (2010) 176 Cal.App.4th 889; Environmental Council of Sacramento v. City of Sacramento (2006) 142 Cal.App.4th 1018 [“A public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true.”]

Also, Impacts to protected habitat and species covered under habitat plans from implementation of the RTP/SCS would be mitigated through Mitigation BIO-4.

The table in Appendix C-5 has been revised to include the project specific numbers from the preferred alternative in the EIR for the Melrose project in Oceanside, as cited in the comment. The revised numbers show 2.8 acres of wetland impacts and 4.3 acres of coastal sage scrub/grasslands impacts. This change does not change the conclusion for impact BIO-1.

See Master Response 22 for a discussion of how the impacts of regional arterials were considered in The Draft EIR. Please note that the table in Appendix C-5 includes only those projects that will result in direct impacts to vegetation communities. Additionally, there are only two arterial projects proposed for the 2035 horizon year and no projects were proposed for the 2050 horizon year. One arterial project, SD 81, was identified as having potential impacts to sensitive vegetation communities for the 2035 horizon year. Impacts to biological resources related to corridors are addressed at a programmatic level and rather than a project by project basis. Project level analyses will be completed during the project specific CEQA review for future arterial projects.

Please note that the total acreage for Riparian and Wetlands vegetation communities presented in Tables 4.4-7, 4.4-8 and 4.4-9, and referenced by the commenter, include riparian areas that may not be considered wetlands as defined by various agencies. The comment notes the concern that wetland mitigation sites may not be available to compensate for the loss of wetlands outlined in the 2050 RTP/SCS. This comment has been noted. According to CDFG’s official list of mitigation banks, as of August 2011 San Diego County had several functioning wetlands migration banks; see http://www.dfg.ca.gov/habcon/conplan/mitbank/catalogue/catalogue.html.

Mitigation for the 2050 RTP/SCS has been developed at a programmatic level and does not identify project-specific mitigation sites for wetlands mitigation. Please note that mitigation for impacts to sensitive vegetation communities, including wetlands has also been revised in response to this and other comments in ways that address the commenter’s concerns that mitigation monitoring and funding in other, past projects has been inadequate. Additions to mitigation measures BIO-A and BIO-E, have been made to note that: “After final success criteria have been met and relevant permitting agencies have approved the mitigation project as complete, all mitigation areas shall be permanently conserved (e.g. conservation easement) and managed in perpetuity.” USFWS and CDFG require funding, typically a perpetual, or non-wasting, endowment, to ensure the long-term management of conservation banks.
Mitigation measures BIO-A, B, and E have been modified to make more stringent mitigation requirements within the coastal zone. Language to these measures has been added to note: “Compensatory mitigation for impacts inside the Coastal Zone may not be satisfied through in lieu fee programs and should occur within the Coastal Zone as close as is feasible to the impact.” Finally, mitigation measure BIO-A did not previously state a specific maintenance and monitoring timeframe requirement for restoration areas, and instead left it up to the permitting agencies to determine the appropriate period of time. To improve clarity and to make the EIR’s minimum requirements more explicit, new language has been added to BIO-A requiring a 5-year maintenance and monitoring period as follows: “To the extent allowed by the above plans and ordinances, project specific mitigation may be provided through on-site restoration of temporary impacts, on-site or off-site preservation of existing habitats, or off-site restoration. On-site or off-site restoration areas used as mitigation shall be maintained and monitored for a minimum of 5 years, but monitoring shall continue until required success criteria are achieved.”

Future project design and mitigation measures would take into consideration the need to avoid impacts to wetlands, and the challenges of identifying project-specific mitigation measures, including potential sites for compensatory mitigation, to reduce impacts to these resources.
place to assure that there are wetland mitigation sites identified that will in fact compensate for the loss of these wetlands? Furthermore in numerous cases we have seen wetlands mitigation project failures. Years after a project is underway it starts all over again for another 5 year monitoring period. In theory the 3:1 ratio for mitigation is supposed to compensate for this. However a study done by a UCSD intern reviewing historical wetlands mitigation found an abysmal failure in documentation and completion of projects. (to be submitted separately). The temporal loss of functional wetlands is huge and will have the greatest impact during the next 10 years. The DEIR has not properly identified or mitigated for this temporal loss. At a minimum this should include a requirement to install wetlands mitigation prior to the associated loss and much tighter controls and restrictions on any further impacts within a sub-watershed until success criteria have been met (IE realistic limits on temporal losses). MM BIO-B has not adequately addressed this issue of limiting temporal losses.

Table 4.4-10 again makes it clear that there has been insufficient analysis of the arterial projects- most of these show no impacts likely because they have not been surveyed so impacts are not known and therefore have not been recorded on the two databases used as the sources. This is really misleading as it makes it look like these projects will have no impacts when what it really means is that the impact is not known. This should be clarified in the text.

Table 4.4-19 has not fully identified all of the impacts to existing hardline preserves. For example, the local arterial Cannon Rd Reach 4 in Carlsbad is hardline preserve under the city of Carlsbad HMP and is shown as such in the MHCP for north county. The DEIR has failed to identify this as a conflict with a adopted plan issue of concern. In this case, and in most cases, public funds were used to acquire this hardline conserved land and public funds have been used to manage it for years. While the MHCP says that impacts to such lands require mitigation at 5 times the otherwise required ratios, this is rarely imposed, does not compensate for the wasted public resources, and cannot replace the resource in the area of impact. This is a biological core and linkage area. All projects that impact hardline preserve land need to be identified, with a requirement for the mitigation required in the adopted conservation plan to be fully provided- and most importantly with a requirement to consider alternatives that avoid any impacts to hardline preserve land- this should be a last resort.

- The identified MMs for BIO-3 do not address barriers to wildlife movement during construction. BIO-D should be modified to expand the role of the biologist monitoring construction to include monitoring to assure that construction staging, equipment storage/movement and fencing or other barriers are designed in a way that still provides for some functional wildlife movement. This also needs to include monitoring to assure that wildlife are not inadvertently being directed to roadways where they are at risk of becoming roadkills.

- BIO-K and others do not address all of the edge effects of development on sensitive habitat species. Page 4.4-71 includes a partial list of such indirect impacts. In some cases a potential edge effect is not listed. For example, control of cats and dogs, proper securing of trash in enclosed containers, irritation run-off control. In others it is listed, but is not addressed in the MMs. For example, providing a food source for predators. Please review MSCP and MHCP's for complete lists of edge effects and expand MM's to fully address all of them.

The comment refers to an unknown study conducted by a UCSD intern. Please note that wetland mitigation techniques have changed over the years, and may represent an improvement over the mitigation efforts that were the subject of the unknown study. Mitigation Measure BIO-B has been revised as follows (changes in bold), "The mitigation ratio for jurisdictional wetlands shall be a minimum of 2:1 for the permanent loss of acreage to provide for no net loss of wetlands, however, project-level consultation with USACE and CDFG may result in a higher ratio. A minimum on-site mitigation/restoration ratio of 1:1 shall be provided for temporary impacts, unless USACE and CDFG determine otherwise higher ratio. A mitigation and monitoring plan completed per the requirements of USACE and CDFG shall be prepared for all impacts to jurisdictional waters." Furthermore, it states, "The plan shall also identify locally appropriate plant species for the mitigation/restoration plan, and outline yearly success criteria and remedial measures should the mitigation effort fall short of the success criteria. Success criteria shall be sufficient to create self-sustaining habitat providing the functions and values required to offset those lost to the impacts and meet the requirements of all applicable agency and adopted plans, ordinances, and policies."

The language within Mitigation Measure BIO-B requiring no net loss of wetlands, restoration ratios for temporary impacts, and monitoring plans with success criteria and remedial measures to verify restoration is achieved adequately address the permanent and temporary impacts at the programmatic level and note that consultation with USACE and CDFG may result in a higher ratio. Should the USACE and CDFG have concerns that the "temporal loss" or the time between the initiation of mitigation and maturation of ecological function at a mitigation site could be significant, then USACE and CDFG could potentially require higher mitigation ratios if justified. Please also note that for Section 404 jurisdictional wetlands, the current USACE/EPA wetlands mitigation policy recognizes past shortcomings in compensatory mitigation for wetlands impacts, and is designed to overcome those shortcomings, including consideration of temporal impacts.

Additional clarification has been added to the Draft EIR text n the second paragraph under BIO-2 in Section 4.4.4 that states, "These tables summarize estimated species impacts based on regional databases and actual species impacts will be determined during project specific CEQA review. To note that the tables summarize estimated species impacts and that actual species impacts will be determined during project specific CEQA review. Please note that many of the arterial projects listed in the table are entirely or partially within urbanized areas.

Tables 2.0-7, 4.4-10 and 4.4-11 and the text have been revised to note that construction of Cannon Road (CB 11) is no longer included as part of the near-term arterial projects 2050 RTP/SCS. This revision will not change the conclusion for BIO-4. Specific examples of impact to existing hardline MHCP preserves have been added to the text. Additionally, Tables 4.4-19 through 4.4-21 have been revised to note impact acreages (7 acres – 2020, 9 acres -2035, 9 acres -2050) within existing hardline MHCP preserves. Specific examples in the 2020 horizon year within the MHCP existing hardline preserve include the proposed widening of El Camino Real from La Costa Avenue to Arenal Road; the College Boulevard and Palomar Airport Road intersection improvements; widening of I-5 from Manchester to SR 78; and the Coaster double-tracking. Specific examples in the 2035 horizon year within the MHCP existing hardline preserve include the proposed widening of El Camino Real from La Costa Avenue to Arenal Road, the College Boulevard and Palomar Airport Road intersection improvements; widening of I-5 from Manchester to SR 78; and the Coaster double-tracking. Specific examples in the 2020 horizon year within the MHCP existing hardline preserve include the proposed widening of El Camino Real from La Costa Avenue to Arenal Road; the College Boulevard and Palomar Airport Road intersection improvements; widening of I-5 from Manchester to SR 78; and the Coaster double-tracking. Specific examples in the 2035 horizon year within the MHCP existing hardline preserve include the proposed widening of El Camino Real from La Costa Avenue to Arenal Road, the College Boulevard and Palomar Airport Road intersection improvements; widening of I-5 from Manchester to SR 78; and the Coaster double-tracking.
the I-5/I-805 merge to SR 56, SR 56 to Manchester, and Manchester to SR 78; and the Coaster double-tracking. Specific examples in the 2035 horizon year within the MHCP existing hardline preserve include the proposed widening of El Camino Real from La Costa Avenue to Arenal Road; the College Boulevard and Palomar Airport Road intersection improvements; widening of I-5 from the I-5/I-805 merge to SR 56, SR 56 to Manchester, and Manchester to SR 78; and the Coaster double-tracking. These revisions will not change the conclusion of BIO-4.

L-47
Additional language has been added to Mitigation Measure BIO-D to expand the role of the biologist monitoring construction to address any potential barriers that may occur to wildlife movement during construction. Changes consistent with the commenter’s recommendations to mitigation measure BIO-D, are as follows (added text in bold): “...All construction activities shall be monitored by qualified biologists when construction is occurring in, or adjacent to, sensitive habitat or areas suitable for special status species, and the biologist shall be granted the authority to stop work if it deviates from approved plans and mitigation measures. The qualified biologist shall ensure that construction staging, equipment, and fencing are not directing wildlife towards roadways or urban areas and that some functional wildlife movement is maintained in situations where construction may bisect contiguous habitat. The biologist shall possess relevant expertise for the affected resources and shall be approved by the CEQA lead agency for the project.”

L-48
The indirect impact section under BIO-2 in Section 4.4.4 provides a list of the indirect impacts noted in the comment. Additional language has been added to Mitigation Measure BIO-D, BIO-K, and BIO-R to address the additional edge effects that may occur to sensitive habitat and species from development. Changes consistent with the commenter’s recommendations to mitigation measure BIO-D, are as follows (added text in bold): “…Construction staging and access areas shall be located in previously disturbed and/or developed areas to the greatest extent feasible. All construction materials, staging, storage, dispensing, fueling, and maintenance activities shall be located in upland areas outside of sensitive habitat, and adequate measures shall be taken to prevent any potential runoff from entering jurisdictional waters. Fueling of equipment shall take place within existing paved roads. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary...”

Changes consistent with the commenter’s recommendations to mitigation measure BIO-K, are as follows (added text in bold): “…During the design and CEQA review of individual projects implementing the 2050 RTP/SCS, SANDAG shall and other implementing agencies can and should incorporate measures to avoid and minimize temporary and/or permanent indirect impacts to terrestrial wildlife species. Anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with stakes and flagging prior to construction to avoid natural resources where possible. .... Spoils, trash, or any debris shall be removed offsite to an approved disposal facility. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as coyotes and feral dogs and cats that may prey on sensitive species. Workers shall be prohibited from bringing pets and firearms to the site...”

Additional language has also been added to mitigation measure BIO-R to address land adjacency guidelines required in adopted HCP and/or NCCPs. The additional text states, “Avoidance and minimization measures to covered species and their habitats shall include adherence to land use adjacency guidelines as outlined in adopted HCP and/or NCCPs.”
- BIO-N does not address the need for design to consider fencing to properly direct wildlife to the undercrossing or to limit their ability to access roadways and cross at the surface. This needs to be modified to add the need to assess adequate fencing as part of crossing design.

- BIO-3 MM have not addressed maintenance of the measures included to provide for wildlife movement. This is a particular concern with undercrossings and culverts. It is a common problem for erosion over time to degrade the function of culverts, or for them to become inundated and no longer functional for wildlife movement. Please review the following for a more complete consideration of both design and maintenance issues and include this in the MM’s: Best Management Practices for Wildlife Corridors, Paul Beier, Dan Majka, Shawn Newell, Emily Garding, Northern Arizona University, January 2008.

- BIO-4 is not fully mitigated through Bio-Q and R as there is no ability to assure that impacts to a specific reserve can be compensated for at that reserve. While eminent domain can be used to allow the road or other infrastructure project to proceed it cannot be used to acquire land necessary to make for the habitat loss. The MM needs to be defined in a way that assures mitigation in the effected preserve.

- HM-8 raises the concern about wildland fires but the proposed mitigation measures do not go far enough to mitigate for potential impacts to wildlife. Roads contribute to wildland fires because of sparking from or fires associated with failures of the vehicles and from people throwing smoking materials out of car windows. Expansion of roads will increase the risk of such fires. While fire is identified as one of the triggers for adaptive management in the adopted habitat conservation plans, further effort is needed to address the increased fire risk associated both with expanded roads and climate change- and prepare modifications to plans that address these issues more specifically. Failure to do so will leave this as a significant unmitigated impact.

Greenhouse Gas Emissions

- Please clarify why GHG-B does not require each jurisdiction to adopt a CAP within a specified time period in order to be eligible for continued transportation system funding? THE RTP assumes that all jurisdictions will comply with SB 375 but can only do so if each of the relevant jurisdictions contributes their share. It is not reasonable to assume that this will occur in every jurisdiction, and within the necessary time frame, if this remains voluntary. Please clarify how you expect this to work.

- GHG-C is one where SANDAG should impose more controls on local jurisdiction compliance (through withholding of funds for non-compliance) but also could be of great assistance by preparing standard language and project conditions that would make it easy for local jurisdictions to just insert in their local documents.

- There are numerous additional feasible measures to reduce GHG that should be included, or strengthened both in the RTP and the EIR.

Land Use

- Page 4.11-14-5 states that “SANDAG staff also worked extensively with local jurisdictions to inventory ways in which plans might change in the next four decades. These additional land use inputs were derived from draft plan updates, rezoning programs, and other locally-
The suggestion for development of standard GHG emissions language and project conditions is not considered appropriate as the circumstances and conditions of individual future projects are unique and different. Some project conditions may not be appropriate or applicable to individual projects as they are evaluated and designed. Additionally, the topic of GHG emissions is very dynamic and continually changing as new information and regulations emerge. Standard language or project conditions that seem adequate now may become outdated very quickly due to new information or technology. Please refer to Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement, and Master Response 21 for a discussion of GHG mitigation measures that are proposed for implementation.

The comment is noted, however it does not provide or describe any additional feasible mitigation measures for SANDAG’s consideration. Please refer to Master Response 21 for further discussion of the mitigation measures included in the Draft EIR’s GHG analysis.

Please see Master Response 11 for further discussion of how the SCS land use pattern was developed, and how it furthers the intent and goals of SB 375.

The commenter is incorrect in stating that the Draft EIR did not use adopted plans in formulating its land use forecasts. The 2050 Regional Growth Forecast and SCS land use plan is based on economic and demographic projections for the year 2050, existing land use plans and policies, and potential changes to those plans and policies. As described throughout the Draft EIR, development of the 2050 RTP/SCS utilized the most recent planning assumptions, including local jurisdictions’ general plans and other planning assumptions as well as input on the forecast from each jurisdiction at a range of public meetings. The comment also references a statement from the Draft EIR Land Use section regarding coordination with local jurisdictions to inventory future land use changes. This coordination was a critical element of developing the growth projections and land use plan, as the horizon planning year of 2050 extends beyond most of the planning documents currently in existence and it was necessary to work with local jurisdictions to understand and accurately predict the ways in which these plans might change over the extensive planning timeline. Therefore, the 2050 RTP/SCS is inherently consistent with the intent of local jurisdictions’ general plans and other planning assumptions as these policy documents are the foundation of the SCS land use pattern.
While the commenter is correct that the SCS would be updated as described in Mitigation Measure LU-B, there is no indication that future land use plans and policies would use fewer smart growth principles. Recent trends throughout the San Diego region have shown local jurisdictions embracing and using smart-growth principles within their local planning documents. See Master Response 11 for more detail.

Please refer to Master Response 11 for a discussion of the relationship between SB 375, the SCS and local land use plans.

Hydrology and Water Quality

- A major problem with our current highway and local road system is that they were built prior to the new regulations that limit the type and amount of run-off from the site. Many have old culverts that discharge directly to creeks with no dissipation or filtering of pollutants. While it is recognized that new expansion projects will have to meet new standards, they still are connected to old sections that do not. As part of project planning for expansion/extensions they should be required to consider run-off from the larger road segment, particularly the segments on each end of the new project. Similar to what is now required with building permits - if you are changing over 10% there needs to be further action to bring the entire building up to code, or in this case the entire road. At a minimum there needs to be consideration of the condition of BMP's in the adjacent older roadway sections, of the time frame of any future improvements to those BMP's, and consideration of improving run-off control system for the entire road and not just the project area. 

- WQ-3 states that land use and transportation network improvements would not be constructed in 100 year flood planes in a manner that would significantly impact flood flows. We disagree with this conclusion. Many local jurisdictions have existing, known flood control problem areas. Numerous projects are approved that include building within the limits of 100 year floodplains. The applicants then propose a comparable size area for flood detention and revises the FEMA map. This leaves the existing flood problem area in exactly the same condition and has just relocated flood waters from one area to another in order to allow building in the floodplain. We have also seen numerous times where such theoretical redistribution of flood waters did not work and in fact localized flood problem areas were the result. The DEIR needs to include something that more specifically assures that if any FEMA boundary adjustment is required for a road project that it receives much more

The comment is noted. Language was added to the analysis of Significance Criteria WQ-3 clarifying that the implementation and required adherence to all applicable existing laws and regulations will ensure that impedance and redirection of flood flows will be avoided to the maximum extent practicable, and that anywhere this cannot be avoided a Conditional Letter of Map Revision may need to be prepared and provided to FEMA as required, and more extensive impact review will be provided at that point on a project-by-project basis.
substantial review of flooding impacts over the entire downstream area that could be impacted.

- Table 4.10-2, 3 and 4 is not a complete list. There are additional tributary creeks that will be crossed by the identified transportation improvements that have not been included. According to RWCCB staff a tributary creek is considered to have the same 303(d) listing status as the section of creek that it discharges to. One example of a missing segment is the arterial project Cannon Rd Reach 4 in Carlsbad which will cross a creek that is tributary to Agua Hedionda in a reach that is impaired. These tables need to be modified to include all of the crossings of tributary creeks to the impaired waterbodies.

Public Service, Utilities and Energy

- The population, employment, and transportation network changes included in the RTP will require a proportionate increase in public infrastructure, including, water, sewer and storm water systems. All of our local jurisdictions have deteriorating systems with inadequate replacement plans, funding, and schedules. In fact the national association of Civil Engineers has identified water systems as an even higher issue of concern than transportation systems. US-A and other mitigation measures assumes that there are impact fees in place to address both the share of construction costs associated with facility expansion, and methods to provide for on-going system maintenance. This is not the case. SANDAG needs to establish some baseline conditions for funding of this necessary public infrastructure including reasonable guidelines for impact fees.

- US-2 and associated MM US-C does not do enough to reduce these impacts. Culverts and storm water measures are often associated with wetlands so design and maintenance of these facilities has on-going impacts to these associated wetlands. This is an indirect impact that was not identified and has not been mitigated. Further these are often very small projects so there is a significant administrative burden for planning and carrying out numerous small mitigation projects, and the benefits of a small isolated mitigation site are often questionable. There needs to be better integration of planning for the design, maintenance and mitigation of these facilities that reduces the cumulative impacts of these actions. We would like to see SANDAG support the development of comprehensive watershed management plans (WMP) for each of the sub-watersheds in the county. Such WMP’s would include identifying priority areas for retrofits, buffers, and acquisition. These could then form the basis for identifying larger, more meaningful mitigation projects.

Recreation

- This is another area where there are no assurances that parklands will be expanded in proportion to the population increases- particularly since the project description at the beginning showed an increase of only 2,000 acres of parks and open space for a population increase of 1.2m people as discussed under project description. Table 4.15-2 shows that by 2030 17 of 19 jurisdictions will have less parkland/resident than they do today and that by 2035 through 2050 100% will. There needs to be a more direct tie between land use changes that support population/jobs growth and the related necessary growth in parkland. There should be a specific requirement to make this happen- and tie transportation funding release to achievement of required parkland/open space standards. Without such a connection this remains a significant unmitigated impact.

L-60 Cont.

L-61

The comment is noted. Greater detail on 303(d)-listed water bodies was not provided given the programmatic nature of this EIR. Further tributary water body breakdown and potential impacts will be addressed in project-specific environmental evaluation. Please see Master Response 1 for further discussion of the appropriate level of detail of a program EIR.

L-62

The 2050 RTP/SCS considers growth planned and forecasted for the region and crafts a plan to best use smart-growth principles to accommodate that growth. Mitigation Measure US-A and other mitigation measures in the Draft EIR require that appropriate fees, as determined by local jurisdictions or special districts, be paid to mitigate impacts on public infrastructure. However, SANDAG does not have the authority to modify or enforce higher funding requirements or other impact fees within these local jurisdictions or special districts to pay for local infrastructure improvements. It is the responsibility of local jurisdictions or special districts to determine the costs and associated fees necessary to fund and develop required infrastructure to serve their communities. Also, refer to Master Response 4 for a discussion of mitigation measures that are within the responsibility and jurisdiction of other agencies.

L-63

The potential impacts to wetlands due to transportation facility improvements, such as stormwater drainage facilities, are discussed and analyzed in Section 4.4.4 of the Draft EIR’s Biological Resources chapter. Impact US-2 does not discuss wetland impacts as it focuses on the actual provision of service and capacity, rather than biological impacts resulting from development of the infrastructure. Impact BIO-1 identifies significant impacts to jurisdictional waters, including wetlands. Mitigation Measures BIO-A through BIO-E, specifically BIO-B, mitigate impacts to wetlands that could result from project implementation. These measures first require avoidance of impacts, and if avoidance is not possible, require other appropriate mitigation. As outlined in Draft EIR Section 4.4.6, indirect impacts on and jurisdictional waters would remain significant and unavoidable, even with implementation of the mitigation measures. A similar significant and unavoidable cumulative impact to wetlands was identified in section 5.2.4 of the Draft EIR.

Regarding watershed management plans, watershed management planning is being done in the region, and it is being coordinated by the County of San Diego. (See http://www.sdcounty.ca.gov/dplu/watershed/watershed_planning.html.) Mitigation Measure US-C has been revised as follows to recognize that watershed management plans may form the basis for project-specific mitigation of storm water drainage facilities (revisions shown in bold text):

US-C

During the CEQA review process for individual facilities, SANDAG shall and San Diego region cities, the County of San Diego, and other implementing agencies with responsibility for the construction of new storm water drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures, including actions set forth in regional and local watershed management plans, to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or
expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of storm water drainage facilities projects.

L-64
As noted by the commenter, the parkland to population ratio is projected to decline in future years. In Section 4.15.6, the Draft EIR states that local jurisdictions with inadequate parkland per capita would use state regulations and local plans and ordinances to acquire land and funding for the provision of new parkland as population growth occurs. However, the Draft EIR concedes that there is no guarantee that adequate resources would be available to acquire the amount of parkland needed to meet forecasted population growth, and therefore concludes that impacts would remain significant and unavoidable. Please note that SANDAG does not have the land use authority to ensure that the appropriate amount of land is set aside for park and recreation use in local jurisdictions. Additionally, many jurisdictions, especially highly built out coastal communities, have a limited amount of land available to serve as parkland.
Mitigation Measure REC-B has been modified to address trails as follows (new text added in bold): “During project-specific design and CEQA review, the 19 incorporated cities, the County of San Diego, and special districts with responsibility for the construction of new or expanded recreation facilities, including recreational trails, can and should apply mitigation measures to avoid or substantially reduce construction and operational impacts on air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and other resources.”

Although informal trail cutting may be an ongoing concern, it is not an impact of the 2050 RTP/SCS. SANDAG has no management authority over recreational trails and cannot enforce encroachment regulations. The planning and management of regional recreational trails typically occurs through local jurisdictions and programs such as the County of San Diego County Trails Program and Community Trails Master Plan.

In response to this comment, mitigation language in Mitigation Measure T-A has been modified to include the assessment of land use patterns as they evolve over time and their impact on regional travel times. The revisions to Mitigation Measure T-A are shown as follows in bold and strikethrough text:

T-A
SANDAG, working with local jurisdictions and other transportation planning agencies, including Caltrans, shall reevaluate regional travel times, in interim years prior to 2035 and 2050 land use changes, and regional growth during the development of each RTP/SCS, occurring every four years. When feasible, SANDAG shall in future RTP/SCSs modify the timing and priority of transportation network improvements to be consistent with available funding programs to most quickly implement those improvements that would reduce T-3 and T-4 to less than significant levels.

SANDAG acknowledges the large number of significant and unavoidable impacts that will result from the adoption and implementation of the 2050 RTP/SCS. Please refer to Master Response 6 for a discussion of the significant and unavoidable impacts identified in the Draft EIR. Please also refer to Master Response 16 for an explanation of the range of alternatives included in the Draft EIR.

SANDAG acknowledges the benefits of Transportation Demand Measures (TDMs), and the 2050 RTP/SCS includes many TDMs. (Draft EIR p. 2-62.) An Unconstrained Funding Alternative that would fully implement the TDM programs and improvements was considered, but ultimately rejected as an alternative for multiple reasons. (See Draft EIR p. 6-201.)

Please refer to Master Response 16 for further discussion of the range of alternatives included in the Draft EIR.

These closing comments are noted and no additional response required.

Sincerely,

Diane Nygaard
On behalf of Preserve Calavera

Submitted via email
July 7, 2011, 2011

Rod Rundle, Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

RE: Notice of a Draft Environmental Impact Report for the 2050 Regional Transportation.

Dear Mr. Rundle,

On behalf of the Rincon Band of Luiseno Indians, we have received your letter on June 22, 2011. And wish to make comments on the Draft E.I.R for the 2050 Regional Transportation.

Our areas of concern include the following areas: Carlsbad, Escondido, Oceanside, Poway, San Marcos and Vista. Other areas include: Lake Wohlford in Valley Center, and the San Luis Rey River. They are in the Luiseno Territory and were used for migration from the inland region to the coastal region of the Luiseno Territory. We wish to be kept updated as the project progresses. Especially the cities that are in the Luiseno Territory.

We trust that this project has the best interest of all parties involved and look forward to hearing any further information on the Notice of a Draft E.I.R for the 2050 Regional Transportation.

We thank you for the opportunity to comment and look forward to a successful resolution to our concerns.

Sincerely,

Rose Duro
Rincon Culture Committee Chair

Letter M
Rincon Band of Luiseno Indians

M-1

Comment noted. SANDAG will continue to provide updates on the 2050 RTP/SCS to the general public and to the tribal governments as part of its tribal outreach program.
Letter N
San Diego Mountain Biking Association

SANDAG
401 B Street, Suite 800,
San Diego, CA 92101
2050rtp@sandag.org

re: Draft 2050 RTP Environmental Impact Report

August 1, 2011

To Whom It May Concern:

I am a member of San Diego Mountain Biking Association’s (SDMBA) board, and I am writing and submitting this letter on behalf of SDMBA. The San Diego Mountain Biking Association (SDMBA) is a nonprofit, volunteer organization representing the interests of off-road cyclists and other non-motorized trail users in San Diego County. SDMBA’s goal is to unite mountain bike riders, retailers and manufacturers to speak with a coordinated and responsible voice when interacting with other trail users, land managers and policy makers. SDMBA is an IRS 501 (c) 3 Tax-exempt organization dedicated to protecting mountain bike access in San Diego County.

I have reviewed SANDAG’s Draft 2050 RTP Environmental Impact Report (Draft EIR)1 in particular, I focused on the aspects of the Plan relating to mountain bikes. As documented by the EIR, the 2050 RTP encourages using bicycles to commute and develops an extensive network of existing and planned bicycle paths. The Draft EIR also references SANDAG’s Regional Bicycle Plan.2

The Draft EIR, however, does not discuss commuting using mountain bikes and trails in preserves and open space. The Draft EIR does reference the “Regional Bicycle Plan” (p. 413-8) and SANDAG’s Regional Bicycle Plan briefly mentions the possibility “[t]here are, however, recreational trails in the region that do serve a transportation function,” (Riding to 2050, p. 75), but does not provide

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N-1

This comment provides introductory remarks; therefore no further response is required.

N-2

The San Diego Regional Bicycle Plan was adopted by SANDAG to provide a regional strategy for making the bicycle a useful form of transportation for everyday travel. It was originally developed to support implementation of the RTP, which calls for a multimodal regional transportation system that includes a regional bicycle network. The Bicycle Plan includes the 2050 Regional Bicycle Network, as well as the programs that are necessary to support it. As an integral part of the 2050 RTP/SCS, the San Diego Regional Bicycle Plan will become part of the SCS mandated by SB 375, and will help the region meet its goals in reducing GHG emissions and improving mobility. Many recreational trails are used for commuter and other transportation, and providing connections to them was a factor in the development of the overall Regional Bicycle Network, included in the 2050 RTP/SCS. The next update of the Regional Bicycle Plan, to be included in the next RTP/SCS update, will provide an opportunity to look at ways to further improve the relationship of the trails to the Regional Bicycle Network.
N-3

The comment is noted. Please see Response to Comment N-2.

N-4

As discussed in Response to Comment N-2, the San Diego Regional Bicycle Plan will become part of the SCS mandated by SB 375 and the next update of the plan will provide the opportunity to look at ways to further improve the relationship of the trails to the Regional Bicycle Network. The Los Peñasquitos Canyon Preserve is jointly owned and administered by the City and County of San Diego. While the commenter’s observations regarding bicycle commuter use of trails within the LPQCP are noted, Comments regarding trail maintenance are appropriately directed to the City and County.

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Under “Nonmotorized Facilities” several types of bikeways are listed. The first group includes those as defined by the California Highway Design Manual. Additionally, two additional types of “facilities”: the Bicycle Boulevard are listed. None of these categories encompass soft surface trails.
Just as in the case of using bicycles for commuting, encouraging the use of mountain bikes for commuting also reduces the environmental impact of transportation. It improves air quality by reducing the emissions of pollutants, in particular it also reduces the carbon footprint of transportation. Furthermore, in so much as trails and paths can be rebuilt and/or replaced by trails and paths of a more sustainable design, such as those built to WikiBA standards, the amount of erosion and accompanying sediment is reduced. Additionally, a trail in KPQCP would increase commuter access to the Sorrento Valley station.

We believe that in keeping with the SANDAG's goal of encouraging the use of bicycles, the 2050 RTP should encourage the development of sustainable trails in San Diego's open spaces where appropriate and thereby reduce the environmental impact of San Diego's increasing population and transport needs.

We realize that using open space trails in a meaningful context for SANDAG's transportation plan requires a specialized set of circumstances – an open space and/or a preserve with a trail system. On the other hand, as the San Diego area develops to the east according to the principals of smart growth (see hopes) this might become more commonplace through the integration of open space into the development.

Weather-proofing natural surface trails is easy to accomplish. Because there is a large enthusiastic mountain bike community in San Diego, and because better trails for commuting also provide a superior recreational experience, abundant volunteer labor would be available for such trail-building/road/path-replacement projects.

We also believe using well-built narrow trails for both commuting and recreation creates a win-win situation because it is in keeping with conservation goals of the open space location of the trails since such trails are less intrusive, both visually and in their footprint in the habitat. Such trails also reduce run-
The next update of the Regional Bicycle Plan will provide an opportunity to look at ways to improve the relationship of the trails to the Regional Bicycle Network. As we expand our definition of transportation facilities and recognize the importance active transportation can play in improving public health it will be possible to consider the integration of trails into the overall transportation system.

Thank you for considering our comments.

Yours truly,

Russell T. Boggs, Ph.D., J.D.
San Diego Mountain Biking Association
PO Box 881491
San Diego, CA 92168-1491

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4 http://www.parks.ca.gov/pages/982/files/draft%20eir%20trail%20change%20of%20set%20space inserted%20project%20website%20copy.pdf

5 In general, SDMBA considers a “trail” to be anything less than 3’ wide. We understand the County of San Diego has already defined trails in the Community Trails Master Plan with the Type A, B, and C designations. SDMBA defines a Type A “trail” as a road and a Type B “trail” as a path. Only the narrowest of the Type C trails provide the true outdoor experience we strive to achieve: singletrack. The International Mountain Bicycling Association defines singletrack as a trail where users must generally travel in single file. The tread of a singletrack trail is typically 18- to 24-inches wide, though it can be as narrow as 6 or as wide as 36 inches. Singletrack trails tend to wind around obstacles such as trees, large rocks, and bushes. As compared to roads, singletrack trails blend into the surrounding environment, disturb much less ground, are easier to maintain (and shed water readily) and when properly designed, control speeds by providing curves and choke points. The tread of singletrack is almost always a natural surface, in contrast to the decomposed granite, gravel or pavement frequently encountered on roads and pathways.
August 8, 2011

Rob Rundle
Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

VIA ELECTRONIC MAIL
mtu@sandag.org

RE: COMMENT LETTER ON DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE 2050 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

Dear Mr. Rundle:

Thank you for the opportunity to submit the following comments regarding the 2050 Regional Transportation Plan/Sustainable Communities Strategy (“2050 RTP/SCS and/or Project”). We, the San Luis Rey Band of Mission Indians (“Tribe”), acknowledge that our comments are being submitted to you past the specified deadline (August 1, 2011), however due to the imperative nature of the inclusion of our comments to the 2050 RTP/SCS, it is our sincere hopes that you will include them as part of the official record for this Project and reply to our comments in your official responses in September.

In the Draft Environmental Impact Report (“DEIR”) for the 2050 RTP/SCS only the Kumeyaay history was discussed. The Kumeyaay traditional territory is in the southern portion of San Diego County; whereas, the Luiseño traditional territory is located in the northern portion of San Diego County. Unfortunately, the DEIR does not acknowledge the Luiseño people, our traditional territory, and for those reasons our comments for the 2050 RTP/SCS are critical.

Therefore, for background purposes, we are a northern San Diego County tribe whose traditional territory encompasses the cities in which State Route 76, State Route 78, Interstate 5 and Interstate 15 travel through, namely Oceanside, Carlsbad, Vista, San Marcos, Escondido and the communities of Fallbrook and Bonsall. Please be aware that our tribe is resolute in the protection and preservation of our cultural resources.

1 See CEQA Guidelines Section 15207, “Although the Lead Agency need not respond to late comments, the Lead Agency may choose to respond to them.”
2 Luiseño traditional territory continues into Orange County and Riverside County.

O-1 Though late, the comment letter has been included in the EIR administrative record and responses are included in the Final EIR.

O-2 Information on the Luiseño people and their traditional territory in the northern portion of San Diego County has been added to the Existing Conditions discussion in Section 4.5 in the EIR.

O-3 The comment is noted and as indicated in Response to Comment O-2, the information has been incorporated in the Draft EIR.

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1 See CEQA Guidelines Section 15207, “Although the Lead Agency need not respond to late comments, the Lead Agency may choose to respond to them.”
2 Luiseño traditional territory continues into Orange County and Riverside County.
As suggested by the commenter, Mitigation Measure CULT-D has been modified in Section 4.5.5 to include the following language (shown in bold text):

**CULT –D**

During construction of specific development projects and transportation network improvement projects implementing the 2050 RTP/SCS, SANDAG shall and other implementing agencies can and should require areas determined to be of cultural significance to be monitored during the grading phase of individual projects by a qualified archeologist and Tribal monitor.

SANDAG shall and other implementing agencies can and should retain a Tribal monitor (at historic rates of compensation) ... designated by the Tribal Council or chairperson, if so requested, to accompany a qualified archeologist to identify, and determine the significance of, cultural resources and/or sacred lands. Both the archeologist and tribal monitor shall observe ground-disturbing activities and/or other scientific surveying that may occur in preparation for construction activities.

Should an archaeological deposit and/or feature be encountered during construction activities, an Archaeological Data Recovery Program (ADRP) shall be prepared and implemented with consultation with Interested Tribes. Both the archeologist and tribal monitor should strive for agreement on the determined significance of an artifact or cultural resource. Once in agreement, either the archeologist or tribal monitor may divert or halt ground-disturbing activities for the purposes of implementing a data recovery program.

A data recovery program for archaeological sites consists of excavation of a percentage of the site (determined in consultation with the lead agency) to provide information necessary to answer significant research questions. Project implementation agencies shall integrate curation of all archaeological and/or historical artifacts and associated records in a regional center focused on the care, management, and use of archaeological collections. All Native American human remains and associated grave goods discovered shall be returned to their Most Likely Descendent and repatriated. The final disposition of artifacts not directly associated with Native American graves will be negotiated during consultation with Interested Tribes. Artifacts include material recovered from all phases of work, including the initial survey, testing, indexing, data recovery, and monitoring. Curated materials shall be maintained with respect for cultures and available to future generations for research.
Prior to construction of individual development projects and transportation network improvement projects implementing the 2050 RTP/SCS, SANDAG shall and other implementing agencies can and should consult with the NAHC and local tribes for each discretionary project at the onset and during the environmental review process and the preconstruction phases to determine if ethnographic resources and/or sacred lands are present within the project area, or its vicinity. Native American tribes shall be notified of project construction prior to obtaining grading permits and/or beginning ground-disturbing activities within a tribe’s traditional territory. SANDAG shall and other implementing agencies can and should request from Interested Tribes appropriate provisions to address the proper treatment of found cultural resources and Native American remains and consider including these provisions in applicable work plans to the maximum extent feasible.

If cultural resources and/or sacred lands are present, SANDAG shall and other implementing agencies can and should communicate with Interested Tribes during the design, construction, operation, and decommissioning of the project. Prior to implementation of construction, SANDAG shall and other implementing agencies can and should communicate with Interested Tribes that place cultural significance on the project area. Outreach efforts between the Tribes and SANDAG or other implementing agencies shall be communicated quarterly during the design and construction phase for review and input. Where potential impacts are identified, grading and excavation activities shall avoid impacts to identified resources, as feasible.

B. Native American monitors are trained in their individual culture’s history. Having Native American monitors working alongside a qualified archaeologist increases the likelihood that if resources are located that they will be identified and protected from further disturbance and/or destruction.

SANDAG’s 2050 RTP/SCS will have substantial adverse affects on Luiseño cultural resources. According to the Native American Heritage Commission, a California state agency, “[w]hen projects are proposed in areas where Native American cultural features are likely to be affected; one way to avoid damaging them is to have a Native American monitor … present during ground disturbing work. In sensitive areas, it may also be appropriate to have a monitor … on site during construction work.”

Native American monitors are very important in the protection and preservation of cultural resources. They are trained in their individual culture’s history and spiritual beliefs. They understand an artifacts use and importance to their ancestors. Their analysis and interpretation of an unearthen artifact is based on their education, their belief system and their respect for those that came before us. Native American monitors undeniably add value to and support for the accompanying archaeologist. Each offer different cultural values and perspectives, but a Native American monitor’s first and primary duty is to protect and preserve the Native American cultural resource. We therefore respectfully request that Native American monitors be included in the process of protecting our cultural resources.

C. When determining an artifact’s or cultural resources significance, both the archaeologist and Native American monitor should agree.
SANDAG believes that communication with tribal governments is important in the development of any project which may impact traditional tribal territories, sacred lands, or cultural resources. As suggested by the commenter, Mitigation Measure CULT-D was revised in Section 4.6.5 to include the following language: “SANDAG shall and other implementing agencies can and should retain a Tribal monitor (at historic rates of compensation) or tribal representatives designated by the Tribal Council or chairperson, if so requested, to accompany a qualified archeologist to identify, and determine the significance of, cultural resources and/or sacred lands. Both the archeologist and tribal monitor shall observe ground-disturbing activities and/or other scientific surveying that may occur in preparation for construction activities.”

D. The DEIR must be amended and/or modified to provide the Native American monitor the power to divert or halt ground disturbance operations in addition to the qualified archaeologist.

CULT-D states that when archaeological deposits and/or features (cultural resources) are encountered during ground disturbing activities, an Archaeological Data Recovery Program (“ADRP”) will be implemented. The ADRP must include protocols for monitoring, preservation and long-term protection for any unearthed cultural resources. Therefore, the Tribe must be consulted in the preparation of any such program in order for our concerns to be adequately addressed. And moreover, in any ADRP the Native American monitor must be given the joint authority to divert or temporarily halt ground disturbance operations in the areas where potentially significant cultural resources are discovered and we must have a say in those resources fate. As mentioned above, Native American monitors and archaeologists approach culturally sensitive finds very differently. Neither process of evaluation is more important than the other and each must be given the same amount of respect from the participating governments of the County of San Diego.

II. PREDICTED REGIONAL GROWTH AND EXPECTED LAND USE CHANGES FOR THE YEARS 2020, 2035 AND 2050 WILL UNDENIABLY HAVE SIGNIFICANTLY ADVERSE AFFECTS ON KNOWN AND UNKNOWN CULTURAL RESOURCES.

It is predicted that the County of San Diego will reach a population of 1,160,435 by 2050. Future development and redevelopment projects will, without a doubt, result in a wide range of construction and ground and/or earth disturbing activities. Moreover, “these ground-disturbing activities, associated with infill, redevelopment, and/or expansion of infrastructure, have the potential to impact cultural resources. With additional growth and increased development intensities, the extent of impacts to cultural
resources by 2050 would be greater than that experienced by 2020 and 2035 as more resource-sensitive land would be disturbed over time. In fact, as the DEIR states several times, even minimal grading activities will have significant and/or substantial impact on cultural resources. It is also important to emphasize that when redevelopment projects, or intensification of land uses, take place it is still possible that cultural resources will be unearthed and discovered. It is for this important reason that Native American monitors must always be present alongside a qualified archaeologist during all previously undeveloped land projects, as well as all previously developed projects. It is crucial for SANDAG and the other implementing agencies to recognize and acknowledge that local Native American tribes must be involved in the protection and preservation of their cultural resources and Native American monitors must be present in the field to ensure their ancestors' and their past is preserved.

III. FORECASTED TRANSPORTATION NETWORK IMPROVEMENTS FOR THE YEARS 2020, 2035 AND 2050 INCLUDE ALL MAJOR ROADWAYS WITHIN OUR TRIBE’S TRADITIONAL TERRITORY.

Ground disturbing activities associated with forecasted transportation network improvements are anticipated by this DEIR. Moreover, given the magnitude and location of some of the expected projects, substantial adverse effects on significant cultural resources will occur. As mentioned previously, State Route 76, State Route 78, Interstate 5 and Interstate 15 all run through and affect our traditional territory. In additional to these highways and interstate, our traditional territory is also affected by rail lines, such as the Sprinter and Coaster. Each of these transportation networks will be impacted by the forecasted SANDAG transportation network improvement projects through 2050. There are many known cultural resource sites along these heavily traveled roadways and rails. It is also just as likely that there are just as many unknown sites as well. Moreover, the DEIR makes it clear that each of these major roadway and rail improvements will almost certainly impact our prehistoric villages, camp sites, ceremonial sites, religious and/or spiritual sites, and burial sites, to name a few. Therefore, we agree with SANDAG that “implementation of the transportation network improvements in the 2050 RTP/SCS would impact these [cultural] resources if encountered” and thereby recommend the presence of Native American monitors to observe and to protect both the known and unknown cultural resources.

IV. CULT-1: CULTURAL RESOURCES - FAILS TO STATE THE CRUCIAL IMPORTANCE OF HAVING ON-GOING COMMUNICATIONS WITH SURROUNDING TRIBAL GOVERNMENTS AND THE FUNDAMENTAL NECESSITY TO HAVE NATIVE AMERICAN MONITORS PRESENT DURING ALL SURVEYS AND FIELD WORK.

4 See SANDAG 2050 RTP/SCS EIR at 4.5-28.
5 Id. at 4.5-23.

DEIR Comment Letter to SANDAG
2050 Regional Transportation Plan/Sustainable Communities Strategy
Page 5 of 8
CEQA Guidelines Section 15064.5 describes a substantial adverse change to a cultural resource as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the cultural resource would be materially impaired. The Native American community translates “substantial adverse change” as the complete and utter annihilation of our cultural resources. To help protect our resources from the violent desecration by unnatural earth disturbances, local tribal governments must be kept in constant communication to help safeguard and preserve our history. Furthermore, SANDAG and the other implementing agencies must be required to utilize local Native American monitors to protect and preserve our cultural resources.

V. CULT-A IS DEFICIENT DUE TO THE EXCLUSION OF NATIVE AMERICAN PARTICIPATION.

Requiring the implementing agencies to conduct a review of literature, historic maps and conduct a record search for cultural resources is unsatisfactory. To leave it up to a “qualified cultural resource expert” to determine the need for additional surveys is irresponsible. These may be the necessary first steps to conducting a cultural resource report, but they should never be considered by a responsible lead agency to be the only and/or final steps. The physical location of cultural resources cannot always and will not always be found in archaeological data bases or published literature. Instead, for many cultural resources the lead agencies will have to reach out to not only the Native American Heritage Commission, but to any and all tribes that have filed a claim in the Sacred Lands Inventory. They will also have to contact all the local tribes to inquire if they have any additional information that they may not have submitted to the Sacred Lands Inventory. This, as mentioned above, will need to be done with more than one or two local Native American tribes.

VI. ALTHOUGH CULT-C PROVIDED A VARIETY OF CAPPING METHODS, NATIVE AMERICAN TRIBES SHOULD HAVE FINAL APPROVAL OF ANY CAPPING PLANS.

Avoidance of significant cultural resources is always the preferred choice of the Native American community. Our Tribe is always of the position that we would rather the developer completely avoid destroying our non-renewable sites than capping the site or worse, destroying the site. However, understanding that SANDAG would prefer the areas of significance to be “capped” we feel it is our duty to inform you that a preferred method of capping would be to require that no foreign substances be placed above the cap. For instance, no concrete, no asphalt, no structures of any kind, temporary or permanent, and no landscaping and/or vegetation with invasive root systems should be placed above the capping material. It is for these reasons, that Native American tribes should be consulted with and given the final approval of any capping method and/or plans.

As suggested by the commenter, Mitigation Measure CULT-A in Section 4.5.5 has been modified as follows (deleted text shown in strikethrough and new text shown in bold):

CULT-A

During CEQA review of development projects and transportation network improvement projects implementing the 2050 RTP/SCS, SANDAG shall and other implementing agencies can and should conduct a review of literature and historic maps and a records search to determine whether the project area has been previously surveyed and whether cultural resources were identified. In the event that the records indicate that no previous survey has been conducted, the project implementing agency shall obtain a recommendation from a qualified cultural resource expert or an appropriate facility regarding the need for survey. If a qualified cultural resource specialist conducts a survey of the project area. Specifically, the report shall explicitly state whether the resource is eligible for either state or local historical registers, the results of the literature study and site survey. In addition, SANDAG shall and other implementing agencies can and should contact the Native American Heritage Commission and any and all area tribes that have filed a claim in the Sacred Lands Inventory to identify potential places of cultural and/or religious importance or sites that may contain other cultural resources. Resources that cannot be avoided will need to be evaluated, and if found significant, will require project-level mitigation.

As suggested by the commenter, Mitigation Measure CULT-C in Section 4.5.5 has been modified as follows (deleted text shown in strikethrough and new text shown in bold):

CULT-C

During the planning, design, and environmental review phases of individual development projects and transportation network improvement projects implementing the 2050 RTP/SCS SANDAG shall and other implementing agencies can and should incorporate design measures in engineering documents to provide avoidance or minimization of impacts to significant archaeological or cultural resources. Archaeological or cultural resource sites identified as significant shall be avoided or mitigated by completion of a data recovery program conducted in compliance with CEQA and agency guidelines.
Site avoidance and preservation can include capping the site with gravel or construction fabric and 16 to 18 inches of sterile fill soil. Sites proposed for capping shall be indexed so future researchers have reasonable knowledge of the resources that have been protected. Capped sites can be landscaped with native, shallow rooted plants that are compatible with the surrounding biologic habitat. Suggested capping methods should be communicated to Interested Tribes for their review and Tribal recommendations shall be considered to the maximum extent feasible as capping plans are finalized. Passive uses for capped sites include trails, picnic areas, and play areas. Capped areas should not contain asphalt or landscaping with invasive root systems.

During the planning, design, and environmental review phases of individual development projects and transportation network improvement projects implementing the 2050 RTP/SCS SANDAG shall and other implementing agencies can and should incorporate design measures in engineering documents to provide avoidance or minimization of impacts to significant archaeological resources. Archaeological sites identified as significant shall be avoided or mitigated by completion of a data recovery program conducted in compliance with CEQA and agency guidelines. Site avoidance and preservation can include capping the site with gravel or construction fabric and 16 to 18 inches of sterile fill soil. Sites proposed for capping shall be indexed so future researchers have reasonable knowledge of the resources that have been protected. Capped sites can be landscaped with native, shallow rooted plants that are compatible with the surrounding biologic habitat. Passive uses for capped sites include trails, picnic and play areas, parking lots, and tennis or volleyball courts.
VII. CULT-D IS INADEQUATE DUE TO THE OMISSION OF A NATIVE AMERICAN MONITORING REQUIREMENT AND SANDAG’S NEED FOR CURATION OVER THE NATIVE AMERICAN BELIEFS OF REPATRIATION.

As mentioned above, CULT-D must be amended and/or modified to require the presence of Native American monitors. Moreover, the local Native American tribes must have a voice as to the future of any and all unearthed artifacts. It is our Tribe’s belief that all artifacts, small or large, must be repatriated to the earth from which they came. They are not to be kept on a shelf in a laboratory or museum. Hence, in order to treat these unearthed artifacts with the respect and dignity they deserve, they must be returned to the earth. Therefore, out of respect for the culture in which these artifacts belong, all artifacts recovered must be returned to their Most Likely Descendant and repatriated. Repatriation is supported by California Public Resources Code Section 5097.901 and in People v. Van Horn (1990) 218 Cal.App.3d 1378. SANDAG and the other implementing agencies should no longer hold the position that curation is the only fate of an unearthed artifact, but rather SANDAG and the other implementing agencies should deem repatriation by the local Native American tribe as an equally, if not more favorable, fate.

VIII. CULT-2: DISTURBANCE OF HUMAN REMAINS - DOES NOT TAKE INTO ACCOUNT THE PROBABLE RECOMMENDATION OF AVOIDANCE BY THE MOST LIKELY DESCENDANT

As suggested by the commenter, Mitigation Measure CULT-D has been modified. Please refer to Response to Comments O-4 and O-10.

VIII. CULT-2: DISTURBANCE OF HUMAN REMAINS - DOES NOT TAKE INTO ACCOUNT THE PROBABLE RECOMMENDATION OF AVOIDANCE BY THE MOST LIKELY DESCENDANT

As suggested by the commenter, Mitigation Measure CULT-F was added to Section 4.5.5 of the EIR. CULT-F reads as follows:

CULT-F

If human or nonhuman remains are found, construction shall be immediately suspended in the in the vicinity of the discovery and determine if the remains discovered are human or nonhuman. For human remains, the archeologist and Tribal monitor, if present, shall protect discovered remains and/or burial goods remaining in the ground from additional disturbances. In the event that the human remains are discovered to be Native American, project implementation agencies shall contact the NAHC so that a Most Likely Descendant can be identified as required under California Public Resources Code §5097.98. Through coordination with SANDAG (or other implementing agencies), the Most Likely Descendant will determine the ultimate disposition of the human remains in compliance with all applicable local, state, and federal laws. Whenever possible, areas in which Native American remains and/or burial goods are discovered shall be avoided and placed into protected open space.

9 California Public Resources Code Section 5097.991 states that the policy of the State of California is that Native American remains and associated grave artifacts be repatriated.
10 See SANDAG 2050 RTP/SCS EIR at 4.5-35.

DEIR Comment Letter to SANDAG
2050 Regional Transportation Plan/Sustainable Communities Strategy
Page 7 of 8
### DISTURBING ACTIVITIES WITHIN OUR TRADITIONAL TERRITORY.

The Tribe requests that SANDAG and/or the implementing agencies be required to enter into a pre-excavation agreement with the Tribe prior to obtaining grading permits and/or beginning earth disturbing activities within our traditional territory. This agreement contains provisions to address the proper treatment of unearthed cultural resources and Native American human remains inadvertently uncovered during the course of a project. This agreement is necessary to ensure that all parties understand their rights and responsibilities under the laws of the State of California.

### X. CONCLUSION

The San Luis Rey Band of Mission Indians appreciates this opportunity to provide comments on SANDAG’s 2050 Regional Transportation Plan/Sustainable Community Strategy DEIR. The Tribe is hopeful that SANDAG will incorporate our concerns and amend/modify the cultural resource mitigation measures accordingly.

As always, we look forward to working with SANDAG to guarantee that the requirements of CEQA are rigorously applied to the 2050 RTP/SCS. We thank you for your continuing assistance in protecting our invaluable Luiseño cultural resources.

Sincerely,

Merri Lopez-Koifer  
Tribal Legal Counsel

cc:  Mel Vernon, SLR Captain  
Carmen Mojado, SLR Secretary of Government Relations and President of Saving Sacred Sites

**DEIR Comment Letter to SANDAG**  
2050 Regional Transportation Plan/Sustainable Communities Strategy  
Page 8 of 8
This comment provides introductory remarks. No further response is required.

Please see Master Response 9 for a discussion of the relationship between the plan’s VMT and GHG reductions, and explanation of how the 2050 RTP/SCS meets the sustainability goals and intent of SB 375. Further discussion of the relationship between VMT and GHG impact analysis is provided in Master Response 20.

With noteworthy goals but limited implementation, the Sierra Club believes it is critical that SANDAG reviewed the current document and realistically consider a true, transit-oriented alternative that significantly
Please see Master Response 10 for a discussion of TransNet financing constraints.

This is a general comment; the commenter’s specific assertions regarding the legal adequacy of the DEIR are presented in other comments, and addressed in responses to those comments. This EIR has been prepared with a sufficient degree of analysis to enable decision makers to take intelligent account of the environmental consequences. Consistent with CEQA Guidelines, such an evaluation need not be exhaustive; the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. (CEQA Guidelines § 15151.) Please note that a decision on the 2050 RTP/SCS will be based on the Final EIR, not the Draft EIR.

This EIR has been prepared in compliance with CEQA and the CEQA Guidelines. (Pub. Res. Code §21000 et. seq., CEQA Guidelines §15000 et. seq.) The commenter’s specific assertions regarding the legal adequacy of the EIR and CEQA compliance are presented in other comments, and addressed in responses to those comments.

SANDAG recognizes the importance of EIR public participation. The commenter does not identify any specific deficiencies in the 2050 RTP/SCS EIR public participation process. Regarding the commenter’s general concerns about public participation, please note that SANDAG implemented an extensive public review and participation process for the 2050 RTP/SCS and EIR. (See Draft EIR, Section 1.4.) The public review period for the Draft EIR was 55 days, exceeding the minimum requirements under CEQA Guidelines §15105.

Please note that the commenter’s list of “significant irreversible” impacts corresponds to the significant unavoidable impacts described in detail in the Executive Summary (pages ES-3 through ES-5). Significant irreversible effects are addressed in Section 7.3 of the Draft EIR. See Master Response 6 for additional responses to comments about significant and unavoidable impacts.

The commenter’s legal assertions do not match the cited Public Resources Code sections; for example, they do not literally state that an EIR “must contain as much information and analysis that is known and available at the time of preparation.” The comment ignores other counterbalancing, pragmatic CEQA Guidelines requirements that are particularly applicable to the Program EIR prepared for the 2050 RTP/SCS. For example:

- An EIR evaluation of a project’s environmental impacts need not be exhaustive. (§15151)
- The courts have not looked for perfection, but for adequacy, completeness, and a “good faith effort at full disclosure.” (§15151)
- The adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. (§§15151, 15204(a))

scales back freeway and roadway improvements, in order to achieve the goals set forth in the RTP/SCS. Simply put the current iteration continues to place an emphasis on freeway/roadway expansion, which simply is not sustainable. This letter amongst several others submitted reference numerous academic studies highlighting the danger and liability of following the freeway expansion, business as usual approach. In light of the fact that significant funding for listed projects is allocated from TransNet, SANDAG should acknowledge that TransNet can and should be restructured and prioritized to place transit projects before freeway improvements. Adoption and certification of the current RTP/SCS and EIR will do more than set a bad planning precedent it will act as a direct violation of CEQA and CEQA Guidelines.

I. Importance of CEQA Compliance

CEQA is the cornerstone of California’s environmental legislation. The Court has referred to the EIR as “the heart of CEQA.” Agencies are held to a high level of environmental accountability through the planning and decision-making stages of major development. The California legislature enacted CEQA to “[e]nsure that long-term protection of the environment shall be the guiding criterion in public decisions.” The California Supreme Court has repeatedly held that CEQA must be interpreted so as to “afford the fullest possible protection to the environment.” Therefore, the proper interpretation of CEQA is one that will impose a “low threshold requirement for initial preparation of an EIR and reflects a preference for resolving doubts in favor of environmental review when the question is whether any such review is warranted.”

The 2050 RTP/SCS will result in significant, irreversible environmental consequences. By its own admission, SANDAG acknowledges that the Plan will result in significant impacts to the following areas: aesthetic and visual resources; agricultural and forest resources; air quality; biological resources; geological, soils, and mineral resources; greenhouse gas emissions; hazards and hazardous materials; land use; noise; population and housing; public services; utilities and energy; recreation; transportation; and traffic; and water supply. With significant impacts across the spectrum, a special degree of public participation and opportunity for criticism is warranted. Informing the public about the potential significant environmental effects of proposed projects and the reasons behind an agency’s decision to approve a project in spite of the potential environmental effects is fundamental purpose of CEQA. The CEQA statute and the Guidelines provide for a public comment and review period, which enables citizens “to make important contributions to environmental protection” and facilitates “notions of democratic decision-making.” In this regard, CEQA review not only protects the environment, but also informs self-government, accountability, and transparency.

II. The DEIR Is Legally Indefensible.

The Sierra Club is specifically concerned that the DEIR is missing pertinent information from which to make a proper assessment. CEQA mandates that the DEIR contain all pertinent information to ensure that the EIR is comprehensive document that provides the information necessary to allow decision-

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6 No Oil, Inc. v. City of Los Angeles (1974) 13 Cal. 3d 98, 74
7 Wildlife Assn v. Chicozereng (1976) 18 Cal.3d 190, 206 (internal citations omitted)
9 DEIR 3-5
10 CEQA Guidelines § 15020, subd. (a)(1) and (4)
11 Concerned Citizens of Costa Mesa, Inc. v. 32nd District Agricultural Association (1980) 42 Cal. 3d 929, 936.
• The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated. (§15146)
makers and the public to make an informed decision about the adequacy of the document and proposed project. Thus, a planning document should not be a perfunctory – it must contain as much information and analysis that is known and available at the time of preparation to identify and analyze all significant environmental impacts and whether alternatives and/or mitigation measures exist which would substantially lessen the significant environmental effects.32

A. The DEIR's Project Description is Insufficient to Satisfy Requirements of CEQA.

The Courts have recognized an EIR's need for "[a]n accurate, stable, and finite project description," and that an accurate description of the project is "necessary for an intelligent evaluation of the potential environmental effects of a proposed activity."33 Public participation is an essential part of CEQA. Please note that the Draft EIR is a Program EIR. A Program EIR is not expected to provide the level of detail found in a project level EIR. Please see Master Response 1 for additional discussion of the purpose of a Program EIR and the appropriate level of detail.

Regarding the commenter's general concerns about public participation, please note that SANDAG implemented an extensive public review and participation process for the 2050 RTP/SCS and EIR. (See Draft EIR, Section 1.4.) The EIR also was made available for a 55-day public review period, exceeding the minimum review period required by CEQA. (See CEQA Guideline §15105.) The commenter's specific criticisms of the EIR's project description are presented in the comments that follow, and are addressed in responses to those comments.

A key justification for developing the RTP/SCS with a 2050 planning horizon is to consider future revenues and projects approved by voters through the TransNet Extension Ordinance that extends to 2048; see Master Response 7 for further discussion of the 2050 planning horizon. Please see Master Response 1 for further discussion on the level of detail required for project impacts and mitigation in a Program EIR. The Draft EIR does not contain a statement that 2050 is "too far in the future" to adequately assess impacts of the project and sufficiently mitigate them, at a programmatic level of detail.

P-11

A key justification for developing the RTP/SCS with a 2050 planning horizon is to consider future revenues and projects approved by voters through the TransNet Extension Ordinance that extends to 2048; see Master Response 7 for further discussion of the 2050 planning horizon.

Please see Master Response 1 for further discussion on the level of detail required for project impacts and mitigation in a Program EIR. The Draft EIR does not contain a statement that 2050 is "too far in the future" to adequately assess impacts of the project and sufficiently mitigate them, at a programmatic level of detail.

P-10

See Response P-2 and Master Response 9 for a discussion of how the 2050 RTP/SCS meets the goals and intent of SB 375. Please also see Master Response 7 for a discussion of transportation network components and project prioritization, and a description of the 2050 RTP/SCS emphasis on transit.

P-11

The commenter is correct that Alternatives 2a, 2b, 3a, 3b, and 4 have significant air quality impacts, but less than the 2050 RTP/SCS. Alternative 5 (Slow Growth) also has significant air quality impacts, but less than the 2050 RTP/SCS. More information on the level of detail provided for impact analysis of project alternatives and the selection of alternatives is provided in Master Response 16.

\[ \text{Comments DEIR 2050 RTP/SCS Page 3 of 17} \]

\[ \text{October 2011} \]

\[ \text{Rob Roodle} \]

\[ \text{August 1, 2011} \]
a. Failure to Adequately Describe the RTP’s Transportation Projects

Since the release of the DEIR, there has been at least one change made to the projects included in the 2050 RTP/SCS. On July 7, 2011, the California Department of Transportation (“Caltrans”) and the Federal Highway Administration (“FHWA”) announced that they had selected the Express Lanes only alternative as the preferred alternative for the I-5 Express Lanes project, which would add two express lanes in each direction from La Jolla to Oceanside.30 The project description in the DEIR should be updated to reflect this and other changes. For example, the I-5 freeway expansion between La Jolla Village Drive and the I-5/I-805 merge is listed, in the DEIR, as being improved from 8F/14P to 8F/14P – 2ML (F=Freeway lanes, ML=managed lanes (HOV and value pricing)).31 This description of the project is now inaccurate and does not include “the precise location and boundaries of the proposed project”, as required by CEQA, because the Locally Preferred Alternative provides for four managed lanes to be added in each direction between La Jolla Village Drive and Oceanside.32

Furthermore, the 2050 RTP/SCS contains discrepancies between itself and the DEIR that forestall meaningful review. The 2050 RTS/SCS and the DEIR contain different project phasing timelines, as shown in Attachment A. Many projects in the DEIR are listed as “scheduled to be completed” by 2020, 2030, and 2050, whereas in the 2050 RTP/SCS those same projects are scheduled to be completed by 2018, 2030, and 2040 (respectively). SANDAG needs to provide an explanation as to the difference between timelines in the 2050 RTP/SCS and the DEIR? What is the actual timeline for these projects? An accurate assessment of the independent and cumulative environmental impacts for the years 2020, 2030, and 2050 is thwarted without an accurate timeline for when the projects are to be completed. The DEIR must be updated to accurately reflect the proposed projects, and then environmental impacts and mitigation measures must be recalculated to ensure that the DEIR accurately informs decision-makers and the public of the Project’s environmental consequences.

b. The TransNet Ordinance is Inherently at Odds with the SCS and Therefore Should not Serve as the Baseline for the Projects in the 2050 RTP and DEIR

As other commenter’s have noted, TransNet is the leading constraint on the 2050 RTP/SCS. The projects approved as part of the TransNet ordinance favor highway investments over transit investments. Approximately, forty-two percent of the TransNet funds are dedicated to major highway and transit congestion relief funds. Out of a total of $9.945 million dedicated to specific corridor improvements in the Ordinance, $6.760 million in was allotted for highway capital improvements, while only $2.185 million is allotted for Bus Rapid Transit (BRT) and Rail Transit Capital Improvements. Therefore, out of the total funding allocated toward corridor improvements 71.6 percent was for highway capital improvements, while 28.4 percent was for BRT and Rail Transit Capital Improvements.

31 DEIR 2.7.5, 2.89
32 SANDAG Guidelines, 1 15124, subd. (a) (the locally preferred alternative provides for four managed lanes to be added on the I-5 between La Jolla Village Drive and the I-5/I-805 merge [g 1535 North Coast Corridor Planned Improvements Map, available at http://www.keepersandiegomoving.com/Documents/1535_North_Corridor_Planned_Improvements_Maps_list.pdf (as of July 24, 2011).]
33 See TransForm document titled “Recommendations for Improving SANDAG’s 2050 RTP and for Post-RTP Actions (May 28, 2011), related to Agenda Item 82 at the SANDAG Board of Director’s meeting on June 10, 2011.
Furthermore, 33 percent of total TransNet funds are dedicated towards local programs. This number is broken down into 29.3 percent for Local Street and Road Programs, 2.1 percent for Smart Growth Incentive Programs, and 1.8 percent for Habitat-Related Mitigation Costs, which fund the habitat-related mitigation costs of local transportation projects consistent with the RTP as part of the Environmental Mitigation Program. Thus, a significant portion of TransNet funds dedicated to local programs will benefit solo drivers and people not making use of the public transportation options available to them. Although the SCS places significant emphasis on the growth and use of public transit to reduce GHG and VMT, almost half of the funding for major new transit facilities is not scheduled to be expended until the years 2041-2050 ($14,320 million (YOE) to be spent between 2041-2050, out of a total of $32,751 million (YOE)). In total, 44 percent of the money estimated to be spent on transit projects (including major new facilities, miscellaneous capital/repair/replacement, transit ops, and ADA and HRSA transportation services) is scheduled to be spent between the years 2041-2050.

In order to fulfill the purpose of the SCS requirement and satisfy the long-term goals of SB 375 — reducing GHG emission and VMT, TransNet must be reprioritized to frontload transit projects over highway improvements and expansions. As the 50-10 Plan states, “TransNet is not locked in stone. The measure allows flexibility in the event of changing technology, new priorities, or other factors during its 40-year term.” Section 16 provides for amendments to the Ordinance by a roll call vote with two-thirds of the SANDAG board in favor of amendment. Significant changes in the environment, transportation, and energy policy have occurred since TransNet was originally passed by the voters in 1987 and extended in 2004. In order to meet the goals of the 2050 RTP/SCS, SANDAG should vote to reprioritize TransNet to allot additional funding and earlier phasing for transit projects. Moreover, SANDAG has failed to provide a fundamental understanding of how the 2050 RTP/SCS interacts with TransNet and achieves the TransNet objectives. SANDAG must provide answers to the following questions:

- What amount of TransNet funds are scheduled for highway projects?
- What amount of TransNet funds are scheduled for public transit projects?
- What amount of TransNet funds are scheduled for IND/HOV projects?
- What TransNet projects have already been completed, and what TransNet projects are currently under construction or scheduled for construction? Have EIRs been prepared for these projects? Were changes made, or have changes been made, to any of the projects as they were described in the TransNet ordinance? What were those changes? How were the changes made?

Furthermore, the proposed projects in the 2050 RTP/SCS do not line up accurately with the projects approved by voters in the 2004 TransNet Ordinance and Expenditure Plan. Appendix I compares the I-5 corridor improvements approved in the TransNet ordinance with the I-5 improvements listed in the various charts in the 2050 RTP/SCS. Not only are these segments inconsistent, but also the actual improvements are not the same. For example, the TransNet 2004 ordinance provides for I-5 to be expanded from 8 lanes to 10 lanes (high-occupancy vehicles) between SR 54 and I-8. However, the 2050 RTP/SCS and the DEIR provide for an expansion from 8 lanes to 2 lanes between SR 54

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P-13

See response P-13 and Master Response 10 for information on TransNet funding. This comment requests detailed descriptions and analyses of one source of funding for the 2050 RTP/SCS. The 2050 RTP/SCS is required to be revenue constrained, its funding sources must be realistic, and the details requested by the commenter are not necessary in order for SANDAG to conclude that the 2050 RTP/SCS has realistic sources of funding. A detailed description of the funding sources and how they are allocated is included in Chapter 5 of the 2050 RTP/SCS. Chapter 5 identifies all the funding sources (local, state, and federal), and how much is anticipated to be available for each decade of the plan. Further, many of the details requested by the commenter are not readily available and would require additional research and study. SANDAG disagrees that this detailed information on TransNet is necessary in order to “adequately assess the scope of the project,” i.e., to adequately describe the 2050 RTP/SCS. An EIR project description should not, and is not required to, supply extensive detail beyond that needed for evaluation and review of environmental impacts (CEQA Guidelines §15124.) To determine a project’s environmental effects, a Lead Agency is not required to conduct every study recommended by interested parties. (See, e.g., Irrigated Residents v. County of Madera (2003) 107 Cal. App. 4th 1383, 1395–1396.) Also, the quoted language from the Attorney General’s office comes is a generic statement submitted on an NOP for another project, and does not constitute substantial evidence that the 2050 RTP/SCS funding sources or allocations have an impact on GHG emissions. Lastly, the Draft 2050 RTP/SCS included both general purpose and managed lanes improvements in the I-5 corridor referenced in this comment. It is acknowledged that Caltrans and Federal Highway Administration selected the preferred alternative for the I-5 North Coast Corridor. The Final 2050 RTP/SCS includes this preferred alternative. See Master Response 13 for a full list of changes to the project description included in the Final EIR.
Please see Master Response 14 for a discussion of the selection of the 2050 RTP/SCS and EIR transportation performance measures and impact significance thresholds. Please also see Master Response 9 for a discussion of why the 2050 RTP/SCS is consistent with the sustainability goals and intent of SB 375.

Please note that the comment does not identify any specific alleged significant transportation impacts that the Draft EIR overlooked. Rather, the comment suggests different, multidisciplinary sustainability performance indicators that SANDAG should have used to evaluate the performance of the 2050 RTP/SCS. Several of the sustainability performance indicators listed by the commenter include topic areas analyzed by the EIR in both the transportation impact analysis, and in sections other than the transportation impact analysis, including environmental justice, air quality, noise, water pollution, land use, habitat protection, GHG emissions, and aesthetics. Other monitoring programs, such as the Regional Comprehensive Plan (RCP) Monitoring Program, collect and monitor data on the livability of the region, including such topic areas as housing, healthy environment, economic prosperity, and public facilities.

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P-14

cont.

P-15

and USR 15 and 8F to 8F-operational between USR 15 and I-8. Did the SANDAG board approve these changes to the TransNet project?

The requested information is paramount in order to adequately assess the scope of the Project. TransNet is the second largest overall revenue source for the draft 2050 RTP/SCS (second to local General Funds/Miscellaneous Local Road Funds)-total estimated revenue from TransNet is $25,248 million, or 12.7 percent of the total revenue source ($196,178 million).25 When combining TransNet revenue with the revenue from the TransNet bond proceeds ($6,286 million), the total revenue is $31,534 million, or 16.1 percent of all revenue sources.26 As the California Attorney General’s office has noted, “the way a transportation plan allocates funds among potential transportation projects can make a significant difference in the amount of transportation-generated GHG emissions in the future.”27 Thus, because of the influence that TransNet has on the 2050 RTP/SCS, it is essential that the public fully understand the relationship between two programs.

c. DEIR Lacks Adequate Thresholds of Significance for Transportation.

The determination of whether a significant adverse environmental effect will result from a project is a key function of CEQA.28 CEQA relies on the agencies to use proper thresholds of significance as an analytical device upon which to judge the significance of a project’s impacts.29 The Courts have held that “[b]efore the impacts of a project can be assessed and mitigation measures considered, an EIR must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined.”30 If the environmental review document fails to properly identify the significance of an impact the ability to adequately mitigate is equitably compromised.

The 2050 RTP/SCS lists performance measure categories as: system preservation and safety, mobility, prosperous economy, reliability, healthy environment, and social equity.31 Although it is clear in the DEIR that SANDAG sufficiently evaluates the adequacy of the proposed Project’s performance by evaluating the levels of congestion and transit times. Rather than driving SANDAG toward a sustainable transportation system, these performance indicators foster auto-oriented transportation improvements as they focus solely on improving conditions for the single occupancy vehicles. Selecting these as the most significant performance indicators has hindered SANDAG’s ability to track the accuracy of its plan resulting in SANDAG’s “miscategorizing problems and misdirecting decision-making.”32

A revised EIR should embrace performance indicators that properly measure the outcomes of policies, programs, identify problems, and evaluate progress towards stated goals and objectives.33 Without

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34 Ibid.
36 CEQA Guidelines § 15064(a) 1502.16 (an EIR must describe direct and indirect effects and their significance).
37 CEQA Guidelines § 15064.
38 SVP-82404, Committee v. Monterey City Board of Supervisors, 87 Cal. App. 4th 599, 119-120.
39 RTP/SCS Table 2.2, 2-5 RTP, 2-67.
40 Victoria Transport Policy Institute, Performance Evaluation: Practical Indicators for Evaluating Progress Toward Planning Objectives, supra.
adequate performance measures to identify the actual results of the 2050 RTP/SCS, the true extent of environmental impacts and feasible mitigation measures cannot be appropriately implemented. For example, sustainable performance indicators include quality of overall accessibility, land use mix, land use accessibility, children’s accessibility, commute speed, mode split, transit service, motor transit options, congestion delay, consumer transport costs, affordability, facility costs, freight and commercial traffic efficiency, delivery services, market principles, planning practices, user rating, citizen involvement, crash costs, planning process, health and fitness, community livability, cultural preservation, basic access, horizontal equity (fairness), progressivity, mobility for non-drivers, mobility for people with disabilities, non-motorized transport, climate change emissions, air pollution, noise pollution, water pollution, land use impacts, habitat protection, and roadway aesthetic conditions. Using performance indicators analogous to those cited above would cover a broad range of economic, social, and environmental objectives that allow SANDAG to more effectively identify, modify, and mitigate the environmental impacts of the proposed Project and develop a plan that supports a high quality of life and shifts to a new sustainable transit paradigm.

Not surprisingly the performance index relied upon by SANDAG is also deficient. A performance index quantifies performance indicators and measures and then produces an objective “report card” of system performances, such as safety, mobility and economy, and customer satisfaction.[1] Thus, a performance index, which relies on poor indicators, simply compounds the problems associated with them because by evaluating and reporting on performance indicators, which focus chiefly on the automobile, the agency is limiting itself to auto-dependent solutions to the auto-indicated problems.

For example, conventional performance indicators include roadway level-of-service (LOS), average traffic speeds, average congestion delay (measured annually per capita), parking convenience and affordability (low price), and crash rates per vehicle-mile.[2] A performance index which reports on these outdated indicators would “justify road and parking facility capacity expansion that tends to create Automobile Dependent transport and land use systems, increasing per capita vehicle travel and reducing the viability of walking, cycling, and public transit. This increases per capita vehicle ownership and use, increasing resource consumption, pollution emissions and land consumption, and exacerbating the transport problems facing non-drivers.”[3] It is necessary for SANDAG to revise the 2050 RTP/SCS and DEIR to include more sustainable performance indicators, and update the performance index to ensure that the Plan meets its long-term, Smart Growth goals and objectives.

B. DEIR’s Inadequate Analysis for Significant Environmental Impacts

a. Transportation & Traffic

The proposed highway/roadway improvements would result in a considerable increase to the freeway’s capacity and, as a consequence, would trigger increased travel. The reduction in traffic congestion accompanied by increases in vehicle speeds that occur with increases in highway capacity would ultimately result in induced travel. Additional lanes in the corridor will clearly attract additional traffic, either from parallel facilities or as a result of induced demand that will be satisfied by the additional

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[3] Ibid.
[4] Ibid.

P-16 Please see Master Response 8 for a discussion of how SANDAG’s transportation modeling did take into account generated and induced traffic, and therefore why the Draft EIR did not underestimate the impacts of the 2050 RTP/SCS.
P-16 Cont.

roadway capacity. However, the DEIR does not take into account induced or generated travel and therefore significantly underestimates the Project’s environmental impacts (e.g., increased traffic, increased air pollution (criteria pollutants, toxic air contaminants, and GHG emissions), and increased development in and around the freeway corridor.

i. The DEIR analysis of the Proposed Project’s Impacts on Transportation and Traffic is Inadequate because it does not discuss Generated and Induced Traffic.

An established scientific body of research demonstrates that widening highways is merely a temporary solution to the complex problem of traffic congestion, similar to placing a band-aid over a gushing wound. A June 2011 report from the Victoria Transport Policy Institute explains that “[r]oad improvements that reduce travel costs attract trips from other routes, times and modes, and encourage longer and more frequent travel.” This phenomenon is known as “generated traffic.” Additional traffic occurs on a given roadway when drivers adjust their driving behavior—their route, time and mode of travel, destination, and travel frequency—consideration of the newly expanded roadway. Generated traffic leads to induced travel, which is when drivers who would previously have chosen to avoid the inconvenience of driving to work will instead choose to drive their own vehicle, increasing the total VMT.

The increase in VMT can arise from, for example, drivers who previously would carpool choosing to travel alone, some who travelled on parallel routes would travel on the freeway instead, some who travelled earlier to later so would revert to travelling at a more convenient time, some who rode the bus would choose to drive a car, and some who did not travel the route at all would be induced to travel on the newly fixed-up roadway. The report summarizes the findings of several relevant studies:

- The medium-term elasticity of highway traffic with respect to California state highway capacity was measured to be 0.6-0.7 at the county level and 0.9 at the municipal level (Hansen and Huang 1997). This means that 60%-90% of increased road capacity is filled with new traffic within five years. Total vehicle travel increased 1% for every 2-3% increase in highway lane miles.

- The long-term elasticity of VMT with respect to traffic speed was estimated to be 0.64, meaning that a 10% increase in speed results in a 6.4% increase in VMT, and that about a quarter of this results from changes in land use (e.g., additional urban fringe development).

Noticeably absent from the DEIR are any references to generated or induced traffic caused by the transportation improvements in its analysis of how the improvements will impact transportation and traffic. SANDAG fills in the gaps left with shallow and oversimplified statements that highlight the inadequacies of its analysis:

- The DEIR states that “The implementation of the 2050 RTP/SCS would not substantially decrease the percentage of work and higher education trips accessible...”40 Where is the supporting evidence? If SANDAG considered the impacts of generated and induced travel on work and higher transportation trips, would that significantly decrease the number of trips accessible in 30 minutes (decrease by more than three percent (3%) or more)?

42 DEIR, at p.4:16-21.

P-17

Please see Master Response 8 for a discussion of how SANDAG’s transportation modeling did take into account generated and induced traffic, and therefore why the Draft EIR did not underestimate the impacts of the 2050 RTP/SCS.

The first bullet point on the top of page 9 in the comment addresses congestion and travel time. As discussed in Section 4.16 of the EIR, regional population and job growth by 2020 would increase the number of people commuting to work during peak hours. At the same time, transportation network improvements implemented between 2010 and 2020 would expand HOV, transit, and active transportation options. These improvements would reduce the congestion that would have occurred if these improvements had not been implemented. Overall commute time, as analyzed in the EIR, is based on a net change in commute time for all transportation modes (drove alone, carpool, and transit). Additionally, the project description for the 2050 RTP/SCS has been revised, and is included in the Final EIR. Performance measure results and transportation impacts using these performance measures as significance criteria were revised to reflect changes in the project description. Please see section 4.16, Transportation and Traffic, for these revisions.
Comment noted. The text referenced in the comment was intended to characterize the nature of non-work related trips. It has been removed from Section 4.16 in the Final EIR. Since the analysis is based on wholly different information provided, as provide in Technical Appendix 3 of the 2050 RTP/SCS, the impact analysis and conclusion remain the same.

The DEIR states that new transit services would "reduce congestion during peak travel times and increase the availability of more convenient and efficient transit options for commuters" for year 2020, but then in the next sentence states that "the average work trip travel time would increase by 1 minute over 2010 conditions." If commute time is increasing, how can reductions in congestion be attained? In many situations, people run personal errands or trips on their ways to and from work (i.e., trips to the grocery or drug store) since they may not be able to take time during work hours for these trips. SANDAG must account for the possibility that these types of personal stops during commutes actually worsen or lengthen congestion problems?

ii. The DEIR Improperly Relies on Faulty Assumption Regarding the Benefits and Impacts of HOT and Managed Lanes to Attain Transit Objectives.

The proposed Project relies in part on transit improvements to meet the vision and objectives of the 2050 RTP/SCS. The goals of SANDAG’s transit system are to lessen freeway congestion, encourage compact land uses, have concern for transit dependent riders, serve as residents’ second car, expand service to employment centers, and maintain consideration for school trips. The result of an efficient and well-developed transit system would be a reduction in many of the environmental, health, and quality of life impacts that are predicted to occur in the DEIR. SANDAG relies substantially on the creation of additional general-purpose lanes coupled with HOT, Managed Lanes and Bus Rapid Transit ("BRT") to obtain the target objective. However, although it is clear that BRT fits under the umbrella definition of transit, it does not fit so neatly within the context of transit goals. There are numerous documented problems and concerns with BRT that contradict the underlying principles and goals of transit.

KonSULT, a UK organization whose mission is to “clarify the process of developing sustainable urban transport strategies” and “enable policy-makers to select effective policy instruments” analyzed the effects that introducing BRT has on communities. Study results including a myriad of weak or neutralizing effects:

- Response to BRT of changed routes will lead to a weak reduction in road traffic because people living away from the guided bus corridor travel by car in order to use the service.
- Response to BRT of changed destinations will lead to a weak reduction in road traffic because increased average bus speeds and reliability make travel to more distant destinations more attractive/feasible.
- BRT will have a weak contribution to the problem of community severance because whilst guided bus systems would usually be associated with infrastructure works to improve pedestrian conditions, including provision of additional road crossings, the curbs on the guidedway represent a barrier to lateral movement.
- BRT will have a neutral contribution on the problem of visual intrusion so long as design is sensitive to the surrounding environment.

P-17 Cont.

P-18

P-18

Comment noted. Please note that the KonSULT study is a generic study, and does not constitute substantial evidence about the effectiveness of BRT in the San Diego region. The 2050 RTP/SCS includes many Bus Rapid Transit (BRT) and Rapid Bus services that will provide long-range commute options that leverage existing and future investments in Managed Lanes facilities along the region’s freeways. BRT would complement the regional Trolley/SPRINTER services by providing regional connections along the I-15 corridor between Escondido and downtown San Diego via Kearny Mesa and Mid-City; the SR 52 corridor between East County and Kearny Mesa/University City; the south I-805 corridor between Otay Mesa/Otay Ranch and downtown San Diego; and between Otay Mesa/Otay Ranch and Kearny Mesa/ University City. These routes will connect communities with job centers such as UTC, Sorrento Mesa, Kearny Mesa, Palomar Airport Road, and downtown San Diego. Implementation of BRT will include transit priority treatments such as signal priority for buses, queue jump lanes and short segments of dedicated transit lanes to help increase travel speed and trip reliability and prevent bus bunching and delays. These measures link regional arterials to the Managed Lane network and transitways at transit stations and other strategic locations, providing transit vehicles with easy access to the regional network. SANDAG selected BRT for these specific routes based on three key strategies, as described in Chapter 6 of the 2050 RTP/SCS, that guided the development of the 2050 Regional Transit Network, which include: (1) improvements to the current system that will improve the convenience and travel speeds of bus and rail service; (2) implementation of new transit services that will improve transit in more areas and offer new service types designed to attract new riders to transit; (3) enhancing the customer experience to make transit easier, safer, and more enjoyable to use.
Citing the general KonSULT study, the commenter outlines reasons why BRT does not meet the goals for the 2050 Revenue Constrained Transit Network, including that it will not significantly reduce congestion, will negatively impact environmental justice and equity. In reality, BRT would provide high-quality regional transit connections along high-demand corridors, enhancing existing service and providing an alternative method of travel to reach key destinations. BRT would also complement other transit such as the regional Trolley/SPRINTER lines, and would be supported by local transit such as Rapid Bus. The Sustainable Communities Strategy included in the 2050 RTP/SCS envisions a land use pattern that would make it easier for more people to walk and bike to key transportation centers rather than driving. SANDAG believes that BRT is a key component of the regional transportation system, and the 2050 RTP/SCS demonstrates a reduction in congestion (2050 RTP/SCS, Table 2.2) and fully analyzes equity issues as required (2050 RTP/SCS, Chapter 4).

Also, please refer to Master Response 7 for a discussion of the 2050 RTP/SCS transportation network components.
The EIR addresses, at a programmatic level, the impacts of all projects, including BRT and HOV/Managed Lanes projects that will be built over the horizon of the plan. See Master Response 7 for a discussion of managed lanes included in the 2050 RTP/SCS. Programmatic impacts and mitigation measures associated with BRT and HOT/HOV projects are identified for multiple environmental issue areas. Further, individual project-level impacts and mitigation measures will be addressed as each project in the Plan undergoes environmental review. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1. Also, please see Master Response 23 regarding why the EIR did not and is not required to analyze the impacts of individual project components.

The PATH study analyzed the safety performance between different types of high occupancy vehicle (HOV) facilities in California. The findings show that HOV facilities with limited access offer no safety advantages over those with continuous access, whether measured by percentage of collisions, collisions per mile, collisions per VMT, or collision severity. As part of the research, the PATH study investigated the relationship between HOV design features and safety performance of HOV facilities. One key design feature is shoulder/total width. The findings indicate that maintaining adequate shoulder and total width is essential, and a quantitative estimate for the relationship between shoulder and total width versus safety performance of HOV lanes is provided. Additionally, findings from investigating other influential factors on safety performance of HOV facilities, including design features of ingress/egress section in limited access HOV facilities, congestion, High Collision Concentration Locations and etc., were also documented. The study determined that while further research is needed, results to date suggest that improvements in HOV facility performance can be achieved by improved HOV facility design.

The 2050 RTP/SCS identifies future HOV/Managed Lanes corridors. The specific design of each corridor will consider how health and safety can be protected through adequate shoulder and total width, and take into account the other design factors mentioned in the PATH study. Project-specific CEQA documents will address project-specific safety issues, and may propose additional mitigation measures for safety.
Please see Master Response 2 and 9 for a discussion of why the 2050 RTP/SCS is consistent with the goals, intent, and requirements of SB 375, as well as the AB 32 2020 statewide GHG reduction target.

Master Response 20 discusses the Draft EIR’s GHG impact analysis approach. GHG-1 evaluated the impact of GHG emissions from implementation of the RTP/SCS compared to the baseline year of 2010. The GHG emissions for 2010 were provided in Tables 4.8.4 and 4.8-5 for land use and transportation, respectively. GHG-1 evaluates whether total emissions would increase compared to the baseline and is therefore independent of population.

GHG-2 evaluates the impact of GHG emissions from implementation of the RTP/SCS compared to the targets for SB 375. The targets set as a result of SB 375 are based on per-capita GHG emissions from passenger vehicles in 2020 and 2035, relative to 2005 (as specified by the regulation). Therefore, the information in Table 4.8-5 provided per-capita GHG emissions for 2005, and did not include the per-capita GHG Emissions for 2010 because they were not used in any impact assessment (N/A = Not Applicable).

GHG-3 evaluated the impact of GHG emissions from implementation of the RTP/SCS compared to the goals of applicable plans, including AB 32 and the Scoping Plan. The goal of AB 32 is to achieve 1990 emissions levels by 2020, but in the absence of reliable 1990 emissions data, an accepted approach is to achieve 15% below 2005 emissions levels by 2020. Therefore, 2005 was the year of comparison. The goal of AB 32 is to achieve a total, not per capita, reduction, and therefore a per-capita emission level was not evaluated in this impact.

The intent of the alternatives analysis is to compare the proposed project against project alternatives, not against a “baseline” or “existing conditions” scenario. The Alternatives analysis provides information for 2010 for informational purposes. The table below provides a summary of the GHG analysis conducted in the 2050 RTP/SCS.
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**P-24**
Please see Master Response 7 for a discussion of transportation network components, and Master Response 10 for a discussion of funding constraints for increasing transit investments. The 2050 RTP/SCS meets the SB 375 GHG emission reduction targets established for 2020 and 2035 without a funding reallocation, and is consistent with the latest (2010) version of the RTP Guidelines.

**P-25**
Please see Master Response 21 for information on the effectiveness of mitigation measures to reduce GHG emissions and their ability to meet the intent of SB 375. Please also see Master Response 1 regarding the EIR’s approach to programmatic mitigation.
Please see Master Response 2 and 9 for a discussion of why the 2050 RTP/SCS is consistent with the goals, intent, and requirements of SB 375.

Please see Master Response 21 for information on the effectiveness of mitigation measures to reduce GHG emissions and their ability to meet the intent of SB 375. A description of SANDAG’s land use authority and its ability to influence land use policies, planning, and development is provided in Master Response 4.

Please see Master Response 16 for a discussion of the EIR’s range of alternatives, the differences between the proposed project and the alternatives, and the alternatives analysis level of detail. In addition, Master Response 16 also discusses the Slow Growth Alternative.

In response to the comment regarding the No Project Alternative’s “minimal decrease in GHG emissions by 2020 as compared to the proposed project”, there are a number of projects that will be implemented by 2020 that would also be implemented under the No Project Alternative. Land use changes and growth forecasted in the 2050 Regional Growth Forecast would continue to occur under the No Project Alternative, and the transportation network improvements listed in Tables 6.2-1 and 6.2-2 in the EIR would also still be implemented. The GHG emissions analysis considered these components in the emissions calculations for the No Project Alternative. Master Response 20 further discusses the alternatives analysis conducted for the GHG analysis.

In addition, the commenter incorrectly refers to the “No Project” Alternative as the “No Growth” Alternative. As stated in the paragraph above, the No Project Alternative assumes the growth forecasted in the 2050 Regional Growth Forecast. In response to the comment regarding the impacts the 2050 RTP/SCS will have on altering drainage patterns when compared to the No Project Alternative, the cited text from Draft EIR page 6-44 is accurate. The No Project Alternative would likely not have the same compact development pattern as the 2050 RTP/SCS.
As explained in Draft EIR Section 6.2 (p. 6-7), the development pattern under No Project would likely be less compact because all transit improvements associated with the proposed project would not be available to support the transit-oriented development pattern envisioned in the 2050 RTP/SCS.

P-28
Cont.

P-29

The comment cites Citizens of Goleta Valley for the requirement that evidence support a conclusion that an alternative is economically infeasible. In contrast to the fact situation in Citizens of Goleta Valley, the 2050 RTP/SCS is a public project that must rely on funding that is either programmed or otherwise readily available. The economic feasibility issue for an extreme phasing alternative is not whether the total costs of an extreme phasing alternative make it infeasible to implement. Rather the economic infeasibility issue is whether government funding would be reasonably available to pay for the transit programmed in an alternative, or whether lack of available funding would be sufficiently severe as to render it impractical to proceed with the alternative. See Master Response 10 for discussion of TransNet funding constraints for additional transit projects, and 17 for a discussion of the reasons for rejecting two specific extreme phasing alternatives.

Also, the Draft EIR points out that an extreme phasing alternative is legally infeasible as well as economically infeasible. Federal law (23 CFR 450.322(b)(11)) requires RTPs to be revenue constrained. RTPs legally may include only those projects based on reasonable revenue projections.
This response has been divided into two sections labeled 30a and 30b. In response to comment 30a, please see Master Response 16 regarding the range of alternatives evaluated in the Draft EIR. As discussed in MR 16, Alternative 5: Slow Growth reduces GHG emissions. Compared to the proposed project, Alternative 5 reduces Impact GHG-1 (increase GHG emissions compared to existing conditions in 2010), although it does not change impact significance conclusions. Additionally, Alternatives 1, 2a, and 2b also reduce significant impact GHG-1 of the 2050 RTP/SCS in 2050, although the impact would remain significant under those alternatives.

In addition, GHG-reducing alternative offered by the comment is designed to increase transit ridership. Alternatives 2a, 2b, 3a, and 3b evaluated in the Draft EIR are also designed to increase transit ridership, by placing a higher priority on transit projects. An EIR is not required to evaluate every permutation of the alternatives offered by Draft EIR comments. See Master Response 16 for further discussion of the Draft EIR range of alternatives.

In response to 30b, refer to Master Response 21 for a discussion of the Draft EIR’s GHG mitigation measures. In addition, GHG-C has been revised to include the feasible measures as suggested, and as shown in bold text below:

### GHG-C

SANDAG shall and implementing agencies can and should require Best Available Control Technology (BACT) during construction and operation of projects, including:

- Solicit bids that include use of energy and fuel efficient fleets;
- Solicit preference construction bids that use BACT;
- Employ use of alternative fueled vehicles;
- Use lighting systems that are energy efficient, such as LED technology;
- Use CEQA Guidelines Appendix F, Energy Conservation, to create an energy conservation plan;
- Streamline permitting process to infill, redevelopment, and energy-efficient projects;
- Use adopted emissions calculator to estimate construction-related emissions;
- Use the minimum feasible amount of GHG-emitting construction materials that is feasible;
- Use of cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
- Use of lighter-colored pavement with increased reflectivity, which reduces the “heat island” effect;
- Recycling of construction debris to maximum extent feasible;
- Planting shade trees in or near construction projects where feasible.

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3. Utilization of “warm-mix” production method for asphalt that is known to significantly reduce GHG emissions during application for roadway paving. See, www.sandag.org/clip/clip/pdf/greenhgh.pdf

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The DEIR should provide and evaluate at least one alternative designed to maximize the reduction of GHG emissions. There are numerous policies and/or projects that SANDAG could consider to help achieve its goal, some of which it already considering and could fund at a significantly higher level. While this letter is not intended to provide a complete list, some of the possibilities include the following:

- focusing on eliminating transit shortfalls;
- increase serve capacity to meet increased demand for public transit in core urban areas;
- increase funding for transportation infrastructure to serve infill and mixed use development located near employment centers and provide incentives for such development;
- increased incentives for use of public transit, ride-sharing and carpools; and
- expanded public transit frequency of operation.

To further reduce the impact of the projects in the proposed RTP/SCS on air quality and climate change, specifically, the DEIR should evaluate the effect of including a mandatory “green construction” policy. Such a policy could require, for example,

- the use of an emission calculator in planning of every construction project (continued within the plan), one that uses the proposed equipment fleet and hours of use to project nitrogen oxides, particulate matter, and carbon dioxide emissions then quantifies the reductions achievable through the use of cleaner/newer equipment;[
- all off-road construction vehicles be alternative fuel vehicles, or diesel-powered vehicles with a Tier 3 or better engines or retrofit/powered to meet equivalent emissions standards as Tier 3 engines;
- use the minimum feasible amount of GHG-emitting construction materials (cement, asphalt, etc.);[
- use of cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
- use of lighter-colored pavement with increased reflectivity, which reduces the “heat island” effect;
- recycling of construction debris to maximum extent feasible;
- planting shade trees in or near construction projects where feasible.

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1. Recent studies have shown that slower growth leads to lower GHG emissions. See, e.g., California Air Resources Board, “GHG Mitigation Measures for Transportation Projects,” www.arb.ca.gov/ltghm/ltghm.htm
2. The emission calculator used in the Draft EIR was developed by Sandag and is available at www.sandag.org/greenhgh.pdf

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Please see Master Response 17 discussion of the reasons for not including the 50-10 plan as an EIR alternative.

This comment reflects a basic misunderstanding of when formal CEQA findings on the feasibility of alternatives and mitigation measures are made in the CEQA process. They are not made in Draft EIRs. The lead agency decisionmaker makes formal findings following Final EIR certification and before project approval (Public Resources Code §21081(a); CEQA Guidelines §15091(a)). The SANDAG Board will make the formal CEQA findings requested by the commenter at that time.

An EIR’s conclusions about the feasibility of alternatives and mitigation measures are preliminary, reflect the EIR preparer’s analysis, and may be changed by the lead agency decisionmaker when formal CEQA findings are adopted. (See California Native Plant Society v. City of Santa Cruz (2009) 177 Cal.App. 4th 957, 1000.) An EIR must briefly explain the reasons underlying a preliminary determination that an alternative is infeasible. (CEQA Guidelines §15126.6(c).) Similarly, an EIR must evaluate mitigation measures suggested by the public unless it explains why they are preliminarily determined to be “facially infeasible.” (See Los Angeles Unified School District v. City of Los Angeles (1997) 58 Cal.App. 4th 1019, 1028-1031.)

The Draft EIR does provide specific preliminary explanations of why certain alternatives or mitigation measures were preliminarily determined to be infeasible. These explanations are supported by substantial evidence. Please see responses to comments specifically addressing particular alternatives or mitigation measures for further information on these explanations. Final determinations about the feasibility of specific alternatives and mitigation measures will be made when the SANDAG Board adopts CEQA findings.

\cite{5} Normal L. Marshall, Smart Mobility, Inc., The 50-10 Transit Plan: A World Class Transit System for the San Diego Region (July 2011).
\cite{6} Ibid. at pp. 1-5-69.
\cite{7} CEQA Guidelines, §§ 15091, 15093.
Please see Master Response 3 for a discussion of why changes between the Draft and Final EIRs do not trigger recirculation.

Comment noted. Please see Master Responses 2 and 9 for a discussion of the consistency of the 2050 RTP/SCS with goals, intent, and requirements of SB 375. Please see Master Response 7 for a discussion of the 2050 RTP/SCS transportation network phasing and prioritization.

Please see Master Response 3 for a discussion of why changes between the Draft and Final EIRs do not trigger recirculation.

Comment noted. Please see Master Responses 2 and 9 for a discussion of the consistency of the 2050 RTP/SCS with goals, intent, and requirements of SB 375. Please see Master Response 7 for a discussion of the 2050 RTP/SCS transportation network phasing and prioritization.

alternative, or declining other reasonable alternatives (such as commuter train or other public rapid transit), based on the current DEIR, have no legally supportable basis. 79

E. The DEIR Must be Revised and Re-circulated to Achieve CEQA Compliance

As the document stands now, recirculation is warranted in light of the fact that the DEIR is so fundamentally flawed that it prohibits any and all meaningful public review and comment. 80 Furthermore, according to CEQA, an EIR requires recirculation when significant new information is added to the document after notice and opportunity for public review has been provided. 81 As set forth in this letter, it is apparent that the DEIR must be extensively revised and recirculated in order to address the myriad of environmental issues and various other deficiencies. In this case recirculation can also be justified because meaningful responses to posed questions will undoubtedly result in the addition of significant new information regarding potential environmental impacts, mitigation measures and alternatives. 82

III. Conclusion

For the reasons set forth throughout this comment letter, it is respectfully requested that SANDAG revise the draft 2050 RTP/SCS and DEIR to incorporate projects that are truly sustainable resulting in meaningful reductions in VMT and GHG emissions. In an effort to achieve this goal, SANDAG should move critical transit projects forward in the planning process and defer highway expansion projects until a performance and competitive based transit network within the urban core is fully constructed. In closing there should be no further consideration or action taken on the RTP/SCS until such time that a CEQA compliant EIR has been drafted.

Respectfully Submitted,

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Legal Eagles Environmental Law & Policy Clinic
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San Diego, CA 92111

The San Diego Chapter of the Sierra Club is San Diego's oldest and largest grassroots environmental organization, founded in 1948. Encompassing San Diego and Imperial Counties, the San Diego Chapter seeks to preserve the special nature of the San Diego and Imperial Valley area through education, activism, and advocacy. The Chapter has over 700,000 members. The National Sierra Club has over 700,000 members in 65 Chapters in all 50 states, and Puerto Rico.

82 14 Cal. Code Regs. § 15088.5, subd. (a)(3), G2. (3)
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<td>Improve 8F to 8F+2ML</td>
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<td>From SR 163 to SR 56, improve 8F/2ML(E) to 10F+4ML/MB</td>
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<td>From Centre City Parkway to SR 78, improve 8F to 8F+4ML</td>
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<td>From Centre City Parkway to SR 78, improve 8F to 8F+4ML</td>
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<td>From SR 78 to Riverside County, improve 8F to 8F+4T</td>
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<td>From I-8 to SR 163, improve 8F to 8F+2ML</td>
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<td>HOV connectors - North to north and south to south</td>
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<td>North to West Freeway Connector</td>
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<td>HOV connectors - East to South and North to West</td>
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HOV Connectors - east to south and north to west
HOV Connectors - South to West and East to North

From Manchester Ave to SR 78, improve 8F to 8F+2HOV

From Manchester Ave to SR 78, improve 8F to 8F+2HOV
From La Jolla Village Drive to I-5/I-805 Merge, improve 8F/14F to 8F/14F+2ML.

From La Jolla Village Drive to I-5/I-805 merge, improve 8F/14F to 8F/14F+2ML.
From SR 56 to Manchester Ave, improve 8F+2HOV to 10F+4ML

From SR 56 to Manchester Ave, improve 8F+2HOV to 10F+4ML.
From Palomar St to SR 15, improve 8F to 8F+2ML

From Palomar St to SR 15, improve 8F to 8F+2ML.
From I-5/I-805 merge to SR 56, improve 8F/14F+2HOV to 8F/14F+4ML

From I-5/I-805 merge to SR 56, improve 8F/14F+2HOV to 8F/14F+4ML.
From Manchester Ave to Palomar Airport Rd, improve 8F+2HOV to 10F+4ML (two phases)

From Manchester Ave to Palomar Airport Rd, improve 8F+2HOV to 10F+4ML.
From Palomar Airport Rd to SR 78, improve 8F+2HOV to 8F+4ML

From Palomar Airport Rd to SR 78, improve 8F+2HOV to 8F+4ML.
From SR 78 to Vandegrift, improve 8F to 8F+4ML.
<p>| From SR 78 to Vandegrift Blvd, improve 8F to 8F+4ML |
| From SR 56 to Palomar St, improve 8F to 8F+2ML |
| From SR 56 to I-15, improve 8F to 10F+2ML |
| From SR 56 to I-15, improve 8F to 10F+2ML |
| From I-15 to I-8, improve 8F to 8F=operational |
| From I-15 to I-8, improve 8F to 8F=operational |
| From I-8 to La Jolla Village Dr, improve 8F 10F to 8F/10F+2ML. |
| From Vandegrift Blvd to Orange County, improve 8R to 8R+4L |
| HOV Connectors- North to North &amp; South to South |
| HOV Connectors- North to north and south to south |
| Freeway Connector-West to North |
| Freeway connector-west to north |
| Freeway Connector- South to East |
| Freeway connector-south to east |
| HOV Connectors- South to East and West to South |</p>
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<tr>
<th>HOV Connectors- south to east and west to north</th>
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<td>HOV Connectors- North to East and West to South</td>
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| HOV Connectors- north to east and west to south |
| Freeway Connector- South to East |
| Freeway connector- south to east |
| Freeway Connector- West to South |
| Freeway connector- west to south |
| From I-15 to SR 125, improve 8F/10F to 8F/10F operational |
| From I-15 to SR 125, improve 8F/10F to 8F/10F operational |
| From SR 125 to 2nd Street, improve 6F/8F to 6F/8F operational |

<p>| From SR 125 to 2nd Street, improve 6F/8F to 6F/8F operational |
| From I-5 to I-15, improve 8F to 8F operational |
| From I-5 to I-15, improve 8F to 8F operational |
| From 2nd Street to Los Coches, improve 4F/6F to 6F |
| From 2nd Street to Los Coches, improve 4F/6F to 6F |
| From Palomar St to SR 15, improve 8F to 8F/2HOV |
| From Palomar St to SR 15, improve 8F to 8F/2HOV |
| From Palomar St to SR 15, improve 8F+2HOV to 8F+4ML (two phases) |</p>
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<td>From Palomar St to SR 15, improve 8F+2HOV to 8F+4ML</td>
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<td>From Carroll Canyon Rd to I-5(north), improve 8F/10F to 8F/10F+2ML</td>
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<tr>
<td>From Carroll Canyon Rd to I-5 (north), improve 8F/10F to 8F/10F+2ML</td>
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<td>From SR 52 to Carroll Canyon Rd, improve 8F/10F to 8F/10F+4ML</td>
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<tr>
<td>From SR 52 to Carroll Canyon Rd, improve 8F/10F to 8F/10F+4ML</td>
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<tr>
<td>From SR 905 to Palomar St, improve 8F to 8F+2HOV</td>
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<td>From SR 905 to Palomar St, improve 8F+2HOV to 8F+4ML (two phases)</td>
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<tr>
<td>From SR 905 to Palomar St, improve 8F to 8F+4ML</td>
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<tr>
<td>From SR 15 to Mission Valley, improve 8F to 8F+4ML</td>
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<tr>
<td>From SR 15 to Mission Valley, improve 8F to 8F+4ML</td>
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<tr>
<td>From Mission Valley Viaduct to SR 52, improve 8F/10F to 8F/10F+4ML</td>
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<tr>
<td>From Mission Valley Viaduct to SR 52, improve 8F/10F to 8F/10F+4ML</td>
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<td>Mission Valley Viaduct, improve 8F to 8F+4ML</td>
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<tr>
<td>Mission Valley Viaduct, improve 8F to 8F+4ML</td>
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<td>HOV Connectors- West to North and South to East</td>
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<td>HOV Connectors- west to north and south to east</td>
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<td>HOV Connectors- North to west and east to south</td>
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<td>HOV Connectors- North to west and east to south</td>
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<td>Time Frame</td>
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<td>15 minutes in key corridors</td>
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<td>Bay Marina Drive, Civic Center Freeway Access Improvements</td>
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<td>La Mesa to Ocean Beach via Mid-City, Hillcrest, Old Town</td>
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<td>La Mesa to Ocean Beach via Mid-City, Hillcrest, Old Town</td>
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<tr>
<td>Spring Valley to SDSU via SE San Diego, Downtown, Hillcrest, Mid-City</td>
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<tr>
<td>Spring Valley to SDSU via SE San Diego, Downtown, Hillcrest, Mid-City</td>
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<tr>
<td>Kearny Mesa to Downtown via SR 163</td>
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<tr>
<td>Kearny Mesa to Downtown via SR 163</td>
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<td>Mid-City Rapid (SDSU-Downtown)</td>
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<td>Mid-City Rapid (SDSU-downtown)</td>
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<tr>
<td>UTC Area Super Loop</td>
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<td>UTC Area Super Loop</td>
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<td>Route Description</td>
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<tr>
<td>North Park to downtown San Diego via 30th St</td>
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<tr>
<td>North Park to Downtown San Diego via 30th St</td>
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<tr>
<td>Point Loma to Kearny Mesa via Old Town, Linda Vista</td>
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<tr>
<td>Point Loma to Kearny Mesa via Old Town, Linda Vista</td>
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<tr>
<td>Old Town to Sorrento Mesa via Pacific Beach, La Jolla, UTC</td>
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<tr>
<td>Old Town to Sorrento Mesa via Pacific Beach, La Jolla, UTC</td>
</tr>
<tr>
<td>Escondido to Del Lago via Escondido Blvd and Bear Valley</td>
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<tr>
<td>Escondido to Del Lago via Escondido Blvd and Bear Valley</td>
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<tr>
<td>Downtown Escondido to East Escondido</td>
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<tr>
<td>Downtown Escondido to East Escondido</td>
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<tr>
<td>Oceanside to UTC via Hwy 101 Coastal Communities, Carmel Valley</td>
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<tr>
<td>Oceanside to UTC via Hwy 101 Coastal Communities, Carmel Valley</td>
</tr>
<tr>
<td>Oceanside to Vista via Mission Ave/Santa Fe Road Corridor</td>
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<tr>
<td>Oceanside to Vista via Mission Ave/Santa Fe Road Corridor</td>
</tr>
<tr>
<td>Eastlake/EUC to Palomar Trolley via Main Street Corridor</td>
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<tr>
<td>Eastlake/EUC to Palomar Trolley via Main Street Corridor</td>
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<tr>
<td>SDSU to Spring Valley via East San Diego, Lemon Grove, Skyline</td>
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<tr>
<td>SDSU to Spring Valley via East San Diego, Lemon Grove, Skyline</td>
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<tr>
<td>Route Description</td>
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<tr>
<td>North Park to 32nd Street Trolley via Golden Hill</td>
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<tr>
<td>San Ysidro to Otay Mesa via Otay, SR 905 Corridor</td>
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<tr>
<td>H Street Trolley to Millennium via H Street Corridor, Southwestern College</td>
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<tr>
<td>Coronado to Downtown via Coronado Bridge</td>
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<td>San Marcos</td>
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<tr>
<td>San Marcos—Increase frequencies</td>
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<tr>
<td>San Marcos—Increase frequencies—Double tracking (Otay Mesa–Escondido) Increase in existing SPRINTER frequencies (existing headways: 30 peak/30 off-peak)</td>
</tr>
<tr>
<td>SPRINTERS express stops at Otay Mesa, Otay Mesa Transport Center</td>
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<tr>
<td>Sprinter Express</td>
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<tr>
<td>From SR 905 to Mexico, improve to 4T</td>
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<td>From SR 905 to Mexico, improve to 4T</td>
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<td>From</td>
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<td>SR 94 to I-8</td>
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<td>SR 94 to I-8</td>
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<td>SR 94 to I-8</td>
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<td>SR 905 to San Miguel Rd</td>
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<td>SR 905 to San Miguel Rd</td>
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<td>San Miguel Rd to SR 54</td>
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<td>SR 54 to SR 94</td>
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<td>SR 34 to SR 94</td>
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<td>SR 94 to I-8</td>
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<td>I-5 to SR 94</td>
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<td>I-5 to SR 94</td>
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<td>Orange County to I-5</td>
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<td>From I-15 to SR 125</td>
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<td>From I-15 to SR 125</td>
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<td>From I-3 to I-805</td>
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<td>From I-5 to I-805</td>
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<td>From I-5 to SR 125</td>
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<td>From I-5 to SR 125</td>
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<td>From I-5 to I-15</td>
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<td>From I-5 to I-15</td>
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<td>From Mapview St to Dye Rd</td>
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<td>From Mapview St to Dye Rd</td>
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<tr>
<td>From Melrose Drive to I-15</td>
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<td>From Melrose Drive to I-15</td>
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<td>From I-15 to Coeur Canyon</td>
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<td>From I-15 to Coeur Canyon</td>
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<td>From I-5 to I-15</td>
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<td>From I-5 to I-15</td>
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<td>Route</td>
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<tr>
<td>From I-805 to Mexico</td>
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<tr>
<td>From I-805 to Mexico, improve to 6F</td>
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<tr>
<td>From I-5 to I-805, improve 8F to 8F+2ML</td>
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<tr>
<td>From I-805 to College Ave, improve 8F to 8F+2ML</td>
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<tr>
<td>From College Ave to SR 125, improve 8F to 8F+2ML</td>
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<tr>
<td>From College Ave to SR 125, improve 8F to 8F+2ML</td>
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<tr>
<td>From SR 125 to Avocado Blvd, improve 4F to 6F</td>
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<tr>
<td>From Avocado Blvd to Jamacha Rd, improve 4C to 6C</td>
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<tr>
<td>From Jamacha Rd to Steele Canyon Rd, improve 2C/4C to 4C</td>
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<tr>
<td>Freeway connector- South to east</td>
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<td>Freeway connector- South to east</td>
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<tr>
<td>Freeway connector- West to north</td>
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<td>Route Description</td>
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<tr>
<td>Downtown to San Diego: Little Italy to East Village</td>
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<tr>
<td>Hillcrest–Balboa Park/Downtown San Diego loop</td>
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<td>Hillcrest–Balboa Park/Downtown San Diego loop</td>
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<td>30th St to Downtown San Diego via North Park/Golden Hill</td>
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<td>Mid-coast LRT extension (peak frequencies 7:5 to downtown/15 to UTC)</td>
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<tr>
<td>Mid-cost LRT extension (peak frequencies 7:5 to downtown/15 to UTC)</td>
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<tr>
<td>Orange Line- Increased frequency (existing 15 peak/15 off-peak)</td>
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<tr>
<td>Orange Line- increased frequency (existing peak 15/off-peak 15)</td>
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<td>Orange Line- Extend to Lindbergh ITC</td>
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<td>Orange Line- extend to Lindbergh ITC</td>
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<td>Orange Line- increase frequencies</td>
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<td>Orange Line- increase frequencies</td>
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<tr>
<td>Orange Line express- El Cajon to Downtown San Diego</td>
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<tr>
<td>Orange line express- El Cajon to downtown San Diego</td>
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<tr>
<td>Green line extend to downtown-Hayeside</td>
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<td>Green line extend to downtown-Hayeside</td>
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</table>
Green line extend to downtown-Bayside increase frequencies

Green line extend to downtown-Bayside
Blue line express- UTC to San Ysidro via downtown

Blue line express- UTC to San Ysidro via downtown
SDSU to downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to LRT)

SDSU to downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to LRT)
UTC to Mira Mesa via Sorrento Mesa Carroll Canyon (extension of Route 510)

UTC to Mira Mesa via Sorrento Mesa Carroll Canyon (extension of Route 510)
UTC to Palomar Trolley Station via Kearny Mesa, Mission Valley, Mid-City, National City Chula Vista via Highland Ave/4th Ave

UTC to H St Trolley Station via Kearny Mesa, Mission Valley, Mid-City, National City) Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, SDSU

Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, SDSU
Mobility connector over Harbor Drive at Naval Base San Diego

Mobility Connector over Harbor Drive at Naval Base San Diego
August 1, 2011

Rob Rundle, Principle Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Via E-mail, mub@sandag.org

Subject: Comments Regarding the Draft 2050 Regional Transportation Plan EIR (the DEIR)

Dear Mr. Rundle:

I appreciate the opportunity to communicate with you concerning this important topic. Unfortunately, due to personal time constraints, I have found it necessary to restrict most of my attention to those sections of the subject document that deal with greenhouse-gas (GHG) emissions.

Introduction
Since understanding the relationship between global warming and transportation requires mathematics, I feel that it would be useful to give you a summary of my professional experience. I have a BSEE degree and a Masters of Science, Engineering (MSE) degree. I worked for 36 years at Lockheed Martin, in Sunnyvale. For the last 20 years or so I worked as a satellite-systems engineer. One of my responsibilities was to develop equations and methods to measure and then compensate out, through satellite database upload, the misalignments of the key antennas on the MILSTAR communication satellite.

As Chair of the Transportation Committee of the San Diego Chapter of the Sierra Club, it is my responsibility to speak for the Chapter on regional and local transportation matters. Therefore, I have spoken many times before your Board of Directors. In those speeches, I have repeatedly made the following points:

1. Above all else, SANDAG must adopt an RTP that will ensure that SANDAG does its part to stabilize the climate at a livable level.
2. This means at least achieving the reductions specified in the Governor’s Executive Order S-3-05.
3. The SB 375 target, for year 2035, which CARB gave to SANDAG, as just 13%, would instead have to be 35%, in order to support the S-3-05 trajectory.
4. The above result is so important that SANDAG needs to evaluate its validity, by reviewing the mathematics shown in Reference 1, and reporting back its findings.
5. The money allocated to freeway expansion, including Managed Lanes, should be reallocated to build and operate transit.
Climate change is discussed and its impacts are analyzed in the following sections of the EIR: Section 4.8, Greenhouse Gas Emissions; Section 4.9, Hazards and Hazardous Materials; Section 4.10, Hydrology and Water Quality; and Section 5.0, Cumulative Impacts. In addition, please refer to Master Response 18 for a discussion on sea level rise and climate change adaptation.
Q-3 Draft EIR Section 4.8.1 accurately summarizes the potential effects of GHG emissions on global climate change. Please refer to Response Q-2 regarding how the Draft EIR addresses climate change impacts.

Q-4 The commenter correctly identifies the relationship between CO₂ and temperature, and that anthropogenic actions are contributing to increased levels of CO₂. Current law mandates that the State achieve 1990 GHG Emissions levels by 2020 (AB 32) and sets SANDAG region GHG reduction targets of 7 and 13 percent reductions in per-capita emissions in 2020 and 2035 from passenger vehicles (SB 375). Please see Master Response 2 for further discussion of the requirements of AB 32 and SB 375, and explanation of the effect of Executive Order S-3-05. Since the 2050 RTP/SCS and its associated EIR must be updated every four years, the effect of any new legal requirements for GHG reductions will be accounted for during each update cycle.

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1 Scientific American, The Ethics of Climate Change, Professor John Broome, June 2008. Page 100
2 For example, when we burn a gallon of gasoline, we introduce nearly 20 pounds of CO₂ into the atmosphere.
Figure 2 shows atmospheric CO2 and average yearly world atmospheric temperature, with respect to a recent yearly average temperature. The data start 800,000 years ago. It shows that the current value of atmospheric CO2, which is now actually more than 390 PPM, far exceeds the values of the last 800,000 years. It also shows that we should expect the corresponding temperature to eventually get to be about 2°C or 3°C above current temperatures. This would be a human disaster, as shown in Reference 3.

Figure 1: Atmospheric CO2, Increasing Over Recent Decades

S-3-05, a California Governor’s Executive Order, orders actions to ensure that Year 2020 levels of greenhouse gas (GHG) will be no more than 1990 emissions and that Year 2050 levels of GHG will be no more than 80% below 1990 levels. Reference 3 indicates that if the world achieves similar reductions, the earth’s level of atmospheric CO2 will probably be capped at 450 parts per million (PPM). Figure 1 shows the 450 PPM value. Unfortunately, 450 PPM is now known to be dangerous, as also shown in Reference 3.

The fundamental reason for the positive correlation between CO2 and temperature, shown in Figure 2, (positive correlation means that they tend to move together), is that the atmosphere’s CO2 molecules will absorb and then re-emit infrared (IR) heat. In this way, the molecules trap IR heat that would otherwise escape out into space.

Reference 3 states, “Annual mean global temperature has increased by 0.76°C relative to pre-industrial times and is increasing at a rate of 0.17°C/decade.”

Figure 3 shows the average (AKA “mean”) yearly temperature difference from the recent, but before warming, temperature. It also shows atmospheric levels of CO2. The S-3-05 goal of 450 PPM is literally “off the chart”. In Figure 3, Figure 3 shows that temperatures are starting to follow the CO2, as expected.

2 Specific consequences of a 2°C temperature rise from pre-industrial levels include the loss of 87% of the world’s coral reefs and the transformation of 10% of global ecosystems. Approximately one to three billion people would experience an increase in water stress, sea level rise and cyclones would displace millions from the world’s coastal areas and agricultural yields would fall in the developed world. At a global increase in temperature of 3°C above pre-industrial levels, many additional impacts in human and natural systems would occur in ways exponentially more devastating than those predicted for a 2°C temperature increase.
1.2.1 Expert Opinion Supporting the Fact of Urgency

Figures 2 and 3 suggest that our current level of atmospheric CO2 is already at a dangerous level and that we must quickly adopt strategies to reduce emissions. This apparent urgency is verified by many...
statements in Reference 3, including the following, where “DAI” stands for “Dangerous Anthropologic Interference”:

On account of additional warming to which we are committed, Ramanathan and Feng found that there is a “high probability that the DAI threshold is already in our rearview mirror.” Similarly, on the basis of paleoclimate evidence and ongoing climate change, James Hansen and other leading climate scientists concluded the present CO2 levels of 385 PPM are “already in the dangerous zone” and that “[i]f humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO2 will need to be reduced from its current 385 PPM to at most 350 PPM, but likely less than that.” In looking at dangerous climate change though the lens of risk tolerance, Harvey concluded that, at a 10% risk tolerance, atmospheric CO2 concentrations close to present levels “violates the UNFCCC” for a range of assumptions of climate sensitivity. Accordingly, as the climate change to which we are committed is already dangerous, there is little scientific basis to conclude that any new source of emissions is innocuous.

1.3 The DEIR uses (at least) two significance criteria that are in violation of CEQA law.

Page 4.8-15 of the DEIR shows the following significance criteria.

GHG-2 Conflict with SB 375 GHG emission reduction targets
GHG-3 Conflict with applicable GHG reduction plans

Reference 3 contains the following words:

Under CEQA, regulatory standards can serve as proxies for significance where they accurately reflect the level at which an impact can be said to be less than significant. See, e.g., Protect the Historic Amador Waterways v. Amador Water Agency, 116 Cal. App. 4th 1099, 1109 (2004).

1.3.1 GHG-2

GHG-2 uses SB 375, which requires that CARB give SANDAG a target GHG reduction target for 2020 and 2035. This provides no significance criterion for the horizon year of the DEIR document, which is 2050. Furthermore, the target CARB gave to SANDAG, for year 2035, was given without considering the GHG reduction needed so that SANDAG’s RTP would do its part to prevent dangerous anthropogenic interference (DAI as defined and used in Reference 3). Therefore, the regulatory standard selected cannot serve as a proxy for significance, because it does not come close to reflecting the level at which the impact can be said to be less than significant. As shown in Reference 1, in order to get the emission level from cars and light-duty trucks down onto the S-3-05 trajectory, the 2035 target would have to have been set to 35%, instead of the 13% value given to SANDAG by CARB. It would have been far better for the DEIR to have used S-3-05 for GHG-2, since S-3-05’s goal was to limit the levels of atmospheric CO2 to 450 PPM and avoid the worst outcomes of DAI. However, as Reference 3 makes clear, even that criterion is in violation of CEQA law, because it is now understood that 450 PPM is dangerous.

1.3.2 GHG-3

The GHG-3 criterion would be marginally acceptable if S-3-05 were selected as the applicable GHG reduction plan and if CARB, Caltrans, and other responsible agencies were doing a credible job of implementing S-3-05. From S-3-05 comes the following implementation plan, as embodied by the “do hereby order” items 2, 3, and 4.

Q-4 Cont.

Q-5

Please refer to Master Response 2 for a discussion of the Draft EIR’s significance thresholds and how they comply with applicable law. Please also refer to Master Response 2 for an explanation of the provisions of Executive Order S-3-05, and why it has no binding legal effect on SANDAG.
2. That the Secretary of the California Environmental Protection Agency ("Secretary") shall coordinate oversight of the efforts made to meet the targets with: the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the Air Resources Board, Chairperson of the Energy Commission, and the President of the Public Utilities Commission; and

3. That the Secretary shall report to the Governor and the State Legislature by January 2006 and biannually thereafter on progress made toward meeting the greenhouse gas emission targets established herein; and

4. That the Secretary shall also report to the Governor and the State Legislature by January 2006 and biannually thereafter on the impacts to California of global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry, and shall prepare and report on mitigation and adaptation plans to combat these impacts.

However, since CARB gave SANDAG a 2035 target that ignored S-3-05 (shown in Reference 1), any CARB plan is suspect and the best option is to use only the numbers in “do hereby order” of S-3-05:

1. That the following greenhouse gas emission reduction targets are hereby established for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This has legitimacy in that it is a plan that goes out to the horizon year of the subject document (2050) and its reductions are at least based on what can be assumed to be a sincere 2003 attempt to provide safety from DAI. SANDAG's decision to use CARB’s Scoping Plan is flawed, because that plan says very little about what should be done after 2020. SANDAG's decision to use its Climate Action Strategy (CAS), http://www.sandag.org/uploads/publication/publicationid_1481_10946.pdf adds nothing beyond S-3-05. It contains the S-3-05 reduction profile, in its Figure 3-1. By that measure the RTP fails in that its reductions fall far short of what is needed in 2035 and 2050. As stated, for 2035, 35% is needed (shown in Reference 1) but the RTP only achieves 18%. The 2050 RTP only achieves an 8% reduction in 2050. This means that the RTP is a failure at protecting us from climate change.

1.3.3 Use of S-3-05 for GHG-2 and GHG-3

Although adopting S-3-05 as a significance criterion would be of some value, Reference 3 shows that CEQA requires that reductions be larger than the S-3-05 targets, that avoiding DAI can be guaranteed with a reasonable probability of success.

1.3.4 Possibly Legal Definitions of GHG-2 and GHG-3

GHG-2 and GHG-3 need to be replaced with 2020, 2035, and 2050 “GHG-Legal-Under-CEQA” levels that ensure, with at least a 95% probability, DAI can be avoided, if other sectors here and all sectors in all countries, on a weighted average, achieve these same levels.

1.3.5 Domino Effect of Illegal Definitions

The DEIR’s adoption of illegal significance criteria has potentially tragic implications. This is the first RTP with an SCS and other MPOs are observing to see what will be allowed. Likewise, S-3-05 is California’s promise, to the other states and countries, that we will do our part to stabilize the planet’s climate. Ignoring both S-3-05 and the science behind global warming, in the DEIR, shows that we have no intention of keeping that promise. If this is allowed to stand, it will give political strength to all the proponents of “business as usual” (BAU), in California, in other states, and all over the world. These BAU proponents can use this DEIR to urge others to stick with BAU, by following this DEIR’s illegal methods.
1.4 The DEIR’s mitigations, on GHG impacts, as described in the DEIR’s Section 4.8.5 (and probably other mitigations on other impacts), violate CEQA law.

Within CEQA’s Section 15126.4, Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects, the following requirement is found:

(a)(2) Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments.

This means that a claimed mitigation, which is no more than a listing of a collection of policies that “can and should” be enacted or that “aim” to reduce impacts, or some other similar word construct, which guarantees nothing, is illegal under CEQA. Yet that is all that is seen in the DEIR’s short (less than a page) Section 4.8.5, for the GHG impacts.

1.4.1 GHG-A

For example, after GHG-A, the DEIR states SANDAG shall update the future Regional Comprehensive Plan and RTPs/SCS to “incorporate policies and measures that lead to reduced GHG emissions.”

The key word is “incorporate.” SANDAG’s documents only describe policies that would reduce GHG, if adopted. “Incorporate” simply means to add to that list. There is no reason to believe that the SANDAG municipalities would actually adopt any of the described measures.

Saying that the next RTP/SCS will be somehow better begs the question as to why the current RTP/SCS didn’t have the solutions that seem to be promised as “mitigation” for this RTP/SCS.

1.4.2 GHG-B

For GHG-B, the DEIR says the following:

San Diego region cities and the County government can and should adopt and implement Climatic Actions Plans (also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that contain the following information:

a) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within their respective jurisdictions;

b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;

d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

e) Establish a mechanism to monitor the plan’s progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and

f) Be adopted in a public process following environmental review.

Note the “can and should” words at the top.

1.4.3 GHG-C

For GHG-C, the DEIR says the following:

Q-6

Please refer to Master Response 1 for a discussion of the EIR’s approach to programmatic mitigation and Master Response 4 for a discussion of mitigation measures that are within the jurisdiction and responsibility of other agencies to implement. Please also refer to Master Response 21 for a discussion of the adequacy of the GHG mitigation measures provided in the Draft EIR including GHG-A, GHG-B, GHG-C and the ability of these measures to meet the intent of SB 375. The suggested mitigation measure in Section 1.4.4 of the comment is infeasible for SANDAG to implement because it is not within the authority of the Board of Directors to require the adoption of policies of individual local jurisdictions.

Q-6

Many of the projects identified in the 2050 RTP/SCS span multiple local jurisdictions which have decision making authority over policy decisions related to parking and land use approval. Withholding funding for regional projects unless particular local policies are implemented and enforced, whether such policies are endorsed by SANDAG or not, could prevent the implementation of projects identified in the 2050 RTP/SCS that would provide important transportation network improvements that would benefit the region. Therefore, mitigation measures that would require the coordination of local policies are considered infeasible.
CEQA does not require that the alternatives identified in the Notice of Preparation (NOP) be identical to the alternatives presented in the Draft EIR. The purpose of including the identified preliminary alternatives in the NOP was to obtain feedback and input on how the alternatives as presented could be revised or modified to better meet the project objectives. Please refer to Master Response 16 for a discussion of the range of alternatives selected for analysis in the Draft EIR.

To the extent Sierra Club’s June 7, 2010 letter on the NOP includes comments raised in this (August 1, 2011) letter, SANDAG has responded to such comments here. Please refer to Master Response 5 for a discussion of CEQA’s requirements for responding to documents either attached to EIR comment letters or incorporated by reference. To the extent the June 17, 2010 letter includes comments about the RTP project that do not raise significant environmental
issues, the comments will be considered by the decision makers prior to making a final decision
on the project, and no further response is required.

This letter expresses concern regarding the reasonableness of the assumptions used in the No
Project Alternative. As stated in Section 6.2, the No Project Alternative assumes the regional
growth and land use change of the 2050 Regional Growth Forecast adopted by SANDAG’s
Board of Directors in February 2010. The No Project Alternative assumes only those
transportation projects that are currently under construction or development, but does not
include any federally funded transportation improvements. These projects are listed in Tables
6.2-1 and 6.2-2. While additional funding would be available from local sources (especially the
TransNet extension ordinance), it is speculative whether funding would be allocated to future
transportation projects other than those listed in Tables 6.2-1 and 6.2-2. Therefore, under the No
Project Alternative, specific future transportation projects other than those listed in Tables 6.2-1
and 6.2-2 are considered speculative and not reasonably foreseeable.

The other suggested alternatives (i.e., coaster, fee pricing system and bicycle alternative)
presented in this attachment were taken into consideration during the development of the
alternatives for the Draft EIR. Please refer to Master Response 16 for a discussion of the range
of alternatives considered and ultimately selected for analysis in the Draft EIR. Please also refer
to Response Q-21 for discussion of the suggested fee pricing system and bicycle alternatives.
1.7 The DEIR fails to describe feasible mitigations, which could minimize significant adverse impacts, even though such mitigations have been identified by the public.

This violates Section 151264 of the CEQA Guidelines. It is also unacceptable, since such mitigations have been repeatedly communicated to SANDAG. It is also unacceptable that some of the mitigations that have been identified to SANDAG in response to the NOP and in other letters have been misrepresented and then described as “infeasible”, in the DEIR.

1.7.1 Brief, Top-Level List of Mitigations

These described, feasible mitigations include those itemized in a presentation (Reference 5) that was made to SANDAG on May 13, 2011, on Slide 9, shown in Figure 4.

Figure 4: Presented Feasible Mitigations to Achieve Driving Reductions that Will Support S-3-05

<table>
<thead>
<tr>
<th>Strategies to Achieve 35%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Stop expanding freeways</td>
</tr>
<tr>
<td>(2) No need, because we must drive less</td>
</tr>
<tr>
<td>(3) Eliminate congestion with following strategies</td>
</tr>
<tr>
<td>(4) Reallocation of freeway expansion funds to transit</td>
</tr>
<tr>
<td>(5) Priced to increase travel &amp; choice</td>
</tr>
<tr>
<td>(6) Parking, downtown action project, bus, and others urban and State legislation</td>
</tr>
<tr>
<td>(7) Undedicated cost of “free” parking</td>
</tr>
<tr>
<td>(8) Eat all the cost of “free” parking</td>
</tr>
<tr>
<td>(9) Increased revenue from more efficient cars, S-3-05</td>
</tr>
<tr>
<td>(10) Smart growth, complete streets, bicycle education</td>
</tr>
</tbody>
</table>

The ideas in Figure 4 are repeatedly presented to the SANDAG Board.

1.7.2 Detail for SANDAG to Add

Note that detail, such as requiring unbundling, on the part of municipal governments, as a condition of some advantage, such as getting Transit-Net money to pave streets, is left off of the ideas shown in Figure 4. However, this should be a simple addition for SANDAG staff to consider. Also, the state can be requested to do its part in road-use pricing. Very soon they will have to comply, because filling gas at revenue from more efficient cars, S-3-05, and the science of global warming all require strong state action. The MPOs could help get the state to wake up to its responsibility.

1.7.3 A Detailed Mitigation Request from CNIP and the TransitNet Tax

Q-8 Cont.

Q-9

Table ES-1 in the Executive Summary of the Draft EIR includes a complete list of feasible mitigation measures intended to reduce the significant environmental impacts of the 2050 RTP/SCS. Mitigation measures determined to be infeasible are also discussed in the Draft EIR. Please see individual resource chapters of the Draft EIR for discussions of particular mitigation measures.

Q-10

SANDAG acknowledges the mitigation strategies presented by the commenter. Please refer to Master Response 21 for further discussion on the adequacy of the GHG mitigation measures provided in the Draft EIR, and why other mitigation measures were not selected. Please refer to Master Response 2 for an explanation of the provisions of Executive Order S-3-05 and why it has no binding legal effect on SANDAG. Please refer to Master Response 20 for a discussion of the GHG significance criteria used by the Draft EIR. In response to specific mitigation measures presented in Section 1.7.1, please refer to the following Master Responses: Master Response 17 which discusses why a specific alternative to increase the allocation of transit funding and reduce the funding to highways, and another to expedite implementation transit improvements, did not meet fundamental project objectives; Master Response 11 which discusses the limits of SANDAG’s authority, and why local policies such as those suggested in the comment relate to parking policies that are decisions of cities and counties; Master Response 15 for a discussion of why parking pricing policies were not included in the Draft EIR alternatives; and, Master Response 9 for a discussion on how the proposed Final 2050 RTP/SCS is being revised to include Complete Streets supportive language. Response to Comment Q-16 addresses bicycle education.

Q-11

The comment is noted. Please see Response to Comment Q-10 above.

Q-12

Please refer to Master Response 17 for an evaluation of the 50-10 Plan alternative and why it was not included in the EIR range of alternatives. Also, please refer to Master Response 10 for a discussion of TransNet funding constraints.
Q-13
Please refer to Master Response 15 for a discussion of parking policies including fees and other parking options.

Q-14
SANDAG appreciates the information provided in this comment (referring to Attachment 6 of this letter). This information however, was submitted as comments on the Regional Climate Action Plan (RCAP), not on the 2050 RTP/SCS EIR and the comment does not raise any significant environmental issues directly related to the EIR project description, impact analysis or mitigation measures. For a discussion of how the Draft EIR addressed the general parking topic discussed in this comment, please refer to Master Response 15.
needed, SANDAG alone must fund this effort.) Such an ideal system would fully unbundle the cost of car parking from all related money transactions in a way that: encourages the spontaneous sharing of parking; reduces driving to look for parking; limits parking-block occupancy to 85%; includes provisions for both on-street and off-street parking; protects struggling business districts; appeals to neighborhoods; requires no effort on the part of the drivers and those benefiting financially from parking, except to either pay their bills or cash their checks; mitigates impacts on low-income and handicapped drivers; and protect personal privacy. Reference 6 has a detailed description of such a system, although it needs more details in the equations that divide up the parking earnings among the individuals in the beneficiary groups.

I. Background Information:

1. The Threat of Global Warming and the Role of Driving in California

The June 2008 issue of Scientific American (The Ethics of Climate Change, by Professor John Broome) reports that the levels of GHG expected in 20 years will result in a 5% chance of a 14.4 degree Fahrenheit increase in the earth’s temperature and this would be an “utter catastrophe” and create the possibility of a “devastating collapse of the human population, perhaps even to extinction”.

Transportation produces 40% of California’s GHG emissions and most of that is from cars and small trucks. The world’s leaders know this. They will be more likely to adopt the measures needed to avoid climate catastrophe if California demonstrates an unwavering commitment to climate protection.

According to the testimony of Justin Horner, Policy Analyst for the Natural Resources Defense Council, Reducing Congestion & Greenhouse Gas Emissions through Parking Policy, presented to the California State Senate Transportation and Housing Committee on February 25, 2009, “reducing global warming pollution from the Transportation sector rests on a “three-legged stool” of cleaner cars, cleaner fuels and reductions in vehicle miles travelled (VMT).

Also, “All three strategies are necessary to meet AB32 goals and the goal set out in the Governor’s Executive Order of 80% of 1990 emissions by 2050.”

2. The Promise of SB375 and the Role of Parking

SB375 requires Metropolitan Planning Organizations (MPOs, such as SANDAG and MTC) to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plans. The intent is to decrease vehicle miles travelled (VMT) by increasing density, zoning for mixed use and infill development, and reducing local and regional jobs-housing imbalances.

The land available for development around transit stations is often expensive and car parking, which is generally provided free to the user, is often already in short supply. Surface car parking only parks 120 cars per acre. The per-space construction cost for a parking garage ranges from $20,000 to $30,000; while for underground parking, it is $60,000 to $90,000. Therefore, it would be advantageous to scale back the amount of the parking required for the various uses that might be desired around a transit station. However this will be difficult politically; no community wants insufficient parking.

Similarly, reducing the required parking in existing industrial parks (offices) could yield new land for infill housing. This would reduce the jobs-housing imbalance. If parking could be shared, it would create an additional efficiency, allowing for less parking. However, reducing the amount of required parking could probably not be done until it is demonstrated that there is more parking than is needed.
Mr. Horner’s testimony states, “In Growing Cooler, the definitive work on the relationship between climate change and urban form, the authors conclude that smarter, more compact development can reduce household VMT by as much as 40%. While in some localities, the type of development envisioned in Growing Cooler requires zoning reform, many other localities already have zoning in place but find development intensities diminished, partly due to parking requirements.”

From the Findings and Declarations of SB518 (Senator Lowenthal), “…parking requirements greatly expand the built footprint and increase travel distances, thereby increasing vehicle miles traveled and reducing the viability of alternate transportation modes.”

Also, “The high cost of land, construction, and maintenance to provide free parking adds significantly to the cost of economic development, making many developments, especially those on infill or transit-oriented sites, financially infeasible and hindering economic development strategies.”

3. Pricing Parking, an Important Tool to Make SB375 Successful

Mr. Horner’s testimony states, “Since 1999, California law has mandated that certain employers offer parking cash-out (AB 2919, Katz), giving employees the option of a cash payment for their free parking space. In 1997, the California Air Resources Board analyzed several Los Angeles-area employers who participated in the program. Using surveys of employees before and after the introduction of parking cash-out, CARB’s report noted a 17% reduction in solo driving and a 64% increase in carpooling. VMT dropped an average of 12% per employee per year, the equivalent of removing one out of every eight cars driven to work.”

Referring to CARB’s Climate Change Scoping Plan, 2008, Mr. Horner’s testimony states, “But while many of the land use reforms envisioned in the Scoping Plan and SB 375 may take years to realize, parking reforms can be done now, at relatively low cost, and have a major impact. They are the proverbial low hanging fruit.”

From the Findings and Declarations of SB518 (Senator Lowenthal), “Eliminating subsidies for parking has enormous potential to reduce traffic congestion and greenhouse gas and other vehicle emissions by reducing vehicle miles traveled. If drivers must pay the true cost of parking, it will affect their choices on whether or not to drive. In the short term, changes to parking policy can reduce traffic congestion and greenhouse gas emissions more than all other strategies combined, and they are usually the most cost-effective.”

Also from the Findings and Declarations of SB518, “The existence of ‘free’ parking is a significant factor that encourages vehicle trips. At employment sites, employer-paid parking increases rates of driving by as much as 22 percent.”

4. Reformed Parking Policies will Increase Fairness

From the Findings and Declarations of SB518 (Senator Lowenthal), “Free parking at stores is paid for by all customers in higher prices for goods, including those customers who do not drive. Free parking in housing developments is paid for by all residents, even those who do not drive. Free employer-provided parking is paid for by lower wages for all workers, including those who do not drive. Free on-street parking is paid for by the entire community in the form of taxes.”

Again, Mr. Horner’s testimony states, “By encouraging driving, free parking also creates a number of driving-related externalities, including collisions and collision-related injury, conventional air pollution and greenhouse gas emissions.”
5. **Drawbacks to “Best Practice” Car Parking Cash-out**

Current, state-mandated parking cash-out (AB 2019) rarely applies. AB 2019 only applies if companies have at least 200 employees, own no parking, are leasing a building that has no parking, and are leasing parking for their employees in a contract that allows them to change the number of parking spaces being leased, with no economic penalty. It is easy to design a contract that makes AB 2019 inapplicable. Despite this, companies that own or lease buildings with parking have occasionally elected to pay their employees extra money for not driving. However, these companies are free to pay any amount, including one so low that it will not reduce driving significantly. Unbundling the full cost of the parking for employees requires reasonable estimates of the per-unit-time value of the car parking.

6. **Drawbacks to “Best Practice” Unbundling**

Again, Mr. Horner’s testimony states, “unbundling separates the cost of parking from the total cost of housing. This rewards those who do not choose to own a car with more affordable housing, while transferring to car owners the true, rightful cost of owning an automobile.”

The problem with this method of unbundling is that it does not encourage the spontaneous sharing of parking. If a condominium owner elects to buy a parking space, it is theirs, full time. Likewise, if an apartment resident elects to rent a car-parking space, it is theirs, full time. This type of unbundling is better than bundled parking cost, but it is not optimum because it does not support the spontaneous sharing of parking.

7. **Drawback to Current Systems of Timed Parking and Timed, Pay Parking**

About 67% of the money collected in parking meters is spent on collection and enforcement. Time limits on parking detract from a driver’s enjoyment. The driver has to note when they started to park and then, as the time left gets short, they have to worry about getting an expensive parking ticket. Only rarely does a driver know exactly how long they will want to park. These types of concerns detract greatly from the downtown experience. Drivers either have to drive away with time left on their parking meter or risk getting a traffic ticket. Getting coins for a meter is sometimes difficult. Pay stations are better, but even the most advanced systems are still difficult. For example, motorists in Coral Gables, Florida can register their cell phones, credit cards, and license plates and then call in when they pull into a parking place and then call again, when they leave. This eliminates overpaying or underpaying and getting a ticket, but it is still difficult, because two actions are required. It is always better to do nothing and have the perfect outcome ensue.

8. **Poor Record Keeping**

Generally, there are no records kept of how much money any given parking space is earning. Free parking is also generally unmetered. Cities pay significant fees to have consultants come in and count parked cars to determine such things as how often and when “free” parking is being used, how well time limits are being adhered to, and other questions that could easily be answered by computer programs when automation is installed.

9. **“Congestion Priced” or “Convenience Priced” Parking**

This means that the base price is instantaneously increased to prevent the occupancy rate from getting too close to 85%. This maximum occupancy rate has been identified by UCLA Professor Donald Shoup. Keeping occupancy below this threshold guarantees that anyone that is willing to pay a premium price can find a parking place, even in high-demand areas, without needing to drive around looking for a parking space. Tables 2 and 3 of Reference 6 provide the algorithms.
10. How to Fully Unbundle the Cost of Parking to Support Sharing
The full cost must be visible and avoidable. Here’s what this means in more detail.

a. Requirement 1
The base, per-unit-time price (before any congestion-price increase) must be at least the current cost to provide the parking multiplied by the time rate cost of money, divided by the fraction of the time that the space is rented.

b. Requirement 2
In order to state the second requirement, it is useful to define the term, “beneficiary group”. The beneficiary group is generally that group of potential users that paid for the parking, either directly or indirectly, or those that are paying for the parking, either directly or indirectly. The exception is at, for example, a school or a transit station. In these cases, the potential users have not paid for the parking. However, since the baseline is “free” parking, it is clear that the providers of this parking (often tax payers) are content to (in effect), “give” the parking to the groups using the facility. The second requirement can now be stated. The parking-lot earnings should be divided up among the members of the beneficiary group that is associated with the parking.

c. How to Compute Each Beneficiary Group Member’s Share of the Parking Lot Earnings
The formulas used to divide up the money among the members of the beneficiary group should reflect either the extent to which they paid, the extent to which they are paying, or the extent to which they are consumers of the service associated with the parking. For example, students would receive earnings in proportion to the time they spend at the school. Train riders would receive earnings in proportion to the amount of time they spend on round-trip train rides. Shoppers would get earnings in proportion to the amount of money they spend. Renters would get earnings in proportion to the amount that their rent is paying for parking. Condominium owners would get earnings in proportion to the amount that their purchase price paid for parking. Employees would get earnings in proportion to the amount of wage they are losing so that the parking can be available. Alternatively, employees could get earnings in proportion to the amount of time they spend at work.

d. Why This Method of Unbundling Supports Sharing
With this method, sharing is acceptable to the beneficiary group, because they are earning money from anyone who uses the parking.

11. Concerns for the Economic Health of Downtowns
Merchants and their advocates within government often fear that charging for parking will cause potential customers to go to locations with “free” parking. For this reason, it is important that on-street parking be free until it is 50% full, at which point it is assigned a base price equal to the base price of the closest off-street parking.

12. Helping Potential Drivers Decide Whether They Want to Drive and If So, Where to Park
Software can be developed so that a potential user can specify time, place, (or a set of time and places) and desired price and be given (on a computer or on a phone) parking locations, with a probability of accuracy. It will also give transit information. This will encourage “park once” behavior, walking, and a rational decision as to whether or not the trip should be made by car. It will minimize driving because no search for parking will be necessary.
II. Arguments in Favor:

1. Global Warming Imperative to Eliminate “Free” Parking

The background material makes it clear that “free” parking must be replaced with priced parking if California is going to meet its AB32 responsibilities.

2. Overcoming Resistance

There is sure to be resistance to this idea. That resistance will be minimized by defining each type of parking’s beneficiary group and then operating the parking for the benefit of those in the beneficiary group. It will also be minimized if the parking is fully automated so that those that are paying for the parking are getting convenience. Those earning extra money are sure to be pleased. Those paying more than they are earning from the parking will understand that the new system allows them to no longer take money unfairly from their beneficiary-group colleagues that drive less.

3. Sharing of Parking, Protecting Low-Income Drivers, Handicapped Drivers, and Privacy

This method of unbundling will support sharing. Sharing of parking will allow less parking to be built. This will support the goals of mixed use and increased density, especially around transit stations. Since all potential drivers must have a “billing address” (some will never get a bill; they will only get a check), it will be easy for the system to also identify handicapped or low-income drivers. These drivers will get either a reduced rate or free parking. Privacy will need to be protected.

Congestion (or “Convenience”) pricing should be supplied so that occupancy rates are held below 85%. This will help to minimize driving to look for parking. It will also maximize the earnings for beneficiary groups that are lucky enough to be associated with parking that is well used.

Business districts will be less opposed if they see that if there is light demand for parking, no charge will be applied for the most convenient parking, which is on-street parking.

4. Parking at Train Stations

Paying riders that ride round trip their fair share of the parking lot earnings will mean that the parking lot is being operated to maximize ridership. If the parking is being offered at no charge, the parking is being operated to maximize driving to the station. With the charge, those that can get to the station without driving will be more likely to do so, leaving more parking for those that must drive. Those that must drive will be guaranteed a space, thanks to “convenience pricing”. Convenience pricing will also mean that each block of parking will have vacancy. This means that if a driver wants to spend “top dollar” for parking and park, for example, very close to the station platform, so as to catch a train, that option will be available. If the station happens to be in a downtown area, many of the cars in the parking lot will belong to those using the downtown. This will not hurt the riders because it will mean that they will earn more money from the parking. It is conceivable that the train riders could ride for almost no net money, if they get to the station without driving.

5. Purpose of Getting a Comprehensive Description

The description can be viewed by local governments, developers, and private investors. It can be used as a requirements document to support a full design and development. There can be a “request for proposal” (RFP) process. Parts of the resulting designs may lead to patents. The first
companies that implement these systems will have an advantage in implementing them in other locations. Since car parking is known to exist almost everywhere, the business opportunity that his represents is nearly unlimited. Once the system has been shown to please all stakeholders in a real implementation, it will be time for the state to create an agency to implement these systems at the locations of their choosing. State law will require the cooperation of all concerned. This means that companies will get this ideal system installed for free, by doing almost nothing. This will similarly be true for all other types of locations.

6. Letter Showing that the Required Technology Could Be Easily Developed

----- Original Message ----- 
From: David Carta
To: Lisa Redman; Mark Tanneau; Kelli; Nicole; Mark S.; John
Cc: Mike Bullock
Sent: Wednesday, January 13, 2010 5:40 PM
Subject: RE: RFID ParkingNewCabbadBIS

Dear Carlsbad School Board,
I wanted to send a quick note discussing the technical feasibility of tracking cars into a lot without impacting students or requiring the need for gates. Mike Bullock and I have discussed this project; it can be accomplished straightforwardly by utilizing Radio Frequency Identification and/or Video Cameras integrated with automated license recognition systems. The cars would need to register with the system at the start, but it would be fairly painless for the users after the initial installation. The back end database system can also be implemented both straightforwardly and at a reasonable price. This is not necessarily a recommendation of the proposal for unbundled parking. Rather it is strictly an unbiased view of the technical feasibility of the proposal to easily and unobtrusively track cars, both registered and unregistered, into a fixed lot.

Best regards,
David R. Carta, PhD
CEO Telairis Inc.
858-449-3454

1.7.4.2 Unbundling the Cost of Driving

Reference 6 also suggested that the Climate Action Plan (CAP, later named the Climate Action Strategy, CAS) include the following new section, to implement a cost-effective mitigation to unbundle the cost of providing roads. Note that the use of the word “unbundling”, in the heading above, denotes that the money collected should be paid out to those that are losing money under the current system, besides doing the needed maintenance. This means, for example, that the money collected to account for increased health-care costs, caused by the air pollution the public must breathe, would go to reduce the cost of health care, not to build or even maintain roads. What follows is the new “Section 12” that was suggested for the CAP, in Reference 6. Note finally that “AMRP” stands for “as much as is reasonably possible”.

Q-15 Please refer to Response to Comment Q-14. For a discussion of the road-use fee topic discussed in this comment, please refer to the ‘Managed Lane Network’ discussion in the 2050 RTP/SCS Chapter 6.

12 - Comprehensive Road-Use Fee Pricing System

Abstract This section contains a listing of road pricing principles. It provides an example of a road-use fee structure that supports the listed principles. Useful background information is provided. Arguments in favor of the presented example are presented.
Initial Note: For many reasons, including the climate crisis and the “AMRP” principle stated above, a comprehensive road-use fee pricing system is needed. It would be optimal for the state to implement the type of system described in this section. However, the state has a long history of irresponsibility in pricing road use. It is hoped that global warming will change this. Certainly, all the MPO’s in the state should be urging our state government to wake up and take action. If these efforts fail, the MPO’s will have to proceed as best they can to implement as much of these road-use pricing system components as possible.

I. Road-Use Fee Principles

1. The first principle is that of “full-cost pricing”. Driving has enjoyed a favored status in this state and in this country, resulting in sprawl, health-damaging pollution, global warming emissions, and congestion. We should advocate for the elimination of that favoritism in California, primarily by adopting this first principle.

2. Secondly, the current economic rewards for good mileage vehicles must not be eroded. Due to global warming, motorists need to “go electric” as soon as possible.

3. In addition, road-wear factors (primarily weight), the noise generated, and the pollution generated by each individual vehicle must be taken into account. This will increase fairness and support a shift to lighter, cleaner, and quieter vehicles.

4. The time and place of travel must be incorporated to reduce congestion.

5. Any road-use fee structure must do no economic harm to low-income drivers.

6. As road-use fee technologies evolve, privacy must be protected at each step.

II. An Example of a Conforming Road-Use Fee Structure

Condition 1

100% of the funding for all of the expenses of public roads, excluding those costs associated with future expansion (covered in Condition 3), comes from a road-use fee (that may include a fuel excise tax), that ultimately (as affordable technology can support) would contain the following Features:

1. VMT Fee A base, per-mile (VMT) component fee paid by all motorized vehicles for road construction and maintenance.

2. Carbon Fee An additional per-mile carbon component part is computed using an effective fee per gallon that is equal or larger than the fuel tax, that this per-mile carbon fee might replace, to correlate with the amount of CO2 emitted. This could either be charged at the pump, as it is now done, or could be added to the VMT fee by using a price per mile computed by dividing the effective price per gallon by the charged vehicle’s (year and model) average mileage, in the units of mile per gallon.

3. Road Wear Fee An additional per-mile component part that is proportional to the vehicle’s (year and model) average weight, or other road-wear variable of the vehicle being charged.

4. Air Pollution Fee An additional per-mile component part proportional to the charged vehicle’s (year and model) average pollution level, to be used to compensate people, schools, businesses, governments, and corporations harmed by pollution, with this rate set for full compensation.
5. Noise Pollution Fee  An additional per-mile component part proportional to the average noise pollution level of the charged vehicle, to compensate people, schools, businesses, governments, and corporations harmed by noise pollution, with the rate set for full compensation.

6. Congestion Fee  An additional per-mile component part or, alternatively a multiplier, to account for either time and place, or instantaneous traffic flow rate, to reduce or eliminate congestion, with the proceeds of this fee (collection minus collection cost) used for either the expansion or the operation of transit systems that would tend to reduce this congestion.

7. Low Income Relief  A fractional multiplier that would reduce the total per-mile cost for drivers with a sufficiently low income and a sufficiently high need to drive, but only available for a period of calendar time sufficient for the driver to change their circumstance creating the need to drive, unless this is impossible. Section V’s Section 7 has more detail.

8. Privacy  Privacy protections so that where and when people drive, the vehicle they drive, and any Feature 7 advantage, is fully protected, unless a warrant is issued by a judge in response to substantiated allegations of a serious, felony crime.

Condition 2
The per-mile charges of Condition 1 must be large enough to fund yearly payments to the municipalities having large, limited access roads (AKA “freeways”) within their boundaries (thereby keeping land off of their property-tax rolls), with these yearly payments equal to the average yearly property tax per acre of the adjacent land, multiplied by the total acreage covered by the road’s right of way, including frontage roads.

Condition 3
No expansion of the system of public roads should be done unless market research and traffic modeling show that the net revenue of the proposed road or additional lanes will fund all the expenses identified in Conditions 1 and 2.

Condition 4
No expansion of the system of public roads should be done unless it is shown that the expansion will not negatively impact the state’s AB32 goals and responsibilities.

Condition 5
The sales tax on gasoline and diesel fuel should remain. Its revenue can be used as is the revenue from any other sales tax that is collected on consumer items.

III. Background Material
This section provides information about the current level of the fuel tax, the difficulty of raising the fuel tax, the use of the fuel sales tax, lane performance during times of high demand, demand under the condition of “full cost pricing”, political “push back” to full cost pricing, other opinions that a pure fuel tax is becoming obsolete, and finally, information indicating that a road-use fee could be raised by a simple majority in the state legislature.

1. Current Level of Fuel Excise Tax
A full accounting of the fuel excise tax and what it currently pays for is not our responsibility. A significant segment of the population probably believes that current fuel tax rates are high enough. However, a San Diego County newspaper, the North County Times (NCT), in a February 9, 2009 article, reported that the Chair of the California Transportation Commission
(CTC) recently wrote that the fuel tax currently contributes nothing to road construction and only provides half of the money needed annually for repairs: http://www.actimes.com/articles/2009/02/09/news/columnists/downey/8591536f3e7332da882575510756f6e.txt

Increasing the state gas and diesel taxes, unchanged at 18-cents per gallon since 1994 – when the final one-cent increase mandated by Proposition 111 (June, 1990 that doubled the nine-cent excise fuel tax over a 5-year period) was added, is long overdue.

2. The Difficulty of Raising the Fuel Tax

To raise the fuel tax would require a 2/3rd majority vote of the legislature. In addition, according to a CNN report, http://www.cnn.com/2009/POLITICS/02/20/driving.tax/

“Officials including [Secretary of Transportation] LaHood have opposed raising the national gas tax, particularly in the current recession, and have said a new system is needed.”

3. Use of the Fuel Sales Tax

California has a sales tax on all consumer items sold in the state, except food and medicine. The revenues from sales taxes are generally placed in our state’s general fund. However, an exception to the general rule has been made for the sales tax on gasoline and diesel. By the conditions of a successful ballot measure, the sales tax on fuel must be used to support roads, which supplements the excise tax on fuel (also known as the “gas tax”), allowing the excise tax to be lower than necessary.

4. Lane Performance During Times of High Demand

From the DOF’s Freeway Management and Operations Handbook:

http://ops.fhwa.dot.gov/freewaymgmt/publications/fwwy_mgmt_handbook_final_complete_all.pdf, Page 1-18, comes the following:

As flow increases from zero, density also increases, since more vehicles are on the roadway. When this happens, speed declines because of the interaction of vehicles. This decline is negligible at low and medium densities and flow rates. As the density further increases, these generalized curves suggest that speed decreases significantly just before capacity is achieved, with capacity being defined as the product of density and speed resulting in the maximum flow rate. This condition is shown as optimum speed So (often called critical speed), optimum density Do (sometimes referred to as critical density), and maximum flow Vm. (7). In general, this maximum flow (i.e. capacity) occurs at a speed between 35 and 50 mph.

Efficient freeway operation depends on the balance between capacity and demand. In the simplest terms, highway congestion results when traffic demand approaches or exceeds the available capacity of the highway system. As vehicle demand approaches highway capacity, traffic flow begins to deteriorate. Flow is interrupted by spots of turbulence and shock waves, which disrupt efficiency. Then, traffic flow begins to break down rapidly, followed by further deterioration of operational efficiency.

For the purpose of this resolution the most important result is that when demand is allowed to significantly exceed capacity, the flow rate drops well below optimum. In fact, speed can drop to nearly zero. With no intervention, freeway lanes can be counted on to fail, just when they are needed the most.

5. Demand, Under the Condition of “Full-Cost” Pricing
The price-setting stipulations of Section III’s Features 1 through 6 of Condition 1, in conjunction with Condition 2, could be described as “full cost pricing”. It is not our responsibility to do an analysis to calculate what the average price per mile would need to be or to then determine how much driving would be reduced in reaction to this price. It could be that driving would decrease so much that congestion would disappear and the new problem would be to figure out what to do with the excess land buried under unneeded highway lanes and how to meet the large new demand for transit.

6. Political Pushback to the Notion of Full-Cost Pricing

There are many, well-funded “think tanks” and political figures and institutions that argue against raising the cost of driving. So far they have been largely successful in keeping the taxes on driving low.

7. Other Opinions That a Pure Fuel Tax Is Becoming Obsolete

There are many indications that more decision makers are adopting the view that the fuel tax either needs to be replaced or supplemented. We have undertaken no comprehensive search and evaluation to quantify this. However the following examples are presented, with the first three being taken from the same NCT article identified in Section-1 of this Section.

First the Chair of the CTC pointed out that, “People are driving more-fuel-efficient cars and ones that run on alternative fuels and buying less gas. As a result, they are paying less in gas taxes”. The author of the NCT article states that the CTC Chair and others are calling for “phasing out the gas tax,” in favor of a VMT fee.

Second, Will Kempton, director of the California Department of Transportation, told local officials in Valley Center recently “we need to make a transition to a new way of collecting transportation funds.” Kempton also said the state should consider following the lead of Oregon, which is exploring a tax based on the number of miles a person drives.

Third, Jim Earp, a California Transportation Commission member from Roseville, added, “Either that or we’re going to have to jack up the gas tax considerably.”

Fourth, the Christian Science Monitor editorial, February 27, 2009, “A road map to better US roads,” says, “Congress should heed a panel that suggests replacing a tax on gas with one on miles driven.”

http://www.csmonitor.com/2009/0227/p08s01-comv.html It goes on to say, “In Europe, the Netherlands will transition to a VMT by 2014 and Denmark by 2016. Changing behavior is the key to 21st century transport that must unplug crowded highways and reduce dependence on fossil fuels. Taxing miles alerts drivers to the real cost of using roads and can better motivate them to drive less. A VMT (fee) is the more reliable and efficient way to pay for transport. Its time has come.”

Finally, according to a CNN report, http://www.cnn.com/2009/POLITICS/02/20/driving.tax/

Speaking to The Associated Press, Transportation Secretary LaHood, an Illinois Republican, said, “We should look at the vehicular miles program where people are actually clocked on the number of miles that they traveled.”

8. Raising a Road-Use Fee Could Be Done By a Simple Majority

The Sacrament Bee printed an article by Dan Walters, on January 20th, 2009, describing a proposal to help close California’s budget gap.

The key elements from the article are as follows.

1.) Senate President Pro Temp Darrell Steinberg, the scheme's father, insists that it's legal, basing that assertion on a 5-year-old opinion from the Legislature's legal office.

2.) The plan would eliminate excise and sales taxes on gasoline and raise other taxes to help close the budget deficit, then "backfill" the gasoline taxes with a new "fee" that would actually increase the bite on motorists by 50 percent, from 26 cents a gallon to 39 cents. A "fee" can be imposed by a simple majority vote as long as it relates to actual services rendered by government.

Note that this fee approach is relatively far from meeting all of the stipulations of this report. However, it would represent significant progress.

IV. Arguments in Favor of Road Use Fees

This Section provides an analogy demonstrating why roads should be operated for the equal benefit of all. It presents some of the consequences of the current level of our state fuel tax. It argues that a road-use fee should include a vehicle miles traveled (VMT) component and that furthermore, a component should relate to congestion pricing (i.e. needs to account for specific time and place of travel). A road-use fee should account for environmental impacts, should protect low-income families, and contain privacy protections. It explains why revenue from a road use fee should be used to pay an effective property tax to municipalities. It argues that this resolution offers methods that would help to alleviate the state’s budget problems. It states that it is easier to discuss setting a road use fee than it is to discuss increasing an excise tax on fuel. Finally, it briefly discusses some of the emerging technologies and the relationship between technology and this resolution.

1. Full Cost Pricing

Roads should be priced so that they are no longer an economic burden on those that choose to drive less than average. Yet, it is hard to be objective about roads. Here’s an analogy. Assume that California owned a large number of 2-bedroom apartments that it allowed families to live in if they paid a tax of $500 a month, even though the market rental value of the apartments was $1000 a month. Clearly, the people living in the apartments are the winners and all the other citizens of California are the losers, because if the state set the price to the market value, it would have additional money that it could either use for the benefit of all citizens or it could return the money to everyone as a tax rebate. Some might note that since there are a large number of these apartments, almost everyone that wants one could get one, so those that don’t live in these 2-bedroom apartments are losing out because of their own poor choice. However, since not every citizen wants to live in these apartments, the State’s practice is indefensible. The correct thing for the state to do would be to allow low-income citizens to remain in the rental units at the subsidized price of $500 a month, stop calling the price-per-month a “tax” and instead call the price-per-month a “user fee”, and set the price for the families that are not low income to the market value of $1000 per month. In this case, the low-income families remain winners. Even though all the others are losers, they are losing much less than before. This assumes that the state takes the additional earnings and uses it in a way that benefits all citizens. Buying more 2-bedroom apartments would not qualify. This analogy’s original operation is similar to what California does by under pricing road use fees, as described below.

2. Consequences of the Current Level of Fuel Tax
a. Economic Inequity

Because our state fuel tax is too low, funds derived from taxes (and fees) that are not related to the choice of driving a car must be used to support our system of public roads. Examples are our sales tax, our income tax, our property tax, and the development fees that increase many of our costs. In effect what is happening is that money is systematically being taken from those that drive less and being given to support those that drive more.

This violates a fundamental principle of our free market system. People should pay for what they use and, conversely, people should not be forced to pay for what they do not use. It is true that we often willingly violate this principle, for some higher purpose. Education, mass transit, and Section 8 housing are good examples. However, there is no valid reason to increase driving by making it artificially cheap to drive, or for that matter, to park a car. The facts about global warming suggest quite the opposite.

b. Global Warming Threat and the California Example of Road-Use Pricing

According to an article in the June 2008 issue of Scientific American, *The Ethics of Global Warming* (on Page 100 of the well-respected magazine), there is a 5% chance that the level of CO2-equivalent gasses in our atmosphere, expected in just 20 years, will result in a 14.4 Degree increase in temperature and this could result in “a devastating collapse in the human population, perhaps even to extinction.”

From [http://www.sandiego.edu/EPIC/ghginventory/GHG-On-Road1.pdf](http://www.sandiego.edu/EPIC/ghginventory/GHG-On-Road1.pdf) we learn that in San Diego County, emissions from on-road vehicles are about 46% of regional GHG emissions. Item 4 of the Background Information of the CNRCC Resolution Supporting Fuel Tax Increase (39-6-0) March 22, 2009, says that 40% of the state’s GHG emissions come from transportation.

Many world leaders know that many of our citizens have taken all of the time and cost variables into account and then built their life around their automobiles. How can we expect the world to do its part to reduce GHG emissions, if they see us unwilling to reform the way we price the use of roads, so as to conform to the basic free-market principles that we claim to hold dear?

c. Other Pollution

Besides GHG emissions it is well known that on-road transportation contributes significantly (around 50% by some accounts) to our air and noise pollution. Cars cause air and water pollution directly and indirectly. This occurs when they are manufactured, when their fuel is transported and refined (refineries are, by far, the biggest cause of ground-water contamination in California), and when they are driven.

d. Urban Sprawl

The dominance of the automobile is the primary reason for our sprawling, urban land-use patterns. For example, it is well known that a simple 4-lane freeway, with frontage roads, can consume 26 acres per mile. An acre of land can only park 117 cars. Sprawl has taken valuable farm land, wet lands, and wild-life habitat. It makes it more difficult to walk or to bicycle. It also makes it more difficult to provide or to use transit.

e. Summary Statement
GHG emissions, urban sprawl and air, water, and noise pollution are made worse by making driving seem artificially inexpensive to the public. Note that for every penny earned by raising the price per mile to drive to its correct value, a penny could be cut from other taxes and fees that are unrelated to driving. Secretary of Transportation Ray LaHood’s statement is shown in Section IV’s Section 2 (“we can’t raise the gas tax in a recession”) shows that he misses this important point. This point has been made by the Sierra Club, as shown in http://www.sierrclub.org/policy/conservation/trans.aspx, where it says, of subsidies to driving, “These subsidies should be publicly scrutinized and eliminated by appropriate fuel and carbon taxes, parking and road user charges, . . .”

3. Section II’s Condition 5, The Use of the Gasoline Sales Tax
As stated in Section III, 3, currently the sales tax on fuel must be used for the same purposes as the excise tax on fuel. This is contrary to the normal rule for sales taxes, whereby sales taxes are used for general-fund purposes, unrelated to the item sold. For example, the sales taxes from running shoes are not removed from the general fund to be used to build running facilities. Likewise, the sales tax on alcoholic beverages is not separated out to be used to subsidize the building of more drinking establishments. If we are going to end our unfortunate favoritism towards roads, we need to end the practice of using the sales tax from gasoline as if it were an additional fuel excise tax. This practice would be ended if the implied recommendations of this report were enacted. The sales tax on gasoline should continue, but the tax on the sale of gasoline should go to the general fund, as does the tax on the sale of other consumer items.

4. Reasons to Adopt Section II’s Feature 1, a VMT Based, Road-Use Fee
From a Global Warming perspective, there is a hierarchy of favored transportation modes.

- **Mode 0:** Telecommuting (no need to leave the house)
- **Mode 1:** Walking
- **Mode 2:** Cycling (skate boarding and any other device-aided, non-motorized transportation mode)
- **Mode 3:** Transit
- **Mode 4:** Electric cars or cars that get great mileage
- **Mode 5:** Other cars

In terms of reducing pressure to expand road capacity, Modes 0, 1 and 2 are many times more desirable than even Mode 4, which is many times better than Mode 5. The point here is that as much as we want to see more electric cars and more cars that get exceptional mileage, we should not lose sight of the fact that unless all road users pay their fair share, those people using Modes 0, 1 and 2 are not being fully rewarded for not using road capacity, and this is poor environmental policy, based on the desirability factors suggested. All cars are large, manufactured devices with a finite life. They promote sprawl. People that routinely use Modes 0, 1 and 2 have often set up their lives so that they could drive less. Those life-style choices need to be fully rewarded. The statements of Sections 2a and 2b of this Section apply.

5. Reasons to Adopt Road-Use Pricing Methods Tied to Specific VMT
a. Need to Support Section II’s Feature 6

The current fuel tax is simple and, in theory it could be raised to cover the costs of driving (for those vehicles that use fuel. Alternatively, it is easy to imagine odometers that transmit their values at scheduled times to a billing computer. With vehicle-recognition schemes, implemented
at the pump or within the billing computer containing odometer data, it would be possible to expand these simple methods to support Section II’s Features 1 through 5, Feature 7, and Feature 8. However, these simple methods would not support Section II’s congestion pricing Feature 6, which is sufficiently important that it must be identified and supported.

b. Value of Section II’s Feature 6: Congestion Pricing

Various names have been proposed for Section II’s Feature 6, including “congestion pricing” or “convenience pricing”. Regardless of the name, it is a powerful way to reduce our society’s propensity for expanding highways. Proponents of freeway expansion frequently mention the fact that highway “gridlock” harms our public safety because it can significantly delay emergency vehicles. Individuals in society see this in personal terms. We can all imagine a need to get home to attend to a child, or to get to an emergency room. The consequences of congestion can go well beyond being just a frustrating inconvenience. Sometimes people feel that they would pay almost anything to be able to drive at higher speeds. How many people have missed a plane, or a train, or a critical business meeting, “stuck in traffic”? Besides this, lanes also often support transit. Transit success requires dependable and reasonably fast bus travel. In addition, stop and go traffic wastes fuel, increasing global warming and unhealthy emissions.

“Convenience Lanes” could provide an option for drivers when they feel it is worth the extra money to drive beyond congestion speeds. This pricing also provides a means to keep one or more lanes operating close to their theoretical capacity, instead of at the greatly reduced flow rate that comes when demand is large. (See Section III. 4.) The pricing can adjust automatically so as to keep demand below capacity, on one or more lanes. This means that congestion in parallel lanes will clear sooner than if all lanes were allowed to stay severely congested.

“Convenience Lanes” also offer the hope of significant revenue generation, if enough people are willing to, in effect, bid up the price. (This will probably happen if the “political pushback” of Section III. 6 “trumps” the condition of “full-cost pricing” in Section III. 5, meaning that the price of driving is kept low enough in regular lanes that there are still times and places where congestion is significant.) Section II’s Feature 6 would require that proceeds (collection minus collection costs) be used for transit systems that would tend to reduce the congestion. As stated in Section III. 4, the lanes and roads that are parallel to the “convenience priced” lanes can be counted on to fail to carry their capacity when serious congestion strikes. Fortunately, there is no comparable effect for transit. Although it is conceivable that transit demand could exceed transit carrying capacity, when this happens, the transit can be counted on to continue to carry its full capacity.

c. Section II’s Feature 6 and Road Price Variability

Some roads are relatively expensive to build; others are relatively inexpensive. There is no reason we have to settle for charging the same per-mile price for all roads. Similarly, driving at different times should be priced differently. It is well understood that freeways are sized and expanded to facilitate peak driving times. Since it is more costly to provide the added capacity needed at peak times, it is reasonable to charge peak-time drivers more. Charging more at the times that demand is high will tend to smooth out traffic demand over various times of the day.

d. Section II’s Feature 6 and Pollution

Section II’s Feature 6 can reduce congestion. This is important because stop-and-go traffic probably increases pollution and GHG emissions when compared to lanes operating at “optimum speed” as identified in Section III. 4.

e. Section II’s Feature 6 Supported by the CTC
These powerful arguments have evidently been recognized by the CTC. In their Addendum to the 2007 Regional Transportation Plan Guidelines, Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process, adopted on May 29, 2008, they provide strong support to lane pricing.

In the CTC’s Pricing Strategies Section (Page 3), the CTC instructs Metropolitan Planning Organizations to “model adding pricing to existing lanes, not just as a means for additional expansion. Variable/congestion pricing should be considered.”

Variable/congestion pricing cannot be done without Section II’s Feature 6 of its Condition 1.

f. Arguments to Support the CTC’s Road-Pricing Guideline

Politically speaking, the Pricing Section took great courage on the part of the CTC. We should publicize the CTC guideline and defend it against critics. There is widespread confusion regarding who owns existing lanes and what promises were made. Converting existing, “free” lanes to lanes that are priced can be justified by explaining that fuel taxes have always been road-use fees and that any stated or implied promise that paying fuel tax entitled drivers, for all time forward, to drive free on the roads that the fuel taxes may have been used to fund was specious. Specifically, the claim that drivers “already paid” for roads through the payment of fuel taxes is incorrect because (i) many drivers have just started driving; (ii) many drivers that paid fuel tax for many years have died; and (iii) paying a fee to use a public road is no different than paying rent to use property and paying rent does not lead to quasi ownership. These same arguments can be used against statements supporting the idea that drivers can forever drive free over a bridge because the tolls have paid off the loan for the bridge.

6. Reasons for Section II’s Feature 2 – 5

These features charge vehicles for their environmental impacts.

7. Reasons for Section II’s Feature 7

The ability of low-income families to be able to drive to work and other essential family errands must be protected. However, given our challenge of global warming, this needs to be “constructive charity”. The features shown in Section II suggest that a billing computer will probably be involved. If so, that computer’s database can, perhaps at the individual’s discretion, be supported with information such as current housing details, current salary, job location, occupation and job skills to include a full resume, childcare, location of family and friends, hobbies, or recreational pursuits, and other items that could be related to the individual’s current need to drive. When the software determines that the person qualifies for a reduced multiplier of the full cost of driving (a subsidy), it could then also run various programs to offer, in creative, tailored, form letters, suggestions for changing circumstances to reduce driving. This could involve a search for jobs, a search for suitable housing, a search for daycare, and a search for better locations to pursue hobbies or recreational pursuits. The availability of transit would be considered in the software and would be offered. Job training could be suggested or offered at a discount. If circumstances support it, the person could also be asked if they would be interested in a class on riding a bicycle in traffic. Taking such a class could earn the person a financial award, perhaps to include a new or used bicycle. The software would put a high priority on helping the person achieve a lifestyle that requires less driving. As a last resort the software would take into account the congestion level of various routes and offer a driving route that requires a reduced subsidy. If no billing computer is involved, the person receiving the subsidy
might be required to send in data to support the running of these programs to reduce driving and the subsidy to driving.

8. Reasons for Section II’s Feature 8

Privacy must be protected, unless confidential disclosure to law enforcement agencies is ordered by a judge based on reasonable cause. We currently rely on laws and judges to protect our privacy regarding what we say on our telephone, our emails, our Internet activities, and the information we provide on our tax forms. This information could be both politically revealing and highly embarrassing, to the point where it could seriously degrade our personal and professional lives. In terms of protecting our democracy, it is especially important that our political activities be protected. Where we drive and park a car is also somewhat sensitive in this regard. However, in most cases it is less sensitive than our emails and what we say on the phone. Cell phone companies already have information about our travel. Many locations, such as Dallas, have “toll-tags” that record every time someone goes through a toll plaza and charges them accordingly. The conclusion is that the argument that many people will never accept a computer, with built-in privacy protections, from having information about where we drive is overblown and not supported by the facts.

9. Reasons for Section II’s Condition 2

Railroads pay property tax on the land under their tracks. Utility companies pay property taxes on the land under their transmission lines. There is no reason that large highways should not pay a property tax for the land they take off the tax rolls in each community. The favored status of roads should be eliminated.

10. California’s Budget Problem

California currently has a large budget gap. Children may lose their health care and education cuts will probably be severe. State parks may close. Most state funding for transit has already been eliminated. This Section 12 strategy might help to reduce some of these cuts.

11. Raising the Fuel Tax vs. Pricing a Road-Use Fee

There are advantages in reframing the question from should we raise the fuel tax to: Should we replace the fuel tax with a road-use fee and, if so, how should we set the price of the road-use fee? Section III. 2 showed that a 2/3rds vote is needed in the state legislature to raise a tax; while, as shown in Section III. 8, only a simple majority is needed to set and then raise a user fee. Besides this, there are a lot of common misunderstandings about our fuel taxes. Many think they are a mechanism whereby drivers somehow buy new roads. This confusion was discussed in detail in this Section’s Subsection 5. If we can move the discussion to one of how to properly set the price of road use, we will have already made large gains in framing the question to the advantage of environmentalists and everyone that recognizes that it is time to stop favoring driving.

12. Technology

It is not our responsibility to pick the technologies that will ultimately be used in the implementation of the road-use pricing described in the 4 conditions of this resolution’s Section II: Email and phone conversations with employees of “Skymeter”, http://www.grushtour.blogspot.com/, indicate that they are ready to respond to a Request For Proposal (RFP) to implement VMT pricing in the Netherlands, to include every road in the country. Their proposal will be that each car will have a GPS unit, about as large as an eyeglasses case, sitting on the dash. It will contain a database of roads and a variable set of pricing...
1.7.4.2.3 Cost-Effective Mitigation to Increase Bicycle Use

Reference 6 also suggested that the Climate Action Plan include the following new section, “Section 13”, to implement a cost-effective mitigation to reduce driving by increasing bicycle use.

13 - Education and Projects to Support Bicycle Transportation

For many reasons, including the climate crisis and the “AMRP” principle stated in the Introduction of this RES, the elements of this section need to be adopted, even if the computer model of the SCS shows that our CARP target reductions are going to be met without these measures. The criteria for spending money for bicycle transportation should be to maximize the resulting estimated reductions in driving. The following strategies will probably do this.

Projects
Each of the smart growth place types, both existing and planned, shown in Figure 2 of Section 9, should be checked to see if bicycle access could be substantially improved with either a traffic calming project, a “complete streets” project, more shoulder width, or a project to overcome some natural or made-made obstacle. These projects should be prioritized using a cost/benefit ratio metric. It is hereby assumed that 40% of the $270M available for the Regional Bicycle Plan should be used to fund the projects. They should be selected for implementation, from top of the list (lowest cost/benefit ratio) down, until the money (about $108M) is used up. An example of one of these projects, for the proposed town center near the corner of I-5 and SR-78, is described in the “Existing Planning Efforts” of Section 9.

Education
The remaining 60% of the $270M, about $160M, should be used to

1) teach interested adults about bicycle accident statistics (most serious injuries occur to cyclists in accidents that do not involve a motor vehicle), car-bike accident statistics (most are caused by wrong-way riding and errors in intersections; clear cut hit-from-behind is rare), and how to ride in all conditions, to minimize problems.

2) teach riding-in-traffic skills and how to ride in other challenging conditions, by having the class members and instructor go out into real conditions and ride together, until proficiency is achieved.

Students that pass a rigorous written test and demonstrate proficiency in traffic and other challenging conditions are paid for their time and effort.

These classes should be based on the curriculum developed by the League of American Bicyclists and taught by instructors certified by the League.

SANDAG acknowledges the mitigation strategies presented by the commenter in Attachment 6. Please see Master Response 21 for further discussion on the adequacy of the GHG mitigation measures provided in the Draft EIR, and why other mitigation measures were not selected. Also, please refer to the ‘Managed Lane Network’ discussion in the 2050 RTP/SCS Chapter 6 for a further discussion of congestion pricing strategies.
SANDAG appreciates the information provided by the commenter (referring to Attachment 4 of this letter). Attachment 4 provides general non-project-specific information on parking costs. The comment does not raise any significant environmental issues directly related to the EIR project description, impact analysis or mitigation measures. For a discussion of how the Draft EIR addressed the general parking topic discussed in this comment, please refer to Master Response 15.

1.7.4.3 One-Hour Presentation of Reference 4
Reference 4 is a peer reviewed and published report that I coauthored with Dr. Jim Stewart. Dr. Stewart has a PhD in Nuclear Physics, a Master's degree in Urban Planning, and cofounded Sierra Club California's Energy-Climate Committee. The paper was peer reviewed and published by the Air and Waste Management Association. I presented the paper at their 103rd Conference and Convention on June 22, 2010, in their Sustainable Land Use and Transportation Session.

On January 7, 2011, I gave a 1-hour presentation on the paper to SANDAG's Mr. Maggs Stoll and Carolina Gregor. Mr. Stoll is SANDAG's Director of Land Use and Planning. Ms. Gregor is a SANDAG Regional Planner. On January 6th, to prepare for the meeting, I sent Reference 4 and three related files to Mr. Stoll and Regional Planners Colleen Clementson and Carolina Gregor.

1.7.4.4 Conclusion
It is hard to understand why SANDAG did not realize that reallocating TransNet money from highways to transit, unbundling the cost of parking and driving, and good bicycle strategies are good, feasible, and necessary mitigations, given the harsh requirements of our climate crisis.

1.8 The DEIR presents weak, poorly worded, straw man versions of mitigations that were presented by the public and then, through poor logic, finds them infeasible.

There are at least two places where the mitigations offered by the public have been misrepresented and then described as "infeasible", in the DEIR.

1.8.1 "Elevating Parking Fees" Mitigation
On Page 4.16-34 of the DEIR, a mitigation measure is described as a requirement to "elevate parking fees". Using faulty logic, which ignores all of the information that has been given to SANDAG in References 4, 6 and countless speeches to the SANDAG Board, it is argued that it is infeasible, as follows.

- Require SANDAG's member agencies to increase congestion pricing by elevating parking fees. The increased parking fees would serve as an economic deterrent for commuters driving alone. This could reduce single-driver trips and help avoid substantial increases in work trip travel time and peak period congestion.

This measure was considered infeasible due to the social considerations, that is, the inability to implement this measure adequately and equally throughout all agencies and because of economic consideration of the added economic burden that would be placed on workers in the San Diego region, in addition to the already difficult economic situation. Also, this measure would not achieve the objective to provide a transportation system that offers convenient travel options for people and goods, as well as reasonable travel costs as the increased parking fee may adversely impact the travel costs of drivers who do not have access to convenient transit options.

1.8.1.1 Problem with Using the Words "Elevated Parking Fee"
It may have happened, but I have never heard any member of the public ask for anything like "elevated parking fees" without explaining that the money collected would need to go back to those for whom the
parking is built, or in other words, to those that are losing money because of the “free” or underpriced parking. If anyone ever had such an idea, it was poorly thought out. SANDAG has been exposed to the correct idea, that parking costs should be unbundled, for at least several years now, as shown, for example, in References 4 and 6, as well as Section 1.7 above. The word “unbundled” is the correct word because the high cost of parking is always being paid, whether it is visible and discretionary or if it is hidden and forced on people. As it has been stated repeatedly to SANDAG, parking is expensive to provide. When it is “free” or underpriced, its cost reduces people’s wages, increases people’s rent, increases peoples net cost for a round trip on a train, and raises the cost of all goods and services, even food. This is true, whether a person uses the parking or not. Therefore this status quo method is unjust because it takes money from those that drive less than average and gives it to those that drive more than average.

1.8.1.2 Problem with Using the Words “Congestion Pricing”

The cost of parking should be unbundled in all locations. Parking provided at no charge is the worst case of bundled parking cost and, as such, it is the case that needs to be fixed first, not last. Usually, where parking is “free”, there is plenty of vacancy and so no “congestion pricing” is needed. Reference 4 is the first report in the world to include real-time congestion pricing algorithms. These algorithms would be used any time occupancy moves above 70%, for cases where 85% occupancy might be exceeded.

SANDAG should now know all that is needed about how to unbundle the cost in all cases. The words “congestion pricing” shields the suburbs, including the offices in industrial parks, exactly where unbundling is needed the most.

1.8.1.3 Inequity of an Apartment Complex with “Free Parking”

For example, consider a case where the actual cost of providing parking at an apartment complex is $25 per month per space and the average family own 2 cars. If nothing is charged for parking, a family that owns 4 cars has no problem, as long as their neighbor happens to be a family that does not own a car. However, if the parking is worth $25 a month, the family with no cars is getting cheated out of $50 a month. This could be a serious matter if that family’s income is incapable of feeding all its members near the end of its pay period.

Please note that the system which seems like the obvious answer to the above example, where tenants are given a choice to rent any number of parking spaces, including zero, is suboptimal because it does not allow day-to-day flexibility and it does not allow for the full sharing of parking. “Full sharing” means that anyone can make use of the parking, if they are willing to pay the fair price. If this sounds familiar, please read Reference 4, a published and peer-reviewed document.

1.8.1.4 Implementation of Unbundled Parking Cost Is Not that Difficult

Regarding the DEIR’s claim that there is an “inability to implement this measure adequately and equally throughout all agencies”, that is not true. SANDAG could adopt a rule that any city that continues to allow bundled parking cost will not get any money for road maintenance. At the same time that SANDAG takes this position of demanding basic economic fairness, it could petition the State of California to pass laws disallowing parking practices that transfer wealth from those that drive less than average to those that drive more than average. In other words, SANDAG could petition the State of California to make bundled parking costs illegal. This is reasonable, because all levels of government have a responsibility to enforce basic economic fairness. The technology to do this “efficiently and conveniently” is described in Reference 4.

1.8.1.5 The “Added Economic Burden” is a One-Sided View

Regarding the DEIR’s claim that there is an “added economic burden”, the following example will prove that, on average, this burden is small and well worth the benefit of increased fairness. With good technology, the cost
Q-19
The comment is noted. It raises hypothetical situations that do not contradict the Draft EIR’s statements that increasing parking fees may adversely impact travel costs for those drivers who do not have convenient transit options. Please refer to response Q-18 for further discussion of parking fees.

1.8.1.6 Concern for Drivers without Convenient Transit Options

Similarly, regarding the DEIR’s words, “the increased parking fee may adversely impact the travel costs of drivers who do not have access to convenient transit options”, the following information is provided.

Some locations have good transit and some locations have poor transit. It is common to think that unbundling the cost of parking where it is difficult to not drive, would have a poor outcome. That is not true, as can be seen by the following example.

Let’s consider a factory with 100 employees, that has no transit service, is located just outside of Palm Springs, during a month where temperatures are over 100 degrees. Before unbundling the cost, let’s assume that there are no employees that car pool and only 1 employee that bicycles to work. Let’s also assume that, based on the value of land and the cost of money, the value of the parking is $5 per day. For simplicity, let’s also assume zero cost for implementation and that all employees work exactly the same amount of hours, every single work day. Finally, let’s assume that after unbundling the cost of the parking, due to the high temperatures, there is still just the single bicycle commuter.

Given these assumptions, the 99 employees that drive each pay $5 each day. Therefore, instead of generating $500 per day, the parking charge would only generate $495 per day, because the bicyclist pays nothing. Since all the employees work the same hours, they all get $4.95 per day. It therefore seems that SANDAG is worried about all the driving employees losing five cents per day. SANDAG forgets that the bicyclist is getting $4.95 per day, which some would say she deserves, for riding in the 100 degree weather. The employees would know that they are losing the five cents per day because the lone cyclist is not driving. Given, this situation, it is easy enough to imagine that one other person would take up cycling to work. If so, all the employees would get $4.90 per day, and that includes the two cyclists, that are not paying the $5 per day. Now, less assume one more thing. Let’s say this situation is so stable that the company president steps in and finds two people in Palm Springs who work to park an RV or a boat on these two extra spaces, at a charge of $5 per work day, but free on the weekend. In this case, no driver loses any money and the two cyclists earn an extra $2 per day. Under these assumptions, the SANDAG concern for the drivers is seen to be false. Besides this, the number of non-drivers doubled, which is an impressive outcome from an environmental standpoint.

Another case could be considered where transit is very good and a large percentage of employees get to work without driving. This outcome would be very different but would still be fair to all. In this case, it would be reasonable for a company to step in and help a low income worker who has made a poor choice of where to live and must drive to a location where many can use transit. In such a case, the worker I have described will be considerably worse off if parking costs are unbundled. However, the financial help to the low-income worker should not be permanent. We all need to realize that not all bad decisions can be covered by special actions on the part of companies or governments.
The SANDAG preparers of this document seem strangely oblivious to these facts. Finally, destablizing the climate should also be a SANDAG concern, at least as legitimate as the DEIR’s concern that an “increased parking fee may adversely impact the travel costs of drivers”.

1.8.2 “Increased Tax on Transportation Fuel” Mitigation

It is never advisable or accurate to talk about a “tax on transportation fuel”. The excise tax on fuel should be viewed as a very poorly understood and a very poorly priced road-use fee. Calling it a road-use fee and talking about setting the road-use fee at a level which is fair to all citizens will help to foster a rational discussion. SANDAG’s choice of words is exactly what the oil companies would like. Few people like to see any type of tax raised.

On Page 4.16-34 the following mitigation is given, and then it is argued that it is infeasible, as follows.

- Impose increased taxes on transportation fuel as an economic deterrent to auto and truck travel.
  This could reduce single-driver trips and avoid substantial increases in work trip travel time and peak period congestion.

This measure was considered infeasible because of the inability of SANDAG to adequately require the implementation of this measure across the region with the necessary authority to impose such taxes. In addition, this measure would not achieve the objective to provide a transportation system that offers convenient travel options for people and goods, as well as reasonable travel costs as increased transportation fuel taxes would elevate costs associated with travel, including transit. Also, the measure would not achieve the objective to provide a transportation system that supports improvement of the region’s standard of living due to the adverse impact it would have on the economic prosperity and viability of the region as a center for regional distribution and the goods movement industry due to higher transportation fuel prices.

1.8.2.1 General Comments on the Logic

This logic is reminiscent of John McCain and Hillary Clinton calling for an end to gas taxes, as they did during the Indiana primary in the 2008 election. Although big oil and the highway lobby were certainly thrilled by this suggested policy, the voters of Indiana were not impressed and President Obama, who told the truth about the issue, did well in Indiana.

Section 1.7.4.2.2 shows that this DEIR is both illogical and biased in its attempt to show that this mitigation is infeasible.

1.8.2.2 The Feasibility of a Local Implementation

The discussion in Section 1.7.4.2.2 includes the following words:

These powerful arguments have evidently been recognized by the CTC. In their Addendum to the 2007 Regional Transportation Plan Guidelines, Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process, adopted on May 29, 2008, they provide strong support to lane pricing.


In the CTC’s Pricing Strategies Section (Page 3), the CTC instructs Metropolitan Planning Organizations to “model adding pricing to existing lanes, not just as a means for additional expansion. Variable/congestion pricing should be considered.”

Therefore, if California refuses to realize that the gas tax has no future and that therefore a road-use fee is needed, SANDAG will have no choice but to follow its CTC guidelines and approve the pricing of our controlled-access roads (“freeways”), using cameras at all exits and entrances and automated billing. I-5 and I-15 could be done first. The original price to charge would be 2 cents per mile. This approach is described in an as-yet unpublished opinion piece, coauthored by myself and the former Mayor of Palo

Q-19

Q-20

The commenter expresses concern about the Draft EIR’s use of the term “tax on transportation fuel”. Currently, neither SANDAG nor local agencies have the authority to impose a gasoline tax. SANDAG does have the authority to set pricing for the Managed Lanes that currently operate on the I-15 corridor and are planned in other corridors in the region. Some of the revenue generated from the Managed Lanes is used to operate transit in the same corridor. This comment is noted; however, because use of this term in the Draft EIR has no impact on the overall significance conclusions for transportation impacts, no further response is required.
Alto, co-founder of "Friends of Caltrain," here is the opinion piece, which we hope to eventually get published in the San Jose Mercury News.

**Use Free Market Principles to Save Caltrain**

Reduce Congestion, and Help Stabilize Our Climate

Just this week, the regional transportation agencies put their heads together in response to the outpouring of public support for Caltrain and came up with a rescue package that will save a substantial part of the service. The Caltrain board sent staff back to come up with another $3.3 million to sustain the current schedule with the successful Baby Bullet. The latest ridership numbers show Caltrain is more popular than ever, even with the recent fare increases and service reductions. It is a successful and efficient transit system; the problem is it lacks a dedicated funding base to complement the 47% that comes from the riders.

The rescue package will buy time for one year; hopefully two. We must create a dedicated, long-term funding source for Caltrain. There are many ideas which are beginning to emerge. One is an increase in our regional sales tax. A second is a regional increase in the gas tax. Either would require a two-thirds vote. This is a pitch for another idea that both free market advocates and environmentalists should be able to support.

The Chairman of the California Transportation Commission has written that our current gas tax contributes nothing towards building roads and only pays half the cost of maintenance. Maintaining roads therefore requires using money generated by income, sales, and property tax; less general tax money for such things as schools, libraries, and public safety.

The gas tax has a poor long-term future. Cars and light-duty trucks emit about 40% of the Bay Area’s greenhouse gas emissions. Since, under state law, we must continue to improve the efficiency of our state’s fleet of cars, our gas-tax revenue will decline, over time. President Obama’s Republican Secretary of Transportation Ray LaHood has stated that we must implement what he called a “VMT” (vehicle-miles-travelled) fee. Considering how fast we can increase the efficiency of our fleet of California cars and how fast we must reduce GHG emissions, we must also drive less, even as our population increases. If roads were operated according to free-market principles, we would drive less.

Both Sierra Club California and the Environmental Caucus of the California Democratic Party have passed resolutions supporting a “comprehensive road-use fee pricing system.” Besides being priced to cover all costs, such a system would need to also incentivize energy-efficient cars, at least as much as our current gas tax; protect low-income drivers; and protect privacy.

If we assume that we collect 50 cents per gallon in gas tax and that the average car gets 25 miles per gallon, then, on average, we are charging about 2 cents per mile. Using our Transportation Commission Chairman’s statement, we conclude that this only covers half of the maintenance cost and that therefore we should be charging at least 5 cents per mile. If we were to charge an additional 2 cents per mile, it would be reasonable to use the additional money for a general-fund purpose, since general funds are being used to maintain the roads.

There is a promising road-use fee technology, Sipmeter, a Canadian company, has a system that is based on GPS technology. According to the company, it could accumulate only net charge, if that is the wish of the car owner, to protect privacy, and could easily charge all cars on all roads, in California.

We can customize road-use fees to our local needs. Perhaps we would prefer to not charge all drivers on all roads, to reduce 101/280 congestion and fund Caltrain. Using the technology that transmits license plate numbers of cars running red lights, it would be easy to bill drivers, per
Q-20 Cont.

mile, on any controlled-access road. Since Caltrain parallels 101 and 280, it is best to set up a system to charge drivers that use just these two roads, over a length that is within the main segment of Caltrain. These are the drivers that benefit the most from Caltrain.

It can be shown that 35 miles of 16 lanes, with an average flow rate of 300 cars per hour, being charged 2 cents per mile, would generate the necessary $30 million dollars per year. For 600 cars per hour, 60 million dollars per year would be earned. A 30-mile trip would cost one car (with any number of passengers) sixty cents. Congestion pricing could be added, if desired, to reduce congestion during peak hours. The earnings above thirty million dollars per year could be used to help redesign and electrify Caltrain, for quiet, safe “24/7” service that could serve more stations.

The blow up in the Gulf and the melt down in Japan tell us that we should stop subsidizing energy use. Considering global warming, our grandchildren will thank us. Let’s start to operate our roads as a business and let’s save and improve Caltrain.

Go to FriendsOfCaltrain.com for the latest updates on how to save Caltrain. Caltrain provides an essential and cost-effective, time-competitive service. Let’s work together to Save our Caltrain for the long term!

Toriko Kashimoto, Former Mayor of Palo Alto and co-founder of Friends of Caltrain

Mike Bullock, long time transportation advocate

All of the $30 to $60 million dollars per year that this would raise should be given back to all tax payers in proportion to the state, general taxes they pay, since they are the ones making up the difference between the gas tax paid and the total road maintenance cost needed. If congestion pricing is needed to eliminate congestion, the extra earnings could be used to increase transit service or electrify our trains.

If SANDAG moved toward implementation, it is highly likely that the state would be embarrassed into action.

1.9 The DEIR presents an inadequate set of alternatives.

1.9.1 An obvious Alternative That Should Have Been Considered

The mitigations described above, in Sections 1.7 and 1.8, are feasible and powerful. Although they have been described to SANDAG for years, by members of the public, none of them appear in this DEIR, except for the two that were described in a distorted form, as shown in Sections 1.8.1 and 1.8.2. Those overlooked mitigations would be so effective that they would obviate the need for any highway expansion, which is perhaps the reason they were overlooked. These mitigations, taken together, would be the alternative that would need to be selected. Such an alternative would meet the primary demands of the RTP. It would eliminate congestion and support business. It would support business by using free-market principles (except for transit and bicycling), lowering taxes, and reducing the amount of parking needed. It gives our youth and unborn hope for the future. It would provide the environmental justice we need. It would create healthy environments for our neighborhoods.

It could be called the “Equitable Alternative”, because it is inequitable to use a sales tax to increase driving by making it artificially cheap to drive; it is inequitable to have the cost of parking and operating roads bundled; it is inequitable to assume adults can bicycle in traffic since they have not been given the information they need; it is inequitable to have bicyclists have to ride significant distances out of their way because our freeways cut off bike routes on surface streets, such as the way I-5 blocks Vista Way, in Oceanside; and finally, it is inequitable to destabilize our planet’s climate. The features of this Equitable Alternative would be:

- Reallocating TransNet money for building new lanes on our freeways to instead be used for transit

Q-21

The “Equitable Alternative” presented in this comment includes components that were previously examined in the Draft EIR, as well as features that were not because they are considered infeasible to implement. For ease of discussion, the components of the “Equitable Alternative” are reiterated in bold print at the beginning of each of the paragraphs below and a discussion of each follows. In response to the portion of this comment that asserts that the alternatives presented in the EIR violate CEQA, please refer to Master Response 16 for a detailed discussion on the reasonable range of alternatives that were analyzed in the Draft EIR.

Reallocating TransNet money: As described in Section 6.2 of the Draft EIR, Alternatives 2a and 2b are based on a modified funding strategy that would result in the implementation of less highway projects and more transit projects (see Draft EIR Tables 6.2-3 and 6.2-4 for a list of projects included in the modified funding strategy), and Alternatives 3a and 3b would also emphasize transit and modify the phasing of transportation improvements, which would require reallocation of TransNet funding (see Draft EIR Tables 6.2-6 and 6.2-7 for a list of projects included in the transit emphasis strategy). Please refer to Master Response 16 for an explanation of the range of alternatives included for analysis in the Draft EIR; as explained in that response, CEQA does not require an EIR to evaluate multiple permutations of each alternative. Please also refer to Master Response 10 for further discussion of constraints on TransNet funding allocation for additional transit investments.

Unbundling the cost of parking and operating roads (road use fee pricing system): Please refer to Master Response 15 for a discussion of why parking pricing policies were not included in the Draft EIR alternatives.
Using funds for “Smart Growth” and bicycle transportation in ways that maximize the driving reduction achieved for each dollar spent: SANDAG has worked closely with the cities and the County to develop a regional Smart Growth Concept Map (approved in 2006, and updated in 2008). This map identifies existing, planned and potential smart growth opportunity areas in the region. Smart growth policies, programs, and guidelines that SANDAG has adopted over the past few years that support the 2050 RTP/SCS include, but are not limited to (1) the Smart Growth Concept Map, and (2) TransNet Smart Growth Incentive Program, which provides funds to local jurisdictions engaged in smart growth planning and smart growth capital investments. Please refer to Response Q-16 regarding how the 2050 RTP/SCS addresses bicycle use. The Regional Bicycle plan includes criteria to prioritize investments in regional bicycle facilities that will result maximize bicycle ridership. The Regional Bicycle plan also includes a framework for prioritizing investment in local bicycle facilities through the Active Transportation grant program. Further, the TransNet Extension Ordinance includes a provision for “routine accommodation” – which requires projects using TransNet funding to accommodate all transportation modes, including bicycles.

Q-22
Please refer to Master Response 2 for a discussion of the requirements of AB 32, SB 375 and EO S-03-05. Please also refer to Master Responses 9 and 20 for a discussion of the relationship between VMT and GHG emissions. The targets of 7% and 13% per-capita reductions in GHG emissions from passenger vehicles in the SANDAG region for 2020 and 2035, respectively (compared to 2005 levels) were developed by CARB through a comprehensive process, detailed here http://arb.ca.gov/cc/stb375/staffreport_sb375080910.pdf. Methodologies used by SANDAG for GHG analysis are consistent with CARB-recommended methodologies for SB 375-compliant RTPs. Through this process SANDAG's model and estimate of GHG reduction estimates has been accepted by CARB. The CARB staff report outlining its review and concurrence on...
Unfortunately, CARB gave you (SANDAG) the Year 2035 reduction that you (SANDAG) requested, which is only a 13% reduction, for year 2055. These reductions are per capita, with respect to driving in 2005. This can be understood by carefully considering the following two items:

1.) Page 8 of http://arb.ca.gov/cc/sb375/staffreport_sby375080910.pdf, which says, “The RTAC recommended that targets be expressed as a percent reduction in per capita greenhouse gas emissions from a 2005 base year.”

2.) The first footnote in the table of CARB calculations, http://arb.ca.gov/cc/sb375/mpe_co2-reduction.xls, which says: “The CO2 emissions presented in this table do not include reductions from Pavley (better mileage for the California fleet of cars and light duty trucks) and LCFS (low carbon fuel standards) regulations.”

Since no reductions are counted from Pavley and the LCFS regulations, reducing driving is the only way SANDAG can reduce GHG by its RTP/SCS. “Greenhouse gas (GHG)” emissions are used as equivalent to the more accurate “CO2 emissions.” In the second item, “Pavley” (named after Senator Fran Pavley) refers to a lowered average CO2 per mile driven. Also in the second item, “LCFS” refers to the “Low Carbon Fuel Standard.” Both “Pavley” and the “LCFS” reduce the emissions per mile driven. Since these reductions are not being counted, the reductions shown come only from per capita, percent reductions in driving, or “vehicle miles travelled”, VMT. Therefore the so-called GHG reductions are really VMT reductions.

2.2 Overview of Relationships and Derivation of Key Formula

The 8-3-05 net reduction in GHG emissions, from cars and light-duty trucks, expressed as a fraction of 2005 emissions, is obtained by multiplying four factors together. The definitions of Table 1 apply.

<table>
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<tr>
<th>Factor Definitions, with Respect to Year 2005</th>
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<tr>
<td><strong>Factor Definitions</strong></td>
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<td><em>f</em>&lt;sub&gt;Pavley&lt;/sub&gt;</td>
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<td><em>f</em>&lt;sub&gt;Fuel&lt;/sub&gt;</td>
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<tr>
<td><em>f</em>&lt;sub&gt;Population&lt;/sub&gt;</td>
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<tr>
<td><em>f</em>&lt;sub&gt;PerCapitaVMT&lt;/sub&gt;</td>
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</table>

All are for the year of interest, with respect to year 2005 values. Except for Population, all are for cars and light-duty trucks.

The following equations apply.

**Eq. 1**

\[ f = f_{\text{Pavley}} \times f_{\text{Fuel}} \times f_{\text{Population}} \times f_{\text{PerCapitaVMT}} \]

**Eq. 2**

\[ f_{\text{PerCapitaVMT}} = \frac{f}{(f_{\text{Pavley}} \times f_{\text{Fuel}} \times f_{\text{Population}})} \]

2.3 Getting the Values to Use in the Equation

SANDAG’s SCS is available on the CARB website at http://www.arb.ca.gov/cc/sb375/sandagscs.pdf. One of the objectives of the 2050 RTP/SCS is to achieve the targets as determined by CARB. In addition, while this comment indicates that the reductions estimated by CARB did not take into account Pavley or LCFS; there is no requirement that the reductions set by CARB incorporate these regulations.
2.3.1 Getting the Net Factor of the Emissions of Greenhouse Gas in 2035, with Respect to 2005 Values

To get the net factor of the emissions of GHG, for year 2035, and with respect to year 2005, it is necessary to extrapolate the Governor’s Executive Order target values (the gold line of Figure 5), out to year 2035. The gold line shows that this factor is 0.87 in 2020 and is 0.64 in 2030. Therefore, in year 2035, the factor will be

\[ 0.64 + (0.64 - 0.87) \times (2035-2030) = 0.525 \]

2.3.2 Getting the Factor of the Average Statewide Mileage in 2035, with Respect to the 2005 Value

To get the Pavley reduction factor, for Year 2035, it is necessary to extrapolate the average statewide mileage factor data, which is Figure 5’s green line, out to Year 2035. It is 0.82 in 2020 and it is 0.73 in 2030. Therefore, in year 2035 the statewide mileage factor data will be

\[ 0.73 + (0.73 - 0.82) \times (2035-2030) = 0.685 \]

Pavley 1 ends in Year 2017. It is widely assumed that it will be replaced by what is often called “Pavley 2”. The extrapolation computed here is based on the assumption made by the author of Figure 5, as
shown in the slope of the green line from year 2020 to 2030. Based on the authoritative credentials of the authors of Figure 1, this is the best assumption that can be made. Assuming that the California fleet will continually get more efficient, in terms of CO2 per mile driven, relies on an assumption that a significant fraction of our car owners will be able to purchase newer-model cars.

2.3.3 Getting the Factor of the Reduction of GHG Due to Fuels that Burn less Carbon

Looking at the purple line of Figure 5, it is clear that this factor will be 0.9 in 2035.

2.3.4 Getting the Factor of the Increase in Population

The factor for population in San Diego County is computed using the populations estimated in CARR’s http://arb.ca.gov/cc/sh375/mpo.co2.reduction.calculator.pdf, namely 3,034,388 people in 2005 and 3,904,753 people in 2035. So the factor, from 2005 to 2035 is 3,904,753/3,034,388 = 1.313.

2.4 Computing the Required Driving Reduction, for 2035

The 4 values, computed in Section 2.3 above, are used in Eq. 2, to compute the required factor.

\[
\text{Eq. 2} \quad f_{\text{PerCapitaVMT}} = \frac{.525}{( \cdot 685 \text{ } x \text{ } 0.9 \text{ } x \text{ } 1.313 )}
\]

Therefore, \( f_{\text{PerCapitaVMT}} = \cdot 649 \).

This corresponds to a 35.1% reduction in per-capita driving, in year 2035.

3.0 Computing the Amount of Driving, in 2035, Compared to 2005, to See if There is Any Reason to Add Highway Capacity

3.1 Formula to use

The factor of driving in 2035, compared to 2005, is the product of the factor of driving (.649, as computed in Section 2.0) and the factor of population change (1.313 as computed in Paragraph 2.3.5).

Multiplying these two factors together (factor of driving per population multiplied by the factor of the increase in population) gives a factor as follows:

\[
\text{Factor of driving in 2035 compared to 2005:}
= \cdot 649 \text{ } x \text{ } 1.313 = .8515.
\]

3.2 Significance of Result

This means that even though our population will grow by 31.3% we still must all collectively drive nearly 15% less than we did in 2005. This is a profound piece of information. It means that there is no reason whatsoever to expand roads. This is good news because if means we can confidently reallocate TransNet money away from highway expansion and into meeting our need to upgrade transit. It also means it is time to step away from “Business As Usual” and adopt the “Equitable Alternative”.

4.0 An Alternative (The “Equitable Alternative”) with Estimated Driving Reductions

4.1 Introduction

Since Reference 3 makes it clear that S-3-05 is insufficient to provide an acceptable safety margin from Dangerous Anthropogenic Interference (DAI), the 35% computed in Section 2.0 above is expanded to 45%, by 2035. This might be large enough to be legal, under CEQA.

Q-22

The comment is noted. Please see Responses Q-21 and Q-22.

Q-23

The majority of this comment presents information to support the commenter's opinion about how to achieve further driving reductions through an “Equitable Alternative.” It does not specifically comment on the environmental analysis presented in the Draft EIR. SANDAG acknowledges the information presented for the commenter’s “Equitable Alternative. Please refer to Response Q-21 for further discussion on why the Equitable Alternative was not included in the EIR range of alternatives.
This section will debunk SANDAG’s claim, made to CARB, that your RTP is “aggressive” (as in “aggressive but achievable”). Significant reductions in driving can be achieved, as this section will show.

One strategy that the MPOs are trying to implement is enacting zoning changes to reduce sprawl. These changes typically increase densities and allow mixed use, especially around transit stations. These changes are said to support “smart growth”. As stated above, SANDAG Directors have repeatedly been asked to define “smart growth” to be “VMT-reducing” growth, so that smart growth strategies and estimated outcomes could be quantified. These requests have been ignored. Therefore, SANDAG has done a poor job of creating their “Smart Growth Incentive Plan” and their “Smart Growth Design Guideline”. These documents had great potential. However, SANDAG preferred to keep the definition of “smart growth” vague, using such phrases as “pedestrian and bicycle friendly” so that decisions on spending money could remain arbitrary. Even so, the concept of improving zoning to reduce driving is sound. Over time and to the extent the economy supports growth, this will yield driving reductions. However, building smart growth requires a significant investment. Unless the economy improves dramatically, this strategy will produce VMT reductions that are too little and too late.

The MPOs need to identify all of the significant root causes of the car-oriented California lifestyle, besides just the urban sprawl that can only be partially mitigated by zoning specific and unique areas for smarter development. Several of these root causes are a direct result of government policies that create fundamental unfairness to those that drive less than average. MPOs need to fully develop strategies that eliminate these causes. These strategies would best be accomplished with both CARB and state legislative help.

The primary root causes are the poor methods used to get the public to pay for roads and parking. Fundamental changes in parking policy and road-use pricing, which are both related to the issue of congestion and freeway expansion, are never discussed in any depth at SANDAG. This oversight is reducing the chances of getting strategies that will bring down rates of driving on the scale that is needed. Such strategies would allow California to live up to its global warming responsibility and to do this in a way that is equitable to all.

4.2 Road Use Fee Pricing Systems

A San Diego County newspaper, the North County Times (NCT) in a February 9, 2009 article, reported that the Chair of the California Transportation Commission (CTC) wrote that the gas tax currently contributes nothing to road construction and only provides half of the money needed annually for repairs: http://www.nctimes.com/articles/2009/02/09/news/columnists/downnev/z8591536f3e7332de68257551007601e2a2a.

A Canadian company, Sky meter, is designing and installing a variable and comprehensive road-use fee pricing system, in the Netherlands by 2014 and in Denmark by 2016. The charge per mile will vary by such things as model of car, road, time of day, and congestion level. In 2005, the gas tax in the Netherlands was equivalent to $3.50 per gallon. However, with the advent of the new system, the Netherlands will eliminate the gas tax. The Netherlands estimates that the GHG from driving will drop by 10%, with the new system. Note that such a system could easily charge a price of zero cents per mile for a low-income driver. Our current system of a gas tax has no such capability. Sky meter will program the navigational-unit-like GPS boxes so that no travel information is stored, to protect driver privacy.

On July 17th 2009, the California Nevada Regional Conservation Committee (CNRCC) of the Sierra Club California passed a resolution supporting a “Comprehensive Road Use Fee Pricing System”.
The CNRCC resolution is supported by a 10-Page "Reference Document" that describes the defining characteristics of a road-use fee pricing system that would conform to Sierra Club principles. It has an example of a road-use fee structure that has these characteristics. Useful background information is also provided. This paper can be provided upon request.

On November 14th, the Environmental Caucus of the California Democratic Party (CDP) passed a 1-page resolution in support of a “Comprehensive Road-Use Fee Pricing System”. This one-page resolution contains the following words:

**THEREFORE, BE IT RESOLVED,** that the California Democratic Party* supports a state-funded study of a design of a road-use fee pricing system that (1) would pay for all road-use costs including the environmental and health costs caused by driving, (2) could still include a fuel tax or fee, (3) would mitigate impacts on low-income users and protect privacy, (4) would include congestion pricing when that technology becomes feasible, (5) would keep the per-mile price incentive to drive energy-efficient cars at least as large as it is with today’s fuel excise tax, and (6) could be accompanied by tax reductions sized to achieve either net-revenue neutrality or near-net-revenue neutrality.

*Not true because the resolution failed in the CDP Resolution Committee

The Nevada Department of Transportation is taking comments on a proposal for a VMT fee to replace their gas tax, as shown at [http://www.vmtfeev.com](http://www.vmtfeev.com). Oregon has done a proof of concept of a decentralized VMT system.

The 2010 Platform of the California Democratic Party ([at http://www.cadem.org/affil%7BBF9D7366-F5A7-41C8-8E3E-E06F885ECC5E%7DPlatform2010CDP_FINAL_June.pdf](http://www.cadem.org/affil%7BBF9D7366-F5A7-41C8-8E3E-E06F885ECC5E%7DPlatform2010CDP_FINAL_June.pdf)) has words that were in part inspired by the 1-page resolution identified above. These words are the following bullet:

- Work for equitable and environmentally-sound road and parking use

Using sales taxes, property taxes, income taxes, and other general taxes to pay for road expansion and operation makes it artificially cheap to drive. This is unjust to citizens that drive less than average. It also encourages driving. There is no reason why government should adopt policies that increase driving and economically discriminate against those that telecommute, walk, bike, car pool, or use transit. The unconstitutionality of the current system is plain to see since roads are built and maintained by the government. The government must be fair to citizens unless there is a significant reason to be unfair. Forcing people with no children to pay for education is justifiable because we will all suffer if we have a poor public education system. However, driving a car is not behavior that justifies government subsidy. Getting an education deserves subsidy; driving does not.

Considering all of this information, SANDAG has a responsibility to notify the Governor and our legislative leaders that our state has good reasons to implement a comprehensive and variable road-use fee pricing system. There is probably no reason to "reinvent the wheel". The Skyliner system would work here in California. The Sierra Club California analysis can be considered to ensure an implementation that is both equitable to all and environmentally sound.

This strategy, by itself, would probably decrease driving throughout California by between 20% and 25%.

### 4.3 Unbundling the Cost of Car Parking

For the vast majority of destinations in California, the cost of car parking is hidden within other costs. This has serious consequences. For example, at most places of employment, parking costs reduce the wages that can be paid to all the employees, even those that never use the parking. Similarly, at most apartment complexes, bundled parking costs increase the rent and this is true, even for families that do
not own a car. Bundled parking costs routinely increase the costs of goods, such as groceries, for all customers. Again, this is even true for those that do not drive. Since governments require businesses to provide minimum levels of parking, they are involved in this economic discrimination towards those that drive less.

Driving less is, to some degree, a lifestyle choice. Since government has no valid reason to encourage driving, the lifestyle choice of less driving deserves constitutional, or at least legal, protection from any practices that discriminate against it, economically. So far, this agency (SANDAG) has not taken an active role in educating the people of San Diego County on how parking policy effects economic fairness or how parking policies that were more fair could reduce driving.

On June 22nd 2010, I presented a paper that I coauthored, on how parking could be operated to unbundle parking costs in a way that supports the sharing of parking. This was at the 101st Conference and Exhibit of the Air and Waste Management Association, in Calgary, Canada. The session, Sustainable Land Use and Transportation, included my paper, A Plan to Efficiently and Conveniently Unbundle Car Parking Costs. The paper was extremely well received.

My paper is therefore both peer reviewed and published. I would be pleased to present this paper to the staff of SANDAG, in the hopes that SANDAG could help to bring about equitable and environmentally-sound parking policies to California. It should be incorporated into your next Regional Comprehensive Plan, for example.

The following points, taken from the paper, apply:

- Vehicle miles traveled (VMT) are a major cause of global warming and pollution.
- California’s Metropolitan Planning Organizations (MPOs) need to adopt strategies that reduce vehicle miles traveled (VMT), in order to at least meet the S-3-05 trajectory, for years 2020 and 2035.
- The appropriate pricing of parking is one of the least costly tools documented to reduce VMT.
- New technologies, such as sensors feeding computer-generated billing, offer the potential to efficiently bill drivers for parking and alert law enforcement of trespassers.
- Reform parking policies can increase fairness, so that, for example, people who use transit or walk do not have to pay higher prices or suffer reduced wages, due to parking.
- Methods to unbundle parking cost are inefficient unless they support the spontaneous sharing of parking spaces. Shared parking with unbundled cost would ultimately allow cities to require significantly less parking.
- Typical systems of timed parking and metered parking are far from ideal. Such parking has no automated record keeping, so it is difficult to know where there is too much or too little.
- Good policies will eventually let cities turn parking minimums into parking maximums.

Less land and resources devoted to parking will support mixed use and make “smart growth” more economically viable. It should therefore be a key ingredient supporting the SANDAG’s stated desire to foster “smart” growth, where “smart” should be defined as “VMT-reducing”.

Here is a copy of the abstract of the paper.

The Introduction shows documented driving reductions due to the pricing of parking. It notes that although the benefits of priced and shared parking are known, such parking has not been widely implemented, due to various concerns. It states that a solution, called “Intelligent Parking,” will
overcome some of these concerns, because it is easy to use and naturally transparent. It asserts that this description will support a “Request for Proposal” (RFP) process. Eight background information items are provided, including how priced parking would help California achieve greenhouse gas reduction targets. A story demonstrates some of the key features of Intelligent Parking. Arguments for less parking, shared parking, and priced parking are made. Barriers to progress are identified. The fair pricing of parking is described. New ways to characterize transportation demand management are presented. Seven goals of Intelligent Parking are listed. Eleven definitions and concepts, that together define Intelligent Parking, are described. This includes a method to compute a baseline price of parking and how to adjust that price instantaneously to keep the vacancy above 15% (“Congestion Pricing”). An implementation strategy is described.

This abstract aroused enough interest among those responsible for A&WMA’s Sustainable Land Use and Parking session that they requested that I submit a manuscript, which was ultimately selected to become part of the written Conference Proceedings and for presentation. I hope that it will similarly arouse the interest in the SANDAG Board and staff. SANDAG needs to consider working to execute the implementation strategy described in A Plan to Efficiently and Conveniently Unbundle Car Parking Costs. I would be honored to help in any way possible.

This strategy, by itself, would probably decrease driving throughout California by between 15% and 25%. This is shown by Table 1 of A Plan to Efficiently and Conveniently Unbundle Car Parking Costs, Reference 4.

4.4 Increase Bicycle Use: Education and Projects to Support Bicycle Transportation

The criteria for spending money for bicycle transportation should be to maximize the resulting estimated reductions in driving. The SANDAG board has been told this many times but they ignore this suggestion. SANDAG has so many criteria for bicycle projects that the result is that staff can spend their “bicycle money” however they want. As usual, the Directors provide no useful direction. For RTP2030, SANDAG has $270M to spend on bicycle transportation. The following strategies will maximize driving reductions.

4.4.1 Projects

Each of the smart growth place types, both existing and planned, should be checked to see if bicycle access could be substantially improved with either a traffic calming project, a “complete streets” project, more shoulder width, or a project to overcome some natural or made-made obstacle. These projects should be prioritized using a cost-benefit ratio metric. It is hereby assumed that 40% of the $270M available for SANDAG’s Regional Bicycle Plan should be used to fund the projects. They should be selected for implementation, from the top of the list (lowest cost/benefit ratio) down, until the money (about $110M) is used up. An example of one of these projects, for the proposed town center near the corner of I-5 and SR-78, is to build a pedestrian/bike bridge, over I-5, to reconnect West Vista Way in Oceanside. This would better connect a coastal neighborhood with a large regional shopping center. The current bicycle route requires more distance and a significant hill to climb over.

4.4.2 Education

The remaining 60% of the $270M, about $160M, should be used to

1.) Teach interested adults about bicycle accident statistics (most serious injuries occur to cyclists in accidents that do not involve a motor vehicle), car-bike accident statistics (most are caused by wrong-way riding and errors in intersections; clear cut, hit-from-behind is rare), and how to ride in all conditions, to minimize problems.
2.) Teach riding-in-traffic skills and how to ride in other challenging conditions, by having the class members and instructor go out into real conditions and ride together, until proficiency is achieved.

Students that pass a rigorous written test and demonstrate proficiency in riding in traffic and other challenging conditions are paid for their time and effort. These classes should be based on the curriculum developed by the League of American Bicyclists and taught by instructors certified by the League.

Assuming a class size of 3 riders per instructor and that each rider passes both tests and earns $100 and that the instructor, with overhead, costs $500 dollars, for a total of $800 for each 3 students, means that the $160M could educate $160M/$800 = 200,000 classes of 3 students, for a total of 600,000 students. This is about 20% of the population of San Diego County.

This strategy, by itself, would decrease driving in San Diego County by at least 5%.

4.5 Replacing Freeway Expansion Projects by Transit Redesign, Construction, and Operations

4.5.1 Background Information

SANDAG’s 2007 RTP, “RTP2030”, calls for increasing the number of freeway lanes by 38%.

This would be in a region that already had one of the highest VMT-per-capita metrics in the state. SANDAG also supported a sales tax measure, “TRANSNET”, that was advertised as one that would spend two-thirds of its money on roads and one-third on transit. However, after it was passed, SANDAG defined all HOV lanes to be “transit”, thereby significantly reducing the fraction of money spent on true transit.

Out of a $57 billion dollar budget for RTP2030, SANDAG budgeted about 1% for mitigation. This mitigation is split evenly between “smart growth” incentive money and a Regional Bicycle Plan. They have published a Smart Growth Incentive Plan, a Smart Growth Design Guidelines, as well as the Regional Bicycle Plan. SANDAG has an excellent staff. However, the Board does not provide useful direction. One obvious direction needed was to adopt a metric of reducing VMT to decide what “smart growth” should get funding, what “smart growth” design guidelines should be adopted, and what bicycle programs should be funded. They were asked repeatedly to put citizen comments, directed toward the early drafts of these documents, on line, to be viewed by all. Not doing this made it easy for the staff to ignore significant public comment and to instead spend bike money mostly for trails and smart-growth money for beautification projects in areas deemed suitable for eventual smart growth. If reduced driving reductions were used as a criteria for spending money, then funding the League of American Bicyclists’ class on how to ride a bike in traffic and the development of equitable and environmentally-sound parking policy (good enough to be politically acceptable), would have been a large part of the spending. Instead, bicycle education and car-parking policies were marginalized to the point of being essentially unfunded.

4.5.2 Putting a Stop to Freeway Expansion

One of the most powerful strategies to reduce GHG would be to stop expanding freeways. Instead of costing money, it would generate money. It is well understood that the metric of freeway-lane miles per square mile of developed land increases an area’s average car-trip length and thereby increases VMTs. SANDAG is ignoring this fact and this is probably one of the primary reasons that its 2035 GHG Reduction Target is unacceptable small. When the SANDAG TRANSNET tax was passed, few voters understood that we were threatened with a climatic catastrophe and that our responsibility was to drive significantly less. Given our current understanding, The SANDAG Board has a responsibility to either pass by a two-thirds vote a motion to reconfigure TRANSNET, or go back to voters with a ballot measure, to reconfigure TRANSNET, to be 67% for transit. The 33% for road maintenance can be retained and used as an incentive to get cities to unbundle the cost of their parking.
Please refer to Responses Q-21 and Q-24. The commenter summarizes an opinion pertaining to the "Equitable Alternative" as presented in this letter and does not raise new comments on significant environmental issues in the Draft EIR or comments that were not previously addressed. No further response is required.

4.6 Conclusions

The best strategies to reduce VMT are shown here, with the estimated driving reductions for each one shown in square brackets:

- Comprehensive (equitable and environmentally sound) road use fee pricing system, as could be installed by SBYMer; [15%]
- Unbundling the cost of car parking; [15%] (This estimate is based on Table 1 of Reference 4.)
- Good bicycle projects and bicycle education; [5%] (This estimate should be checked by the League of American Bicyclists)
- Stopping all freeway expansions and reconfiguring TRANSNET to be 67% for transit and 33% for road maintenance [10%] (This is a conservative estimate, especially if the CNFF's "50-10" projects are adopted)

These strategies could be implemented by 2020, not 2035, and would decrease per capita driving by a sum of at least 45% (15+15+5+10). The strategies to do this are primarily those that increase fairness for all, especially families that drive less than average.

Conclusion

This DEIR must be rewritten to correct the nine fatal errors shown and discussed in Section 1.0.

Sections 2, 3, and 4 are added to help SANDAG act responsibly, so our region can meet its climate-change responsibilities, based on science. The mitigations and the "Equitable Alternative" defined within this letter, will help SANDAG accomplish this critical task.

These mitigations, which, when summed, amount to an alternative that achieves all goals, would also eliminate congestion, clean up our air, increase equity, and offer more choices to people in San Diego County. People would have more transit choices and more choices over how they spend their own money.

Respectfully submitted,

Mike Hullock
1800 Bayberry Drive
Q-29
SANDAG has reviewed the seven attachments to this comment letter which were provided by the Sierra Club and referenced in this letter. SANDAG has provided a response to each letter in Responses Q-30-Q-36.
SANDAG Board of Directors

Via E-mail: pji@sierraclub.org (Philip Johnston)

Re: California Air Resources Board (CARB) Greenhouse Gas (GHG) Reduction Targets, Issued to SANDAG, in Accordance with SB 375, for the Year 2035

SANDAG Board Chair Jerome Stocks and Members of the Board:

I appreciate the opportunity to communicate with you concerning this important topic. The subject targets were issued on September 30th of 2010. On September 20th, I sent a letter to CARB asking them to issue targets that would uphold the Executive Order S-3-05's GHG reduction trajectory for cars and light-duty trucks. CARB's Scoping Plan gives no reason to not apply the straight-line trajectory, implied by the S-3-05 reductions, to the GHG emissions from cars and light-duty trucks. S-3-05 names CARB as one of the agencies that must create plans and progress reports to ensure that the reductions in S-3-05 are achieved.

Unfortunately, CARB gave you (SANDAG) the Year 2035 reduction that you (SANDAG) requested, which is only a 13% reduction, for year 2035.

“GHG” is really “VMT” and Other Important Details on the Reductions

These reductions are per capita, with respect to driving in 2005. This can be understood by carefully considering the following two items:

1.) Page 8, of http://arb.ca.gov/cc/sh375_staffreport_sh375083010.pdf, which says, “The RTAC recommended that targets be expressed as a percent reduction in per-capita greenhouse gas emissions from a 2005 base year”; and

2.) The first footnote in the table of CARB calculations, http://arb.ca.gov/cc/sh375/mro_co2_reductioncalc.pdf, which says: “The CO2 emissions presented in this table do not include reductions from Pavley and LCFS regulations.”

“Greenhouse gas (GHG)” emissions are used as equivalent to the more accurate “CO2 emissions.” In the second item, “Pavley” (named after Senator Fran Pavley) refers to a lowered average CO2 per mile driven. Also in the second item, “LCFS” refers to the “Low Carbon Fuel Standard.” Both “Pavley” and the “LCFS” reduce the emissions per mile driven. Since these reductions are not being counted, the reductions shown come only from per capita, percent reductions in driving, or “Vehicle miles travelled”, VMT. Therefore the so-called GHG reductions are really VMT reductions.

1 The letter is Reference 1, listed at the bottom of this letter and attached in the email with this letter.
2 S-30-05 is shown in Reference 2, listed at the bottom and attached in the email with this letter.

Q-30
Attachment 1: Letter, Sierra Club Transportation Chair to SANDAG Board, California Air Resources Board (CARB) Greenhouse Gas (GHG) Reduction Targets, Issued to SANDAG, in Accordance with SB 375, for the Year 2035, April 20, 2011. To the extent Sierra Club’s April 20, 2011 letter includes comments raised in this (August 1, 2011) letter, SANDAG has responded to such comments here. Please refer to Master Response 5 for a discussion of CEQA’s requirements for responding to documents either attached to EIR comment letters or incorporated by reference.
More Background Information

In 2007, you (SANDAG) adopted your current Regional Transportation Plan (RTP). It includes a 38% increase in the total number of freeway-lane miles, in San Diego County. My job as Transportation Chair for the Sierra Club is to stop all freeway expansions, as specified in our National Policy. Our Chapter has commented extensively on the I-5 expansion Draft Environmental Impact Report. As you know, it would add either 4 or 6 lanes, to an eight-lane freeway, over a length of 27 miles.

You (SANDAG) are now in the process of approving a new RTP, with even more freeway expansions. However, your staff now claims that by Year 2035, they will reduce GHG (really VMT; as explained above) from cars and light-duty trucks by 19%. You (the SANDAG Board) and staff can therefore claim, correctly, that you are going to exceed your CARB target, for Year 2035.

However, the GHG reductions of S-3-05 must be achieved by mankind, if we are to have any reasonable chance of stabilizing our climate. A destabilization will likely have disastrous environmental and human consequences.

The purpose of this letter is to show you that the GHG (really VMT) reduction achieved must be at least 35%, not the 19% given by CARB and not the 19% that your staff now claims they can achieve by 2035.

Overview of Relationships and Derivation of Key Formula

The S-3-05 net reduction in GHG emissions, from cars and light-duty trucks, expressed as a fraction of 2005 emissions, is obtained by multiplying four factors together. The definitions of Table 1 apply.

<table>
<thead>
<tr>
<th>Factor Definitions, with Respect to Year 2005</th>
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<tr>
<td><strong>Factor Definitions</strong></td>
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<tr>
<td><em>All are for the year of interest, with respect to year 2005 values.</em></td>
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<tr>
<td>Except for Population, all are for cars and light-duty trucks.</td>
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<tr>
<td>$f$</td>
</tr>
<tr>
<td>$f_{Pavley}$</td>
</tr>
<tr>
<td>$f_{Fuel}$</td>
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<tr>
<td>$f_{Population}$</td>
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<tr>
<td>$f_{PerCapitaVMT}$</td>
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The following equations apply.

Eq. 1 $f = f_{Pavley} x f_{Fuel} x f_{Population} x f_{PerCapitaVMT} \quad (\text{eq})$

Eq. 2 $f_{PerCapitaVMT} = f / (f_{Pavley} x f_{Fuel} x f_{Population}) \quad (\text{eq})$
Figure 1 is from [http://www.pde.org/globalWarming/sh375-files/sh375.pdf](http://www.pde.org/globalWarming/sh375-files/sh375.pdf), a widely-respected report on SB-375. Note that all of its values are in the units of factors (same as fraction) of their values in year 2005. Figure 1 will supply all of the needed values, except for the factor of population. (Neither the red line nor the blue line are used.) Its gold line is the S-3-05 trajectory that CARB ignored when it issued the driving reduction values for year 2035.

**Figure 1**  GHG Reductions from Pavley (AB 1493, in Green); the Low Carbon Fuel Standard (in Purple); the Predicted Driving (VMT, in Red); the Net Result of GHG (CO2, in Blue); and & the S-3-05 Trajectory (in Gold)

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Getting the Net Factor of the Emissions of Greenhouse Gas in 2035, with Respect to 2005 Values

To get the net factor of the emissions of GHG, for year 2035, and with respect to year 2005, it is necessary to extrapolate the Governor’s Executive Order target values (the gold line of Figure 1), out to year 2035. The gold line shows that this factor is 0.87 in 2020 and is 0.64 in 2030. Therefore, in year 2035, the factor will be

\[ 0.64 + \left(1 - 0.64\right) \times \frac{2035 - 2030}{2030 - 2020} = 0.525 \]

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Getting the Factor of the Average Statewide Mileage in 2035, with Respect to the 2005 Value

To get the Pavley reduction factor, for Year 2035, it is necessary to extrapolate the average statewide mileage factor data, which is Figure 1’s green line, out to Year 2035. It is 0.82 in 2020 and it is 0.73 in 2030. Therefore, in year 2035 the statewide mileage factor data will be

\[ 0.73 + \left(1 - 0.73\right) \times \frac{2035 - 2030}{2030 - 2020} = 0.685 \]

Pavley ends in Year 2017. It is widely assumed that it will be replaced by what is often called “Pavley 2”. The extrapolation computed here is based on the assumption made by the author of
Figure 1, as shown in the slope of the green line from year 2020 to 2030. Based on the authoritative credentials of the authors of Figure 1, this is the best assumption that can be made. Assuming that the California fleet will continually get more efficient, in terms of CO2 per mile driven, relies on an assumption that a significant fraction of our car owners will be able to purchase newer-model cars.

Getting the Factor of the Reduction of GHG Due to Fuels that Burn Less Carbon

Looking at the purple line of Figure 1, it is clear that this factor will be 0.9 in 2035.

Getting the Factor of the Increase in Population

The factor for population in San Diego County is computed using the populations estimated in CARB’s http://arb.ca.gov/cc/sb375/mpo.co2.reduction.calc.pdf, namely 3,034,388 people in 2005 and 3,984,753 people in 2035. So the factor, from 2005 to 2035 is 3,984,753/3,034,388 = 1.313.

Computing the Required Driving Reduction, for 2035

The 4 values computed above are used in Eq. 2 to compute the required factor.

\[ f_{PerCapitaVMT} = \frac{.525}{(.685 \times 0.9 \times 1.313)} \]

Therefore, \( f_{PerCapitaVMT} = .649 \). This corresponds to a 35.1% reduction in per-capita driving, in year 2035.

In Conclusion

You must not conspire with CARB to violate S-3-05. Your RTP must achieve a 35% reduction. Reference 1 shows how this can be done. You have a responsibility to get CARB and SANDAG back on a path of moral and responsible leadership. The current 2035 targets undermine S-3-05.

Respectfully submitted,

Mike Bullock, 760-754-8925
Chair of the Sierra Club San Diego Transportation Committee

References Attached with Email

Reference 1: PROPOSED REGIONAL GHG EMISSION REDUCTION TARGETS FOR AUTOMOBILES AND LIGHT TRUCKS PURSUANT TO SENATE BILL 375 (Released: August 9, 2010, for a September 23, 2010 Consideration) and the Failure of Its Proposed SANDAG GHG Reductions to Protect Health, Support S-3-05, and Be Just and Reasonable.

Reference 2: S-3-05, with additional comments

Copies: C. Chase, P. Epstein, Richard Miller

The San Diego Chapter of the Sierra Club is San Diego’s oldest and largest grassroots environmental organization, founded in 1948. Encompassing San Diego and Imperial Counties, the San Diego Chapter seeks to preserve the special nature of the San Diego and Imperial Valley area through education, activism, and advocacy. The Chapter has over 14,000 members. The National Sierra Club has over 700,000 members in 65 Chapters in all 50 states, and Puerto Rico.
June 17, 2010

Michael Bullock
1800 Bayberry Drive
Oceanside, CA 92054

Rob Rundle, Principle Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Via E-mail

Subject: Comments Regarding Notice of Preparation – Programmatic EIR Project Description and Scope of Environmental Analysis 2050 Regional Transportation Plan, April 19th, 2010

Dear Mr. Rundle,

My comments will follow the headings of the April 19th document, except for my additional headings towards the end of this letter.

Background and Overview

Your first paragraph predicts that the RTP will integrate “land use, transportation systems, infrastructure needs, and public investment strategies within a regional smart growth framework” (emphasis added).

That statement would be meaningful and encouraging, if SANDAG defined “smart” in a meaningful and useful way that could be quantified. Such a definition is easy to identify, given our climate crisis and the level of our transportation-related GHG emissions.

Unless curtailed, human-caused, CO2 emissions will amount to a self-inflicted genocide. The levels of GHG expected in 20 years will result in a 5% chance of a 14.4 degree Fahrenheit increase in the earth’s temperature and this would be an utter catastrophe and create the possibility of a devastating collapse of the human population, perhaps even to extinction. Therefore, emissions must be reduced and stopped as soon as possible.

On-road transportation causes 47% of the GHG emissions in San Diego; cars and light-duty trucks cause 42%.

Given these facts, “smart” should be defined as “VMT-reducing”. Then, if “Development A” reduces driving 10% more than “Development B”, it would be 10% smarter. This quantification would also allow strategies to be compared on their VMT-reducing efficiency. Using fleet-average, GHG-per-mile values, VMT

1 Scientific American, The Ethics of Climate Change, Professor John Broome, June 2008, Page 100

Comments on SANDAG’s April 16th NOP of EIR for RTP2050, 6/18/10 1 of 12
reductions could be converted to GHG reductions. Selected strategies could go directly into the SCS where GHG reductions are summed.

These suggestions have been made several times to the SANDAG Board. See References 2, 3, and 4. Since “smart growth” is supposed to be an environmental mitigation and since SANDAG refuses to quantify it, this refusal amounts to a gross negligence on the part of the SANDAG Directors.

Regarding the second paragraph and in particular the adoption of goals, members of the public have asked SANDAG to adopt a goal of having an SCS sufficient to meet GHG target reductions. The Board and staff have ignored these requests. The most significant performance measure is GHG emissions. The “big picture of what the region hopes to achieve” should be avoidance of climate destabilization, which would cause a significant die off of the human population.

Regarding the third paragraph, our climate crisis threatens all of the goals that are mentioned there. SANDAG ignores its place and its responsibility in the world. California has led the nation and the world in designing communities that are built around the automobile. AB32 and the Governor’s companion executive order are sized so that if the entire world followed their specified reductions, our world GHG levels would peak at 450 PPM in 2050 and decline from there. AB32 is an obvious attempt to lead by example and to recognize our responsibility, given our high level of GHG per capita. SANDAG is tasked with producing the first RTP with an SCS. If SANDAG follows its current path, its SCS will fail to reduce GHG sufficiently. It will therefore be required to include an APS, which contains strategies that are not feasible and will not be implemented. Other MPOs will follow in taking this “path of least resistance”. As soon as SANDAG fails, countries around the world will take note that our state will not reduce GHG emissions significantly as AB32 suggested and they will be less likely to reduce their emissions. Catastrophic climate change will destroy “Quality of Travel”, “Livability” (quite literally), and “Sustainability.” “Social Equity” will be lost.

However, it is good that “social equity” is mentioned. “Social equity” is an important key to the solution to these problems, as will be shown below.

Project Location
I have no comments.

Senate Bill (SB) 375
I have no comments.

Issues Addressed in the EIR
The list looks complete. However, SANDAG typically does a poor job at “Socioeconomics/Environmental Justice.

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5 AB32 was sized on the misunderstanding that 450 PPM would be safe. It is now understood that any value above 350 PPM will destabilize our climate. Our current level is 390 PPM. For safety, we must reduce emissions much faster than AB32 mandates. SANDAG ignores this science.
1.) There can be no justice if we cause a significant die off of the human population due to our destabilizing our climate. SANDAG never mentions this.

2.) The inequity of subsidized driving and parking is never mentioned by SANDAG. Perhaps this is true because the Staff does not want to displease the Directors, who favor a system that takes money from those that drive less and gives it to those that drive more.

Please elaborate on these two critical issues in your EIR and model the result of the full cost pricing of road use the unbundling of parking cost.

Alternatives Analyzed in the EIR

Regarding the “goals of the RTP,” as mentioned in the second octococ, the most important goal should be to reduce the likelihood of catastrophic climate destabilization. However, the phrase, “while reducing the significant regional environmental impacts,” indicates that SANDAG does not consider reducing GHG a goal of its RTP4. This is the same attitude that produced SANDAG’s last RTP, in 2007. That RTP would increase the total freeway-lane miles by 38% in our county, and therefore, that RTP is not “smart” by any reasonable definition of the word, such as “VMT reducing”. In reaction to that RTP, SANDAG received numerous complaints, most notably from the office of the California Attorney General and from Save Our Forests and Ranch Lands (SOFAR), the organization that filed a legal complaint against SANDAG.

1. No Project Alternative

The definition of this alternative (“For this EIR, the No Project Alternative is defined as a transportation network that includes those projects that have already received funding, are scheduled for funding, and/or have received environmental clearance”) shows that the simple act of scheduling funding is sufficient for project inclusion. No DEIR is needed so clearly, negative impacts do not matter to SANDAG. Identification of sufficient funding is also not needed. This may or may not be in accordance with settled law and/or current rules. In any case, it needs to be challenged, because it shows a total disrespect toward the primary purpose of our environmental laws, such as CEQA, which is to avoid building destructive projects if better alternatives exist.

The sentence in question, which is the second sentence of the NOP’s “No Project Alternative” paragraph, means that the I-5 widening project would be included in the No Project Alternative. However, at this time, the I-5 project does not even have a released DEIR. Also, it is not funded.

Consider the following.

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4 It should be noted that to reduce GHG, it will be necessary to reduce driving. This will reduce air pollution, noise, sprawl, and the runoff of contaminated water. It will also reduce energy use. All these effects will move us in the direction of sustainability.
1. Our state’s and our nation’s gas-tax account totals are too small to fund the needed road maintenance that they are supposed to fund.

2. State and federal laws mandate an ever-improving, fleet-averaged mileage; meaning that VMTs will produce less and less cash flow into the gas tax accounts every year.

These two facts mean that there is very little chance that I-5 will ever be funded.

When the day of economic reckoning comes and the state and nation adopt a comprehensive and variable (should vary by model of car, by road, by time of day, etc) road-use fee pricing system to cover all costs, including the health and environmental costs of driving, there will be no need for even the existing lanes of I-5, let alone additional lanes. This is because our governments will find that they can no longer afford to make it artificially cheap to drive by taking money from taxes that are unrelated to driving, such as sales tax, property tax, and income tax.

There is another reason that assuming the I-5 project is part of the “No-Project Alternative” is unreasonable. This is based on Figure 1, which assumes that AB32 reductions will be applied to cars and light-duty trucks (the gold line), the mandated low-carbon fuel standard will be successful (the purple line), and the mandated fleet-average mileage (AB-1493, also known as “Pavely 1”) will be achieved (the green line). From Figure 1, the needed driving reductions can be computed, as a function of year. These results are shown in Table 1. As shown, by 2025, we will need strategies in place to drive 4% less than we drove in the summer of 2009. Given Table 2 reductions, it would be irrational to build more lanes on I-5.

Given Table 1 results, SANDAG owes voters a new ballot measure to restructure the TRANSNET tax. It is also clear that there needs to be a true “No Project” alternative, one that eliminates any and all I-5 widening projects and any and all other similar roadway expansion projects that happen to be in “RTP2030”, the RTP that was unfortunately adopted in 2007.

2. Intensified Land Use Distribution Alternative

The words, “along existing and planned transportation corridors” should be replaced with “within walking distance of significant transit stations or significant bus stops”, where “significant” is defined by hours of service and headway. By 2030, “significant” could mean that hours of service per day are no less than 18 hours and headways are never more than 20 minutes. The existing words

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3 The 2/9/09 North County Times, reported that the Chair of the CTC wrote that the gas tax currently contributes nothing to road construction and only provides half of the money needed annually for repairs.

4 1638

4 For example, see Figure 1’s AB1493 slope (in green), showing fleet average C02 per mile as function of year.

Comments on SANDAG’s April 16th NOP of EIR for RTP2050, 6/18/10
support, for example, adding sprawl development along I-15, since some would claim that I-15 is a “transportation corridor.” This alternative should be aggressive in proposing increased density and height close to significant transit. Since this is about smart growth, “smart” needs to be defined as described above (“VMT-reducing”) and then smart policies should be adopted. This would include unbundling all parking costs in a way that supports full sharing. Bundled parking costs are unfair in proportion to value. If “smart” is “VMT-reducing”, then so-called “free parking” (bundled cost) is “dumb.” Since Coaster stations need to support smart growth, the Coaster service will probably need to be redesigned or at least upgraded. For this to be feasible, a new ballot measure is needed to reconfigure the TRANSNET Tax to fund Coaster redesign or upgrade.

Figure 1 Data Supporting a Calculation of Required Driving Reductions in California

Table 1 Required Driving Reductions in California

3. Modified Transit Network Alternative

SANDAG, in particular David Schumacher, has been presenting largely unfunded proposals for significant transit improvements. Although these plans are set 20 to 40 years in the future, there is no mention of the possibility of advanced system design. All of Mr. Schumacher’s proposals are forms of existing technology.

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3 Supervisor Bill Horn, in supporting the Mission Mountain development of 2,000 homes cut along I-15, with virtually no transit existing or planned, used nearly these same words. He claimed it was “smart” growth.
The Coaster is a technology that was invented in the 1800s. However, its route and the potential development around its station give the system unlimited potential, if it had a modern design.

A modern design would include the following:

- Full automation of both trains and fare collection
- Headway’s as short as one minute
- “Trains” available on call for 24 hours of every day
- Automatic billing of riders
- Skip-stop stations (stations are wide, but not long)

In the stations, parking policy could include the following, so that ridership is maximized, instead of maximizing driving to the station.

- Full automation of fee collection and earnings distribution
- Earnings to round-trip, adult riders, in proportion to round trip time duration
- Parking offered to all drivers (not just train riders) so as to maximize earnings to reduce net cost (fare minus parking earnings) to ride, so as to maximize ridership
- Congestion pricing to ensure that parking is always available at all distances from the platform

Innovations are never mentioned, let alone considered in SANDAG’s work, so far. This alternative should include the consideration of the new design features, as itemized above, and a description of how these innovations could come to be. Figure 2 is meant to inspire SANDAG to consider the possibilities.
Since the Coaster route is a direct competitor with I-5, it is particularly useful to evaluate such a forward-thinking technology and what it could provide. This is a request for a systems engineering first step which is to create a "requirements document" for the new design. A requirements document specifies what the system does, without any concern for how it is done. The requirement document supports a "request for proposal" (RFP) stage, where companies propose solutions and cost. The low bidder is awarded the contract for the full design.

Knowledge of this systems engineering approach seems to be missing in SANDAG. With $270M available for "smart growth incentives," SANDAG suffers from poor direction and poor vision as to what is needed. This alternative could change that.

New transit and transit-related inventions can not materialize when government doesn't understand how innovation happens and the free market incentive is shut down by current practices that make driving and parking seem artificially cheap to users.

There is a danger in this proposal. It must always be explained that none of this is feasible, unless fundamental policy changes are made in the pricing of driving and parking. As long as these costs are kept hidden and/or kept artificially low, transit can never achieve significantly less driving. The "build it and they will..."
come" outcome rarely materializes, in the long run, because parking and driving are being kept artificially cheap. Certainly if government spends large amounts of money to build and operate systems for nearly no fare, there could be significant ridership. However, such a practice is not sustainable and would eventually collapse. We are seeing that now with service cutbacks, required in part because the state refuses to consider fully pricing roads. SANDAG is at fault for never asking the state to consider how roads should be priced fairly. All of this information needs to be included in this alternative.

Since an updated Coaster design and operation must be considered, it follows that the so-called “Commuter Rail” alternative of Reference 5 must be considered. Although this is expensive, it may be that by reducing the travel time between Oceanside and San Diego, this will eliminate the need to build I-5, saving billions of dollars.

Areas connected with transit service such that transit travel times are competitive with driving travel times should be maximized.

4. Transportation Demand Management/Systems Management Alternative

The words "Transportation Demand Management" need to be replaced by neutral language. No one likes to have their wants, needs and "demands" managed by government policy.

Technically, this "demand" is more derived from the "supply and demand" theory, which is presented in introductory economics. However, these concepts are introduced with price being the driving factor. SANDAG seems to consistently avoid any discussion of cost or price.

Currently, SANDAG is presenting car pools and van pools as being "TDM", without ever mentioning the cost of van pools or mentioning that heavily subsidized parking reduces wages of all workers, even those that never drive to work.

Heavily subsidized parking is both unjust and environmentally harmful. It takes money from those that drive less and gives it to those that drive more. Subsidized parking would be illegal in all circumstances, if our governments had a full awareness of this issue, cared about fairness, and understood our looming climate crisis.

It is unfortunate that the descriptor "TDM" is widely used. SANDAG needs to ignore this practice and use language that accurately describes what is being done. For example, supplying bike racks is not TDM. If car parking is being supplied and bike racks are not being supplied, supplying bike racks would more honestly be termed "FMC", "Fairness-Motivated Change", than "TDM".

More importantly, "TDM" masks the reality that the demand for driving is increased by subsidized road use. Subsidized parking reduces wages while it increases rents and the cost of many other goods and services. Parking at train station is said to be for adult riders that make round trips, but this is usually false. If it is offered at no charge, it only benefits those that park. Those that get to the...
station with no need to park get no benefit from the parking, even if they are adults making a round trip.

A better name for this alternative would be the “Equitable and Environmentally-Sound Pricing Alternative”, or the “EESP” Alternative. If desired, this could be an additional alternative. The primary strategies that would need to be evaluated are the following:

1. The complete description of an equitable and environmentally-sound car parking policy. It would fully and conveniently unbundle all car-parking costs and include congestion pricing. Its methods would support shared parking in nearly all cases. This description would include congestion pricing algorithms. It would include methods to price both on-street and off-street parking. It would include a complete description of how the earnings are distributed, to include methods leading to algorithms. This description should be sufficient to support an RFP (request for proposal) process leading to full design proposals. Reference 1 is such a document.

2. The complete description of an equitable and environmentally-sound road-use fee pricing system.

Reference 1 a peer-reviewed report that will be presented at the Air and Waste Management Association’s Annual Conference and exhibit, this June.

The principles that are important to an equitable and environmentally-sound road use fee pricing system are documented in a report available from the Sierra Club’s California Nevada Regional Conservation Committee (CNRCC). A copy can be provided to SANDAG at no cost. One set of technology to implement such a system is readily available and can be purchased from Skymeter Corporation. They have a website. They will implement the system in the Netherlands by 2014 and Denmark by 2016.

Nevada and Oregon are also considering such systems. Descriptions of their work are readily available on each state’s website.

However, there is no reason not to primarily use the most mature effort, which is the one being implemented by Skymeter. The system should conform to the principles of the CNRCC report.

SANDAG needs to model these two pricing systems. Each should be modeled alone and then they should be modeled together. There is no reason that both systems could not be fully operational before 2020.

Table 2 gives a preview of what can be expected from pricing. Each case comes from a documented, peer-reviewed study8. It shows a 25% reduction in driving. Notice that “Group A” is composed of cases in areas with little or no public transportation. This answers critics who say that you can’t price parking until you have great transit. Since earnings are returned to all workers in proportion to the amount of time they spend at work, if nearly everyone continues to drive, the earnings will almost equal the charge and so drivers will lose very little money.

8 Table 2 References are available upon request.
On the other hand, if half of the workers get to work without driving, the drivers’ earnings will only equal about half of the charge and so their additional cost will be significant. Again, under the plan described in item 1 above, all employees, drivers and non drivers alike, get the same earnings. However, only drivers are charged to use the parking. This charge is in direct proportion to the time that their car is in the parking lot.

SANDAG should be aware of the importance of pricing. The only study on how to meet San Diego GHG reductions, assuming AB32 reductions are required in the car and light duty truck sector, needed to assume that all employers in San Diego County, with at least 100 employees, adopted significant cash-out programs (http://www.sandiego.edu/epic/ghgpolicy/)

<table>
<thead>
<tr>
<th>Table 2 Driving Reductions as a Function of Parking Pricing</th>
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<tbody>
<tr>
<td>Impact of Financial Incentives on Parking Demand</td>
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<table>
<thead>
<tr>
<th>Location</th>
<th>Scope</th>
<th>1995 dollars per mo.</th>
<th>Parking Use Decrease</th>
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</thead>
<tbody>
<tr>
<td>Caltech, Los Angeles, West Los Angeles</td>
<td>3500 employees &amp; 150+ cars</td>
<td>$31</td>
<td>15%</td>
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<tr>
<td>Pomona University, El Camino</td>
<td>5000 faculty &amp; Staff</td>
<td>$34</td>
<td>15%</td>
</tr>
<tr>
<td>San Fernando Valley, Los Angeles</td>
<td>1 employee, 1500 employees</td>
<td>$37</td>
<td>30%</td>
</tr>
<tr>
<td>Costa Mesa, CA</td>
<td></td>
<td>$37</td>
<td>30%</td>
</tr>
<tr>
<td>Average for Group</td>
<td></td>
<td>$47</td>
<td>22%</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Group B: Areas with fair public transportation</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles Civic Center</td>
<td>10000+ employees, several times</td>
<td>$105</td>
<td>10%</td>
</tr>
<tr>
<td>McAllen, TX</td>
<td>1,000 employees, several times</td>
<td>$105</td>
<td>10%</td>
</tr>
<tr>
<td>Washington DC Studios</td>
<td>5000 employees at 5 weekdays</td>
<td>$85</td>
<td>25%</td>
</tr>
<tr>
<td>Downtown Los Angeles</td>
<td>5000 employees, 150+ cars</td>
<td>$105</td>
<td>25%</td>
</tr>
<tr>
<td>Average for Group</td>
<td></td>
<td>$102</td>
<td>21%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Group C: Areas with good public transportation</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Washington, Seattle WA</td>
<td>10,000 faculty, staff &amp; students</td>
<td>$18</td>
<td>24%</td>
</tr>
<tr>
<td>Edmonton, Canada</td>
<td>5000+ government staff</td>
<td>$72</td>
<td>18%</td>
</tr>
</tbody>
</table>

Average for Group, but not Bellevue Washington $46 21%

Over All Average, Excluding Bellevue Washington 25%

Parking vacancy would be higher. Not used, since transit & walkable facilities also improved.

6. Bicycle Alternative

This alternative could be included in the “Equitable and Environmentally-Sound Pricing Alternative”, or the “EESP Alternative” alternative, which may or may not be an additional alternative. It could also be included in your current “Alternative 4” Alternative (TDM/TSM), a mediocre alternative to use not much more than van pools and car pools. It could also be considered with the “No Build” alternative. Finally, it could be considered as its own alternative.

The criteria for spending money for bicycle transportation should be to maximize the resulting estimated reductions in driving. In other words, the strategy should
be "smart" where "smart" means "VMT-reducing". The following strategies will probably be the best ways to spend the $270 M allocated for bicycle transportation.

Projects
Each of the smart growth place types, both existing and planned, shown in SANDAG's Smart Growth Concept Map, viewable at http://www.sandag.org/programs/land_use_and_regional_growth/comprehensive_land_use_and_regional_growth_projects_RCP_region.pdf, should be checked to see if bicycle access could be substantially improved with either a traffic calming project, a "complete streets" project, more shoulder width, or a project to overcome some natural or made-made obstacle. An example is a bicycle bridge over I-5 to connect the "West of I-5" section of Vista Way with the "East of I-5" segment of Vista Way in Oceanside. This was a complete bicycle/pedestrian route before I-5 severed it.

These projects should be prioritized using a cost/benefit ratio metric. It is hereby assumed that 40% of the $270M available for the Regional Bicycle Plan should be used to fund these projects. They should be selected for implementation, from top of the list (lowest cost/benefit ratio) down, until the money (about $110M) is used up.

Education
The remaining 60% of the $270M, about $160M, should be used to

1.) teach interested adults about bicycle accident statistics (most serious injuries occur to cyclists in accidents that do not involve a motor vehicle), car-bike accident statistics (most are caused by wrong-way riding and errors in intersections; clear cut hit-from-behind is rare), and how to ride in all conditions, to minimize problems.

2.) teach riding-in-traffic skills and how to ride in other challenging conditions, by having the class members and instructor go out into real conditions and ride together, until proficiency is achieved.

Students that pass a rigorous written test and demonstrate proficiency in traffic and other challenging conditions are paid for their time and effort.

These classes should be based on the curriculum developed by the League of American Bicyclists and taught by instructors certified by the League.

Assuming a class size of 3 riders per instructor and that each rider passes both tests and earns $100 and that the instructor, with overhead, costs $500 dollars, for a total of $800 for each 3 students, means that the $160M could educate $160M/$800 = 200,000 classes of 3 students, for a total of 600,000 students. This is about 20% of the population of San Diego County.

6.) The "Proposed Project" Alternative

Comments on SANDAG's April 16th NOP of EIR for RTP2050, 6/18/10

SANDAG 2050 RTP/SCS EIR

G-442

October 2011
This alternative is not worth studying. It is reckless and unacceptable because it will increase VMT significantly. If you study this alternative, please do not underestimate its effect to both induce sprawling development and increase VMT even if growth were fixed. This second effect is because additional highway lanes cause people to choose greater-distance commutes. It also induces them to drive more often and to drive to destinations that are further away. None of this is acceptable, considering our responsibilities to set a good example for the world to follow and our responsibilities to our young people and their future children.

In Closing

Please feel free to call me to discuss any of this information.

Regards,

Mike Bullock
1800 Bayberry Drive
Oceanside, Ca 92054
760-754-8025
La Jolla Democratic Club's Urban Policy Team, Transportation

References

1.) M. Bullock & J. Stewart, A Plan to Efficiently and Conveniently Unbundle Car Parking Costs; Paper 2010-A-554-AWMA, from the Air and Waste Management Association's 103rd Annual Conference and Exhibition; Calgary, Canada, June 21-24, 2010; available upon request from Mike Bullock, mike_bullock@earthlink.net (Attached in email with this document, to Rob Rundle)

2.) Email, Subject: Re: SANDAG Smart Growth Incentive Programs, November 13, 2008, Bullock. (Attached in email with this document, to Rob Rundle)

3.) Comments on first Draft of "Designing for Smart Growth", March 12, 2009, Bullock. (Attached in email with this document, to Rob Rundle)


5.) The Mid-Coast Corridor Transit Project Subsequent Environmental Impact Report, Pam Epstein for Sierra Club, emailed on June 1, 2010. (Attached in email with this document, to Rob Rundle)
Via Electronic Mail

Elaine Chang
Deputy Executive Officer
Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182
echang@scaqmd.gov

Re: Comments on Survey of CEQA Documents on Greenhouse Gas Emissions Draft Work Plan and Development of GHG Threshold of Significance for Residential and Commercial Projects

This letter provides comments from the Center for Biological Diversity ("the Center") on the "Survey of CEQA Documents on Greenhouse Gas Emissions Draft Work Plan" as well as SCAQMD's continuing efforts to develop a greenhouse gas (GHG) threshold of significance for residential and commercial projects.

SCAQMD's survey of the GHG emissions from residential, commercial, and mixed-use projects should yield valuable data on the range of emissions resulting from these types of Projects in the South Coast air basin. Under the Work Plan, SCAQMD will use this data to determine the level of GHG emissions for residential and commercial projects that constitute the 90th percentile ... or other percentile desired." (Work Plan at 1.) According to SCAQMD, a threshold based on the 90% capture of sector emissions is consistent with the long-term emission reduction objectives set by Executive Order S-3-05, which calls for emission reductions to 80% below 1990 levels by 2050, or 90% below current levels. (SCAQMD Interim GHG Significance Threshold Staff Proposal (revised), at 3-2.) Compliance with Executive Order S-3-05 targets is presumed to be sufficient "to contribute to worldwide efforts to cap GHG concentrations at 450 ppm, thus, stabilizing the climate." (id.)

While the Center appreciates SCAQMD's recognition that a GHG threshold must be based on long-term climate stabilization objectives, the best available scientific data now indicates that the threats posed by even small increases in temperature are far greater than previously thought. Stabilization of greenhouse gas emissions at 450 ppm as contemplated under Executive Order S-3-05 is insufficient to minimize the risk of catastrophic outcomes. Therefore, the capture of 90% of emissions from the residential and commercial sectors, which is based on compliance with Executive Order S-3-05, is insufficient to manage climate risk and would not be consistent with the Center's comment letter addresses issues relevant to the analysis of GHG emissions in the Draft EIR, please refer to Master Response 2.

Q-32
Attachment 3: Letter from Center for Biological Diversity, to Elaine Chang, Deputy Executive Officer of Planning, Rule Development, and Area Sources of the South Coast Air Quality Management District; Comments on Survey of CEQA Documents on Greenhouse Gas Emissions Draft Work Plan and Development of GHG Threshold of Significance for Residential and Commercial Projects; April 15, 2009. Please refer to Master Response 5 for a discussion of CEQA's requirements for responding to documents either attached to EIR comment letters or incorporated by reference. This attachment is a letter to SCAQMD and is not a comment on the proposed 2050 RTP/SCS or the Draft EIR. To the extent the letter addresses issues relevant to the analysis of GHG emissions in the Draft EIR, please refer to Master Response 2.
not a sufficiently stringent capture rate to sufficiently contribute to preventing dangerous climate change.

Importantly, while the emission reduction targets embodied in AB 32 and Executive Order S-3-05 can inform a significance determination, it is only to the extent that these targets accurately reflect scientific data on needed emissions reductions. Under CEQA, regulatory standards can serve as proxies for significance where they accurately reflect the level at which an impact can be said to be less than significant. See, e.g., Protect the Historic Amador Waterways v. Amador Water Agency, 116 Cal. App. 4th 1099, 1109 (2004).

To ensure that an adopted threshold of significant is an accurate reflection of scientific and factual data, this letter sets for the best available science on climate change. As set forth below, the best available science most strongly support a threshold of zero. The further a threshold is from zero, the more tenuous the evidence to support a determination that the threshold is effective at meeting the environmental objective of avoiding dangerous climate change. Framed in the context of SCAQMD’s methodology, the future a threshold is from a 100% capture rate, the more tenuous the evidence to support a determination that the threshold is effective. Accordingly, in the event SCAQMD is unwilling to set a zero threshold, SCAQMD should consider increasing the capture rate beyond 90% and also require projects with emissions less than this threshold to adopt measures to reduce their GHG emissions before reaching a determination that project impacts are less-than-significant. A non-zero quantitative threshold – assuming it is sufficiently stringent – coupled with performance standards that projects under this threshold must adopt recognizes that all projects must be part of the solution to global warming and would seem to be more equitable and defensible than a bright-line non-zero threshold alone.1

Finally, with regard to the Work Plan itself, it would be helpful to included data on emissions from categorically exempt projects. In the debate over an appropriate threshold of significance for GHGs, arguments have been forwarded that a low threshold would eliminate the application of categorical exemptions. Whether or not this is the case, actual data on the emissions typically resulting from projects invoking a categorical exemption would better inform this discussion.

1 A GHG Threshold That Purports to Be Consistent with Executive Order S-3-05 Emission Reduction Targets Is Insufficient to Prevent Dangerous Climate Change

CEQA calls for the identification of “any critical thresholds for the health and safety of the people of the state.” Pub. Res. Code § 21000(d). With regard to GHGs, this

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1 Were the District to adopt a non-zero threshold, a quantitative threshold that does not require projects under this threshold to take any action to reduce GHGs may also create an improper de minimis exception. See, e.g., Communities for Better Env’t v. California Resources Agency, 103 Cal. App. 4th 98, 121 (2002) (“Focusing on the de minimis effect in absolute terms isolates the effect individually, and this runs counter to the combined approach that CEQA cumulative impact law requires.”).
critical threshold is avoiding dangerous anthropogenic interference (DAI) with the climate system. Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC) calls for “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference (DAI) with the climate system.” With the United States and over 180 other countries as signatories, the UNFCCC’s objective of avoiding DAI with the climate is widely viewed as the international regulatory standard for protecting the global climate. The environmental objective of avoiding DAI is recognized in ARB’s Draft GHG Threshold Guidance. (ARB Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the CEQA (“ARB Draft GHG Threshold”)), Oct. 24, 2008 at 3.) In its Policy Objective for the Interim GHG Threshold for Industrial Projects, SCAQMD seems to set a roughly analogous objective of “reducing GHG emissions to stabilize climate change.”  

The policy objectives of both ARB and SCAQMD’s threshold proposals both state that reaching the emission reduction targets set forth by Executive Order S-3-05, whereby emissions are reduced to 80% below 1990 levels by 2050, would contribute to avoiding dangerous climate change because these reductions are consistent with a pathway to the stabilization of atmospheric concentrations of GHG emissions at 450 ppm. (ARB Draft GHG Threshold at 3, SCAQMD Interim Threshold Proposal at 3-2.) Stabilization of GHGs at 450 ppm provides a 50/50 chance of limiting mean temperature rise to 2°C above pre-industrial levels.  

A pathway toward stabilization of GHGs at 450 ppm presents two serious concerns. First, the best available scientific evidence now indicates that a warming of 2°C is not “safe” and would not prevent dangerous interference with the climate system. Second, because the consequences of overshooting a 2°C threshold could include the displacement of millions due to sea level rise, irreversible loss of entire ecosystems, and the triggering of multiple climactic “tipping points” wherein climate change begins to feed on itself and spiral rapidly out of control, the risk tolerance for overshooting a 2°C temperature rise should be extremely low. Yet a stabilization target of 450 ppm seems content to, at best, flip a coin in the hopes that future generations are not left with few choices beyond mere survival. While the emission reduction targets set forth under Executive Order S-3-05 is a significant improvement from business-as-usual, because these targets are insufficient to adequately minimize the risk of DAI, compliance with Executive Order S-3-05 is not a sufficiently stringent objective from which to develop a threshold of significance.  

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3Union of Concerned Scientists, How to Avoid Dangerous Climate Change: A Target for U.S. Emissions 3 (Sept. 2007); Malte Meinshausen, What Does a 2°C Target Mean for Greenhouse Gas Concentrations? A Brief Analysis Based on Multi Gas Emission Pathways and Several Climate Sensitivity Estimates in Avoiding Dangerous Climate Change 208 (Cambridge Univ. Press 2006).
Projected risks and damages from global warming are more serious than believed even a few years ago. In 2001, the Intergovernmental Panel on Climate Change (IPCC) used five Reasons For Concern (RFCs) in its Third Assessment Report (TAR) to illustrate the temperature range at which impacts may be considered dangerous. Relationships between the impacts reflected in each RFC and increases in global mean temperature were portrayed in a “burning embers” diagram, which reflected the severity of risk from rising temperature through gradations in color from white (no or little risk) to yellow (moderately significant risk) to red (substantial or severe risk). Depending on the RFC, substantial impacts or risks (transition from yellow to red) occurred with a temperature rise from 1°C to 4°C from current levels.

Since the release of the TAR, scientific understanding of the vulnerability of the climate to temperature rise has evolved considerably. Based on new findings in the growing scientific literature since the TAR was released, the burning embers diagram was revised in 2008 to reflect the dangerous risks posed by smaller increases in temperature than originally identified in the TAR. In the updated burning embers diagram, substantial impacts or risks now occur at or near current temperature levels for a number of RFCs. As reflected in the updated RFCs, a 2°C temperature increase from pre-industrial levels (1.4°C increase from 1990 levels) is well past the point where severe and irreversible impacts will occur.

It is now estimated that a mean global temperature increase of 1.5°C above pre-industrial levels has the potential to trigger irreversible melting of the Greenland ice sheet, a process that would result in an eventual 7m sea level rise over and above that caused by thermal expansion of the oceans, and potentially causing an additional sea level rise of 0.75m, as soon as 2100. Specific consequences of a 2°C temperature rise from pre-industrial levels include the loss of 97% of the world’s coral reefs and the transformation of 16% of global ecosystems. At a 2°C temperature rise, approximately one to three

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1 IPCC, CLIMATE CHANGE 2001, SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 11 (2001). The five RFCs identified in the TAR are: 1) Risks to Unique and Threatened Systems; 2) Risks of Extreme Weather Events; 3) Distribution of Impacts; 4) Aggregate Impacts; and 5) Risks of Large Scale Discontinuities. Id. 2 Id., Joel B. Smith et al., Assessing Dangerous Climate Change Through an Update of the Intergovernmental Panel on Climate Change (IPCC) “Reasons for Concern,” PNAS—PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA EARLY EDITION 1 (2008), available at http://www.pnas.org/cgi/doi/10.1073/pnas.0812355106. 3 IPCC, supra note 4, at 11. The RFCs assessed impacts from a baseline of 1990 temperature levels rather than pre-industrial levels. Because pre-industrial warming until 1990 was 0.6°C, an impact resulting from a temperature rise of 1°C equates to a 1.6°C rise from pre-industrial levels. 4 Smith, supra note 5, at 1. 5 Id. 6 Id. at 5. 7 Id. 8 Id. 9 Id, 3. 10 Rachel Warren, Impacts of Global Climate Change at Different Annual Mean Global Temperature Increases in AVOIDING DANGEROUS CLIMATE CHANGE 95 (Cambridge Univ. Press, 2006). Unlike the IPCC’s RFC, Warren assessed impacts from temperature rise from pre-industrial levels, not 1990 levels. 11 Id. Indeed, given increased confidence that 1°C to 2°C increase poses significant risks to many unique and threatened systems, including many biodiversity hotspots, the updated burning embers diagram indicates substantial impacts and/or moderate risks from warming that has already occurred. Smith, supra note 5, at 5.
billion people would experience an increase in water stress, sea level rise and cyclones would displace millions from the world’s coastlines and agricultural yields would fall in the developed world.  In the Arctic, ecosystem disruption is predicted upon expectations of a complete loss of summer sea ice, with only 42% of the tundra remaining stable. This would destroy the Inuit hunting culture, cause the extinction of the polar bear and result in large losses in global bird populations. Moreover, because Arctic ice functions to reflect heat back into the atmosphere, its loss would allow more sunlight to heat the Arctic Ocean and further accelerate the buildup of heat and the melting of the Greenland ice sheet. As the devastating and irreversible impacts resulting from a 2°C mean global temperature rise are far in excess of any reasonable definition of DAL, limiting mean temperature rise to 2°C above pre-industrial levels is not a sufficient environmental objective for the purposes of developing a GHG significance threshold.

Specific impacts to California are also more dire than previously estimated. For example, in its most recent report, the Climate Action Team determined that the latest scientific findings indicate that “prior estimates of sea-level rise likely have been too low.” Based on two recent models, “[by 2050, sea-level rise could range from 30-45 cm (11 to 18 inches) higher than in 2000, and by 2100, sea-level rise could be 60 to 140 cm (23 to 55 inches) higher than in 2000. As sea level rises, there will be an increased rate of extreme high sea-level events, which can occur when high tides coincide with winter storms and there are associated high wind wave and beach run-up conditions.” Moreover, the rise in sea-level may be much higher than even these models predict because they do not account for the ice-melt contributions from the Greenland and Antarctic ice sheets and assume medium to medium high emissions scenarios.

Not only are the climate impacts expected from a 2°C temperature increase far in excess of what should be considered “safe”, but policies which propose greenhouse gas stabilization levels of 450 ppm CO₂-equivalent present substantial risks of overshooting this target, thus exacerbating the problem. Equating a particular atmospheric concentration of greenhouse gases with a specific temperature increase involves a significant degree of uncertainty. This is because climate sensitivity—the extent to which temperatures will rise as a result of increasing concentrations of heat-trapping gases—depends on Earth’s response to certain physical processes that are not fully understood. Thus, due to uncertainty in climate sensitivity, scientists estimate that the mean probability of exceeding 2°C where stabilizing greenhouse gases at a CO₂-equivalent level of 450 ppm is 54% with a 30% probability that global average temperature would rise more than 3°C.

13 Warren, supra note 11 at 98.
15 Id at 1.10.
16 California Climate Change Center, The Impacts of Sea-Level Rise on the California Coast, CEIC-500-2009-0240 (March, 2009) at 1.
400 ppm CO$_2$ eq, the mean probability of exceeding 2°C is 28%. If greenhouse gas emissions were stabilized at 350 ppm CO$_2$ eq, the mean probability of exceeding 2°C would be reduced to 7%.13

Properly accounting for climate sensitivity in climate policy is critical because, as dire as the projected impacts resulting from a 2°C mean temperature increase, increases above 2°C would result in impacts of apocalyptic proportions. If a 2-3°C increase in mean global temperature occurred, feedbacks in the climate system would cause a shift in the terrestrial carbon cycle. Currently, land-based carbon acts as a sink for CO$_2$ buffering the effects of anthropogenic climate change. If CO$_2$ concentrations continue to rise, this sink will become a source, owing to increased soil respiration, further exacerbating climate change. The most dramatic impacts will be a widespread loss of forests and grassland, including the Amazon rainforest, which would undergo a transition to savannah, triggering wide spread implications for local population, global biodiversity, and the global carbon cycle.21 At a global increase in temperature of 3°C above pre-industrial levels, many additional impacts in human and natural systems would occur in ways exponentially more devastating that those predicted for a 2°C temperature increase. Few ecosystems can adapt to such a large temperature rise: 22% would be transformed losing 7% to 74% of their extent.22 An additional 25 to 40 million people would be displaced from coasts due to sea level rise, an additional 1200 to 3000 million would suffer an increase in water stress and 65 countries would lose 16% of their agricultural GDP.23

Based on the severe impacts already observed as well as future impacts and risks posed by additional warming to which we are committed due to inertia in the climate system, climatologists are increasingly concluded that current climate conditions already constitute DAI and that greenhouse gas emissions ultimately must be drawn down to net negative levels through the rapid phase-out of coal and improved forest and agricultural management.24 Atmospheric concentrations of CO$_2$ have risen from a pre-industrial

2°C Target Mean for Greenhouse Gas Concentrations?, Meinshausen notes that 550 CO$_2$ eq roughly corresponds to a stabilization of 475 ppm CO$_2$ only. Id at 209. In a second paper that appears to utilize the same assumptions, Meinshausen notes that 500 CO$_2$ eq is approximately equivalent to 450 ppm CO$_2$ stabilization, 450 CO$_2$ eq is approximately equivalent to 400 ppm CO$_2$ stabilization, and 400 CO$_2$ eq is approximately equivalent to 350-375 ppm CO$_2$ stabilization. Union of Concerned Scientists, How to Avoid Dangerous Climate Change: A Target for U.S. Emissions (Sept. 2007) at 3.


19 Id.


21 Id. at 99.

22 Id. at 96-97.

concentration of 280 ppm to 383 ppm in 2007. Annual mean global temperature has increased by 0.76°C relative to pre-industrial times and is increasing at a rate of 0.17°C per decade. Impacts from this anthropogenic interference with the climate has already resulted in tens of thousands of climate-related deaths, species extinction, ocean acidification and loss of coral reefs, and the significant retreat of glaciers and sea ice. In addition to the impacts already observed, additional warming “in the pipeline” due to inertia in the climate system and their feedback loops will result in further increases in temperature posing significant risks of severe and irreversible impacts. The climate is locked into anywhere from 0.3 to 0.7°C additional warming relative to late 20th century levels due to the eventual impacts of past historical emissions. On account of additional warming to which we are committed, Ramanaathan and Feng found that there is a “high probability that the DAI threshold is already in our rearview mirror.” Similarly, on the basis of palaeoclimate evidence and ongoing climate change, James Hansen and other leading climate scientists concluded the present CO₂ levels of 385 ppm are “already in the dangerous zone” and that “[i]f humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, palaeoclimate evidence and ongoing climate change suggest that CO₂ will need to be reduced from its current 385 ppm to at most 350 ppm, but likely less than that.” In looking at dangerous climate change though the lens of risk tolerance, Harvey concluded that, at a 10% risk tolerance, atmospheric CO₂ concentrations close to present levels “violates the UNFCCC” for a range of assumptions of climate sensitivity. Accordingly, as the climate change to which we are committed is already dangerous, there is little scientific basis to conclude that any new source of emissions is innocuous.

2. Conclusion

The Center appreciates SCAQMD’s continued work to develop a threshold of significance for GHGs. The Center urges SCAQMD to apply the data derived from the Work Plan in a manner that is consistent with the scientific and factual data on the emission reductions necessary to avoid DAI. See Guidelines § 15064(h). Given the

26 Kevin E. Trenberth et al., 2007, Observations: Surface and Atmospheric Climate Change in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 252 (Susan Solomon et al. eds., Cambridge Univ. Press 2007).
29 V. Ramanaathan & Y. Feng, On Avoiding Dangerous Anthropogenic Interference With the Climate System: Formidable Challenges Ahead, 105 PNAS 14245, 14249 (Sept. 23, 2008).
severe and irreversible impacts resulting from a 2°C mean global temperature rise and the significant risk that this temperature would increase beyond 2°C at GHG levels of 450 ppm, a stabilization objective of 450 ppm CO₂eq is far in excess of what can be considered safe. Accordingly, setting a threshold based on consistency with a 450 ppm stabilization target is inconsistent with CEQA's purpose to “identify any critical thresholds for the healthy and safety of people of the state.” Pub. Res. Code § 21060(c).

Because the 90% capture rate is based on the outdated presumption that compliance with Executive Order S-3-05 targets is sufficient to avoid dangerous climate change, SCAQMD should adopt a threshold for residential and commercial projects that captures a higher percentage of emissions and requires projects with emissions below this threshold to comply with performance standards.52

Thank you for your consideration. Please do not hesitate to contact Matthew Vaspa at (415) 436-9682 x309 mvaspa@biologicaldiversity.org if you have any questions or concerns.

Sincerely,

Matthew Vaspa
Senior Attorney

cc: Steve Smith
    Michael Krause

52 The 90% capture rate used for SCAQMD’s industrial threshold purportedly reflected the practical concern that minimal mitigation was available for the types of projects (such as boilers) that fell under this threshold. These concerns do not apply to residential and commercial structures, where any number of mitigation measures are available for all sizes of projects to reduce GHG emissions.
A Plan to Efficiently and Conveniently Unbundle Car Parking Costs

Paper 2010-A-554-AWMA

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ABSTRACT

The Introduction shows documented driving reductions due to the pricing of parking. It notes that although the benefits of priced and shared parking are known, such parking has not been widely implemented, due to various concerns. It states that a solution, called “Intelligent Parking,” will overcome some of these concerns, because it is easy to use and naturally transparent. It asserts that this description will support a “Request for Proposal” (RFP) process. Eight background information items are provided, including how priced parking would help California achieve greenhouse gas reduction targets. A story demonstrates some of the key features of Intelligent Parking. Arguments for less parking, shared parking, and priced parking are made. Barriers to progress are identified. The fair pricing of parking is described. New ways to characterize transportation demand management are presented. Seven goals of Intelligent Parking are listed. Eleven definitions and concepts, that together define Intelligent Parking, are described. This includes a method to compute a baseline price of parking and how to adjust that price instantaneously to keep the vacancy above 15% (“Congestion Pricing”). An implementation strategy is described.

INTRODUCTION:

It has been well established that appropriately priced parking will significantly reduce driving. Most case studies presented in Table 1 are evaluations of the most general type of “car-parking cash-out”: a program that pays employees extra money each time they get to work without driving. They show that a price differential between using parking and not using parking will significantly reduce driving, even when transit is described as poor. Since driving must be reduced, the pricing of parking is desirable. Shared parking is also recognized as desirable because it can sometimes result in less parking being needed.

Although the advantages of pricing and sharing parking have been recognized for many years, these practices are still rare. This paper identifies some of the reasons for this lack of progress. The pricing and sharing method of this paper has a natural transparency and ease of use that would reduce many of the concerns. This paper also suggests that those governments that have the necessary resources can take the lead role in developing and implementing the described systems. These governments will recover their investments, over time.

This paper describes how parking facilities could be tied together and operated in an optimum system, named Intelligent Parking. The description of Intelligent Parking is sufficient to support a “Request for Proposal” process, leading to full implementation.

There are two distinct parts to Intelligent Parking. The first is how to set the price. The second is how to distribute the earnings. Briefly, the earnings go to the individuals in the group for whom the parking is built.

Q-33
Attachment 4: M. Bullock & J. Stewart, A Plan to Efficiently and Conveniently Unbundle Car Parking Costs; Paper 2010-A-554-AWMA, from the Air and Waste Management Association’s 103rd Annual Conference and Exhibition; Calgary, Canada, June 21-24, 2010. Please refer to Master Response 5 for a discussion of CEQA’s requirements for responding to documents either attached to EIR comment letters or incorporated by reference. This attachment provides general non-project-specific information on parking costs, and does not include any project-specific or Draft EIR-specific comment. Therefore, no further response is required. For a discussion of the general parking pricing issues addressed in this report, please see Master Response 15.
### Table 1: Eleven Cases of Pricing Impact on Parking Demand

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Workers at Number of Firms</th>
<th>1995 $'s Per Mo.</th>
<th>Parking Use Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A: Areas with poor public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Los Angeles</td>
<td>3500 @ 100+</td>
<td>$91</td>
<td>15%</td>
</tr>
<tr>
<td>Cornell University, Ithaca, NY</td>
<td>9000 Faculty &amp; Staff</td>
<td>$71</td>
<td>26%</td>
</tr>
<tr>
<td>Sun Fernando Valley, Los Angeles</td>
<td>850 @ 1</td>
<td>$37</td>
<td>30%</td>
</tr>
<tr>
<td>Costa Mesa, CA</td>
<td>Not Shown</td>
<td>$37</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$347</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Group B: Areas with fair public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los Angeles Civic Center</td>
<td>10,000+ @ &quot;Several&quot;</td>
<td>$125</td>
<td>26%</td>
</tr>
<tr>
<td>Mid-Wilshire Blvd, Los Angeles</td>
<td>1 &quot;Mid-Size&quot; Firm</td>
<td>$99</td>
<td>28%</td>
</tr>
<tr>
<td>Washington DC Suburbs</td>
<td>5,500 @ 3</td>
<td>$68</td>
<td>26%</td>
</tr>
<tr>
<td>Downtown Los Angeles</td>
<td>5,000 @ 118</td>
<td>$126</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$102</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Group C: Areas with good public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U. of Washington, Seattle, WA</td>
<td>50,000 employees, students</td>
<td>$18</td>
<td>24%</td>
</tr>
<tr>
<td>Downtown Ottawa, Canada</td>
<td>3,500 government staff</td>
<td>$72</td>
<td>18%</td>
</tr>
<tr>
<td>Bellevue, WA</td>
<td>430 @ 1</td>
<td>$54</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Average for Group, except Bellevue, WA Case</strong></td>
<td></td>
<td>$45</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Overall Average, Excluding Bellevue, WA Case</strong></td>
<td></td>
<td>$45</td>
<td>25%</td>
</tr>
</tbody>
</table>

*B - Bellevue, WA case was not used in the averages because its walk/bike facilities also improved and those improvements could have caused part of the decrease in driving.

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### PERTINENT BACKGROUND INFORMATION

- Vehicle miles traveled (VMT) are a major cause of global warming and pollution\(^2\)\(^3\).
- California’s Metropolitan Planning Organizations (MPOs) will need to adopt strategies that reduce vehicle miles traveled (VMT), in order to meet SH375 GHG reduction targets, to be issued by the California Air Resources Board in late 2010, for years 2020 and 2035\(^4\).
- The appropriate pricing of parking is one of the least costly documented tools to reduce VMT.
- New technologies, such as sensors feeding computer-generated billing, offer the potential to efficiently bill drivers for parking and alert law enforcement of trespassers.
- Reformed parking policies can increase fairness, so that, for example, people who use transit or walk do not have to pay higher prices or suffer reduced wages, due to parking.
• Methods to unbundle parking cost are inefficient unless they support the spontaneous sharing of parking spaces. Shared parking with unbundled cost would ultimately allow cities to require significantly less parking.

• Typical systems of timed parking and metered parking are far from ideal. Parking has no automated record keeping, so it is difficult to know where there is too much or too little.

• Good policies will eventually let cities turn parking minimums into parking maximums.

A GLIMPSE INTO A POSSIBLE FUTURE

Jason is driving to work for the first time in several years. He has decided to save money by carrying home a new 3-D, big-screen computer, which he plans to purchase at a store near his office after work. He wanted to avoid paying delivery charges.

Things have been changing around his office development since they unbundled the cost of parking at the nearby train station. Many people who caught the early trains and lived close to the station stopped driving and parking in the best parking spaces; demand for housing close to the station went up; and wealthyiders, who insisted on driving, did so, confident that they could always find parking as close to the platform as their schedules required, due to congestion pricing. Who would have guessed how much those people were willing to pay? It was shocking. Parking-lot earnings, paid to round-trip train riders, meant that the net cost to ride the train went significantly down. Ridership and neighborhood vitality both went significantly up. All Jason knew was that the price to park at his office had been going up yearly because of increased land values. His parking-lot earnings from his office had been increasing almost every month, due to the ripple effect of train riders parking off-site at cheaper parking. Some of them were using his office parking.

As he pulls out of his driveway, he tells his GPS navigation unit his work hours (it already knew his office location), the location of the store where he plans to buy the computer, and his estimated arrival and departure times at the store. He tells the GPS unit he wants to park once, park no more than 1 block from the store, walk no more than 1 mile total, and pay no more than an average of $2 per hour to park. He is not surprised to hear the GPS tell him that his request is impossible. He tells the GPS he will pay an average of $3 per hour and learns that the GPS has located parking.

It guides him into a church parking lot. He hopes the church will use his money wisely. The GPS tells him the location of a bus stop he could use to get to work and the bus’s next arrival time at the stop. With automatic passenger identification and billing, the bus has become easy to use, except that it is often crowded. Jason gets out of the car and walks to work, with no action required regarding the parking.

Three weeks later, when Jason gets his monthly statement for his charges and income for automotive road use, transit use, parking charges, and parking earnings, he finds that the day’s parking did indeed cost about $30 for the 10 total hours that he parked. He notes that the parking-lot earnings for his office parking averaged about $10 per day that month. He then notices the parking lot earnings from the store, where he spent about $1000 dollars. He sees that the parking-lot earnings percent for the store that month was 1.7%, giving him about $17. So for the day, Jason only spent a net of about $3 on parking. Then he realized that he should have had the computer delivered after all. If he would have bicycled that day, as he usually did, he would have still gotten the $27 earnings from the two parking facilities and he would have paid nothing.
for parking. So the choice to drive cost him $30. He remembers that the delivery would have only been $25 dollars. Oh well. He enjoyed his before-work and after-work walks.

THE CASE FOR LESS PARKING

Less parking will support more compact development. This makes walking and biking more enjoyable and less time consuming. There would certainly be less “dead space”, which is how parking lots feel to people, whether they arrive by car or not, after they become pedestrians. Since parking can be expensive, less parking can reduce overhead costs significantly, such as leasing expense and parking-lot maintenance cost. Less overhead means more profit and less expense for everyone. A need for less parking can create redevelopment opportunities at existing developments and reduce project cost at new developments.

At new developments, car-parking costs could prevent a project from getting built.

THE CASE FOR SHARED PARKING

Shared parking for mixed uses means that less parking is needed. For example, shared parking could be used mostly by employees during the day and mostly by residents at night.

Fully shared parking means that very little parking would be off limits to anyone. In a central business district with shared parking, drivers would be more likely to park one time per visit, even when going to several locations. Pedestrian activity adds vitality to any area.

THE CASE FOR APPROPRIATELY-PRICED PARKING

To Reduce Driving Relative to Zero Pricing

Traditional Charging or Paying Cash-out Payments

As shown in the Introduction, this relationship (pricing parking reduces driving) is not new.

Using results like Table 1, at least one study has used an assumption of widespread pricing to show how driving reductions could help meet greenhouse gas (GHG) target reductions. Dr. Silva Send of EFIC http://www.sandiego.edu/epic/ghgpolicy assumes that all work locations within 100 employees or more in San Diego County will implement cash-out, to result in 12% less driving to work. Currently, almost all employees in San Diego County “park for free”, unless they happen to work in a downtown core area.

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1 This is especially true of surface parking, which only accommodates 120 cars per acre.

2 On September 23, 2008, a panel of developers reviewed the Oceanside, Ca. “Coast Highway Vision” [http://www.sandiego.ca.us/pdf/doc_finalvisionnew.pdf]. Parts of this plan were described as “smart growth.”

At the review, developer Tom Wiegand said, “Parking is the number 1 reason to do nothing,” where “do nothing” meant “build no project.” The other developers at the meeting agreed.

3 For many years the Victoria Transport Policy Institute (VTPI) has been recognized as a source of reliable information on “Transportation Demand Management,” or TDM.

From http://www.vtpi.org/tdm/tdm72.html#Price_Parking:

“Even a relatively small parking fee can cause significant travel impacts and provide significant TDM benefits. “TDM Benefits” refers to the many public and private benefits of having fewer people choosing to drive.”
Current, Best-Practice “Unbundling”

The “best-practice” use of the phrase, “unbundled parking cost”, is to describe the case where either the cost of parking, for the case of a condominium, or the rent for parking, for the case of an apartment, is separated from either the purchase price and common fees or the rent of the dwelling unit.

This gives the resident families the choice of selecting the number of parking spaces they would like to rent or buy, including the choice of zero. This would tend to reduce the average number of cars owned per dwelling unit and, in this way, would also tend to reduce driving. Its major drawback is that this method does not encourage sharing.

To Increase Fairness and Protect the US Economy

It is stated above that almost all employees in San Diego County “park for free”. Of course there is really no such thing as “parking for free”. So-called “free parking” always reduces wages or increases costs. At a work site, it reduces everyone’s wage, even those employees that never drive. At an apartment complex, so-called “free parking” increases the rent. Therefore, “free parking” at work or at apartments violates the fundamental rule of the free market, which is that people should pay for what they use and not be forced to pay for what they do not use. Parking should at least be priced to achieve fairness to non-drivers.

The US economy would also benefit. Reductions in driving would lead to reductions in oil imports, which would reduce the US trade deficit.¹

BARRIERS TO PROGRESS

Given all this, it might seem that the widespread pricing of parking should have happened by now. However, there are barriers. In 2007, a majority of the City Council of Cupertino, Ca., indicated that they wanted their City Manager to negotiate reduced parking requirements with any company that would agree to pay sufficient cash-out payments. To this date, no company, including Apple Inc., has expressed an interest. Most companies probably perceive cash-out as expensive. Even if they realize they could get a reduced parking requirement in exchange for paying sufficient cash-out amounts and even if the economics worked in support of this action (quite possible where land is expensive), they want to stay focused on their core business, instead of getting involved in new approaches to parking, real estate, and redevelopment.

On the other hand, simply charging for parking and then giving all the employees a pay raise is probably going to run into opposition from the employees, who will feel that they would be losing a useful benefit.

In addition, neighbors fear the intrusion of parked cars on their streets. Permit parking, which could offer protection, is not always embraced. City Council members know that a sizable fraction of voting citizens believe that there can actually be too much “free parking”,


“The U.S. trade deficit is a bigger threat to the domestic economy than either the federal budget deficit or consumer debt and could lead to political turmoil. Right now, the rest of the world owes $3 trillion more of us than we own of them.”

5
Professor Shoup’s famous book notwithstanding. Some Council members probably feel that way themselves.

It doesn’t help that current methods of charging for downtown parking are often very inefficient. For example, downtown Oceanside, California has parking meters that will only accept coins. Besides this, their on-street, downtown parking is timed, with maximums from 10 minutes to 4 hours. These time limits are enforced by a city employee, who applies chalk from a tire to the street and then records the time. However, by watching the time and moving their car soon enough, drivers can avoid getting a ticket. Of course, they could instead drive to the mall and not have to worry about having coins or elapsed time since parking. It is not surprising that downtown merchants often object to charging for parking.

In summary, those that resist charging for parking, based on their perceptions, include

- Companies, who fear the complexity and expense of paying cash-out payments;
- Employees, who fear of losing a current benefit;
- City leaders, who fear the political repercussions;
- Downtown patrons, who dislike the inconvenience and worry;
- Downtown business owners, who fear that it will drive away customers.

THE COST, VALUE, AND FAIR PRICE OF PARKING

Estimated and Actual Capital Cost

**Surface Parking**

One acre of surface parking will accommodate 120 cars. Land zoned for mixed use is sometimes expensive. At $1.2 million per acre, the land for a single parking space costs $10,000. Construction cost should be added to this to get the actual, as-built cost of each parking space. Estimated cost can be determined by using appraised land value and construction estimates. For new developments, after the parking is constructed, it is important to note the actual, as-built cost.

**Parking-Garage Parking**

One acre of parking-garage will accommodate considerably more than 120 cars. The construction cost of the garage and the value of its land can be added together to get the total cost. Dividing that total cost by the number of parking spaces yields the total, as-built cost of each parking space. Adding levels to a parking garage may seem like a way to cut the cost of each parking space, for the case of expensive land. However, there is a limit to the usefulness of this strategy because the taller the parking garage, the more massive the supporting structural members must be on the lower levels, which increases total cost. Parking-garage parking spaces are often said to cost between $20,000 and $40,000. The actual costs should be noted.

**Underground Parking**

In order to compute an estimate for the cost of a parking space that is under a building, it is necessary to get an estimate of the building cost with and without the underground parking. The difference, divided by the number of parking spaces, yields the cost of each parking space. The

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cost or value of land plays no role in the cost of this parking. However, it does not follow that
this parking is cheap. Underground parking spaces are often said to cost between $60,000 and
$90,000 dollars each. Although there will be an “as built” cost of the building with the parking,
there will never be an “as built” cost of the building without the parking. However, after the
construction is done, the estimate for the cost of the underground parking should be reconsidered
and re-estimated if that is needed. The final, best-estimate cost should be noted.

Value
Initially, value and cost are the same. For surface parking and parking-garage parking, the value
would initially be the same as the as-built cost. For underground parking, the value would
initially be the same as the best-estimate cost. However, over time, the value must be updated.
Both construction costs and land-value costs will change. The value assigned to a parking place
should always be based on the current conditions.

Fair Pricing
Parking space “values”, as described above, must first be converted to a yearly price by using a
reasonable conversion factor. This conversion factor could be based on either the “cost of
money” or the “earnings potential of money”. It is expected that this conversion factor would be
2% to 5% during times of low interest rates and slow growth; but could be over 10% during
times of high-interest and high growth. For example, if the surface parking value is $12,000 and
it is agreed upon to use 5% as the conversion factor, then each parking spot should generate $600
per year, just to cover capital costs. The amount needed for operations, collection, maintenance,
depreciation, and any special applicable tax is then added to the amount that covers capital cost.
This sum is the amount that needs to be generated in a year, by the parking space.

The yearly amount of money to cover capital cost needs to be re-calculated every year or so,
since both the value and the conversion factor will, in general, change each year. The cost of
operations, collection, maintenance, depreciation, and any special applicable tax will also need to
be reconsidered.

Once the amount generated per year is known, the base price, per unit year, can be computed by
dividing it (the amount generated per year) by the estimated fraction of time that the space will
be occupied, over a year. For example, if a parking space needs to generate $900 per year but it
will only be occupied 50% of the time, the time rate charge is $1800 per year. This charge rate
per year can then be converted to an hourly or even a per-minute rate. The estimated fraction of
time that the parking is occupied over a year will need to be reconsidered at least yearly.

NEW DEFINITIONS TO PROMOTE AN OBJECTIVE VIEW OF PRICING

- The “fair price” means the price that accounts for all costs.
- The “baseline amount of driving” means the driving that results from the application of the
  fair price.
- “Zero transportation demand management” (“zero TDM”) is the amount of demand
  management that results when the fair price is used. It will result in the baseline amount
  of driving.
- “Negative TDM” refers to the case where the price is set below the fair price. This will
  cause driving to exceed the baseline amount. Since TDM is commonly thought to be an
  action that reduces driving, it follows that negative TDM would have the opposite effect.
- “Positive TDM” refers to the case where the price is set above the fair price. This would
  cause the amount of driving to fall below the baseline amount.
Clearly, so-called “free parking” is an extreme case of negative TDM. The only way to further encourage driving would be to have a system that pays a driver for the time their car is parked.

**THE GOALS OF INTELLIGENT PARKING**

- There is only one agency operating all parking. (“All parking” does not include driveways and garages in single-family homes.) Intelligent Parking is designed and installed by regional or state government, using all-bid contractors, with design and start-up costs covered by the overhead portion of collection fees.
- Nearly all parking is shared. Almost always, anyone can park anywhere. Those who want exclusive rights to parking will pay “24/7” (all day, every day).
- Parking is operated so that the potential users of parking will escape the expense of parking by choosing to not use the parking. This characteristic is named “unbundled” because the cost of parking is effectively unbundled from other costs.
- Parking is priced and marketed to eliminate the need to drive around looking for parking.
- Parking at any desired price is made as easy as possible to find and use.
- Records of the use of each parking space are kept, to facilitate decisions to either add or subtract parking spaces.
- The special needs of disabled drivers, the privacy of all drivers, and, if desired, the economic interests of low-income drivers are protected.

**DEFINITIONS & CONCEPTS OF INTELLIGENT PARKING**

**Parking Beneficiary Groups**

There are at least 7 types of beneficiary groups. Note that in all cases, members of beneficiary groups must be old enough to drive.

1.) People who have already paid for the capital cost of parking. An example of this type of beneficiary group would be the owners of condominiums, where parking has been built and the cost is included in the price of the condominium. Note that although they have technically already paid for the parking, if they borrowed money to pay for some portion of the price, the cost is built into their monthly payment. This illustrates why the value of parking and the cost of borrowing money (rate of return on money) are key input variables to use to compute the appropriate base, hourly charge for parking.

2.) People who are incurring ongoing costs of parking. An example of this type of beneficiary group is a set of office workers, where the cost of their parking is contained in either the building lease or the cost of the building. Either way, the parking costs are subtracting the wages that can be paid to these employees. 6

3.) People who are purchasing or renting something where the cost of the parking is included in the price. Examples of this beneficiary group are people that rent hotel rooms, rent an apartment, buy items, or dine in establishments that have parking.

6 Such parking is often said to be “for the benefit of the employees”. Defining this beneficiary group will tend to make this statement true, as opposed to the common situation where the employees benefit only in proportion to their use of the parking.
4.) People who own off-street parking as a business. They could be the individual investors or could be a government or government-formed entity.

5.) People who are said to benefit from parking, even though the money for the parking has been supplied by a source that may have very little relationship to those that are said to benefit. An example of this group would be train riders that make round trips from a station which has parking that is said to be “for riders”. Students at a school with parking would be another example.

6.) People who are considered by many to be the logical beneficiaries of on-street parking. Owners of single-family homes are the beneficiaries of the parking that is along the boundaries of their property. The same status is given to residents of multi-family housing.

7.) Governments. Since they build and maintain the streets, they should get a significant benefit from on-street parking.

**Unbundled Cost and Spontaneous Sharing**

“Unbundled cost” means those who use the parking can see exactly what it costs and those who don’t use the parking will either avoid its cost entirely or will get earnings to make up for the hidden parking cost they had to pay. This conforms to the usual rule of the free market where a person only pays for what they choose to use. Unbundled cost is fair.

“Spontaneous sharing” means that anyone can park anywhere at any time and for any length of time. Proper pricing makes this feasible.

**How to Unbundle**

The method of unbundling can be simply stated, using the concept of “beneficiary group” as discussed above. First, the fair price for the parking is charged. The resulting earnings\(^7\) amount is given to the members of the beneficiary group in a manner that is fair to each member. Methods are described below.

**Why this Supports Sharing**

Members of a beneficiary group benefit financially when “their” parking is used. They will appreciate users increasing their earnings. They are also not obligated to park in “their” parking. If there is less-expensive parking within a reasonable distance, they might park there, to save money. This is fine, because all parking is included in the Intelligent Parking system.

**Computing the Earnings for Individuals**

Intelligent Parking must be rigorous in paying out earnings\(^7\). For a mixed use, the total number of parking spaces must first be allocated to the various beneficiary groups. For example in an office/housing complex, 63.5% of the parking might have been sold with the office. If so, the housing portion must be paying for the other 36.5%. For this case, it would follow that the first step is to allocate 63.5% of the earnings to the workers and 36.5% to the residents.

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\(^7\) The earnings amount is the revenue collected minus the collection cost and any other costs that will have to be paid due to the implementation of Intelligent Parking. The costs associated with the parking, paid before the implementation of Intelligent Parking, should not be subtracted from the revenue because they will continue to be paid as they were before the implementation of Intelligent Parking. Therefore, these costs will continue to reduce wages and increase the prices of goods and services.
How the monthly earnings are divided up among the members of the beneficiary group depends on the beneficiary group type. For each member, the group’s total monthly earnings amount is always multiplied by a quantity and divided by the sum (the sum is the denominator) of that quantity, for all members.

For example, for each employee, the multiplier is the number of hours that the employee worked over the month while the denominator is the total number of hours worked by all employees over the month. At a school, for each student, the numerator is the total time spent at the school, over the month, while the denominator is the sum of the same quantity, for all the students.

For a train station with parking being supplied for passengers that ride on round trips of one day or less, the numerator is the passenger’s monthly hours spent on such round trips, over the month; while the denominator is the total number of hours spent by all passengers on such round trips, over the month. Radio Frequency Identification (RFID) units on passengers could support an automated calculation of monthly charges for fares, as well as monthly hours on round trips.

At a shopping center, the numerator is the sum of the money spent by the shopper, over the month, while the denominator is the total amount of money spent by all shoppers over the month.

At a condominium, the numerator is the number of parking places that were paid for (directly or indirectly) by the resident family and the denominator is the total number of parking places at the condominium project; similarly, for apartment complexes.

*Where Earnings Are Low*

The goal is that if someone doesn’t park, they don’t pay, either directly or indirectly, because the earnings that they get will balance out their losses (like reduced wages, for example). However, charging for parking that few want to use will not sufficiently compensate the people that have been forced, or are being forced, to pay for such parking. The only remedy in this case is to redevelop the parking or lease the parking in some other way, for storage, for example. The earnings from the new use should go to those that are in the beneficiary group that was associated with the low-performing parking.

*Why This Method of Unbundling Will Feel Familiar to Leaders*

Developers will still be required to provide parking and will still pass this cost on, as has been discussed. There will be no need to force an owner of an exiting office with parking to break his single business into two separate businesses (office and parking).

Parking beneficiaries are identified that conform to traditional ideas about who should benefit from parking.8

*Unbundling the Cost of On-Street Parking*

The revenue from on-street parking in front of businesses will be split evenly between the city and the business’s parking beneficiaries. All of the earnings from on-street parking in front of apartments or single-family homes will be given to the resident families.9

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8 Showing exactly where parking earnings go will reduce the political difficulties of adopting pay parking in a democracy where the high cost of parking is often hidden and rarely discussed.

9 Although governments own the streets, often, back in history, developers paid for them and this cost became embedded in property values. Admittedly, how to allocate on-street parking earnings is somewhat arbitrary. With
Special Considerations for Condominiums

Unbundling for a condominium owner means that, although their allocated amount of parking has added to their initial cost, their allocated amount of parking also earns money for them. Unbundling for a condominium could also mean that an owner can choose to have control over a single or several parking places. Such parking spaces could be equipped with a red light and a green light. If the red light is lit, this will mean that the space is not available for parking, except for the person who is controlling the spot. If the green light is lit, it will mean that the space is available to anyone. A space that is being reserved with a red light is charged at the full price to the condominium owner that has control over the space. The owner that controls these spaces can change the state of the parking space (available or not available) by either a phone call, online, or at any pay station system that might be in use for the system. After condominium owners experience the cost of reserving a space for themselves, they might give up on the idea of having their own, personal, unshared parking space; especially since Intelligent Parking will give most owners and their guests all the flexibility they need in terms of parking their cars.

Some people think that condominium parking should be gated, for security reasons. However, parking within parking garages needs to be patrolled at the same frequency level as on-street parking, which is enough to ensure that crime around either type of parking is very rare. Cameras can help make parking garages that are open to the public safe from criminal activity.

Special Considerations for Renters

Unbundling for renters means that, although their allocated amount of parking increases their rent, their allocated amount of parking also earns money for them. Therefore, their traditional rent (includes parking) is effectively reduced by the money earned by those parking spaces allocated to them. Renters will be motivated to either not own a car or to park in a cheaper location. Parking in a cheaper location is not a problem because all parking is part of the Intelligent Parking system. Renters will welcome anyone to park in “their” parking, because it will increase their earnings.

Special Considerations for Employers

At first, companies may want the option of offering “free parking” to their employees so as to be able to compete with traditional job sites. This means giving employees that drive every single day an “add-in” amount of pay so that the sum of the add-in and their parking-lot earnings equals their charge, for any given monthly statement. The operator of the parking, which sends out statements, can pay out the “add in” amount, in accordance with the company’s instruction. The company will then be billed for these amounts. There could be no requirement for the company to provide any such “add-in” amount to the employees that don’t drive every day. This would allow the company to treat its every-day drivers better than other employees and so this would be a negative TDM. However, this economic discrimination would be substantially less than the current, status quo, economic discrimination, where drivers get “free” parking and non-drivers get nothing.

Clusters of Parking

Clusters are a contiguous set of parking spaces that are nearly equal in desirability and thus can be assigned the same price. They should probably consist of from 20 to 40 spaces. For off-street congestion pricing and efficient methods, governments may earn significantly more than they are under current practices.
parking, they could be on either side of the access lane to the parking spaces, so that an observer could see the 20 to 40 cars, and get a feel for the vacancy rate. At a train station, clusters will normally be organized so that their parking spaces are approximately an equal distance from the boarding area. On-street clusters would normally conform to our current understanding of what a block is, which is to say from one cross street to the next cross street. The width of the street and the length of the block should be taken into account in defining on-street clusters of parking and in deciding if the parking on either side of the street should or should not be in the same cluster of parking spaces.

Examples of Good and Bad Technology

Parking Meters or Pay Stations

Parking meters are a relic of an earlier period, before computers. Pay stations do not add enough usefulness to merit their inclusion in Intelligent Parking, except as a bridge technology. Once good systems are set up, pay stations should cost additional money to use because of their expense. It would be best to devise an implementation strategy that will minimize their use when the system is first put into effect and will take them out of service as soon as possible.

Radio Frequency Identification Backed Up by Video-Based “Car Present” and License Recognition

Government will eventually enter into an RFID (Radio Frequency Identification) age. Organizers of large athletic events already have. Organizers that put on large open-water swims, foot races, and bike rides have routinely used RFID for many years. An RFID vendor in San Diego states that passive RFID units cost less than $5, are reliable, are durable, and they could be used to identify cars as well as people. He also sees no problem in implementing most of the features of Intelligent Parking.

Automatic Data Collection and Sending Out Statements

Note that the “back end database” of Dr. Carta’s written statement refers to the ability to send statements of earnings and billing to students.

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18 For example, over 20,000 people ran the 2008 Bay-to-Breakers foot race in San Francisco. Each runner had a “chip” in their shoe lace. Each runner’s start time and finish time were recorded and all results were available as soon as the last runner crossed the finish line.

19 David R. Carta, PhD, CEO Telarium Inc., 858-449-3454

20 Concerning a Final Environmental Impact Report approved and funded a new high school in Carlsbad, California, where the School Board has signed a Settlement Agreement to consider “unbundled parking”, “cash-out”, and “pricing”. Dr. Carta wrote, in a January 13th, 2010 written statement to the Board.

1 WANTED TO SEND A QUICK NOTE DISCUSSING THE TECHNICAL FEASIBILITY OF TRACKING CARS INTO A LOT WITHOUT IMPACTING STUDENTS OR REQUIRING THE COST FOR GATES. MIKE DALLOK AND I HAVE DISCUSSED THIS PROJECT, IT CAN BE ACCOMPLISHED STRAIGHTFORWARDLY BY UTILIZING RADIO FREQUENCY IDENTIFICATION AND/OR VIDEO CAMERAS INTEGRATED WITH AUTOMATED LICENSE RECOGNITION SYSTEMS. THE CARS WOULD NEED TO REGISTER WITH THE SYSTEM AT THE START, BUT IT WOULD BE FAIRLY PAINLESS FOR THE USERS AFTER THE INITIAL INSTALLATION. THE BACK END DATABASE SYSTEM CAN ALSO BE IMPLEMENTED BOTH STRAIGHTFORWARDLY AND AT A REASONABLE PRICE.

This is not necessarily a recommendation of the proposal for unbundled parking. Rather it is strictly an unbiased view of the technical feasibility of the proposal to easily and unobtrusively track cars, both registered and unregistered, into a fixed lot.

21 In an earlier email on this subject, Dr. Carta wrote,
Putting it Together

Certainly, government, and in particular transit agencies and parking agencies, could use RFID-based technology. For example, when a person with an RFID unit which is tied to a billable address or a credit card with an open account gets on a bus or a train, they should not have to pay at that time, visit a pay station, or “swipe a card” that has a positive balance. Utility customers that pay their bills are not required to pre-pay. The same courtesy should be extended to transit riders, people that drive on roads, people that get parking-lot earnings, and people that park cars. There should be one monthly bill or statement, for all four activities.

Global Positioning Systems (GPS)

An alternative model is to have GPS systems in cars that would detect the car’s parking location, that location’s current charge rate, and would perform all of the charging functions in the car. The only information the parking-lot enforcement system would need is whether or not a car being parked is owned by a bill-paying owner. The car owner’s responsibility would be to pay the bills indicated by the box in the car. The box would need to process a signal that a bill had been paid. It would also need to process pricing signals.

Not Picking Winners

The purpose of this report is to describe what an ideal system would do, not how it is done. How a proposed system works is left to the systems, software, and hardware engineers that work together to submit a proposal based on this description of what an ideal system does.

Privacy

Privacy means that no one can see where someone has parked, without a search warrant. Also, the level of the detail of information that appears on a bill is selected by the customer.  

Ease of Use for Drivers

For credit-worthy drivers that have followed the rules of the system, pay parking will not require any actions other than parking. Paying for all parking fees over a month is then done in response to a monthly billing statement. Parking will feel to the consumer like a service provided by a municipality, such as water, energy, or garbage. One important difference is that users belonging to a “beneficiary group” will get an earnings amount in their monthly statement. Those that earn more than what they are charged will receive a check for the difference. This ease of use will make all parking less stressful.

Base Price

Off-Street

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This is not too tough - we probably would integrate with a service that already sends physical mail from an electronic submission instead of re-inventing this wheel.

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License plates that have no RFID tags fail to use the best technology to accomplish the primary purpose of license plates, which is to identify and help intercept cars used in a crime. Identifying cars is a legitimate government goal. Protecting privacy is also a legitimate goal. Both goals can be realized with good laws, good enforcement, and good systems engineering.
Off-street parking is priced so that even if demand does not threaten to fill the parking beyond 85%, the money generated will at least equate to an agreed-upon return on the parking value and pay all yearly costs. Equation 1 shows the calculation of the hourly rate.

\[
\text{Baseline Hourly} = \frac{\text{Investment} \times \text{Parking}}{(\text{Hours per Year} \times f_{PD})}
\]  

(Eq. 1)

where:

- \(\text{Baseline Hourly}\) = the computed baseline hourly rate to park
- \(\text{Investment}\) = yearly return on investment, such as 0.06
- \(\text{Parking}\) = value of a parking space, such as (parking garage) $40,000
- \(f_{OP}\) = yearly operations + depreciation, per space, such as $100
- \(f_{Hours per Year}\) = number of hours per year, 24 \(\times\) 365 = 8760 Hours per Year
- \(f_{PD}\) = fraction of time occupied, such as 0.55

For the example values given, the base hourly rate of parking, to cover the cost of the investment, operations, and depreciation is $0.519 per hour. This could be rounded up to $0.52 per hour. This price could also be increased to result in positive TDM, to reduce driving more than the base price, zero-TDM amount.

**On-Street**

If on-street parking is located within walking distance (one-quarter mile) of off-street parking, its base price is set equal to the closest off-street parking's base price. Otherwise, it is set to some agreed-upon value, like fifty cents per hour. However, on-street parking has a special meaning for downtown merchants and for neighborhoods, two powerful political forces in any city. Merchants that have few cars parking on their street, even though it is permitted, are probably falling in their business. They would like free parking to help draw visitors to their store front. Neighborhoods that are not impacted by parking would probably prefer no parking. For these reasons, for any on-street parking, no price is charged until the cluster occupancy reaches 50%. (Time of day is irrelevant.)

**Congestion Pricing**

The time-rate price of parking is dynamically set on each cluster of parking, to prevent the occupancy rate from exceeding 85% to reduce the need to drive around looking for parking. An 85% occupancy rate (15% vacancy) results in just over one vacant parking space per city block. If the vacancy rate is above 30%, the price is left at the baseline hourly rate. If vacancies fall below 30%, the price can be calculated in a step-step method, such as shown in Table 2.

Equation 2 is an alternative method.

In either case, the total charge is time parked, multiplied by the time-averaged, time-rate price. The base multiplier would be adjusted to be just large enough to keep the vacancy rate from falling below a desired level, such as 15%, so it is always easy to find parking.

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\[^{1}\text{This includes money for policing, cleaning, maintenance, any applicable parking tax, and all collection costs. Collection costs will need to include an amount to recover the development and installation costs of Off-Street Parking.}\]
Table 2  Hourly Rates for 2 Base Multipliers and a Baseline Hourly Rate of $0.52

<table>
<thead>
<tr>
<th>Vacancy Rate</th>
<th>Base Multiplier = 2</th>
<th>Base Multiplier = 2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiplication</td>
<td>Hourly Rate</td>
</tr>
<tr>
<td>Above 30%</td>
<td>$a$</td>
<td>50.52</td>
</tr>
<tr>
<td>25% to 30%</td>
<td>$b$</td>
<td>$6.24$</td>
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<td>20% to 25%</td>
<td>$c$</td>
<td>$4.08$</td>
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<tr>
<td>15% to 20%</td>
<td>$d$</td>
<td>$4.16$</td>
</tr>
<tr>
<td>10% to 15%</td>
<td>$e$</td>
<td>$3.32$</td>
</tr>
<tr>
<td>5% to 10%</td>
<td>$f$</td>
<td>$2.64$</td>
</tr>
<tr>
<td>Below 5%</td>
<td>$g$</td>
<td>$2.28$</td>
</tr>
</tbody>
</table>

\[
\text{Hourly Rate} = \text{Baseline Hourly} \times (\frac{B^{(20-V)}}{2}). \text{ for } V < 30; \text{Baseline Hourly, otherwise (Eq. 2)}
\]

where:
- \( \text{Baseline Hourly} \) = the baseline hourly rate to park,
- \( B \) = the base of the multiplier being computed, such as 2.50,
- \( V \) = the vacancy rate percent, such as 17.5, for 7 vacancies in a cluster of 40 spaces, \( 100 \times \left(\frac{7}{40}\right) = 17.5 \).

For the example values given, the hourly rate of parking would be $9.88 per hour.

Pricing Predictions and Notifications

Drivers will develop strategies for their routine trips. The computer system that keeps records of parking use will also provide help for users. The Intelligent Parking website will direct a user to an appropriate cluster of parking if the user provides the destination location or locations, the time and date, and the hourly rate they wish to pay. If the walk is going to be long, the website could suggest using transit to get from the cheaply-priced parking to the destination. In such cases, the website may also suggest using transit for the entire trip.

Another user option is to specify the time, location, and the distance the user is willing to walk. In this case, the computer would give the cheapest cluster of parking available at the specified walk distance. The price prediction would be provided.

All price predictions would also have a probability of correctness associated with them. If a user can show that a computer has predicted a much lower price than what actually occurred, with a sufficiently high probability, it would be reasonable to charge the user the predicted price rather than the actual price.

Websites could routinely inform viewers when occupancy rates are expected to be unusually high, due to a special event (for example, a sporting event). The parking system website will always give current and predicted hourly rates for all locations. The hourly rates of parking will
also be available at a phone number and possibly at pay stations. The base-price hourly rate, for any parking cluster, would be stable and could therefore be shown on signs. Parking garage entrances could have large video screens showing both predicted and existing price. Users will also learn to look at parking and judge whether congestion pricing applies, or could apply, while their car is parked. It would not be long before these capabilities are added into GPS navigation systems.

Prepaid RFID

To be inclusive, pay stations or convenience stores will offer a pre-paid RFID that can be set on the dashboard of a car. This will support drivers with poor credit or drivers who have not obtained the necessary equipment to support the normal, trouble-free methods. This will also work for drivers that do not trust the system to protect their privacy for a certain trip (by removing or disabling the permanent RFID) or for all trips. No billing would occur.

Enforcement

The system would notify the appropriate law enforcement agency if an unauthorized car was parked. Authorized cars would need either a pre-paid RFID or equipment indicating that their owners had Intelligent Parking accounts and were sufficiently paid up on their bills.

IMPLEMENTATION

This description of Intelligent Parking will help to implement efficient parking systems. Parking at train stations, schools, and government buildings could introduce many of these concepts. This description of Intelligent Parking is sufficient to support a “Request for Proposal” process, which could lead to full implementation. Widespread installation should be done by a government agency, to minimize actions required on the part of the private sector. Laws would simply require the cooperation of all private-sector and government entities.

SUMMARY

A parking plan, Intelligent Parking has been described.

1. Technology will make it easy to use for most drivers.
2. Its parking is almost always shared, to support mixed uses.
3. It unbundles cost by charging and having earnings go to the parking beneficiaries.
4. Traditional groups, such as single-family home owners, employees, tenants, train riders, and students benefit from parking. The benefit is equal for drivers and non-drivers.
5. Baseline prices are computed primarily from the value of the parking and an agreed-upon rate of return. On-street parking is free until it is half full, at which time its base price often matches that of the closest off-street parking.
6. For all parking, price is dynamically increased to guarantee availability. Earnings are therefore only limited by what people are willing to pay.
7. Technology helps drivers find parking and decide if they want to drive or use transit.
8. Prepaid RFID provides service to those who have poor credit or don’t want to be billed.
9. Disabled and perhaps low-income drivers will have accounts that allow them to park at reduced prices and perhaps avoid congestion pricing. Specially designated spots might also be required for disabled drivers.
10. The system will provide reports showing where additional parking would be a good investment and where it would be wise to convert existing parking to some other use.

11. Privacy will be protected. Law enforcement officials would need a search warrant to see where someone’s car has been parked. The level of detail on billing would be selected by the car’s owner.

12. Implementations could begin in carefully selected locations and expand.

Global warming, air pollution, trade deficits, and fairness are some of the significant reasons that governments have a responsibility to implement Intelligent Parking.

ACKNOWLEDGEMENTS

The following people have offered encouragement, specific information, and/or special insights.

Dr. Dennis Martinik, Oceanside Planning Commissioner; Sandra Goldberg, California Deputy Attorney General; Jerry Kern, Oceanside, City Council; Amy Volk, Principal Planner, City of Oceanside; Dr. Nilmini Silva-Send, Senior Policy Analyst of the Energy Policy Initiative Center; Diane Nygaard, Director of Preserve Calaveras and founder of Nelson Nygaard, Consulting Associates; Lisa Rodman, Trustee, Carlsbad Unified School District; Dr. Michael McQuary, President, La Jolla Democratic Club; Joan Bullock; Judy Jones, San Diego County Central Committee, California Democratic Party; Patrick Siegman, Principal and Shareholder, Nelson Nygaard; Andy Hamilton, San Diego Air Pollution Control District; Renee Owens, Conservation Chair, San Diego Sierra Club; Caroline Chase, Executive Committee Chair, San Diego Sierra Club; Ed Mainland, Co-Chair, Energy-Climate Committee, Sierra Club California; Bern Grush, Chief Scientist, SkyMeter Corporation; and the following San Diego County Government (SANDAG) employees: Susan Baldwin, Senior Regional Planner; Bob Leiter, former Director of Land Use and Transportation Planning; Colleen Clementson, Principle Planner, and Stephen Vance, Senior Regional Planner.

REFERENCES


KEYWORDS

A&WMA, Parking, Unbundled, Shared, TDM, cash-out, pricing, beneficiary, greenhouse gas, GHG, GPS, RFID
Q-34
Attachment 5: Power Point Presentation to Board, “Governor’s Executive Order S-3-05 and SB375 Target Implications for SANDAG, May 13, 2011. Presented by Mike Bullock and Ellen Schively. Please refer to Master Response 5 for a discussion of CEQA’s requirements for responding to documents either attached to EIR comment letters or incorporated by reference. This attachment provides opinions regarding climate change, S-3-05 and SB375 in relation to the RTP/SCS project, and does not include any Draft EIR-specific comments. Please refer to Master Response 2 for a general discussion of the relationship between the Executive Order and SB 375.
Our Climate Crisis

- Keeling Curve:
  
  Atmospheric Carbon Dioxide
  Measured at Mauna Loa, Hawaii

http://en.wikipedia.org/wiki/An_Inconvenient_Truth#Scientific_basis
Our Climate Crisis

- From: http://en.wikipedia.org/wiki/An_Inconvenient_Truth#Scientific_basis

Temperature and CO₂ Records

S-3-05's goal is to cap CO₂ at 450 PPM

Current Level of CO₂ is 390 PPM
Our Climate Crisis

Earth & Space Research (ESR) website:
http://www.esr.org/outreach/climate_change/mans_impact/man1.html

S-3-05’s Goal is to cap CO2 at 450 PPM, which is off this chart.

Current level = 390 PPM
S-3-05, Signed in 2005

- GHG Emission Trajectory:
  - 2000 levels by 2010
  - 1990 levels by 2020 (AB 32)
  - 80% below 1990 levels by 2050

- Achieved by Plans, & Status
  - Every 2 years
  - For transportation plans

  CALTRANS & CARB → Cal EPA → Governor

If the world achieves these reductions, our levels of atmospheric CO2_e will be capped at 450 PPM. However, 350 PPM is needed for climate stability. We are at 390 now. The world must stop burning fossil fuel by 2050.

The remaining charts are about transportation.
Trajectories to Support Calculations

Purple (Low carbon fuel), Green (CO2/Mile), & Gold (S-3-05)

Figure 1: Increasing VMT Threatens to Overwhelm Greenhouse Gas Savings From Cleaner Fuels and Vehicles

In San Diego County, 41% of GHG emissions come from cars and light-duty trucks.
### SB 375’s Per-Capita VMT Reduction for 2035, to Support S-3-05

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Definition</th>
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<tr>
<td>f</td>
<td>net factor of the emissions of Greenhouse Gas</td>
<td>Gold Line(^1)</td>
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<tr>
<td>f_Pavley</td>
<td>factor of the average statewide mileage</td>
<td>Green Line(^1)</td>
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<tr>
<td>f_Fuel</td>
<td>factor of the reduction of GHG due to low-carbon fuels</td>
<td>Purple Line(^1)</td>
</tr>
<tr>
<td>f_Population</td>
<td>factor of the population in the region of interest</td>
<td>CARB(^2)</td>
</tr>
<tr>
<td>f_PerCapitaVMT</td>
<td>factor of per capita driving</td>
<td>Computed</td>
</tr>
</tbody>
</table>

\(^1\)From the Chart constructed by Steve Winkleman, as shown in the "Guide to SB 375" report.


\[
f = f_{\text{PerCapitaVMT}} \times f_{\text{Population}} \times f_{\text{Pavley}} \times f_{\text{Fuel}}
\]

\[
f_{\text{PerCapitaVMT}} = \frac{f}{(f_{\text{Population}} \times f_{\text{Pavley}} \times f_{\text{Fuel}})}
\]
Per-Capita VMT Reduction for 2035, as Required by S-3-05

\[ f_{\text{PerCapitaVMT}} = \frac{f}{(f_{\text{Population}} \times f_{\text{Pavley}} \times f_{\text{Fuel}})} \]

\[ f_{\text{PerCapitaVMT}} = \frac{0.525}{(1.313 \times 0.685 \times 0.9)} \]

\[ f_{\text{PerCapitaVMT}} = 0.649 \]

This is a 35.1% decrease in GHG or VMT.

Because \(0.649 \times 1.313 = 0.8515\), in 2035, the people in San Diego County must drive 15% less than they did in 2005, even with the 31.3% increase in population. Therefore, why add lanes?
Strategies to Achieve 35%

• Stop expanding freeways
  – No need, because we must drive less
  – Eliminate congestion with following strategies

• Reallocate freeway expansion funds to transit

• Pricing to increase fairness & choice
  – Parking demonstration projects to unbundle cost
  – State legislation
    • Unbundle the cost of all “free” parking
    • Equitable and environmentally-sound road-use fee pricing

• Smart growth, complete streets, bicycle education
San Diego County Voter Preference

- Opinion poll of San Diego County Voters
  - Fairbank, Maslin Maullin, Metz & Associates
  - Sept 14, 2010

Preference, Between Expanding Transit or Roads & Highways

- Expanding public transit, including buses and rail: 55%
- Expanding roads and highways: 32%
- Both, neither, don’t know: 13%
Background Charts

Mike Bullock
mike_bullock@earthlink.net
760-754-8025
SB 375, Year 2035 VMT Reduction Summary

• 13%, request from SANDAG, to CARB
  – Claim: this was “Aggressive but Achievable”

• 13%, from CARB to SANDAG
  – Official target
  – Parroted claim “Aggressive but Achievable”

• 19%, SANDAG current calculation in RTP
  – Proves CARB failed to verify level of “Aggressiveness”

• 35%, value needed to achieve S-3-05
  – Correct minimum value
CARB’s Culture of Avoidance

----- Original Message ----- From: Withycombe, Earl@ARB
To: Mike Bullock
Sent: Monday, August 16, 2010 9:02 AM
Subject: RE: Your Draft

Hi Mike,
I have drafted a response to your question, and management is reviewing it. When I get approval, I will get back to you on the 2035 question. Thanks for your detailed analysis.

Earl Withycombe, P.E.
South Coast AQMD Planning Liaison
Planning & Technical Support Division
California Air Resources Board
916-322-8487 voice
916-322-3646 fax
ewithyco@arb.ca.gov email

Bullock’s Note:
Earl then called me and told me his management told him to never email me information about my question, which was why didn’t CARB’s SB 375 targets, for 2035, have to support S-3-05. Please do not be an accessory to CARB’s violation of S-3-05.
Global Warming Background

We must act decisively, now

• The June *Scientific American* states that the warming caused by the level of equivalent CO2, expected (!) within a few decades, will result in a 5% chance of an increase of 14.4 Degrees Fahrenheit and that this poses a risk of “a devastating collapse of the human population, perhaps even to extinction.”
21st Century Transportation Solutions

- Redesigned rail or monorail systems
  - Electric, automated, 24/7, frequent service
- Commitment to clean-bus technology
- Equitable driving fees to reduce taxes
- Unbundled car parking cost
Attachment 6: Letter, Bullock to Andrew Martin, Senior Regional Planner, SANDAG, Transportation-Related Comments Re: the Preliminary Draft of RCAP of January 14, 2010; January 27th, 2010. Please refer to Master Response 5 for a discussion of CEQA's requirements for responding to documents either attached to EIR comment letters or incorporated by reference. This attachment provides comments on the Regional Climate Action Plan (RCAP), not on the RTP/SCS and does not include any Draft EIR-specific comments. To the extent the attachment addresses issues relevant to the analysis of GHG emissions in the RTP/SCS EIR, please refer to Master Response 2.

Michael Bullock
1800 Bayberry Drive
Oceanside, CA 92054

Andrew Martin
Senior Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Subject: Transportation-Related Comments Re: the Preliminary Draft of RCAP of January 14, 2010

Dear Mr. Martin,

Please add the following list of references to your draft report:

1. Communities Tackle Global Warming, A Guide to California’s SB 375


   http://www.senate.ca.gov/ftp/SEN/COMMITTEE/STANDING/TRANSPORTATION/ home/02-24-09Hornettestimony.doc


I would now like to comment on many of the sections of the subject document. I will use your same headings of these sections.

Bullock to Andrew Martin 1 of 27 January 27, 20010
Introduction

This is a very well written and informative section. It is correct to point out the possible loss of “favorable ecological conditions” and about the risk of “tipping points”. However, readers may still not get a sense of the grave danger that we face or see that there is a probabilistic nature to this problem. Global warming could produce an outcome far more severe than what most people probably realize.

Therefore, something like the following words (reference and citation) should be added:

The June 2006 issue of Scientific American (The Ethics of Climate Change, by Professor John Broome) reports that the levels of GHG expected in 20 years will result in a 6% chance of a 14.4 degree Fahrenheit increase in the earth's temperature and this would be an “utter catastrophe” and create the possibility of a “devastating collapse of the human population, perhaps even to extinction”.

Following this dire warning, something like the following should be added:

This means that regardless of governmental targets, we should employ all feasible measures to reduce GHG emissions. It is conservative to view the AB32 target reductions as levels that, at the very least, must be met. We must do better than those targets, if it is feasible to do so. In other words, beyond what might be legally required, all governments should adopt an AMARP (as much as reasonably possible) approach to GHG reductions. It should also be pointed out that the AB32 limits were conceived when it was believed that 450 PPM of CO2e would be reasonably safe. Most experts now believe that any value above 350 PPM is unsafe. We are currently at 390 PPM.

In subsection Climate Change and SANDAG Regional Planning, several important points need to be added. In the green box titled SANDAG Transportation and Land Use Planning Integration, under the subheading, 2030 San Diego Regional Transportation Plan, the following sentences needs to be added, unless your intent is to mislead the Board:

Unfortunately, the 2030 RTP, adopted in 2007, would increase our freeway system vehicle-lane-miles by 38%. This freeway expansion will increase VMT. It has been pointed out that trying to cure traffic congestion by adding more capacity is like trying to cure obesity by loosening your belt. Los Angeles is a perfect example of the phenomenon known as induced traffic.

Under SANDAG Climate Action Plan Overview, you state,

Regional and local governments have authority and influence over three essential areas that contribute to climate change and are threatened by its impacts:

1. Land use patterns, transportation infrastructure and related public investments
2. Building construction and energy use
3. Government operations
“Transportation infrastructure and related public investments” could include parking but this may not be apparent to many readers. Local governments have off-street parking ordinances. They also control the cost of on-street parking. They also get heavily involved in the building and operating of off-street parking. Governments and our transit districts also control parking at train stations. All of this may or may not be covered in the words “transportation infrastructure and related public investments”. However, given the important link between parking policy and VMT, these items should be referred to explicitly.

Under “SANDAG Climate Action Plan Guiding Principles” you have, “MINIMIZE GHGS RELEASED WHEN VEHICLES ARE USED Programs to manage demand for vehicle trips, such as carpooling, vanpools, and telecommuting, and promote efficient travel conditions are an emphasis in regional transportation planning.”

This leaves out some of the best strategies and makes a very questionable value judgment on the current state of regional transportation. It should be replaced with this:

MINIMIZE GHGS RELEASED WHEN VEHICLES ARE USED Programs to manage demand for vehicle trips, such as priced parking, unbundling the cost of parking, car-parking cash-out, carpooling, vanpooling, and telecommuting, and promoting efficient travel conditions could be an emphasis in regional transportation planning.

Under “SANDAG Climate Action Plan Guiding Principles” you also have, “PRICE TRANSPORTATION MODOES TO REFLECT THEIR CLIMATE IMPACTS Transport pricing signals lead to travel behavior that supports regional GHG emissions reductions.”

This is unrealistic and unacceptably vague. It should be replaced with this:

PRICING STRATEGIES ARE REQUIRED BY OUR RTP GUIDELINES BECAUSE THEIR POTENTIAL TO REDUCE DRIVING IS SIGNIFICANT.

Get parking policies adopted that will reduce driving and ask the state to adopt a variable and comprehensive road-use fee pricing system, as will be implemented in the Netherlands in 2012. Transportation pricing signals lead to travel behavior that supports regional GHG emissions reductions.

Framework for Climate Action

Under the heading, Senate Bill 375, there is a very well-written, brief description of the SCS. What is lacking is a description of the APS and a recommendation that a goal of SANDAG should be to not need an APS, as difficult as this might be.

Also under that heading, to provide an understanding of the required reductions in driving needed, even with the AB1463 reductions in the average CO2 per mile of California’s fleet of cars, as a function of year, the following two figures are needed.
Driving Reductions Required

California, Assuming Figures 1 & AB 32 Targets

<table>
<thead>
<tr>
<th>Year</th>
<th>With Respect to Now</th>
<th>With Respect to BAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>-5%</td>
<td>16%</td>
</tr>
<tr>
<td>2025</td>
<td>4%</td>
<td>32%</td>
</tr>
<tr>
<td>2030</td>
<td>11%</td>
<td>43%</td>
</tr>
<tr>
<td>2035</td>
<td>20%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Notes: 1July 1, 2009 2Business As Usual for the year (California)

AB 32 is based on 450 PPM, instead of 230 PPM.

\[
\begin{align*}
450 & \div 230 = 1.96 \\
\text{or} & \\
350 & \div 230 = 0.78
\end{align*}
\]

The 0.78 value suggests 29% GHG should be down 22% from 1990. We need to drive even less than this table indicates.

SMART GROWTH LAND USE AND LOW-CARBON TRANSPORTATION
The first paragraph should expand item (3) to read, "land use and transportation planning that are coordinated and transportation measures and policies that are determined to be feasible."

Under "GOAL 1. REDUCE TOTAL MILES OF VEHICLE TRAVEL", the first paragraph states, "For example, statewide projections indicate that California will not achieve the long-term 2050 goal for emissions reduction unless VMT is reduced by at least 17 percent. The trend of VMT growth must be slowed, stopped, and even reversed in order to successfully lower GHG emissions from the on-road transportation sector."

It is not clear what the 17% refers to. Is it the "Business as Usual", red line of the following figure, where the VMT is 170% of the 2006 value, in 2030 and it would be far greater in 2050? Including the 17% value with no explanation as to what it means is unacceptable.

Figure 1: Increasing VMT Threatens to Overwhelm Greenhouse Gas Savings From Cleaner Fuels and Vehicles

Figure 1 leads to results shown in the following table.

---

Driving Reductions Required
California, Assuming Figure 1 & AB32 Targets

<table>
<thead>
<tr>
<th>Year</th>
<th>With Respect to Now</th>
<th>With Respect to BAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>-8%</td>
<td>16%</td>
</tr>
<tr>
<td>2025</td>
<td>4%</td>
<td>32%</td>
</tr>
<tr>
<td>2030</td>
<td>11%</td>
<td>43%</td>
</tr>
<tr>
<td>2035</td>
<td>20%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Notes: 2July 1, 2009 3Business As Usual for the year (Caltrans)

AB32 is based on 450 PPM, instead of 350 PPM.

\[ \frac{450}{350} = 1.29 \]
\[ \frac{2030}{1990} = 0.78 \]

The .78 value suggests 2030 GHO should be down 22% from 1990. We need to drive even less than this table indicates.

Note that Figure 1 indicates, as shown in the table, that driving must be reduced 20% from July 2009, by 2035. The CARB value of 17% by 2050 makes no sense, unless they are assuming an incredible increase in the use of electric cars. Such speculation should be fully explained, not left unstated.

The SANDAG Board needs to hire an independent expert to reconcile the differences between the 17% value and what Figure 1 indicates is possible.

Objective 1a is described but no information is provided as to how effective it could be, especially by 2020, starting from an economy not favorable to development. Objective 1a continues promoting the Smart Growth Concept Map. This is the same map that was described as a plan for urban sprawl by DAG Sandy Goldberg, acting for the Attorney General of California. Objective 1a estimated GHG savings would be very low, showing the importance of other, more promising policy options, like the pricing of parking.

Objective 1b advocates for "Low Carbon" modes of transportation. It has no plan for funding, at a time when transit funding is being cut. It leaves out the best way to promote bicycle usage, which is providing education of how to ride a bicycle in traffic. The paragraph does contain the word "education" but it does not bother explaining what that would be. The San Diego Bicycle Coalition has a program designed to teach riding in traffic. It is up and running. It could be expanded as required. Objective 1b contains no estimates as to the potential of GHG savings. This would be difficult since the description is so vague. SANDAG has money to promote bicycle usage but no money for transit. SANDAG wastes most of its bicycle money on recreational trails.
Objective 1c, Manage Demand for Single Occupancy Vehicle Travel

Note: this subsection should instead be:

“Objective 1c, Reducing Driving by Offering New Choices”

This section should be the most important section in the RCAP. It does correctly point out that short-term reductions (2020 to 2035, I would say), will require pricing strategies. However, it then provides only a list of best practices, without explaining the significant potential of parking strategies or going to the trouble of explaining the difficulties in getting widespread implementation of “best practice” and not offering any strategies to improve on “best practice”, with a new strategy that could become feasible.

For starters “Managing Demand” is an unfortunate choice of words. The fact is that demand for driving is being increased by current policies that do not allow employees, tenants, students, train riders, and consumers to observe and avoid, by not driving, the high cost of parking. There is also an “environmental justice” issue, in that policies that harm the environment are unfair to all, but are particularly unfortunate for low income citizens. Driving correlates positively with income. Very low income people are not likely to own a car. When these people spend money at the mall, with “free” parking, do they get a reduced price? If there is “free” parking where they work, do they get the $4 to $10 per day value of the parking? If they live in an apartment complex, where there is “free” parking, do they get the $40 to $100 a month they should get if they don’t own a car? There are many reasons to eliminate or mitigate this economic discrimination.

There should be no doubt that the pricing of parking will need to be brought about in San Diego County, at locations where parking is currently “free”. Reducing Greenhouse Gases from On-Road Transportation in San Diego County (October 2006) http://www.sandiego.edu/apcd/ghg_policy makes this clear. The report assumes that all work locations with 100 employees or more will implement cash-out, to result in 12% less driving to work. The question as to how this would be brought about is unanswered.

With this background, the following sections should be added. This material was offered in my comments to the Regional Energy Strategy. Therefore the sections are shown as starting from 11. This should be adjusted to fit into the critically important Subsection “Objective 1c, Reducing Driving by Offering New Choices”

11 - Universal Unbundling the Cost of Parking

Summary Conclusion of This Section:

For many reasons, including the climate crisis driving the principle that we should reduce GHG “As Much As Reasonably Possible” (the AMARP principle), there needs...
to be a state government process (or regional) to produce a comprehensive description of an ideal, fully automated car parking system. (If the state will not do this then a set of cooperating MPO’s, or, if needed, SANDAG alone, must fund this effort.) Such an ideal system would fully unbundle the cost of car parking from all related money transactions in a way that: encourages the spontaneous sharing of parking; reduces driving to look for parking; limits parking-block occupancy to 85%; includes provisions for both on-street and off-street parking; protects struggling business districts; appeals to neighborhoods; requires no effort on the part of the drivers and those benefiting financially from parking, except to either pay their bills or cash their checks; mitigates impacts on low-income and handicapped drivers; and protect personal privacy. Reference 6 has a detailed description of such a system, although it needs more details in the equations that divide up the parking earnings among the individuals in the beneficiary groups.

I. Background Information:

1. The Threat of Global Warming and the Role of Driving in California

The June 2008 issue of Scientific American (The Ethics of Climate Change, by Professor John Broome) reports that the levels of GHG expected in 20 years will result in a 5% chance of a 14.4 degree Fahrenheit increase in the earth's temperature and this would be an “utter catastrophe” and create the possibility of a “devastating collapse of the human population, perhaps even to extinction”.

Transportation produces 40% of California’s GHG emissions and most of that is from cars and small trucks. The world’s leaders know this. They will be more likely to adopt the measures needed to avoid climate catastrophe if California demonstrates an unwavering commitment to climate protection.

According to the testimony of Justin Horner, Policy Analyst for the Natural Resources Defense Council, Reducing Congestion & Greenhouse Gas Emissions through Parking Policy, presented to the California State Senate Transportation and Housing Committee on February 24, 2009, “reducing global warming pollution from the Transportation sector rests on a “three-legged stool” of cleaner cars, cleaner fuels and reductions in vehicle miles travelled (VMT).

Also, “All three strategies are necessary to meet AB32 goals and the goal set out in the Governor’s Executive Order of 80% of 1990 emissions by 2050.”

2. The Promise of SB375 and the Role of Parking

SB375 requires Metropolitan Planning Organizations (MPOs, such as SANDAG and MTC) to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plans. The intent is to decrease vehicle miles travelled (VMT) by increasing density, zoning for mixed use and infill development, and reducing local and regional jobs-housing imbalances.

The land available for development around transit stations is often expensive and car parking, which is generally provided free to the user, is often already in short supply. Surface car parking only parks 120 cars per acre. The per-space construction cost for a parking garage ranges from $20,000 to $30,000; while for underground parking, it is $60,000 to $90,000. Therefore, it would be advantageous to scale back the
amount of the parking required for the various uses that might be desired around a transit station. However this will be difficult politically; no community wants insufficient parking.

Similarly, reducing the required parking in existing industrial parks (offices) could yield new land for infill housing. This would reduce the jobs-housing imbalance. If parking could be shared, it would create an additional efficiency, allowing for less parking. However, reducing the amount of required parking could probably not be done until it is demonstrated that there is more parking than is needed.

Mr. Horner’s testimony states, “In Growing Cooler, the definitive work on the relationship between climate change and urban form, the authors conclude that ember, more compact development can reduce household VMT by as much as 40%. While in some localities, the type of development envisioned in Growing Cooler requires zoning reform, many other localities already have zoning in place but find development intensities diminished, partly due to parking requirements.”

From the Findings and Declarations of SB518 (Senator Lowenthal), “…parking requirements greatly expand the built footprint and increase travel distances, thereby increasing vehicle miles traveled and reducing the viability of alternate transportation modes.”

Also, “The high cost of land, construction, and maintenance to provide free parking adds significantly to the cost of economic development, making many developments, especially those on infill or transit-oriented sites, financially infeasible and hindering economic development strategies.”

3. Pricing Parking, an Important Tool to Make SB375 Successful

Mr. Horner’s testimony states, “Since 1992, California law has mandated that certain employers offer parking cash-out (AB 2019, Katz), giving employees the option of a cash payment for their free parking space. In 1997, the California Air Resources Board analyzed several Los Angeles-area employers who participated in the program. Using surveys of employees before and after the introduction of parking cash-out, CARB’s report noted a 17% reduction in solo driving and a 64% increase in carpooling. VMT dropped an average of 12% per employee per year, the equivalent of removing one out of every eight cars driven to work.”

Referred to CARB’s Climate Change Scoping Plan, 2008, Mr. Horner’s testimony states, “But while many of the land use reforms envisioned in the Scoping Plan and SB 375 may take years to realize, parking reforms can be done now, at relatively low cost, and have a major impact. They are the proverbial low hanging fruit.”

From the Findings and Declarations of SB518 (Senator Lowenthal), “Eliminating subsidies for parking has enormous potential to reduce traffic congestion and greenhouse gas and other vehicle emissions by reducing vehicle miles traveled. If drivers must pay the true cost of parking, it will affect their choices on whether or not to drive. In the short term, changes to parking policy can reduce traffic congestion and greenhouse gas emissions more than all other strategies combined, and they are usually the most cost-effective.”
Also from the Findings and Declarations of SB518, "The existence of "free" parking is a significant factor that encourages vehicle trips. At employment sites, employer-paid parking increases rates of driving by as much as 22 percent."

4. Reformed Parking Policies will Increase Fairness
From the Findings and Declarations of SB518 (Senator Lowenthal), "Free parking at stores is paid for by all customers in higher prices for goods, including those customers who do not drive. Free parking in housing developments is paid for by all residents, even those who do not drive. Free employer-provided parking is paid for by lower wages for all workers, including those who do not drive. Free on-street parking is paid for by the entire community in the form of taxes."

Again, Mr. Horner’s testimony states, "By encouraging driving, free parking also creates a number of driving-related externalities, including collisions and collision-related injury, conventional air pollution and greenhouse gas emissions."

5. Drawbacks to “Best Practice” Car Parking Cash-out
Current, state-mandated parking cash-out (AB 2019) rarely applies. AB 2019 only applies if companies have at least 200 employees, own no parking, are leasing a building that has no parking, and are leasing parking for their employees in a contract that allows them to change the number of parking spaces being leased, with no economic penalty. It is easy to design a contract that makes AB 2019 inapplicable. Despite this, companies that own or lease buildings with parking have occasionally elected to pay their employees extra money for not driving. However, these companies are free to pay any amount, including one so low that it will not reduce driving significantly. Unbundling the full cost of the parking for employees requires reasonable estimates of the per-unit-time value of the car parking.

6. Drawbacks to “Best Practice” Unbundling
Again, Mr. Horner’s testimony states, “unbundling separates the cost of parking from the total cost of housing. This rewards those who do not choose to own a car with more affordable housing, while transferring to car owners the true, rightful cost of owning an automobile.”

The problem with this method of unbundling is that it does not encourage the spontaneous sharing of parking. If a condominium owner elects to buy a parking space, it is theirs, full time. Likewise, if an apartment resident elects to rent a car-parking space, it is theirs, full time.

This type of unbundling is better than bundled parking cost, but it is not optimum because it does not support the spontaneous sharing of parking.

7. Drawback to Current Systems of Timed Parking and Timed, Pay Parking
About 67% of the money collected in parking meters is spent on collection and enforcement. Time limits on parking detract from a driver's enjoyment. The driver has to note when they started to park and then, as the time left gets short, they have to worry about getting an expensive parking ticket. Only rarely does a driver know exactly how long they will want to park. These types of concerns detract greatly from
the downtown experience. Drivers either have to drive away with time left on their parking meter or risk getting a traffic ticket. Getting coins for a meter is sometimes difficult. Pay stations are better, but even the most advanced systems are still difficult. For example, motorists in Coral Gables, Florida can register their cell phones, credit cards, and license plates and then call in when they pull into a parking place and then call again when they leave. This eliminates overpaying or underpaying and getting a ticket, but it is still difficult, because two actions are required. It is always better to do nothing and have the perfect outcome ensue.

8. Poor Record Keeping

Generally, there are no records kept of how much money any given parking space is earning. Free parking is also generally unmonitored. Cities pay significant fees to have consultants come in and count parked cars to determine such things as how often (and when) “free” parking is being used, how well time limits are being adhered to, and other questions that could easily be answered by computer programs when automation is installed.

9. “Congestion Priced” or “Convenience Priced” Parking

This means that the base price is instantaneously increased to prevent the occupancy rate from getting too close to 85%. This maximum occupancy rate has been identified by UCLA Professor Donald Shoup. Keeping occupancy below this threshold guarantees that anyone that is willing to pay a premium price can find a parking place, even in high-demand areas, without needing to drive around looking for a parking space. Tables 2 and 3 of Reference 6 provide the algorithms.

10. How to Fully Unbundle the Cost of Parking to Support Sharing

The full cost must be visible and avoidable. Here’s what this means in more detail.

a. Requirement 1

The base, per-unit-time price (before any congestion-price increase) must be at least the current cost to provide the parking multiplied by the time rate cost of money, divided by the fraction of the time that the space is rented.

b. Requirement 2

In order to state the second requirement, it is useful to define the term, “beneficiary group”. The beneficiary group is generally that group of potential users that paid for the parking, either directly or indirectly; or those that are paying for the parking, either directly or indirectly. The exception is at, for example, a school or a transit station. In these cases, the potential users have not paid for the parking. However, since the baseline is “free” parking, it is clear that the providers of this parking (often tax payers) are content to (in effect), “give” the parking to the groups using the facility. The second requirement can now be stated. The parking lot’s earnings should be divided up among the members of the beneficiary group that is associated with the parking.

c. How to Compute Each Beneficiary Member’s Share of the Parking Lot Earnings
The formulas used to divide up the money among the members of the beneficiary group should reflect either the extent to which they paid, the extent to which they are paying, or the extent to which they are consumers of the service associated with the parking. For example, students would receive earnings in proportion to the time they spend at the school. Train riders would receive earnings in proportion to the amount of time they spend on round-trip train rides. Shoppers would get earnings in proportion to the amount of money they spend. Renters would get earnings in proportion to the amount that their rent is paying for parking. Condominium owners would get earning in proportion to the amount that their purchase price paid for parking. Employees would get earnings in proportion to the amount of wage they are losing so that the parking can be available. Alternatively, employees could get earnings in proportion to the amount of time they spend at work.

d. Why This Method of Unbundling Supports Sharing

With this method, sharing is acceptable to the beneficiary group, because they are earning money from anyone who uses the parking.

11. Concerns for the Economic Health of Downtowns

Merchants and their advocates within government often fear that charging for parking will cause potential customers to go to locations with “free” parking. For this reason, it is important that on-street parking be free until it is 50% full, at which point it is assigned a base price equal to the base price of the closest off-street parking.

12. Helping Potential Drivers Decide Whether They Want to Drive and If So, Where to Park

Software can be developed so that a potential user can specify time, place, (or a set of time and places) and desired price and be given (on a computer or on a phone) parking locations, with a probability of accuracy. It will also give transit information. This will encourage “park once” behavior, walking, and a rational decision as to whether or not the trip should be made by car. It will minimize driving because no search for parking will be necessary.

II. Arguments in Favor:

1. Global Warming Imperative to Eliminate “Free” Parking

The background material makes it clear that “free” parking must be replaced with priced parking if California is going to meet its AB32 responsibilities.

2. Overcoming Resistance

There is sure to be resistance to this idea. That resistance will be minimized by defining each type of parking’s beneficiary group and then operating the parking for the benefit of those in the beneficiary group. It will also be minimized if the parking is fully automated so that those that are paying for the parking are getting convenience. Those earning extra money are sure to be pleased. Those paying more than they are earning from the parking will understand that the new system allows them to no longer take money unfairly from their beneficiary-group colleagues that drive less.
3. Sharing of Parking, Protecting Low-Income Drivers, Handicapped Drivers, and Privacy

This method of unbundling will support sharing. Sharing of parking will allow less parking to be built. This will support the goals of mixed use and increased density, especially around transit stations. Since all potential drivers must have a "billing address" (some will never get a bill; they will only get a check), it will be easy for the system to also identify handicapped or low-income drivers. These drivers will get either a reduced rate or free parking. Privacy will need to be protected.

Congestion (or "Convenience") pricing should be supplied so that occupancy rates are held below 85%. This will help to minimize driving to look for parking. It will also maximize the earnings for beneficiary groups that are lucky enough to be associated with parking that is well used.

Business districts will be less opposed if they see that if there is light demand for parking, no charge will be applied for the most convenient parking, which is on-street parking.

4. Parking at Train Stations

Paying riders that ride round trip their fair share of the parking lot earnings will mean that the parking lot is being operated to maximize ridership. If the parking is being offered at no charge, the parking is being operated to maximize driving to the station. With the charge, those that can get to the station without driving will be more likely to do so, leaving more parking for those that must drive. Those that must drive will be guaranteed a space, thanks to "convenience pricing". Convenience Pricing will also mean that each block of parking will have vacancy. This means that if a driver wants to spend "top dollar" for parking and park, for example, very close to the station platform, so as to catch a train, that option will be available. If the station happens to be in a downtown area, many of the cars in the parking lot will belong to those using the downtown. This will not hurt the riders because it will mean that they will earn more money from the parking. It is conceivable that the train riders could ride for almost no net money, if they get to the station without driving.

5. Purpose of Getting a Comprehensive Description

The description can be viewed by local governments, developers, and private investors. It can be used as a requirements document to support a full design and development. There can be a "request for proposal" (RFP) process. Parts of the resulting designs may lead to patents. The first companies that implement these systems will have an advantage in implementing them in other locations. Since car parking is known to exist almost everywhere, the business opportunity that this represents is nearly unlimited. Once the system has been shown to please all stakeholders in a real implementation, it will be time for the state to create an agency to implement these systems at the locations of their choosing. State law will require the cooperation of all concerned. This means that companies will get this ideal system installed for free, by doing almost nothing. This will similarly be true for all other types of locations.

6. Letter Showing that the Required Technology Could Be Easily Developed
Dear Carlsbad School Board,

I wanted to send a quick note discussing the technical feasibility of tracking cars into a lot without impacting students or requiring the need for gates. Mike Bullock and I have discussed this project; it can be accomplished straightforwardly by utilizing Radio Frequency Identification and/or Video Cameras integrated with automated license recognition systems. The cars would need to register with the system at the start, but it would be fairly painless for the users after the initial installation. The back end database system can also be implemented both straightforwardly and at a reasonable price.

This is not necessarily a recommendation of the proposal for unbundled parking. Rather it is strictly an unbiased view of the technical feasibility of the proposal to easily and unobtrusively track cars, both registered and unregistered, into a fixed lot.

Best regards,

David R. Carta, PhD
CEO Teluviris inc.
858-449-3454

12 - Comprehensive Road-Use-Fee Pricing System

Abstract This section contains a listing of road pricing principles. It provides an example of a road-use fee structure that supports the listed principles. Useful background information is provided. Arguments in favor of the presented example are presented.

Initial Note For many reasons, including the climate crisis and the "AMRP" principle stated above, a comprehensive road-use fee pricing system is needed. It would be optimal for the state to implement the type of system described in this section. However, the state has a long history of irresponsibility in pricing road use. It is hoped that global warming will change this. Certainly, all the MPO's in the state should be urging our state government to wake up and take action. If these efforts fail, the MPO's will have to proceed as best they can to implement as much of these road-use pricing system components as possible.

I. Road-Use Fee Principles

1. The first principle is that of "full-cost pricing". Driving has enjoyed a favored status in this state and in this country, resulting in sprawl, health-damaging pollution, global warming emissions, and congestion. We should advocate for the elimination of that favoritism in California, primarily by adopting this first principle.
2. Secondly, the current economic rewards for good mileage vehicles must not be eroded. Due to global warming, motorists need to “go electric” as soon as possible.

3. In addition, road-wear factors (primarily weight), the noise generated, and the pollution generated by each individual vehicle must be taken into account. This will increase fairness and support a shift to lighter, cleaner, and quieter vehicles.

4. The time and place of travel must be incorporated to reduce congestion.

5. Any road-use fee structure must do no economic harm to low-income drivers.

6. As road-use fee technologies evolve, privacy must be protected at each step.

II. An Example of a Conforming Road-Use Fee Structure

Condition 1

100% of the funding for all of the expenses of public roads, excluding those costs associated with future expansion (covered in Condition 3), comes from a road-use fee (that may include a fuel excise tax), that ultimately (as affordable technology can support) would contain the following Features:

1. VMT Fee A base, per-mile (VMT) component fee paid by all motorized vehicles for road construction and maintenance.

2. Carbon Fee An additional per-mile carbon component part is computed using an effective fee per gallon that is equal or larger than the fuel tax that this per-mile carbon fee might replace, to correlate with the amount of CO2 emitted. This could either be charged at the pump, as it is now done, or could be added to the VMT fee by using a price per mile computed by dividing the effective price per gallon by the charged vehicle’s (year and model) average mileage, in the units of mile per gallon.

3. Road Wear Fee An additional per-mile component part that is proportional to the vehicle’s (year and model) average weight, or other road-wear variable of the vehicle being charged.

4. Air Pollution Fee An additional per-mile component part proportional to the charged vehicle’s (year and model) average pollution level, to be used to compensate people, schools, businesses, governments, and corporations harmed by pollution, with this rate set for full compensation.

5. Noise Pollution Fee An additional per-mile component part proportional to the average noise pollution level of the charged vehicle, to compensate people, schools, businesses, governments, and corporations harmed by noise pollution, with the rate set for full compensation.

6. Congestion Fee An additional per-mile component part or, alternatively a multiplier, to account for either time and place, or instantaneous traffic flow rate, to reduce or eliminate congestion, with the proceeds of this fee (collection minus collection cost) used for either the expansion or the operation of transit systems that would tend to reduce this congestion.
7. **Low Income Relief**  A fractional multiplier that would reduce the total per-mile cost for drivers with a sufficiently low income and a sufficiently high need to drive, but only available for a period of calendar time sufficient for the driver to change their circumstance creating the need to drive, unless this is impossible. Section V’s Section 7 has more detail.

8. **Privacy**  Privacy protections so that where and when people drive, the vehicle they drive, and any Feature 7 advantage, is fully protected, unless a warrant is issued by a judge in response to substantiated allegations of a serious, felony crime.

**Condition 2**

The per-mile charges of Condition 1 must be large enough to fund yearly payments to the municipalities having large, limited access roads (AKA “freeways”) within their boundaries (thereby keeping land off of their property-tax rolls), with these yearly payments equal to the average yearly property tax per acre of the adjacent land, multiplied by the total acreage covered by the road’s right of way, including frontage roads.

**Condition 3**

No expansion of the system of public roads should be done unless market research and traffic modeling show that the net revenue of the proposed road or additional lanes will fund all the expenses identified in Conditions 1 and 2.

**Condition 4**

No expansion of the system of public roads should be done unless it is shown that the expansion will not negatively impact the state’s AB32 goals and responsibilities.

**Condition 5**

The sales tax on gasoline and diesel fuel should remain. Its revenue can be used as is the revenue from any other sales tax that is collected on consumer items.

**III. Background Material**

This section provides information about the current level of the fuel tax, the difficulty of raising the fuel tax, the use of the fuel sales tax, lane performance during times of high demand, demand under the condition of “full cost pricing”, political “push back” to full cost pricing, other opinions that a pure fuel tax is becoming obsolete, and finally, information indicating that a road-use fee could be raised by a simple majority in the state legislature.

**1. Current Level of Fuel Excise Tax**

A full accounting of the fuel excise tax and what it currently pays for is not our responsibility. A significant segment of the population probably believes that current fuel tax rates are high enough. However, a San Diego County newspaper, the North County Times (NCT), in a February 9, 2009 article, reported that the Chair of the California Transportation Commission (CTC) recently wrote that the fuel tax currently contributes nothing to road construction and only provides half of the money needed annually for repairs.
Increasing the state gas and diesel taxes, unchanged at 18-cents per gallon since 1994 – when the final one-cent increase mandated by Proposition 111 (June, 1990 that doubled the nine-cent excise fuel tax over a 5-year period) was added, is long overdue.

2. The Difficulty of Raising the Fuel Tax

To raise the fuel tax would require a 2/3rd majority vote of the legislature. In addition, according to a CNN report, http://www.cnn.com/2009/Politics/02/20/driving.tax/

“Officials including [Secretary of Transportation] LaHood have opposed raising the national gas tax, particularly in the current recession, and have said a new system is needed.”

3. Use of the Fuel Sales Tax

California has a sales tax on all consumer items sold in the state, except food and medicine. The revenues from sales taxes are generally placed in our state’s general fund. However, an exception to the general rule has been made for the sales tax on gasoline and diesel. By the conditions of a successful ballot measure, the sales tax on fuel must be used to support roads, which supplements the excise tax on fuel (also known as the “gas tax”), allowing the excise tax to be lower than necessary.

4. Lane Performance During Times of High Demand


As flow increases from zero, density also increases, since more vehicles are on the roadway. When this happens, speed declines because of the interaction of vehicles. This decline is negligible at low and medium densities and flow rates. As the density further increases, these generalized curves suggest that speed decreases significantly just before capacity is achieved, with capacity being defined as the product of density and speed resulting in the maximum flow rate. This condition is shown as optimum speed So (often called critical speed), optimum density Do (sometimes referred to as critical density), and maximum flow Vm. (7). In general, this maximum flow (i.e. capacity) occurs at a speed between 35 and 50 mph.

Efficient freeway operation depends on the balance between capacity and demand. In the simplest terms, highway congestion results when traffic demand approaches or exceeds the available capacity of the highway system. As vehicle demand approaches highway capacity, traffic flow begins to deteriorate. Flow is interrupted by spots of turbulence and shock waves, which disrupt efficiency. Then, traffic flow begins to break down rapidly, followed by further deterioration of operational efficiency.
For the purpose of this resolution the most important result is that when demand is allowed to significantly exceed capacity, the flow rate drops well below optimum. In fact, speed can drop to nearly zero. With no intervention, freeway lanes can be counted on to fail, just when they are needed the most.

5. Demand, Under the Condition of “Full-Cost” Pricing

The price-setting stipulations of Section II’s Features 1 through 6 of Condition 1, in conjunction with Condition 2, could be described as “full cost pricing”. It is not our responsibility to do an analysis to calculate what the average price per mile would need to be or to then determine how much driving would be reduced in reaction to this price. It could be that driving would decrease so much that congestion would disappear and the new problem would be to figure out what to do with the excess land buried under unneeded highway lanes and how to meet the large new demand for transit.

6. Political Pushback to the Notion of Full-Cost Pricing

There are many, well-funded “think tanks” and political figures and institutions that argue against raising the cost of driving. So far they have been largely successful in keeping the taxes on driving low.

7. Other Opinions That a Pure Fuel Tax Is Becoming Obsolete

There are many indications that more decision makers are adopting the view that the fuel tax either needs to be replaced or supplemented. We have undertaken no comprehensive search and evaluation to quantify this. However the following examples are presented, with the first three being taken from the same NCT article identified in Section-1 of this Section.

First the Chair of the CTC pointed out that, “People are driving more-fuel-efficient cars and ones that run on alternative fuels and buying less gas. As a result, they are paying less in gas taxes”. The author of the NCT article states that the CTC Chair and others are calling for “phasing out the gas tax,” in favor of a VMT fee.

Second, Will Kempton, director of the California Department of Transportation, told local officials in Valley Center recently “we need to make a transition to a new way of collecting transportation funds.” Kempton also said the state should consider following the lead of Oregon, which is exploring a tax based on the number of miles a person drives.

Third, Jim Earp, a California Transportation Commission member from Roseville, added, “Either that or we’re going to have to jack up the gas tax considerably.”

Fourth, the Christian Science Monitor editorial, February 27, 2009, “A road map to better US roads,” says, “Congress should heed a panel that suggests replacing a tax on gas with one on miles driven.”

http://www.csmonitor.com/2009/0227/p08e01-comv.html It goes on to say, “In Europe, the Netherlands will transition to a VMT by 2014 and Denmark by 2016. Changing behavior is the key to 21st century transport that must unlog crowded highways and reduce dependence on fossil fuels. Taxing miles alerts drivers to the real cost of using roads and can better motivate them to drive less. A VMT...
(fee) is the more reliable and efficient way to pay for transport. Its time has come."


Speaking to The Associated Press, Transportation Secretary LaHood, an Illinois Republican, said, "We should look at the vehicular miles program where people are actually clocked on the number of miles that they traveled."

8. Raising a Road-Use Fee Could Be Done By a Simple Majority

The Sacramento Bee printed an article by Dan Walters, on January 20th, 2009, describing a proposal to help close California’s budget gap.

http://www.nctimes.com/articles/2009/01/20/opinion/walters/zd5e6d64561b6e6f378825753e006c651a.txt

The key elements from the article are as follows.

1.) Senate President Pro Temp Darrell Steinberg, the scheme’s father, insists that it’s legal, basing that assertion on a 5-year-old opinion from the Legislature’s legal office.

2.) The plan would eliminate excise and sales taxes on gasoline and raise other taxes to help close the budget deficit, then "backfill" the gasoline taxes with a new "fee" that would actually increase the bite on motorists by 50 percent, from 26 cents a gallon to 39 cents. A "fee" can be imposed by a simple majority vote as long as it relates to actual services rendered by government.

Note that this fee approach is relatively far from meeting all of the stipulations of this report. However, it would represent significant progress.

IV. Arguments in Favor of Road Use Fees

This Section provides an analogy demonstrating why roads should be operated for the equal benefit of all. It presents some of the consequences of the current level of our state fuel tax. It argues that a road-use fee should include a vehicle miles traveled (VMT) component and that furthermore, a component should relate to congestion pricing (i.e. needs to account for specific time and place of travel). A road-use fee should account for environmental impacts, should protect low-income families, and contain privacy protections. It explains why revenue from a road use fee should be used to pay an effective property tax to municipalities. It argues that this resolution offers methods that would help to alleviate the state’s budget problems. It states that it is easier to discuss setting a road use fee than it is to discuss increasing an excise tax on fuel. Finally, it briefly discusses some of the emerging technologies and the relationship between technology and this resolution.

1. Full-Cost Pricing

Roads should be priced so that they are no longer an economic burden on those that choose to drive less than average. Yet, it is hard to be objective about roads. Here’s an analogy. Assume that California owned a large number of 2-bedroom apartments that it allowed families to live in if they paid a tax of $500 a month, even though the market
rental value of the apartments was $1000 a month. Clearly, the people living in the
apartments are the winners and all the other citizens of California are the losers,
because if the state set the price to the market value, it would have additional money
that it could either use for the benefit of all citizens or it could return the money to
everyone as a tax rebate. Some might note that since there are a large number of these
apartments, almost everyone that wants one could get one, so those that don’t live in
these 2-bedroom apartments are losing out because of their own poor choice. However,
since not every citizen wants to live in these apartments, the State’s practice is
indefensible. The correct thing for the state to do would be to allow low-income citizens
to remain in the rental units at the subsidized price of $500 a month, stop calling the
price-per-month a “tax” and instead call the price-per-month a “user fee”, and set the
price for the families that are not low income to the market value of $1000 per month. In
this case, the low-income families remain winners. Even though all the others are
losers, they are losing much less than before. This assumes that the state takes the
additional earnings and uses it in a way that benefits all citizens. Buying more 2-
bedroom apartments would not qualify. This analogy’s original operation is similar to
what California does by under pricing road use fees, as described below.

2. Consequences of the Current Level of Fuel Tax

a. Economic Inequity

Because our state fuel tax is too low, funds derived from taxes (and fees) that are not
related to the choice of driving a car must be used to support our system of public
roads. Examples are our sales tax, our income tax, our property tax, and the
development fees that increase many of our costs. In effect what is happening is that
money is systematically being taken from those that drive less and being given to
support those that drive more.

This violates a fundamental principle of our free market system. People should pay for
what they use and, conversely, people should not be forced to pay for what they do not
use. It is true that we often willingly violate this principle, for some higher purpose.
Education, mass transit, and Section 8 housing are good examples. However, there is
no valid reason to increase driving by making it artificially cheap to drive, or for that
matter, to park a car. The facts about global warming suggest quite the opposite.

b. Global Warming Threat and the California Example of Road-Use Pricing

According to an article in the June 2008 issue of Scientific American, The Ethics of
Global Warming (on Page 100 of the well-respected magazine), there is a 5% chance
that the level of CO2-equivalent gasses in our atmosphere, expected in just 20 years,
will result in a 14.4 Degree increase in temperature and this could result in “a
devastating collapse in the human population, perhaps even to extinction.”

From http://www.sandiago.edu/EPIC/ghoinventory/GHG-On-Road1.pdf.pdf we learn
that in San Diego County, emissions from on-road vehicles are about 46% of regional
GHG emissions. Item 4 of the Background Information of the CNRCC Resolution
Supporting Fuel Tax Increase (39-6-0) March 22, 2009, says that 40% of the state’s
GHG emissions come from transportation. Many world leaders know that many of our
citizens have taken all of the time and cost variables into account and then built their life
around their automobiles. How can we expect the world to do its part to reduce GHG emissions, if they see us unwilling to reform the way we price the use of roads, so as to conform to the basic free-market principles that we claim to hold dear?

c. Other Pollution

Besides GHG emissions it is well known that on-road transportation contributes significantly (around 50% by some accounts) to our air and noise pollution. Cars cause air and water pollution directly and indirectly. This occurs when they are manufactured, when their fuel is transported and refined (refineries are, by far, the biggest cause of ground-water contamination in California), and when they are driven.

d. Urban Sprawl

The dominance of the automobile is the primary reason for our sprawling, urban land-use patterns. For example, it is well known that a simple 4-lane freeway, with frontage roads, can consume 26 acres per mile. An acre of land can only park 117 cars. Sprawl has taken valuable farm land, wet lands, and wild-life habitat. It makes it more difficult to walk or to bicycle. It also makes it more difficult to provide or to use transit.

e. Summary Statement

GHG emissions, urban sprawl and air, water, and noise pollution are made worse by making driving seem artificially inexpensive to the public. Note that for every penny earned by raising the price per mile to drive to its correct value, a penny could be cut from other taxes and fees that are unrelated to driving. Secretary of Transportation Ray LaHood's statement shown in Section IV's Section 2 ("we can't raise the gas tax in a recession") shows that he misses this important point. This point has been made by the Sierra Club, as shown in http://www.sierrclu.org/policy/conservation/trans.aspx, where it says, of subsidies to driving, "These subsidies should be publicly scrutinized and eliminated by appropriate fuel and carbon taxes, parking and road user charges."

3. Section II's Condition 5, The Use of the Gasoline Sales Tax

As stated in Section III, 3, currently the sales tax on fuel must be used for the same purposes as the excise tax on fuel. This is contrary to the normal rule for sales taxes, whereby sales taxes are used for general-fund purposes, unrelated to the item sold. For example, the sales taxes from running shoes are not removed from the general fund to be used to build running facilities. Likewise, the sales tax on alcoholic beverages is not separated out to be used to subsidize the building of more drinking establishments. If we are going to end our unfortunate favoritism towards roads, we need to end the practice of using the sales tax from gasoline as if it were an additional fuel excise tax. This practice would be ended if the implied recommendations of this report were enacted. The sales tax on gasoline should continue, but the tax on the sale of gasoline should go to the general fund, as does the tax on the sale of other consumer items.
4. Reasons to Adopt Section II’s Feature 1, a VMT Based, Road-Use Fee

From a Global Warming perspective, there is a hierarchy of favored transportation modes.

Mode 0: Telecommuting (no need to leave the house)
Mode 1: Walking
Mode 2: Cycling (skate boarding and any other device-aided, non-motorized transportation mode)
Mode 3: Transit
Mode 4: Electric cars or cars that get great mileage
Mode 5: Other cars

In terms of reducing pressure to expand road capacity, Modes 0, 1 and 2 are many times more desirable than even Mode 4, which is many times better than Mode 5. The point here is that as much as we want to see more electric cars and more cars that get exceptional mileage, we should not lose sight of the fact that unless all road users pay their fair share, those people using Modes 0, 1 and 2 are not being fully rewarded for not using road capacity, and this is poor environmental policy, based on the desirability factors suggested. All cars are large, manufactured devices with a finite life. They promote sprawl. People that routinely use Modes 0, 1 and 2 have often set up their lives so that they could drive less. Those life-style choices need to be fully rewarded. The statements of Sections 2a and 2d of this Section apply.

5. Reasons to Adopt Road-Use Pricing Methods Tied to Specific VMT

a. Need to Support Section II’s Feature 6

The current fuel tax is simple and, in theory it could be raised to cover the costs of driving (for those vehicles that use fuel). Alternatively, it is easy to imagine odometers that transmit their values at scheduled times to a billing computer. With vehicle-recognition schemes, implemented at the pump or within the billing computer containing odometer data, it would be possible to expand these simple methods to support Section II’s Features 1 through 5, Feature 7, and Feature 8. However, these simple methods would not support Section II’s congestion pricing Feature 6, which is sufficiently important that it must be identified and supported.

b. Value of Section II’s Feature 6: Congestion Pricing

Various names have been proposed for Section II’s Feature 6, including “congestion pricing” or “convenience pricing.” Regardless of the name, it is a powerful way to reduce our society’s propensity for expanding highways. Proponents of freeway expansion frequently mention the fact that highway “gridlock” harms our public safety because it can significantly delay emergency vehicles. Individuals in society see this in personal terms. We can all imagine a need to get home to attend to a child, or to get to an emergency room. The consequences of congestion can go well beyond being just a frustrating inconvenience. Sometimes people feel that they would pay almost anything to be able to drive at higher speeds. How many people have missed a plane, or a train, or a critical business meeting, “stuck in traffic”? Besides this, lanes also often support...
transit. Transit success requires dependable and reasonably fast bus travel. In addition, stop and go traffic wastes fuel, increasing global warming and unhealthy emissions.

"Convenience Lanes" could provide an option for drivers when they feel it is worth the extra money to drive beyond congestion speeds. This pricing also provides a means to keep one or more lanes operating close to their theoretical capacity, instead of at the greatly reduced flow rate that comes when demand is large. (See Section III. 4.) The pricing can adjust automatically so as to keep demand below capacity, on one or more lanes. This means that congestion in parallel lanes will clear sooner than if all lanes were allowed to stay severely congested.

"Convenience Lanes" also offer the hope of significant revenue generation, if enough people are willing to, in effect, bid up the price. (This will probably happen if the "political pushback" of Section III. 6 "trumps" the condition of "full-cost pricing" in Section III. 5, meaning that the price of driving is kept low enough in regular lanes that there are still times and places where congestion is significant.) Section II’s Feature 6 would require that proceeds (collection minus collection costs) be used for transit systems that would tend to reduce the congestion. As stated in Section III. 4, the lanes and roads that are parallel to the “convenience priced” lanes can be counted on to fail to carry their capacity when serious congestion strikes. Fortunately, there is no comparable effect for transit. Although it is conceivable that transit demand could exceed transit carrying capacity, when this happens, the transit can be counted on to continue to carry its full capacity.

c. Section II’s Feature 6 and Road Price Variability

Some roads are relatively expensive to build; others are relatively inexpensive. There is no reason we have to settle for charging the same per-mile price for all roads. Similarly, driving at different times should be priced differently. It is well understood that freeways are sized and expanded to facilitate peak driving times. Since it is more costly to provide the added capacity needed at peak times, it is reasonable to charge peak-time drivers more. Charging more at the times that demand is high will tend to smooth out traffic demand over various times of the day.

d. Section II’s Feature 6 and Pollution

Section II’s Feature 6 can reduce congestion. This is important because stop-and-go traffic probably increases pollution and GHG emissions when compared to lanes operating at “optimum speed” as identified in Section III. 4.

e. Section II’s Feature 6 Supported by the CTC

These powerful arguments have evidently been recognized by the CTC. In their Addendum to the 2007 Regional Transportation Plan Guidelines, Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process, adopted on May 29, 2008, they provide strong support to lane pricing. 

In the CTC’s Pricing Strategies Section (Page 3), the CTC instructs Metropolitan Planning Organizations to “model adding pricing to existing lanes, not just as a means for additional expansion. Variable/congestion pricing should be considered.”
Variable/congestion pricing cannot be done without Section II’s Feature 6 of its Condition 1.

1. Arguments to Support the CTC’s Road-Pricing Guideline

Politically speaking, the Pricing Section took great courage on the part of the CTC. We should publicize the CTC guideline and defend it against critics. There is widespread confusion regarding who owns existing lanes and what promises were made. Converting existing, “free” lanes to be lanes that are priced can be justified by explaining that fuel taxes have always been road-use fees and that any stated or implied promise that paying fuel tax entitled drivers, for all time forward, to drive free on the roads that the fuel taxes may have been used to fund was specious. Specifically, the claim that drivers “already paid” for roads through the payment of fuel taxes is incorrect because (i) many drivers have just started driving; (ii) many drivers that paid fuel tax for many years have died; and (iii) paying a fee to use a public road is no different than paying rent to use property and paying rent does not lead to quasi ownership. These same arguments can be used against statements supporting the idea that drivers can forever drive free over a bridge because the tolls have paid off the loan for the bridge.

6. Reasons for Section II’s Features 2 – 5

These features charge vehicles for their environmental impacts.

7. Reasons for Section II’s Feature 7

The ability of low-income families to be able to drive to work and other essential family errands must be protected. However, given our challenge of global warming, this needs to be “constructive charity”. The features shown in Section II suggest that a billing computer will probably be involved. If so, that computer’s database can, perhaps at the individual’s discretion, be supported with information such as current housing details, current salary, job location, occupation and job skills to include a full resume, childcare, location of family and friends, hobbies, or recreational pursuits, and other items that could be related to the individual’s current need to drive. When the software determines that the person qualifies for a reduced multiplier of the full cost of driving (a subsidy), it could then also run various programs to offer, in creative, tailored, form letters, suggestions for changing circumstances to reduce driving. This could involve a search for jobs, a search for suitable housing, a search for daycare, and a search for better locations to pursue hobbies or recreational pursuits. The availability of transit would be considered in the software and would be offered. Job training could be suggested or offered at a discount. If circumstances support it, the person could also be asked if they would be interested in a class on riding a bicycle in traffic. Taking such a class could earn the person a financial award, perhaps to include a new or used bicycle. The software would put a high priority on helping the person achieve a lifestyle that requires less driving. As a last resort the software would take into account the congestion level of various routes and offer a driving route that requires a reduced subsidy. If no billing computer is involved, the person receiving the subsidy might be required to send in data to support the running of these programs to reduce driving and the subsidy to driving.

8. Reasons for Section II’s Feature 8
Privacy must be protected, unless confidential disclosure to law enforcement agencies is ordered by a judge based on reasonable cause. We currently rely on laws and judges to protect our privacy regarding what we say on the telephone, our emails, our internet activities, and the information we provide on our tax forms. This information could be both politically revealing and highly embarrassing, to the point where it could seriously degrade our personal and professional lives. In terms of protecting our democracy, it is especially important that our political activities be protected. Where we drive and park a car is also somewhat sensitive in this regard. However, in most cases it is less sensitive than our emails and what we say on the phone. Cell phone companies already have information about our travel. Many locations, such as Dallas, have “toll-tags” that record every time someone goes through a toll plaza and charges them accordingly. The conclusion is that the argument that many people will never accept a computer, with built in privacy protections, from having information about where we drive is overblown and not supported by the facts.

9. Reasons for Section II’s Condition 2

Railroads pay property tax on the land under their tracks. Utility companies pay property taxes on the land under their transmission lines. There is no reason that large highways should not pay a property tax for the land they take off the tax rolls in each community. The favored status of roads should be eliminated.

10. California’s Budget Problem

California currently has a large budget gap. Children may lose their health care and education cuts will probably be severe. State parks may close. Most of the state funding for transit has already been eliminated. This Section 12 strategy might help to reduce some of these cuts.

11. Raising the Fuel Tax vs. Pricing a Road-Use Fee

There are advantages in reframing the question from should we raise the fuel tax to: Should we replace the fuel tax with a road-use fee and, if so, how should we set the price of the road-use fee? Section III. 2 showed that a 2/3rds vote is needed in the state legislature to raise a tax; while, as shown in Section III. 8, only a simple majority is needed to set and then raise a user fee. Besides this, there are a lot of common misunderstandings about our fuel taxes. Many think they are a mechanism whereby drivers somehow buy new roads. This confusion was discussed in detail in this Section’s Subsection 5f. If we can move the discussion to one of how to properly set the price of road use, we will have already made large gains in framing the question to the advantage of environmentalists and everyone that recognizes that it is time to stop favoring driving.

12. Technology

It is not our responsibility to pick the technologies that will ultimately be used in the implementation of the road-use pricing described in the 4 conditions of this resolution’s Section II. Email and phone conversations with employees of “Skymeter”, http://www可以使hour.blogspot.com, indicate that they are ready to respond to a Request For Proposal (RFP) to implement VMT pricing in the Netherlands, to include every road in the country. Their proposal will be that each car will have a GPS unit,
about as large as an eye-glasses case, sitting on the dash. It will contain a database of roads and a variable set of pricing coefficients. The GPS software will determine the car’s location with sufficient accuracy so as to support software computing a running tabulation of charges, as the car is driven. They state that the final challenge was to design the software so that the unit would function when the car was being driven in the presence of GPS reflections, such as in city “canyons” which is to say around multiple large buildings. They have solved this problem with additional algorithms and have demonstrated this in the most severe conditions they could find. However, they don’t want to have to distinguish between lanes, suggesting that congestion pricing on large multi-lane roads, where pricing varies between parallel lanes, may require a Radio Frequency Identification (RFID) overlay pricing scheme, such as is currently used for toll tags.

There are probably several, perhaps even many, ways to accomplish road-use pricing that has the features described in this Section.

13 - Education and Projects to Support Bicycle Transportation

For many reasons, including the climate crisis and the “AMRP” principle stated in the Introduction of this RES, the elements of this section need to be adopted, even if the computer model of the SCS shows that our CARP target reductions are going to be met without these measures. The criteria for spending money for bicycle transportation should be to maximize the resulting estimated reductions in driving. The following strategies will probably do this.

Projects
Each of the smart growth place types, both existing and planned, shown in Figure 2 of Section 9, should be checked to see if bicycle access could be substantially improved with either a traffic calming project, a “complete streets” project, more shoulder width, or a project to overcome some natural or made-made obstacle. These projects should be prioritized using a cost/benefit ratio metric. It is hereby assumed that 40% of the $270M available for the Regional Bicycle Plan should be used to fund the projects. They should be selected for implementation, from top of the list (lowest cost/benefit ratio) down, until the money (about $110M) is used up. An example of one of these projects, for the proposed town center near the corner of I-5 and SR-78, is described in the “Existing Planning Efforts” of Section 9.

Education
The remaining 60% of the $270M, about $160M, should be used to
1.) Teach interested adults about bicycle accident statistics (most serious injuries occur to cyclists in accidents that do not involve a motor vehicle), car-bike accident statistics (most are caused by wrong-way riding and errors in intersections; clear cut hit-from-behind is rare), and how to ride in all conditions, to minimize problems.
2.) Teach riding-in-traffic skills and how to ride in other challenging conditions, by having the class members and instructor go out into real conditions and ride together, until proficiency is achieved.
Students that pass a rigorous written test and demonstrate proficiency in traffic and other challenging conditions are paid for their time and effort. These classes should be based on the curriculum developed by the League of American Bicyclists and taught by instructors certified by the League.

Assuming a class size of 3 riders per instructor and that each rider passes both tests and earns $100 and that the instructor, with overhead, costs $500 dollars, for a total of $800 for each 3 students, means that the $160M could educate $160M/$800 = 200,000 classes of 3 students, for a total of 600,000 students. This is about 20% of the population of San Diego County.

In Closing

Please feel free to call me about these ideas.

Highest regards,

Mike Bullock
1800 Bayberry Drive
Oceanside, Ca 92054
760-754-8025
Q-36
Attachment 7: Letter, Bullock to the Honorable President Richard Holober and Members of the Board of Trustees, San Mateo County Community College District; An Updated Parking Policy, in Light of the Controversy Surrounding the Removal of Building 20, Greenhouse, and Gardens, to Add Parking; July 27, 2011. Please refer to Master Response 5 for a discussion of CEQA's requirements for responding to documents either attached to EIR comment letters or incorporated by reference. This attachment provides comments on a parking policy unrelated to the proposed RTP/SCS or Draft EIR. Therefore, no further response is required. For a discussion of the general parking pricing issues addressed in this report, please see Master Response 15.

Michael Bullock
1800 Bayberry Drive
Oceanside, CA 92054

Honorable President Richard Holober and
Members of the Board of Trustees
San Mateo County Community College District
Via E-mail

Subject: An Updated Parking Policy, in Light of the Controversy Surrounding the
Removal of Building 20, Greenhouse, and Gardens, to Add Parking

July 27, 2011

Dear President Holober and Trustees:

Please consider this unsolicited parking-policy proposal.

Allow Me to Introduce Myself

I am a retired satellite systems engineer. I worked for Lockheed Martin in Sunnyvale, for 38 years. I now live in north San Diego County, to be close to my two grand daughters. I also have a younger grandson in Walnut Creek. I volunteer my time to various environmental and political organizations, with some success. I am the 2011 Volunteer of the Year at a 14,000-member environmental organization here in San Diego County. I successfully amended the Platform of one of our two large California Political Parties with the following two bullets:

- Provide support for alternatives to driving, from bicycle education to high-speed rail;
- Work for equitable and environmentally sound road and parking use

In the same party (I think you have to pick one), I authored a resolution on Battery Electric Vehicles. As you might guess, I am very concerned about global warming.

I feel that I will always be a systems engineer. Last summer, after many rejections, I finally had my car-parking policy paper peer-reviewed and published by a prestigious organization.

Topic Introduction

The purpose of this letter is to describe and advocate for a parking policy change that would increase fairness and choice while simultaneously results in smarter, healthier students and employees. It would also reduce driving. I assume you want plenty of parking. However, as you will see, this policy change will result in a drop in driving sufficient to allow for a decrease in needed parking of at least 15%
Reference 1 describes a policy that will efficiently and conveniently unbundle the cost of parking in all circumstances. It is available at the following URL: http://www.moderntransit.org/parking/Modern_Transit_Society.html.

However, the system described herein requires fewer features. Features not needed are congestion pricing, price predictions, and policies unique to on-street parking.

Two assumptions allow the elimination of these features. First, it is assumed that there will be an adequate supply of parking, so no congestion pricing is needed. Since the price will be fixed, no price predictions are needed. It is also assumed that students and employees can be successfully required to park only at the school. Therefore there is no need for new, on-street parking policies, designed to protect adjoining neighborhoods from the intrusion of additional parked cars.

For employees, the policies in this paper can still be described as “unbundling the cost of car parking”. Parking is expensive to provide. Therefore, if no parking had been provided, the saved money could have been invested to increase employee salaries. The methods described in this paper allow employees to gain some of that lost salary back, by driving less. The status-quo policy of charging nothing to use the parking is only beneficial to those employees that would drive every single day, even if they were given a method to recover some of the lost salary. The employees that would choose to drive less, to recover some of their lost income, are being treated poorly by charging nothing. With this policy, the employees are shown the value of their parking and are given the ability to recover some of their lost salary, by parking less than every single day.

For students, the policy is better described as “extending the parking lot benefit to all students, regardless as to how often they choose to use the parking”. It could also be described as “equalizing the parking-lot benefit”, for all students.

**Methods**

The parking is operated on the behalf of the students and employees, as if it were their business. Students and employees that choose to use the parking are therefore their own customers.

**Earnings** (net revenue, minus the cost of collection and distribution) are given to students and employees in proportion to the time they spend at the school. This could be based on their schedule or, to be more precise, could be based on the data collected using personal radio frequency identification units (RFIDs) and detectors that are tied to a central, implementing computer. The algorithm used to compute the amount of money given to a student or to an employee is shown on Slides 18, 19, and 20 of Reference 2. Drop-off policy is described on Slide 23 of Reference 2.
Charge for parking is per unit time. A charge rate that is acceptable to all must be established. For example, if sixty cents per hour is selected, the charging software could round off the parking duration time to the minute and apply a one-cent-per-minute charge. The method could be implemented with RFID’s on cars being detected at campus entrances and exits. The collected data is supplied to the implementing computer.

Parking statements are automatically sent out monthly, showing the individual’s charges and earnings. This is shown on Slide 21 of Reference 2.

**Implementation**

A San Diego vendor has stated that both the design and the installation of a fully-automated system would be easy to perform. This is shown on Slide 22 of Reference 2, where the vendor is identified, with all of his contact information. Since this is a new system, it would be prudent to contract with the vendor so that the vendor also operates the system for the first 10 years. This arrangement would ensure that the vendor would fully debug the system and continue to look for operational efficiencies over the 10 year period. The vendor could operate the system for 10% of the revenue, for 5 years; 5% of the revenue, for 3 years, and 2% of the revenue for the final 2 years. If it is assumed that, on average, 6000 cars are parked for 8 hours, for 200 days per year, at a rate of 50 cents per hour, then the yearly revenue would be $4,800,000 per year. The vendor would therefore collect $2,400,000 over the first 5 years, $720,000 over the next 3 years, and $288,000 over the last two years.

**Advocacy**

Table 1 shows that even high schools are starting to charge significant prices for parking. It should be noted that the method described here is much more than just “charging for parking”, because the earnings are given back to the students and employees.

Table 2 shows that introducing a price differential into the choice of how often to drive will decrease the amount of driving. This table is the basis for my assertion, in the Introduction, that this policy change would result in a drop in driving sufficient to allow a decrease in needed parking of at least 15%. The smallest decrease shown in Table 2 is 15%. Given the problems you have had trying to generate increased parking, I am sure you recognize the value in needing 15% less parking. If the baseline amount of parking happened to be 8000 cars, 15% would be 1,200 spaces. Since only about 120 cars can be parked on an acre of surface parking land, this would equate to 10 acres. An acre of land in the Bay area is generally worth several million dollars. Therefore, the 15% reduction could easily yield land worth $20 million dollars.

S-3-05 is a California Governor’s Executive Order to drop Year 2020 levels of greenhouse gas (GHG) to the level of 1990 emissions and to drop our Year 2050 level of GHG to 80%
SANDAG 2050 RTP/SCS EIR

G-515

October 2011


Table 2  Eleven Case of Pricing Impact on the Amount of Driving

<table>
<thead>
<tr>
<th>Impact of Financial Incentives on Parking Demand</th>
<th>Location</th>
<th>Scope</th>
<th>1995 dollars per mo.</th>
<th>Parking Use Decrease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A: Areas with little or no public transportation</strong></td>
<td>Century City/Downtown West Los Angeles</td>
<td>3500 employees at 100+ firms</td>
<td>$81</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Cornell University, Ithaca, NY</td>
<td>9000 faculty &amp; staff</td>
<td>$34</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>San Fernando Valley, Los Angeles</td>
<td>1 employer, 850 employees</td>
<td>$37</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Costa Mesa, CA</td>
<td></td>
<td>$77</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$47</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Group B: Areas with fair public transportation</strong></td>
<td>Los Angeles Civic Center</td>
<td>10000+ employees, several firms</td>
<td>$125</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Mid-Wilshire East Los Angeles</td>
<td>1 mid-size firm</td>
<td>$89</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Washington DC Suburbs</td>
<td>5000 employees at 3 worksites</td>
<td>$68</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Downtown Los Angeles</td>
<td>5000 employees, 118 firms</td>
<td>$126</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$102</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Group C: Areas with good public transportation</strong></td>
<td>University of Washington, Seattle WA</td>
<td>50,000 faculty, staff &amp; students</td>
<td>$18</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Downtown Ottawa, Canada</td>
<td>3000+ government staff</td>
<td>$72</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Bellevue, WA</td>
<td>10,000 employees</td>
<td>$41</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td><strong>Average for Group, but not Bellevue Washington</strong></td>
<td></td>
<td>$41</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td><strong>Over All Average, Excluding Bellevue Washington</strong></td>
<td></td>
<td></td>
<td>26%</td>
</tr>
</tbody>
</table>

1 Parking vacancy would be higher. 2 Not used, since transit & walk/bike facilities also improved.

Figure 1  Atmospheric CO2, Increasing Over Recent Decades

![Graph showing increasing CO2 levels over recent decades](image-url)

G-516  October 2011
Conclusion

As shown in the above section, decreasing the amount of driving is critical to human survival. School Boards are government entities. The first job of all government entities is health and safety.

Adopting this program will help the students gain an understanding of economics and technology. If they understand the harsh realities of global warming, they will have a deep sense of gratitude for this program, as well as a life-long feeling of school pride for San Mateo College. Students will be grateful that the future of any children that they might have will be significantly improved by this pioneering effort. It is a demonstration of the fundamental features of Reference 1. It will set an example for other schools and employers. It will let the world know that the United States has leaders that understand the climate crisis and are willing to take the bold measures needed to help avert disaster.

Please do not hesitate to contact me with questions or comments.

Respectfully submitted,

Mike Bullock

760-754-8025
Retired Satellite Systems Engineer, 36 years
Co-author, “A Plan to Efficiently and Conveniently Unbundle Car Parking Cost”

References

1.) A Plan to Efficiently and Conveniently Unbundle Car Parking Costs, Paper 2010-A-554-AWMA of the proceedings of the 103rd Conference and Exhibition of the Air and Waste Management Association; Mike R. Bullock and Jim R. Stewart, PhD; presented on June 22th, 2010. Also available at http://www.moderntransit.org/parking/Modern_Transit_Society.html

2.) CarlsbadHS2010_2.pdf; a “.pdf” file of a Power Point file created in 2010, Mike Bullock. Available upon request from Mike Bullock, mike_bullock@earthlink.net

3.) Letter from Center for Biological Diversity, to Elaine Chang, Deputy Executive Officer of Planning, Rule Development, and Area Sources of the South Coast Air Quality Management District; Comments on Survey of CEQA Documents on Greenhouse Gas Emissions Draft Work Plan and Development of GHG Threshold of Significance for
Residential and Commercial Projects, April 15, 2009. Available upon request from Mike Bullock, mike_bullock@earthlink.net

Via Email
Mr. Rob Randle
Principal Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101
rru@sandag.org

Re: Proposed 2050 RTP/SCS and Draft Environmental Impact Report

Dear Mr. Randle:

We submit this letter on behalf of the Cleveland National Forest Foundation ("CNFF"), Save Our Forest and Ranchlands ("SOFAR"), and the Center for Biological Diversity to provide comments on the draft 2050 regional transportation plan/sustainable communities strategy ("RTP/SCS" or "Plan") and the accompanying draft environmental impact report ("DEIR"). CNFF and SOFAR have previously submitted comments on the draft RTP/SCS and, in fact, have participated in the planning process for the Plan on numerous occasions. With each letter and at meetings and hearings with SANDAG staff and the Board, CNFF and SOFAR have explained their concerns with SANDAG’s proposed approach to regional planning.¹

Please see: (1) Letter dated May 27, 2010 from SOFAR and CNFF to SANDAG relating to SANDAG’s Draft Evaluation Criteria for Highway Corridors, Connectors, Transit Services, and Freight Projects; (2) Letter dated July 14, 2010 from SOFAR and CNFF to SANDAG relating to SANDAG’s draft Unconstrained Transportation Network; (3) Letter dated December 16, 2010 from SOFAR and CNFF to SANDAG relating to SANDAG’s Proposed Transportation Network Scenario for the 2050 RTP; (4) Letter dated March 9, 2011 from Shute, Mihaly & Weinberger, LLP to SANDAG (footnote continued)

R-1
This comment provides introductory statements. No further response is required.

R-2
SANDAG has read the five letters incorporated by reference in this footnote. Please see Master Response 5 for a discussion of SANDAG’s requirements to respond to Draft EIR comment letter attachments and documents incorporated by reference into comment letters and has provided a response to each letter as follows:


i. To the extent SOFAR’s May 27, 2010 letter includes comments raised in this (July 27, 2011) letter, SANDAG has responded to such comments here. To the extent the May 27, 2010 letter includes comments about the RTP project that do not raise significant environmental issues, the comments will be considered by the decision makers prior to making a final decision on the project, and no further response is required.
b. July 14, 2010. Subject: SANDAG’s Draft Unconstrained Transportation network
   i. SOFAR’s July 14, 2010 letter includes concepts already addressed in the responses to this (July 27, 2011) letter, as well as comments about the RTP project that do not raise significant environmental issues to which a response is required in the Final EIR. These comments will be considered by the SANDAG Board prior to making a final decision on the 2050 RTP/SCS, and no further response is required.

   i. SOFAR’s July 14, 2010 letter includes concepts already addressed in the responses to this (July 27, 2011) letter.


   i. SOFAR’s March 9, 2011 letter and the report attached to this letter prepared by Smart Mobility, Inc. include concepts addressed in the responses to this (July 27, 2011) letter.


e. July 7, 2011. Subject: SANDAG’s Draft 2050 RTP/SCS.
   i. SANDAG has prepared responses to SOFAR’s July 7, 2011 comment letter for consideration by the SANDAG Board prior to adoption of the 2050 RTP/SCS. To the extent this letter includes comments raised in this (July 27, 2011) letter, SANDAG has also responded to such comments here. To the extent the July 7, 2011 letter includes comments about the RTP project that do not raise significant environmental issues, the comments will be considered by the SANDAG Board prior to adopting the 2050 RTP/SCS, and no further response is required.
Inasmuch as SANDAG was tasked with preparing a plan that links transportation and land use planning in order to reduce greenhouse gas emissions ("GHG"), we had hoped for a marked shift in SANDAG’s approach to regional transportation. Unfortunately, the draft RTP/SCS shows remarkably little improvement over the agency’s previous transportation plans. The 2050 RTP/SCS claims to focus on transit and promote sustainable communities, yet it does not. If one attempts to piece together the overall transportation network contemplated by the draft RTP/SCS, the image that emerges of SANDAG’s vision for growth is far from “sustainable.” The Plan fails to include the actual transportation projects necessary to ensure the region’s growth over the next forty years comprises compact, urban development. To the contrary, it includes myriad highway projects and defers many of the much-needed transit projects to the latter years of the 40-year plan.

As a result, the plan does very little to move the San Diego region toward sustainability. Simply put, transit is “sustainable,” highways are not. In fact, the RTP portends environmental disaster. By SANDAG’s own admission, the plan will have significant impacts in the following areas: aesthetic and visual resources; agricultural and forest resources; air quality; biological resources; geological, soils, and mineral resources; greenhouse gas emissions; hazardous and hazardous materials; land use; noise; population and housing; public services; utilities and energy; recreation; transportation and traffic; and water supply. DEIR ES 3.5. Worse yet, rather than propose measures or policies to reduce these impacts, SANDAG appears resigned to their inevitability, deeming all of these impacts “unavoidable.” In doing so, SANDAG is missing a critical opportunity for responsible planning and growth that both achieves the goals of SB 375 (and AB 32) and avoids long-term environmental damage.

A quick review of the RTP/SCS’ vehicle miles travelled ("VMT") and GHG statistics confirms our worst fears. Rather than reducing VMT—the very goal of goal of SB 375—the RTP/SCS, VMT would increase by 50 percent between 2010 and 2050. See DEIR Table 4.3-4 at 4.3-17. It comes as no surprise, then, that the Plan would also fail to achieve any sustained reductions in GHG emissions. While SANDAG appears to exceed its regional target of 14 percent per capita GHG reduction in 2020, in

relating to SANDAG’s Transportation Modeling for the RTP and Memo dated March 7, 2011 by Smart Mobility Inc.

(5) Letter dated July 8, 2011 from SOFAR and CNFF, commenting on SANDAG’s draft 2050 RTP/SCS. These letters and reports are hereby incorporated by reference into this letter.
This comment is a summary assertion that the EIR violates CEQA, and a recitation of CEQA case law language on EIRs. Responses to specific allegations of CEQA violations are presented below. No further response is required.

This comment represents a summary of commenter's overall concerns related to the project and the Draft EIR. Responses to specific concerns are presented below. Also, please refer to Master Responses 7 and 13 for comments concerning the adequacy of the 2050 RTP/SCS project description as presented in the Draft EIR as well as revisions made to the project description from the Draft EIR to the Final EIR. Please refer to Master Response 1 for a discussion of the appropriate level of detail for a Program EIR's impact analyses and mitigation measures. Please refer to Master Response 16 for a discussion on the range of alternatives, level of detail of the alternatives analysis, and differences between the alternatives and the proposed project.
lands and environment. While aptly acknowledging the Plan would result in significant environmental impacts, it fails to provide the analysis and evidence to support many of its conclusions. The DEIR fares no better in its approach to mitigation, which is either overly vague and unenforceable or improperly deferred. Finally, there is very little substantive difference between any of the RTP/SCS alternatives and the RTP/SCS itself. Consequently, the DEIR fails to present any valid option for sustainable transportation planning for the San Diego region. Nor does the DEIR provide sufficient analysis of the environmental consequences of each of the alternatives. SANDAG once again has chosen to play a game of “hide the ball,” leaving the public and decision-makers with a profoundly distorted view of the RTP/SCS and its consequences.

A. The EIR’s Description of the Project Violates CEQA.

In order for an EIR to adequately evaluate the environmental ramifications of a project, it must first provide a comprehensive description of the project itself. “An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.” San Joaquin Riparian/Wildlife Rescue Center v. County of Sonoma, 27 Cal. App. 4th 713, 730 (1994) (quoting County of Yolo v. City of Los Angeles, 71 Cal. App. 3d 185, 193 (1977)). As a result, courts have found that even if an EIR is adequate in all other respects, the use of a “truncated project concept” violates CEQA and mandates the conclusion that the lead agency did not proceed in the manner required by law. San Joaquin Raptor, 27 Cal. App. 4th at 729-30.

Furthermore, “[a]n accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.” Id. at 730 (citation omitted). Thus, an inaccurate or incomplete project description renders the analysis of significant environmental impacts inherently unreliable. Here, the DEIR for the draft RTP/SCS does not come close to meeting these clearly established legal standards.

1. The Project Description Lacks Sufficient Information to Determine How It Would Achieve Plan Objectives.

The DEIR identifies as a fundamental objective for the 2050 RTP/SCS “making transportation investments that result in healthy and sustainable communities.” DEIR at 2-10. To this end, the RTP/SCS explains that it “seeks to guide the San Diego region toward a more sustainable future by integrating land use, housing, and transportation planning to create communities that are more sustainable, walkable, transit-oriented, and compact.” RTP/SCS at 3-2. Despite this lofty goal, there is no
Please refer to Master Response 11 for discussion of how the SCS was developed, and how it meets the sustainability goals and intent of SB 375. As explained in that Master Response, the SCS does not simply rely on existing local general plans, and SANDAG does work closely with local jurisdictions to provide incentives and tools to encourage smart growth. Also, please refer to Master Response 12 regarding the reasonableness and accuracy of SANDAG’s regional growth forecast which underlies the SCS. SANDAG is entitled to make reasonable assumptions indicating that the SCS will be implemented. (See City of Long Beach v. Los Angeles Unified School District (2010) 176 Cal.App.4th 889; Environmental Council of Sacramento v. City of Sacramento (2006) 142 Cal.App.4th 1018 ["A public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true."]

Please refer to Master Response 11 for a discussion of how the regional growth forecast and SCS were developed. As stated in Section 4.11.1 of the Draft EIR, all jurisdictions in the San Diego region use their general plans, associated community plans, and specific plans to guide development within their community, and updates to plans are made as the plans reach their intended planning horizon, or as state regulations and local needs change. The 2050 RTP/SCS is a program level document and examines the San Diego region as a whole. The scale of the land use figures included in Section 4.11 of the Draft EIR is appropriate for a regional plan and program EIR.

This comment references text and information included in the 2050 RTP/SCS document and does not present questions or new information regarding the environmental analysis within the Draft EIR. However, in response to this comment, Appendix D of the 2050 RTP/SCS does contain subregional level land use mapping, which depicts the location of land use designations on a subregional scale for the entire San Diego region. The maps depict land use designations with generalized residential densities (i.e., rural residential, single family, mobile home, and multi-family residential) and non-residential designations (i.e., mixed use, commercial, and industrial). This is appropriate information and level of detail to include in a regional plan and program EIR.
The 2050 RTP/SCS includes a Revenue Constrained Transportation Network, Transportation Demand Management (TDM) strategies and Transportation System Management (TSM) strategies to support and take advantage of the increasingly compact land use pattern which is focused in the western third of the region. More than 75 percent of the investments in the plan support public transit and carpooling. A map has been added to the 2050 RTP/SCS (refer to Figure 3.23) showing the revenue constrained transit network with the areas planned for higher density residential and employment development, including the UATS study area. The map is provided to illustrate how transit will serve the highest density mixed use and smart growth areas in the region. For a complete discussion of the revenue assumptions in the plan and the timing of transit investments, please refer to Master Response 10.

Please refer to Response to Comment R-10 and MR 20 for a complete discussion regarding the basis for concluding the region will meet SB 375 GHG reduction targets. Also, please refer to Master Response 14 for a discussion of SCS implementation.

See response to comments R-9 through RT-14.

Table 2.0-5 in the Draft EIR identifies planned transit service projects for the 2050 RTP/SCS. The phasing/timing (i.e., 2020, 2035, 2050) of each transit service project is included in the first column titled “Period”. Transit services listed in Table 2.0-5 are the new services and improvements to existing transit services planned as part of the 2050 RTP/SCS. In an effort to further discuss the current operating characteristics of the existing public transit network, revisions have been made to Table 2.0-5: Phased Transit Services to include columns that indicate the existing (2010) peak and off-peak headways, and indicate whether the service listed is a new service or an improvement to an existing service. An improvement to an existing service does not always translate to increased frequencies, but may also indicate that the route has been expanded.
The project description included in the Draft EIR meets all CEQA requirements. Information included in the project description and was sufficient to conduct the EIR's environmental impact analysis using accepted methodologies appropriate for the Program EIR's level of detail. An EIR project description should not supply extensive detail beyond that needed for evaluation of environmental impacts. (CEQA Guidelines §15124(a).)

The 67 arterial projects listed in the 2050 Regional Transportation Plan (RTP) Table A.8 – (and included in the 2050 RTP/SCS EIR Table 2.0-7) are a component of the Regional Transportation Improvement Program (RTIP). These projects are programmed within the RTIP. All information related to existing number of lanes/lane miles and capacity improvements regarding number of lanes/lane miles is provided in the 2010 RTIP as amended. Please refer to Master Response 22 for further discussion of regional arterial projects.

Regarding the number of freeway miles in the region, the existing number of freeway lane miles for the 2010 EIR baseline is 2,384. The number of freeway lane miles for the Project (2050 Revenue Constrained Plan) is 2,610.

The DEIR also does not specifically identify the arterial or highway improvements (including HOV, Managed Lanes or BRT projects) that would be constructed in the UATS study area boundary. Regarding transportation network improvements in the UATS area, Tables A.1 through A.5 and A.8 and A.11 of Appendix A of the 2050 RTP/SCS provides detail on highway and transit capital improvements, phased highway projects, phased transit projects, and arterial improvements, and a summary of 2050 transit services and headways. Technical Appendix 7, Figure TA 7.1 provides the Urban Area Transit Strategy study area boundaries.

CEQA requires that this pertinent information be included in the DEIR's project description, so that decision-makers and the public can evaluate the environmental impacts of the RTP/SCS and compare Project alternatives. Accordingly, the revised DEIR must identify these details for the Project and each alternative. Ideally, this information will be provided in a tabular form for ease of comparison.

Regarding "bottlenecks/auxiliary lane projects," the 2050 RTP includes funding for general bottleneck and auxiliary lane projects. Specific projects will be identified and programmed in the RTP as funding becomes available. These projects are not capacity-increasing projects.

The DEIR also does not specifically identify the arterial or highway improvements (including HOV, Managed Lanes or BRT projects) that would be constructed in the UATS study area boundary. Regarding transportation network improvements in the UATS area, Tables A.1 through A.5 and A.8 and A.11 of Appendix A of the 2050 RTP/SCS provides detail on highway and transit capital improvements, phased highway projects, phased transit projects, and arterial improvements, and a summary of 2050 transit services and headways. Technical Appendix 7, Figure TA 7.1 provides the Urban Area Transit Strategy study area boundaries.

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Finally, the DEIR fails to identify the number of annual average daily trips ("ADT") and VMT currently in the SANDAG region, or the number of ADT and VMT that would occur in the region upon implementation of the RTP.

Average daily traffic (ADT) volumes are identified in the 2050 RTP/SCS at certain screenline locations throughout the region. This negates the ability to aggregate ADT data at the regional level. Please refer to Figures A.10 and A.11 in Appendix A of the 2050 RTP for the ADT volumes for the 2008 and 2050 modeled data. Vehicle miles traveled (VMT) is included as one of the 2050 RTP/SCS performance measures (Systemwide VMT [all day] per capita Daily VMT for the 2010 EIR baseline is approximately 78 million, and 110 million for the 2050 Revenue Constrained Plan. ADT and VMT modeled data represent a typical weekday and are generated from the SANDAG Regional Travel Demand Model.

R-18
Please refer to above Response to Comments 16 and 17. Information included in the project description and alternatives descriptions was sufficient to conduct the EIR's environmental impact analysis using accepted methodologies appropriate for the Program EIR's level of detail. An EIR project description should not supply extensive detail beyond that needed for evaluation of environmental impacts. (CEQA Guidelines §15124(a).) The request for additional detailed project description information appears to imply that the EIR should have used different impact analysis methodologies that would employ this information. Please refer to Master Response 1 regarding the level of detail appropriate for a Program EIR environmental impact analysis. In preparing an EIR, CEQA does not mandate that a Lead Agency use any particular methods of environmental impact analysis.
This comment is a recitation of CEQA case law, and contains general assertions that the EIR’s impact analysis, mitigation measures, and alternatives analysis are inadequate. Please refer to responses R-20 through R-39 for responses to specific allegations. Also, see Master Response 1 for additional responses to comments about the EIR’s impact analysis and mitigation measures, and Master Response 16 regarding the alternatives analysis level of detail. An EIR must be prepared with a sufficient degree of analysis to provide decision-makers with the information needed to make an intelligent judgment concerning a project’s environmental impacts. (CEQA Guidelines §15151.) An EIR should, when looked at as a whole, provide reasonable, good faith disclosure and analysis of the project’s environmental impacts. (Laurel Heights Improvement Ass’n v. Regents of University of California, 6 Cal.4th 1112, 1123 (1993) (“Laurel Heights II”). To do so, an EIR must contain facts and analyses, not just an agency’s bare conclusions. Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553, 568 (1990). Thus, a conclusion regarding the significance of an environmental impact that is not based on an analysis of the relevant facts fails to fulfill CEQA’s informational goal.

Additionally, an EIR must identify feasible measures to mitigate significant environmental impacts. CEQA Guidelines § 15126.4. Under CEQA, “public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects.” Pub. Res. Code § 21002.

Although it is clear that the RTP/SCS has the potential to be an extraordinarily environmentally degrading action, neither the public nor decision-makers have any way of knowing the magnitude of this harm. Often, the DEIR asks the wrong questions so that the Project’s environmental impacts appear benign or non-existent. In other instances, the document lacks the necessary detail to verify the validity of its analyses. Consequently, the DEIR fails to provide decision-makers and the public with detailed, accurate information about the Project’s significant environmental impacts and to analyze mitigation measures and alternatives that would reduce or avoid such impacts.

1. The DEIR Fails to Adequately Analyze and Mitigate the RTP/SCS’s Transportation Impacts.

The DEIR’s analysis of transportation impacts is flawed because it assumes incorrectly that the ultimate objective of the RTP/SCS is to accommodate automobile traffic rather than to move persons and goods through the region. While the “project” under consideration is both an RTP and an SCS, the DEIR’s transportation analysis does not focus on sustainable forms of transportation. Instead, the transportation analysis is almost identical to those of prior versions of SANDAG RTP EIRs, focusing almost exclusively on performance indicators such as travel time and congestion.

Although the DEIR would have us believe these performance indicators apply to public transportation as well as highways, this is certainly not the case. Traffic-based measurements (such as traffic speed and roadway capacity) evaluate motor vehicle

R-20
Please refer to Master Response 14 for a discussion regarding the performance measures and transportation thresholds of significance analyzed in the Draft EIR.
The environmental setting section of an EIR should be no longer than needed for an understanding of a project’s significant environmental effects. (CEQA Guidelines §15125(a).) As stated in Section 4.16.1 of the Draft EIR, the existing conditions for the regional transportation system are described for the regional roadway network; transit service including local bus service, commuter and light rail service; non-motorized facilities (bicycle and pedestrian); aviation facilities; and goods movement. Refer to Response to Comment R-16 for further discussion on the current operating characteristics of the existing public transit network revisions have been made to Table 2.0-5: Phased Transit Services in Chapter 2.0 to provide further details on transit operating characteristics.

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R-21

The environmental setting section of an EIR should be no longer than needed for an understanding of a project’s significant environmental effects. (CEQA Guidelines §15125(a).) As stated in Section 4.16.1 of the Draft EIR, the existing conditions for the regional transportation system are described for the regional roadway network; transit service including local bus service, commuter and light rail service; non-motorized facilities (bicycle and pedestrian); aviation facilities; and goods movement. Refer to Response to Comment R-16 for further discussion on the current operating characteristics of the existing public transit network revisions have been made to Table 2.0-5: Phased Transit Services in Chapter 2.0 to provide further details on transit operating characteristics.

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2 The region’s existing transportation network is dominated by roads; there are over 1600 miles of highways and arterials and only includes 123 miles of regional transit service. RTP/SCS at 6-2.
The 2050 RTP/SCS EIR does not assert that the implementation of public transit projects is not as feasible as the implementation of arterial projects. The 2050 RTP/SCS includes improvements to a variety of transit services to support and take advantage of the increasingly compact land use pattern focused in the western third of the region, as detailed in Chapter 2.0. However, the 2050 RTP/SCS also recognizes that arterial improvements are a necessary element of the overall regional transportation system as they serve to provide access and connectivity for not only automobile transportation, but also local transit services as well as non-motorized methods of travel. The inclusion of arterial improvement projects in the 2050 RTP/SCS is not meant to imply that public transit is not as feasible as arterial improvement projects. Please refer to Response to Comment R-16 and R-21 for a discussion of existing transportation network conditions. Please also refer to Master Response 7 for a discussion of the 2050 RTP/SCS transportation network components, Master Response 14 for a discussion of transportation impact thresholds, and Master Response 22 for further discussion on the regional arterial improvements.

Again, the environmental setting section of an EIR should be no longer than needed for an understanding of a project’s significant environmental effects. (CEQA Guidelines §15125(a).) The 2050 RTP/SCS EIR provides sufficient detail of existing conditions to allow for a meaningful program level analysis of the anticipated environmental impacts associated with implementation of the proposed project. Several of the details requested in this comment do not directly correlate with the environmental significance criteria analyzed in the EIR, and/or are not needed for the methodologies used to conduct the EIR’s impact analysis. Nevertheless, the following information has been provided in response to the requests in this comment:

- A transportation metric that describes travel in “passenger miles,” rather than “vehicle mile” units. The 2050 RTP/SCS Technical Appendix 3 provides systemwide VMT (all day) per capita and transit passenger miles (all day) per capita as metrics.
These measures were refined as part of the process to update all of the performance measures. This effort was undertaken by the Transportation Project Evaluation Criteria Ad Hoc Working Group (TPEC). The Group was represented by members from the following stakeholder: the local jurisdictions' Public Works and Planning Directors, the Metropolitan Transit System (MTS) and the North County Transit District (NCTD), and Caltrans among others. The TPEC provided regular status updates for additional discussion and input at the Bicycle Pedestrian Working Group, Cities/County Technical Advisory Committee, Regional Planning Stakeholders Working Group, Regional Planning Technical Working Group, San Diego Regional Traffic Engineers Council, and TransNet Independent Taxpayer Oversight Committee, all of which were open to the public. The performance measures were recommended for acceptance by the SANDAG Transportation Committee and accepted by the SANDAG Board of Directors on July 23, 2010.

- The number of linear miles of rail, bus, and trolley service that exist in the region (this should be identified for COASTER, SPRINTER, Trolley, and bus). The number of linear miles for transit is as follows: COASTER – approximately 41 miles, light rail including SPRINTER and Trolley – approximately 75 miles, and bus – approximately 1,162 miles.

- The ease with which transit passengers can reach a wide range of destinations in the metropolitan area. The 2050 RTP/SCS Technical Appendix 3 provides performance measures identifying transit passenger access and reach of destinations in the region. The following measures are included in Table TA 3.1 – 2050 RTP Comparison of Regional Performance Measures:
  - percent of work and higher education trips accessible in 30 minutes in peak periods by mode,
  - percent of non-work related trips accessible in 15 minutes by mode,
  - percent of peak period trips within a ½ mile of a transit stop,
  - percent of daily trips accessible in 30 minutes in peak periods by mode,
  - percent of homes within a ½ mile of a transit stop,
  - percent of population within 30 minutes of schools,
  - percent of population within 30 minutes of the San Diego International Airport,
  - percent of population within 15 minutes of healthcare, and
  - percent of population within 15 minutes of parks or beaches.

The existing gaps in the local public transit network. Through development of the Urban Area Transit Strategy (UATS) and the incorporation of identified local public transit service issues into the transit network, as identified in transit agency service plans (MTS and NCTD), the 2050 RTP /SCS focused on creating a system of high-frequency services on many of the existing local bus routes in urban core areas.
The transit lines that operate at greater than 15 minute headways in the peak period.

Appendix A of the 2050 RTP/SCS provides transit line headway information in peak periods. Please refer to Table A.5 – Phased Transit Services – Revenue Constrained Plan and Table A.11 – Summary of 2050 Transit Services and Headways.

- The number of the region’s total trips that are within 3 miles or less. SANDAG does not maintain or have access to this information.

- The total regional, and the per capita, VMT in 2000 and 2010. ADT for the 2010 EIR baseline is approximately 78 million. Year 2000 VMT data are unavailable.

The percentage and dollar amount of TransNet funds that are currently earmarked for highway projects. $163.6 million or approximately 8.3% of total TransNet Major Corridor funds programmed in the 2010 RTIP are for highway projects.
The percentage and dollar amount of TransNet funds that are currently earmarked for public transit projects, including Managed Lanes or BRT. $1.777 billion or approximately 90% of total TransNet Major Corridor funds programmed in the 2010 RTIP are for transit projects, including Managed Lanes or BRT.

- The percentage and dollar amount of TransNet funds that are currently earmarked for public transit projects, not including Managed Lanes or BRT. $873.3 million, or approximately 44.2% of total TransNet Major Corridor funds programmed in the 2010 RTIP are for transit projects, not including Managed Lanes but that travels on ML, but it does include urban BRT such as Mid-City. There is an additional $34.4 million or about 1.7% of total TransNet Major Corridor funds programmed in the 2010 RTIP for other projects (Intelligent Transportation System, Grade Separations, etc.).

Please refer to Master Response 14 for a discussion of the performance measures and significance criteria evaluated for transportation impacts associated with implementation of the proposed project. SANDAG appreciates the input provided on potential significance criteria in this comment; however, the significance criteria used in the Draft EIR have not been modified in the Final EIR.

The Draft EIR uses several of the 2050 RTP/SCS performance measures to examine the impacts to the transportation system as a whole, inclusive of all modes including transit. Please refer to Master Response 14 for a discussion of the performance measures and significance criteria evaluated for transportation impacts (including impacts to transit) associated with implementation of the proposed project.

The 2050 RTP/SCS transit phasing strategy maximizes the use of the transit funding as it is expected to become available. Most of the highway expenditures included in the 2050 RTP/SCS are for managed lanes that will accommodate transit and carpools. Many of the highway facilities to be constructed in the next 10 years will serve transit routes. Additionally, SANDAG is limited by revenues restrictions for most funding sources. The key to the 2050 RTP/SCS is a balanced approach that provides many choices for people to get to work, school, or play. The 2050 RTP/SCS includes the most investment in transit and alternative modes compared to any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are 5 new light rail transit lines, new express bus services, and increased frequencies. The 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs. Other than small 2-mile segment of State Route 11 toll road at the new border crossing, there are no new highway facilities included in the 2050 RTP/SCS. Only a handful of improvements add general purpose lane capacity within existing freeway corridors.

Please refer to Master Response 7 for further discussion of the 2050 RTP/SCS transportation network components, and Master Response 11 for a discussion of why the 2050 RTP/SCS does not "perpetuate sprawl."
Please refer to Master Response 8 for a discussion pertaining to how induced travel is recognized in SANDAG's transportation modeling, and the limited applicability of the Victoria Transport Policy Institute study. Induced travel is factored into SANDAG's transportation modeling; therefore, trip volumes are not underestimated, and the analysis included in the Draft EIR appropriately considers the impact of induced travel.
Using data on California freeway expansion, traffic volumes, and various demographic and economic factors between 1980 and 1994, Cervero (2003) found the long-term elasticity of VMT (vehicle miles traveled) with respect to traffic speed to be 0.64, meaning that a 10 percent increase in speed increases VMT 6.4 percent. Thus, about 80 percent of added road capacity is filled with additional peak-period traffic.

Time-series data indicates an elasticity of vehicle travel with respect to lane miles of 0.5 in the short run, and 0.8 in the long run (Noland, 2001). This means that half of increased roadway capacity is filled with added travel within about 5 years, and 80 percent of the increased capacity eventually fills. Urban roads, which tend to be most congested, had higher elasticity values than rural roads, as expected due to their greater congestion and latent demand.

The medium-term elasticity of highway traffic with respect to California state highway capacity was measured to be 0.6-0.7 at the county level and 0.9 at the municipal level (Hansen and Huang, 1997). This means that 60-90 percent of increased road capacity is filled with new traffic within five years. Each 1 percent increase in highway lane-miles increased VMT about 0.65 percent.

A major study found the following elasticity values for vehicle travel with respect to travel time: urban roads, -0.27 in the short-term and -0.57 over the long term; rural roads, -0.67 in the short term and -1.33 in the long term (Goodwin, 1996). These values are used by the U.S. Federal Highway Administration for highway project evaluation. Because of these effects it is unsurprising that urban highway expansion provides modest congestion reduction (STPP 2001).

See Victoria Transport Policy Institute, T. Litman, Smart Congestion Reductions: Reevaluating the Role of Highway Expansion for Improving Urban Transportation, February 2, 2010 at 8, attached as Exhibit B.

The RTP/SCS DEIR fails to even acknowledge the potential for the Project to induce travel. This failure has serious implications for the DEIR and for the Project itself. First, because many of the environmental impact analyses (e.g., traffic, air quality, climate change and noise) are based on the RTP’s trip generation, an underestimation in trip volumes necessarily results in an underestimation of the Project’s environmental effects. Second, the DEIR fails to grapple with the fact that widening freeways and arterials are a temporary solution, at best, to the complex problems of traffic congestion.
This comment is largely a recitation of CEQA case law on mitigation measures, and a description of the Draft EIR's transportation impact mitigation measures, and no further response is required. See response R-28 regarding the adequacy of Mitigation Measure T-A.

Please note that by design, the 2050 RTP/SCS already includes a large number of land use strategies and transportation network improvements that result in lower traffic impacts as compared to the No Project Alternative. (See Draft EIR Table 6.3-1pages 6-50 to 6-52.) However, the 2050 RTP/SCS was not able to feasibly avoid all significant traffic impacts. The Draft EIR did evaluate a number of additional mitigation measures to reduce traffic impacts that would potentially be applicable to this iteration of the RTP, but found them to be infeasible. (For a detailed analysis, see Draft EIR Section 4.16.5, pages 4.16-34 to 4.16-36.) Please refer to response to comments R-29 through R-31 for responses to specific potential mitigation measures. Recognizing that Mitigation Measure T-A would not guarantee that significant transportation impacts T-3 and T-4 would be reduced to than significant levels, the Draft EIR concluded that these impacts were significant and unavoidable. (See Draft EIR Section 4.16.6, pages 4.16-36 to 4.16-38.) In response to this comment, Mitigation Measure T-1 has been modified as follows with revisions shown in strikethrough and bold text:

T-A  SANDAG, working with local jurisdictions and other transportation planning agencies, including Caltrans, shall reevaluate regional travel times in interim years prior to 2035 and 2050, land use changes, and regional growth during the development of each RTP/SCS, occurring every four years. When feasible, SANDAG shall in future RTP/SCSs modify the timing and priority of
transportation network improvements to be consistent with available funding programs to most quickly implement those improvements that would reduce impacts T-3 and T-4 to less than significant levels.
SANDAG has the authority and is required by SB 375 to develop and adopt either an SCS that meets SB 375's GHG reduction targets, or an APS showing how such targets could be met. The SCS or APS does not regulate land use or supersede the land use authority of cities or counties. (Government Code § 65050(b)(2)(K).)

Since SANDAG intends to adopt an SCS that meets SB 375's GHG reduction targets, SB 375 does not require SANDAG to also develop an APS that would achieve further GHG emission reductions. SB 375 requires MPOs to prepare an APS that meets SB 375 GHG targets only if it is not feasible to develop an SCS that meets these targets. Therefore, the Draft EIR determination that an intensified land use scenario is an infeasible mitigation measure is entirely consistent with SB 375's requirements.

As explained on Draft EIR p. 4.16-36, SANDAG rejected the intensified land use scenario as infeasible for three specific reasons. First, land use inputs for the 2050 RTP/SCS came directly from local government plans and policies. SANDAG does not have the legal authority to modify or require modification of these plans. (See Government Code § 65050(b)(2)(K).) Second, the intensified land use scenario conflicts with local government plans and policies, many of them recent, and thus would unlikely to be implemented voluntarily. Third, federal law requires an RTP's forecasted growth pattern to be based on the latest available estimates and assumptions for land use, travel, and other factors. (23 CFR 450.322(e).) Thus, the 2050 RTP/SCS would not meet legal requirements for RTP content if it were modified by a mitigation measure not representing the latest available estimates and assumptions for land use, travel, and other factors.

R-30
Refer to Master Response 15 for a discussion of parking mitigation strategies. As discussed in that Master Response, would be infeasible for SANDAG to implement as part of a uniform regional parking fee program. Even if increased parking fees were to be considered as a potentially feasible mitigation measure for transportation impacts, the Master Response explains that, based on SANDAG analyses, they would not have been effective in substantially reducing transportation impacts. Other parking management strategies described in the Victoria Transport Policy Institute report similarly would be unlikely to substantially reduce transportation impacts given the SANDAG analyses of parking fee effectiveness. Like increased parking fees, it would be infeasible for SANDAG to implement these other parking management strategies as part of a uniform regional parking management program. It should also be noted that some of the parking management strategies described in the Victoria Transport Policy Institute report, such as smart growth and greater opportunities for walking and bicycling, are already included as part of the 2050 RTP/SCS.

R-31
Refer to Master Response 17 for a discussion of why the 50-10 Plan was not included as an alternative in the EIR. In addition, Responses to Comments 50-66 provide direct responses to environmental and other issues raised in the 50-10 Plan.
In short, SANDAG must identify feasible measures to mitigate the Project’s transportation impacts. The appropriate forum for the identification and evaluation of these measures is in a revised DEIR.

C. The DEIR Fails to Adequately Analyze or Mitigate the Project’s Impact on Climate Change.

1. The DEIR Fails to Support its Conclusions With Facts and Analysis.

CEQA requires that an EIR be detailed, complete, and reflect a good faith effort at full disclosure. CEQA Guidelines § 15151. The document should provide a sufficient degree of analysis to inform the public about the proposed project's adverse environmental impacts and to allow decision-makers to make intelligent judgments. Id. Consistent with this requirement, the information regarding the project's impacts must be "painstakingly ferreted out." Environmental Planning and Information Council of Western El Dorado County v. County of El Dorado, 131 Cal.App.3d 350, 357 (1982) (finding an EIR for a general plan amendment inadequate where the document did not make clear the effect on the physical environment). Meaningful analysis of impacts effectuates one of CEQA's fundamental purposes: to "inform the public and its responsible officials of the environmental consequences of their decisions before they are made." Laurel Heights II, 6 Cal.4th at 1123.

Here, the DEIR's purported analysis of the RTP/SCS's impact on climate change lacks the evidentiary basis to support its conclusions. The document identifies the increase in GHG emissions that would be attributable to the land use component of the Project and separately identifies the increase in emissions purportedly from the transportation network component of the Project. The DEIR does not, however, include any of the land use or transportation assumptions used to develop the RTP/SCS's GHG emission inventory. In fact, the climate change chapter lacks any factual support for its conclusions. Instead, the document contains vague statements such as:

Although the 2050 RTP/SCS focuses development in a compact pattern, development projects would occur, resulting in direct and indirect GHG emissions. Direct emissions include emissions from fuel combustion in transportation and natural gas combustion from stationary sources. Indirect sources include off-site emissions occurring as a result of operations such as electricity and water consumption. Id.
Land use GHG emissions were based on SANDAG’s regional growth forecasts for population, employment, and historic trends (see R-32). The regional growth forecast is discussed in detail in Master Response 12. Non-transportation-related GHG emissions, such as from energy (electricity and natural gas), off-road mobile sources, waste, etc., are based on consumption patterns for the San Diego region. Existing (2010) land use patterns for the region are shown in the Land Use section (Figure 4.11-1) of the Draft EIR, along with the changes in land use that are expected to occur in 2020, 2035 and 2050; average trip lengths; average speed of on-road motor vehicles; or the volume of gasoline consumption.

In addition, although SANDAG clearly recognizes the importance of land use patterns in reducing vehicle travel and related GHG emissions, the DEIR lacks any detail as to how specifically the RTP/SCS’s land use related GHG inventory was calculated. The document generally identifies the demographic information (e.g., increase in population, housing units and population), but it does not identify the specific changes in land use patterns, types or areas where development is expected to occur in 2020, 2035 or 2050. Without a before and after comparison of land use patterns, it is simply not possible to determine whether the DEIR accurately identifies the land use GHG emissions inventory. The DEIR lacks other important data and assumptions, including, for example, the increase in GHG emissions from sources such as electricity and natural gas consumption.

2. The DEIR’s Significance Determination is Fundamentally Flawed Because It Ignores California’s Emission Reduction Targets.

One of the Draft EIR’s significance criteria is whether the RTP/SCS would increase emissions from current levels. (4.18-15.) As a long-range planning document that addresses community-wide emissions, the appropriate criteria for determining significance is whether the RTP/SCS is consistent with California’s emission reduction targets. These targets are to reduce emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050. Indeed, the express purpose of SB 375 is to not to keep emissions at existing levels, but to improve land use and transportation policy “to achieve emission
reduction goals of AB 32." (SB 375, § 1(c).) By claiming that impacts of the RTP/SCS in 2020 are not significant because emissions would not increase from existing levels, the RTP/SCS makes an erroneous significance determination and misleads decisionmakers and the public on the severity of project impacts. The Draft EIR's GHG criteria should be revised to compare transportation and land use emissions under the RTP/SCS in 2020 to 1990 levels, emissions in 2035 to 40% below 1990 levels, and emissions in 2050 to 80% below 1990 levels.

The Attorney General and air districts have also concluded that an assessment of GHG impacts from long-range planning documents such as an RTP or General Plan should be based on whether the planning document functions to achieve reductions consistent with AB 32 and Executive Order S-3-05. For example, in Climate Change, the California Environmental Quality Act, and General Plan Updates, the Attorney General stated:

Governor Schwarzenegger's Executive Order S-3-05, which commits California to reducing its GHG emissions to 1990 levels by 2020 and to eighty percent below 1990 levels by 2050, is grounded in the science that tells us what we must do to achieve our long-term climate stabilization objective. The Global Warming Solutions Act of 2006 (AB 32), which codifies the 2050 target and tasks ARB with developing a plan to achieve this target, is a necessary step toward stabilization. Accordingly, the targets set in AB 32 and Executive Order S-3-05 can inform the CEQA analysis.

One reasonable option for the lead agency is to create community-wide GHG emissions targets for the years governed by the general plan. The community-wide targets should align with an emissions trajectory that reflects aggressive GHG mitigation in the near term and California's interim (2020) and long-term (2050) GHG emissions limits set forth in AB 32 and the Executive Order.\(^7\)

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\(^6\) 40% below 1990 levels is consistent with a trajectory to reduce emissions to 80% below 1990 levels between 2020 and 2050.

\(^7\) Attorney General, FAQs: Climate Change, CEQA & General Plans at 4 (Mar. 2009).
Please refer to Master Response 9 for a discussion of why the 2050 RTP/SCS is consistent with the goals and intent of SB 375, and Master Response 20 for a discussion of why per capita GHG emissions increase during the later years of the plan. These increases are not attributable to further decentralized low density development reliant on automobiles, as asserted by the comment.

Reducing GHG emissions from transportation may be achieved through decreased demand or increased efficiency. Decreased demand would result in fewer VMT, which are relatable to GHG emissions but not necessarily proportionate – see Master Response 20. Increased efficiency could include vehicle efficiency (miles per gallon) or lower carbon intensity in fuels, either of which would not necessarily reduce VMT but would reduce GHG emissions.

One of the primary objectives of the 2050 RTP/SCS is to encourage compact development. In addition, the DEIR identifies Mitigation Measure GHG-B, calling for preparation of local government climate action plans (CAPs). The purpose of a CAP is to reduce GHG emissions in a community through a variety of strategies, which often include reducing VMT through locating development near transit and other actions. Also see Master Response 21 for further discussion of GHG mitigation measures.
Please see Master Response 21 for a discussion of the adequacy of the EIR’s GHG mitigation measures, and for a feasibility analysis of the additional GHG mitigation measures suggested in this comment. Regarding Mitigation Measure GHG-A (additional GHG reduction policies and measures in future RTP/SCSs), the 2050 RTP/SCS already incorporates numerous provisions that reduce GHG emissions, and that allow the plan to meet the SB 375 regional GHG reduction targets. Mitigation Measure GHG-A is SANDAG’s commitment to build on the 2050 RTP/SCS accomplishments, and develop additional GHG reduction policies and measures in future RTP/SCSs.
could not be implemented in this RTP/SCS. This systematic deferral of mitigation is directly contrary to CEQA’s requirements. Citizens of Goleta Valley v. Bd. of Supervisors, 52 Cal. 3d 533, 564 (1990). An EIR may not defer identification of mitigation for potentially significant offsets until after the decision on the project has been made. CEQA Guidelines § 15126.4(a)(1)(B) (“Formulation of mitigation measures should not be deferred until some future time.”); Sundstrom v. County of Mendocino, 202 Cal. App. 3d 296, 307 (1988).

The third and final measure simply calls for SANDAG to implement Best Available Control Technology during construction and operation of projects, and suggests that implementing agencies do the same. DEIR at 4.8-36. This measure is particularly significant though since SANDAG does not actually construct or operate projects. Moreover, the DEIR provides no basis to judge the effectiveness of this measure. Rather it is a “mere expression[] of hope” that SANDAG will be able to ultimately devise a way around the problem of climate change. Lincoln Place Tenants Ass’n v. City of Los Angeles, 130 Cal.App.4th 1491, 1508 (2005). CEQA rejects such an approach to mitigating significant impacts. Id.

In essence, we can find no evidence that SANDAG is seriously committed to offsetting the RTP’s substantial increase in GHG emissions consistent with AB 32 and SB 375. SANDAG must take aggressive action to reduce commute distances and commute times and increase the region’s public transit network. To this end, the revised DEIR should establish a performance standard calling for a target VMT reduction figure. The revised DEIR should also include a transit mode share goal. Inasmuch as this RTP was prepared for the express purpose of reducing vehicular travel and promoting sustainable transportation, we can find no logical explanation as to why the DEIR did not take a more vigilant approach to reducing GHG emissions.

D. The DEIR’s Analysis of Alternatives to the Draft RTP/SCS Is Inadequate.

As discussed above, this RTP/SCS will determine the region’s transportation, and the shape of growth, in San Diego for decades to come. Determining which transportation projects become a part of the Plan is likely to be one of the most important decisions the current Board will make. It is thus crucially important that the Board and the public have all available information on this subject.

This DEIR, of course, is the main vehicle for that information. Indeed, the analysis of alternatives lies at the “core of an EIR.” Citizens of Goleta Valley, 52 Cal. 3d at 564. “Without meaningful analysis of alternatives in the EIR, neither the courts nor

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R-37
The DEIR’s analysis of the RTP/SCS’s alternatives—like almost all of its impact analyses—lacks a legally adequate evaluation of their environmental effects. A valid alternatives section must include meaningful analysis—including quantitative analysis, where possible—comparing the proposed Project’s environmental effects with those of particular alternatives capable of reducing the Project’s ‘significant’ impacts. See CEQA Guidelines § 15126.6(b); Laurel Heights I, 47 Cal. 3d at 401–04; Kings County Farm Bureau, 221 Cal. App. 3d at 732 (“[i]f there is evidence of one or more potentially significant impacts, the report must contain a meaningful analysis of alternatives . . . which would avoid or lessen such impacts.”) (emphasis added).
Although the DEIR includes a comparative chart for each of the Project alternatives, this chart contains no facts or analysis and devotes only a few sentences to its discussion of each of the impact categories. See generally DEIR at Chapter 6. Consequently, it is not possible to verify the accuracy of the DEIR’s comparative evaluation of the alternatives. Importantly, the DEIR might have reached a different conclusion about the environmentally superior alternative if it had performed a more complete analysis of all the alternatives, as required by CEQA.

The DEIR refers the reader to an appendix for calculations relating to transportation and GHG emissions. DEIR at 6-32. While this chart identifies performance indicators for the operation of the region’s transportation network, it does not provide the environmental analysis necessary to compare each of the alternatives with the draft RTP/SCS. Moreover, this appendix appears to indicate that there is very little substantive difference between any of the Project alternatives. See Appendix F.

For example, Alternative 2b: Modified Funding Strategy/Modified Land Use would appear to offer advantages over the 2050 RTP/SCS because it would result in fewer highway and more transit projects, increase transit service frequencies, and alter the planning of transit projects so that they are implemented earlier than under the 2050 RTP/SCS. DEIR at 6-10,6-14. In addition, this alternative would modify the land use

R-38
Although the Draft EIR refers the reader to Appendix F for calculations relating to transportation and GHG emissions, this same information is described in the environmental analysis contained in Sections 4.16 and 4.08 of the Draft EIR. Chapter 6.0 Alternatives Analysis provides a comparison of each of the alternatives with the draft RTP/SCS and identifies differences in Table 6.4-1. Pages 6-185 through 6-187 of the Draft EIR describe the differences among alternatives associated with land use pattern impacts and transportation impacts. Contrary to the commenter’s characterization of the alternatives as having only nominal differences from the 2050 RTP/SCS, important distinctions are provided in Table 6.4.1 of the Draft EIR.

In the Draft EIR, both Alternative 2b and 3b would generally: 1) lessen the less than significant impacts of the 2050 RTP/SCS for average work trip travel time, work and higher education trips, and non-work related trips in 2035; and 2) worsen the already significant impacts of the 2050 RTP/SCS in 2035 and 2050 for congested vehicle miles of travel and times for emergency access and response. These important differences are shown in greater detail in Table 6.4-1 of Chapter 6.0, rather than in the Draft EIR appendices.
However, as a result of changes to the 2050 RTP/SCS, the analysis of alternatives contained in Chapter 6.0 of the Final EIR changed in the following ways for Alternatives 2b and 3b. These two alternatives would generally: 1) increase the less than significant travel time impacts of the 2050 RTP/SCS in 2020 for both Alternatives 2b and 3b; 2) increase the less than significant travel time impact of the 2050 RTP/SCS for Alternative 2b in 2035; 3) decrease the less than significant travel time impact of the 2050 RTP/SCS for Alternative 3b in 2035; 4) increase the less than significant travel time impact of the 2050 RTP/SCS for Alternative 3b in 2050; and 5) substantially increase significant congestion impacts for both Alternatives 2b and 3b in 2035 and 2050. These differences are shown in greater detail in Table 6.41 of Chapter 6.0 of the Final EIR.

Reasons that impacts associated with Alternatives 2b and 3b differ from the 2050 RTP/SCS include the following:

**Alternative 2b**

While the difference in 2050 configurations between the 2050 RTP/SCS and Alternative 2b is minimal, there are some important changes in 2035. In 2035 the north segment of the I-5 North Coast project is not included. The project is not complete north of Palomar Airport Road. Also in 2035, the SR-67 widening is not included. Another project that isn’t in the 2035 network is SR-94 managed lanes from I-805 to SR-125. Substantial congestion increases are related to decreased funding for roadway projects and locating growth in denser, more congested locations.

**Alternative 3b**

Alternative 3b has the most distinct contrast with the 2050 RTP/SCS because so many projects contained in the 2050 RTP/SCS are excluded from the alternative. For 2035 and 2050 the SR-78 corridor project is not included. In 2035 and 2050 the SR-67 widening is also not included. This is important because the SR-67 project was among the top scoring highway projects in the TPEC process. The biggest difference clearly is the omission in 2035 and 2050 of the entire I-5 North Coast project. The North Coast project has the biggest effect on modeled results. Substantial congestion increases are related to decreased funding for roadway projects and locating growth in denser, more congested locations.

Finally, the comment asserting that Alternative 3b does not emphasize transit is not entirely accurate. As described in Table 6.2-7 “Transit Emphasis/Modified Phasing Transit Projects”, the majority of transit projects would be implemented by year 2030 (this is the same transit emphasis scenario assumed in Alternative 3a) which is quite different than the non-transit emphasis alternatives proposed in Chapter 6.0. Therefore, Alternative 3b does place an emphasis on transit.

**R-39**

Refer to Master Response 17 for a discussion of why the 50-10 Plan was not included as an alternative in the EIR. In addition, Responses to Comments 50-66 provide direct responses to environmental and other issues raised in the 50-10 Plan.
competitive with the automobile within the urban core; and (2) to create neighborhoods that are close to needed services and amenities.19

Although SANDAG’s Alternative 2b includes some element of the 50-10 Plan, it nonetheless includes substantial increases in highway capacity by 2020. Indeed, it calls for more than $4 billion of highway expansion on the following freeways and highways: I-15, SR 76, SR 505, SR 11, SR 15, SR 94, SR 214, and I-805 over the next decade. See DEIR Table 6.2-3.

Compared to the 2050 RTP/SCS and all alternatives discussed in the DEIR, the 50-10 Plan would result in shorter automobile trips on average, long-term reduction in traffic congestion, more housing and transportation choices, many more walk and bicycle trips, reduced GHG emissions, and improved public health and overall quality of life. Because the 50-10 Plan would reduce or eliminate many of the significant impacts of the 2050 RTP/SCS, we urge SANDAG to study this alternative in the revised DEIR.

E. The DEIR Must Be Revised and Recirculated.

CEQA requires recirculation of an EIR when significant new information is added to the document after notice and opportunity for public review was provided. Pub. Res. Code § 21082.1; CEQA Guidelines § 15085.5. Laurel Heights II, 6 Cal. 4th at 1130.

As this letter explains, the draft RTP/SCS clearly requires extensive revision, which will include new information and analysis. This analysis will likely result in the identification of new, substantial environmental impacts or substantial increases in the severity of significant environmental impacts. Consequently, SANDAG must revise and recirculate the EIR for public review and comment.

II. Conclusion

For the reasons set forth above, we respectfully request that SANDAG revise the draft 2050 RTP/SCS to incorporate transportation projects that are truly

19 The Portland, Oregon-based real estate firm Gerding Edlen describes such neighborhoods as “20 minute living,” for everything residents need is within 20 minutes of their homes.
http://www.portlandonline.com/portlandplan/index.cfm?i=346917&t=46822

SHUTE, MIHALY
& WEINBERGER LLP
sustainable. To this end, SANDAG should move critical transit projects forward in the planning process and defer highway expansion projects until a transit network within the urban core is fully built-out. Additionally, we request that no further consideration be given to the RTP/SCS until an EIR is prepared that fully complies with CEQA.

Very truly yours,

Laurel Impett, AICP, Urban Planner

Rachel B. Hooper
SHUTE MIHALY & WEINBERGER LLP
Representing Cleveland National Forest Foundation & Save Our Forest and Runchlands

Matthew D. Veepa
Representing Center for Biological Diversity

Exhibits:


Exhibit C: Urban Land Institute, Growing Cooler: Evidence on Urban Development and Climate Change.
Exhibit D: Smart Mobility, Inc., 50-10 Year Transit Plan, July 2011.

cc: Duncan McFetridge, CNFF and SOFAR
R-42
SANDAG has read and acknowledges the submission of the letter attachment referred to as Exhibit A entitled “Measuring Transportation: Traffic, Mobility and Accessibility” by Victoria Transport Policy Institute. Please refer to Master Response 5 for a discussion on responses to general studies attached to Draft EIR comment letters.
Introduction
Management experts often say that, “you can’t manage what you can’t measure.” What is measured, how it is measured, and how data are presented can affect how problems are evaluated and solutions selected.

For example, a baseball player’s performance can be evaluated based on batting averages, base hits, runs batted in, and ratio of wins to losses, plus various defense statistics that depend on the player’s position. Performance statistics can be calculated per at-bat, per inning, per game, per season, or for a career. A player can be considered outstanding according to one set of statistics but inferior according to another.

This is just one example of how different measurement methods can give very different impressions about a person, group, or activity. Often, there is no single method or unit that conveys all the information needed for evaluation. Different measurement units represent different perspectives and assumptions. A couch needs to consider several different statistics when evaluating how a particular player fits into a team. It is important that decision-makers understand the different perspectives and assumptions implicit in the measurement units they use.

This article discusses three common methods used to measure transportation, the perspectives they represent, and how the selection of one or another method can affect planning decisions.

Accuracy Versus Precision
Statisticians make a distinction between accuracy and precision. “Accurate” means truthful or correct. “Precise” means measured using small units. Data can be very precise, but inaccurate.

For example, doctors often measure their patient’s weight to help evaluate their health. But weight by itself is an inadequate indicator of health. It would be inaccurate to say that everybody who weighs less than 175 pounds is healthy and everybody who weighs more than 175 pounds is unhealthy. People with different heights and builds have different optimal weights, so medical professionals must use weight-height tables or body-mass indices to interpret the health implications of a particular person’s weight.

A standard medical scale can measure a person’s weight within about 0.5 pound of accuracy. A more expensive scale can provide greater precision, but there is little point in purchasing a super-precise scale simply to track body weight. Knowing that you weigh exactly 168.305 pounds rather than about 170 pounds does little to improve your health management. Weight is relatively easy to measure and understand, but focusing too much attention on weight may distract doctors and patients from considering other health factors that are equally important but more difficult to measure, such as whether you eat a balanced diet or get sufficient exercise.

Similarly, vehicle traffic volumes and speeds are relatively easy to measure and so are often used to evaluate transport system quality. But other more difficult factors may be equally important, such as walking conditions, the distribution of common destinations, and the ease with which non-drivers can perform activities such as commuting and shopping. An accurate assessment of transport system quality requires that these factors be considered even if their measurement is less precise than those measuring traffic.
Evaluation Perspectives
Transportation systems can be evaluated in various ways that reflect different perspectives concerning users, modes, land use, transport problems and solutions, how transport activity is measured, and the type of performance indicators used. Three perspectives, called traffic, mobility, and accessibility, are compared below.

Traffic
Definition
Traffic refers to vehicle movement. This perspective assumes that “travel” means vehicle travel and “trip” means vehicle-trip. It assumes that the primary way to improve transportation system quality is to increase vehicle mileage and speed.

Users
From this perspective, transportation users are primarily motorists (including drivers and passengers). Non-motorists are considered a relatively small and unimportant minority, defined as members of households that do not own an automobile.

Modes
This perspective focuses on automobile travel. It places little value on transit and cycling, since they represent a small portion of vehicle-miles and are relatively slow. It considers walking primarily as a way for motorists to access parking facilities or as a form of recreation, and so devotes little transportation funds to nonmotorized facilities.

Figure 1 Traffic

“Traffic” refers to vehicle movement. A traffic perspective measures vehicle traffic speeds and volumes, using Levels of Service ratings and average traffic speeds as indicators. This tends to favor high-speed, high-volume roadways, resulting in more automobile-dependent transportation systems and land use patterns.

Land Use
This perspective evaluates land use primarily in terms of proximity to highways and parking supply. The best location for a public facility is along a major arterial or freeway intersection. Downtown locations are undesirable due to excessive roadway congestion and parking costs.

Transport Problems and Solutions
This perspective defines transportation problems in terms of costs, barriers and risks to motorists. It favors solutions that increase road and parking capacity, roadway traffic speeds, vehicle ownership, and the affordability of driving. From this perspective, the best way to benefit non-drivers is to help them become motorists, by making automobile and taxi travel convenient and inexpensive.
Measurement
Vehicle traffic is relatively easy to measure. Most jurisdictions have data on motor vehicle registrations, drivers' licenses, and vehicle mileage. Performance indicators include traffic volumes, average traffic speeds, roadway Level of Service (LOS), congestion delay, parking supply, vehicle operating costs and crash rates.

Mobility
Definition
Mobility refers to the movement of people or goods. It assumes that "travel" means person- or ton-miles, "trip" means person- or freight-vehicle trip. It assumes that any increase in travel mileage or speed benefits society.

Users
From this perspective, transport users are mainly motorists, since most person- and ton-miles are by motor vehicle, but recognizes that some people rely on non-automobile modes, and some areas have large numbers of transit, rideshare and cycling trips.

Figure 2 Mobility
"Mobility" refers to the movement of people and goods. This recognizes both automobile and transit modes, but still assumes that movement is an end in itself, rather than a means to an end. It tends to give little consideration to nonmotorized modes or land use factors affecting accessibility.

Modes
This perspective considers automobiles most important, but values transit, ridesharing and cycling where there is sufficient demand, such as downtowns and college campuses, and so justifies devoting a portion of transport funding to transit, HOV and cycling facilities. It supports an integrated view of the transportation system, with attention to connections between modes. For example, it considers walking and transit complementary modes since most transit trips involve walking links.

Land Use
From this perspective, convenient highway access and parking is most important, but transit and HOV access are also desirable in areas where density and demographics concentrate enough riders. The best location for public facilities has a combination of convenient roadway access, adequate parking, transit service, and cycling routes.
Transport Problems and Solutions

A mobility perspective defines transportation problems in terms of constraints on physical movement, and so favors solutions that increase motor vehicle system capacity and speed, including road and parking facility improvements, transit and ridesharing improvements, high-speed rail, aviation and intermodal connections. It gives little consideration to walking and cycling, except where they provide access to motorized modes, since they represent a small portion of person-miles. From this perspective, the best way to benefit non-drivers is to improve motorized transport, including automobile, transit and taxi modes, with more modest consideration of walking and cycling.

Measurement

Mobility is measured using travel surveys to quantify person-miles, ton-miles, and travel speeds, plus traffic data to quantify average automobile and transit vehicle speeds. In recent years techniques have become available to evaluate multi-modal transportation system performance, such as transit and cycling Level of Service (LOS) ratings.

Accessibility

Definition

Accessibility (or just access) refers to the ability to reach desired goods, services, activities and destinations (collectively called opportunities). Access is the ultimate goal of most transportation, except a small portion of travel in which movement is an end in itself (jogging, horseback riding, pleasure drives), with no destination. This perspective assumes that there may be many ways of improving transportation, including improved mobility, improved land use accessibility (which reduce the distance between destinations), or improved mobility substitutes such as telecommunications or delivery services.

Users

From this perspective, transportation users consist of people and businesses that want to reach a good, service, activity or destination. It recognizes that most people use various access options, and so cannot be classified as simply a motorist or transit rider.

Figure 3: Accessibility

Accessibility reflects both mobility (people's ability to travel) and land use patterns (the location of activities). This perspective gives greater consideration to nonmotorized modes and accessible land use patterns. Accessibility needs to be optimized with multi-modal transportation and more compact, mixed-use, walkable communities, which reduces the amount of travel required to reach destinations.
Modes
This perspective considers all access options as potentially important, including motorized and nonmotorized modes, and mobility substitutes such as telecommunications and delivery services. It supports an integrated view of transportation and land use systems, with attention to connections among modes and between transport and land use conditions. It values modes according to their ability to meet users' needs, and does not necessarily favor longer trips or faster modes if shorter trips and slower modes provide adequate access. It supports the broadest use of transport funding, including mobility management and land use management strategies if they increase accessibility.

Land Use
From this perspective, land use is as important as mobility in the quality of transportation, and different land use patterns favor different types of accessibility. The distribution of destinations, land use mix, network connectivity and walking conditions all affect transportation system performance. The best location for public facilities has a combination of convenient proximity, roadway access, transit service and walkability.

Transport Problems and Solutions
Accessibility-based planning expands the range of transport problems and potential solutions that can be considered. From this perspective, transport problems include any cost, barrier or risk that prevents people from reaching desired opportunities. Solutions can include traffic improvements, mobility improvements, mobility substitutes, (such as telecommuting and delivery services), and more accessible land use.

Measurement
Accessibility is evaluated based on the time, money, discomfort and risk (the generalized cost) required to reach opportunities. Access is relatively difficult to measure because it can be affected by so many factors. For example, access to employment is affected by the location of suitable jobs, the quality and cost of travel options that reach worksites, and the feasibility of telework (which may allow employment for a firm that is physically difficult to reach). Activity-based travel models and integrated transportation/land use models are most suitable for quantifying accessibility.\(^7\)
Land Use Accessibility

Land use patterns affect mobility and accessibility in various ways:

1. **Density** (number of people or jobs per unit of land area) increases the proximity of common destinations, and the number of people who use each mode, increasing demand for walking, cycling and transit.

2. **Land use mix** (locating different types of activities close together, such as shops and schools within or adjacent to residential neighborhoods) reduces the amount of travel required to reach common activities.

3. **Nonmotorized conditions.** The existence and quality of walking and cycling facilities can have a major effect on accessibility, particularly for non-drivers.

4. **Network connectivity** (more roads or paths that connect one geographic area with another) allows more direct travel.

Access can be evaluated at different geographic scales. At a fine-grained scale, accessibility is affected by the quality of the pedestrian conditions and the clustering of activities within a site, mall or commercial center. At the neighborhood level, accessibility is affected by the quality of sidewalks and cycling facilities, street connectivity, geographic density and mix. At the regional level, accessibility is affected by area connectivity, transit service, geographic density and mix. **Interregional accessibility refers to the quality of highways, air service, bus and rail service, and shipping services to other regions.**

**Figure 4  Land Use Affects Transportation**

Land use patterns have major impacts on transportation system performance. Automobile-oriented land use has dispersed destinations, while roadways and a generous portion of land devoted to parking. A more multi-modal land use pattern has destinations clustered into walkable centers.

*Travel time maps use isochrones (lines of constant time) to indicate the time needed to travel from a particular origin to other areas.* For example, areas within one hour may be colored a dark red, within two hours a lighter red, within three hours a dark orange, and within four hours a light orange. Maps can indicate and compare travel times by different modes. For example, one set of maps could show travel times for automobile travel and another for public transit travel. Travel time maps are an indication of accessibility.
The Role of Different Modes

How transportation is measured affects the perceived value of different modes. Different modes play different roles in providing mobility and accessibility. For example, nonmotorized modes serve shorter-distance trips and motorized modes serve longer-distance mobility. Some modes are more suitable for people with physical disabilities or low incomes. Some modes are particularly important for industrial activity.

Standard transport statistics indicate that in North America more than 90% of households own an automobile, and more than 90% of trips are made by automobile, while only about 5% of trips are made by nonmotorized modes and less than 2% by transit. This suggests that private vehicle travel is by far the most important form of transport, and that improving other modes does little to address transport problems.

But the high priority given automobiles and the low priority given other modes is partly an artifact of how data are collected and presented. Most travel surveys only count the primary mode used between relatively large Transportation Analysis Zones (TAZs), and some only count peak-period travel or commute trips. As a result, they undercount shorter trips that occur within a TAZ, nonmotorized links of motorized trips, off-peak trips, non-work trips, travel by children, and recreational travel. For example, most surveys would not count a walking trip from a parking space to a workplace, or a walk to a restaurant during a lunch break. If a traveler cycles 10 minutes to a bus stop, rides a bus for five minutes, and walks another 5 minutes to their destination, this bike-transit-walk trip is usually coded simply as a transit trip, even though the nonmotorized links take more time than the motorized link.

Although only about 5% of trips are made exclusively by nonmotorized modes, four to six times as many involve at least some walking or cycling on public right-of-way. Similarly, although only about 2% of total trips are made by public transit, about 5% of US adults report that they rely primarily on public transit for transport, and 12% used public transit at least once during the previous two months. According to a U.K. survey, walking represents 2.8% of total mileage, 17.7% of travel time, and 24.7% of trips, as indicated in Table 1 and Figure 5. If measured simply in terms of distance, walking seems insignificant, but not if evaluated in terms of trips, travel time, or exposure to street environments. Walking conditions therefore have a major impact on how people perceive the transportation system and the local environment, since we experience activities by the amount of time they take, not just distance traveled.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Average Annual Travel By Mode, UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Miles</td>
</tr>
<tr>
<td>Walk</td>
<td>193</td>
</tr>
<tr>
<td>Bicycle</td>
<td>31</td>
</tr>
<tr>
<td>Motorcycle/Moped</td>
<td>36</td>
</tr>
<tr>
<td>Car or Truck Driver</td>
<td>3,466</td>
</tr>
<tr>
<td>Car or Truck Passenger</td>
<td>2,047</td>
</tr>
<tr>
<td>Other private vehicles</td>
<td>162</td>
</tr>
<tr>
<td>Public Transit</td>
<td>897</td>
</tr>
<tr>
<td>Total</td>
<td>6,913</td>
</tr>
</tbody>
</table>

Walking represents just 2.8% of personal mileage, but a much larger portion of travel time and trips.
Figure 5 compares how the choice of measurement units can affect the perceived importance of different modes. When measured by miles, walking is of less significance than when measured by trips or time. People tend to perceive travel based on time, not distance. A short walking trip often replaces a longer automobile trip, for example, walking to a local store rather than driving across town to a supermarket. Motorists tend to travel far more annual miles than people who do not have a car. As a result, it is often most appropriate to compare travel based on time and trips rather than miles.

The U.S. National Household Travel Survey shows similar patterns, as indicated in Figure 6. The relative importance of walking, cycling and public transit travel is much higher when measured based on travel time or trips rather than distance. Transportation planners often evaluate travel based on mileage, which tends to favor motorized modes at the expense of walking and other slower modes.

The portion of travel by different modes varies depending on how it is measured.
Trade-offs Between Different Types of Accessibility

There are inherent trade-offs between different forms of accessibility. This occurs because roadway design and land use patterns optimal for one mode are generally less suited for other modes. As a result:

1. Highways designed for maximum vehicle mobility have poor accessibility (few offramps, driveways or cross-streets), while roads designed for maximum accessibility (many driveways and intersections) cannot safely accommodate higher-speed traffic.

2. Land use patterns that maximize automobile access (low density development with activities located along arterials and highway intersections) tend to have poor transit and nonmotorized access, while transit-oriented development (clustered development with limited parking and good pedestrian access) may increase traffic and parking congestion.

3. Wide roads and higher traffic speeds tend to create barriers to walking, so vehicle and pedestrian street design objectives often conflict.

Figure 7  Transportation Decisions Involve Trade Offs

Transportation decisions often involve tradeoffs between different forms of access, such as how much road space to devote to different modes and how much parking to require at destinations. A transport and land use system optimized for vehicle traffic often provides poor access by other modes.

Because of these trade-offs, traffic-based performance indicators tend to favor automobile access over other modes. For example, roadway "improvements" that increase vehicle traffic volumes and speeds tend to create barriers to walking, and therefore to transit travel since most transit trips involve walking links. Such projects are considered beneficial from a traffic perspective which focuses on vehicle travel conditions, but not from an accessibility perspective which also considers impacts on other modes. It is important that planners understand these tradeoffs and take them into account when making transportation and land use decisions.

Assumptions About Travel Demand

Conventional transport planning and modeling is based on the concept of travel demand, which assumes that consumers have freely chosen one possibility out of all others, and so observed travel patterns represent the best possible set of actions that individuals could have taken given their preferences and the spatial structure of the city. However, current travel demand also reflects existing constraints, such as inadequate alternatives to driving. Given other options, such as improved walking, cycling and public transit conditions, or different price structures, travel demand could be quite different.
Reference Units

Reference units are measurement units normalized to help compare impacts per mile, per trip, per vehicle, per dollar or per capita. Which reference units are used can affect how problems are defined and which solutions are considered. Measured one way, a particular program or project may seem costly and inefficient. Measured another way and the same proposal may seem affordable and worthwhile.

For example, a project may seem expensive if measured in total lifetime expenses, but cheap if measured as “cents per day” per person. It is generally best to report costs and benefits in real (inflation adjusted) per-capita-annual-dollars, which is relatively easy to understand and compare with other expenditures. Exactly which costs are included, and the group included in the denominator (residents, taxpayers, household, users, etc.) should be clearly defined. It is also helpful to compare costs with similar programs or with peers. For example, a new transportation program can be compared with current transportation expenditures, or with what other jurisdictions spend on similar services. If possible, projects should be evaluated based on incremental costs and benefits.

It is important to be comprehensive and realistic when comparing different modes. For example, when computing the cost efficiency of road and transit improvements, it is important to estimate the full incremental costs of each option in a particular situation, such as on a particular corridor. It would be unfair to compare the full cost of providing urban transit services with just the cost of adding a roadway lane, since automobile trips also require parking spaces at destinations, and they require each traveler to pay vehicle ownership and operating costs.16

Different measurement units reflect different perspectives:
1. Vehicle-mile units reflect a traffic perspective that gives high value to automobile travel.
2. Passenger-mile units reflect a mobility perspective that values automobile and transit travel, but gives less value to nonmotorized modes because they tend to be used for short trips.
3. Per-trip units reflect an access perspective which gives equal value to automobile, transit, cycling, walking and telecommuting.
4. Travel time units reflect an access perspective that gives higher priority to walking, cycling and transit travel, because they tend to represent a relatively large portion of travel time.
5. Generalized costs (time and money costs) units reflect an access perspective.

Transportation professionals often use distance-based reference units, such as emissions per vehicle-mile or crash fatalities per billion vehicle-kilometers, although this ignores the increases in these costs that result from increased per capita vehicle travel, and the benefits of mobility management strategies that reduce total vehicle mileage. For example, urban highway expansion tends to reduce emissions and crashes per vehicle-kilometer, but by stimulating increased total vehicle travel it often increase per capita emissions and crash costs. It is usually best to measure these impacts per capita. Other reference units may be appropriate for project evaluation. For example, the mobility and congestion reduction impacts of improvements to various modes (automobile, ride-sharing and public transit) can be compared per additional peak-period person trip.
Summary

Table 3 summarizes differences between these three ways to measure transportation, including their planning perspectives and assumptions.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Comparing Transportation Measurements</th>
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<tbody>
<tr>
<td><strong>Traffic</strong></td>
<td><strong>Mobility</strong></td>
</tr>
<tr>
<td><strong>Definition of Transportation</strong></td>
<td>Vehicle travel</td>
</tr>
<tr>
<td><strong>Unit of measurement</strong></td>
<td>Vehicle-miles and vehicle-trips</td>
</tr>
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<td><strong>Modes considered</strong></td>
<td>Automobile and truck</td>
</tr>
<tr>
<td><strong>Common performance indicators</strong></td>
<td>Vehicle traffic volumes and speeds, roadway Level of Service, costs per vehicle-mile, parking convenience</td>
</tr>
<tr>
<td><strong>Assumptions concerning what benefit consumers</strong></td>
<td>Maximum vehicle mileage and speed, convenient parking, low vehicle costs</td>
</tr>
<tr>
<td><strong>Consideration of land use</strong></td>
<td>Favors low-density urban development patterns</td>
</tr>
<tr>
<td><strong>Favored transport improvement strategies</strong></td>
<td>Increased road and parking capacity, speed and safety</td>
</tr>
</tbody>
</table>

This table compares the three major approaches to measuring transportation.

Evaluating transportation based on traffic and mobility tends to place little value on mobility substitutes and land use management strategies, because they reduce the need for physical travel. From this perspective, higher density, clustered development is usually considered harmful because it tends to increase congestion and reduce roadway level-of-service, even if this is offset by improved access that reduces per capita vehicle travel and congestion delay. Only by measuring transport in terms of access can all impacts and transportation improvement options be considered, as illustrated in Table 4.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Comparing Transportation Improvement Strategies</th>
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<tr>
<td><strong>Transportation Improvement Strategies</strong></td>
<td><strong>Traffic</strong></td>
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<td>Roadway Improvements</td>
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<tr>
<td>Transit Improvements</td>
<td>✓</td>
</tr>
<tr>
<td>bikesharing</td>
<td>✓</td>
</tr>
<tr>
<td>Pedestrian and cycling improvements</td>
<td>✓</td>
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<td>Delivery services</td>
<td>✓</td>
</tr>
<tr>
<td>Telework</td>
<td>✓</td>
</tr>
<tr>
<td>Location-Efficient Development</td>
<td>✓</td>
</tr>
</tbody>
</table>

When measured in terms of vehicle traffic, the main way to improve transportation is to increase roadway capacity and speeds. When measured in terms of mobility, transit, bikesharing and nonmotorized transportation improvements are also recognized as potential solutions. When measured in terms of access, the widest possible range of solutions can be considered, including strategies that substitute for physical travel and increase land use accessibility.
Examples

Three examples of how measurement methods can affect evaluation are discussed below.

Comparing Modes

Consider the daily travel of somebody who commutes by car but walks and bikes for errands, as summarized in Table 5. A traffic perspective, which only counts motor vehicle travel, classifies her as an auto-commuter and measures her car mileage. A mobility perspective also counts walking and cycling trips, but since driving represents 87% of person-miles, considers nonmotorized modes of little importance. However, an access perspective indicates that driving represents just 50% of her travel time and only 20% of her trips, suggesting a more important role for alternative modes.

Table 5: Example of Daily Person Trips

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Mode</th>
<th>Distance (miles)</th>
<th>Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To work</td>
<td>Drive</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>From parking to office</td>
<td>Walk</td>
<td>0.2</td>
<td>4</td>
</tr>
<tr>
<td>To restaurant for lunch</td>
<td>Walk</td>
<td>0.3</td>
<td>10</td>
</tr>
<tr>
<td>From restaurant after lunch</td>
<td>Walk</td>
<td>0.3</td>
<td>10</td>
</tr>
<tr>
<td>From office to parking</td>
<td>Walk</td>
<td>0.2</td>
<td>4</td>
</tr>
<tr>
<td>To home</td>
<td>Drive</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>To noncommuter center</td>
<td>Bike</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Errands travel between shops</td>
<td>Walk</td>
<td>0.3</td>
<td>10</td>
</tr>
<tr>
<td>Home from shopping center</td>
<td>Bike</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Walk dog</td>
<td>Walk</td>
<td>0.3</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Distance (miles)</th>
<th>Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2 trips (20%)</td>
<td>30.6 (30%)</td>
</tr>
<tr>
<td>Walk</td>
<td>6 trips (60%)</td>
<td>24 (73%)</td>
</tr>
<tr>
<td>Bike</td>
<td>2 trips (20%)</td>
<td>2.6 (6%)</td>
</tr>
<tr>
<td>Total</td>
<td>10 trips (100%)</td>
<td>34.4 (100%)</td>
</tr>
</tbody>
</table>

(Assumes Drive = 30 mph, Walk = 3 mph, Bike = 10 mph. Values in parentheses indicate percentage of total travel.)

Different perspectives give different conclusions as to how best to improve transport. A pedestrian shortcut that reduces walking distance from an office to a nearby restaurant by 0.2 miles provides only a 1% reduction in travel distance, and so appears to have little value if evaluated in terms of mobility. But this saves 12% of total travel time, the same time savings that might be provided by a major roadway improvement that increases average traffic speeds from 30 to 38 mph for a 15-mile commute.

Similarly, a particular road might carry 5,000 cars with 6,000 passengers, 100 transit buses carrying 2,000 passengers, 500 pedestrians, 200 bicycles, and have 100 adjacent homes and businesses. Trafiic-based analysis, measured in vehicle-trips, considers motorists the dominant road user group, justifying road designs that maximize vehicle volume and speed. Mobility-based analysis, measured in person-miles, gives greater value to buses and rideshare vehicles, and so may justify HOV priority features. Access-based analysis, measured in person-minutes-of-exposure, gives greater value to pedestrians, cyclists and residents, since they spend more time on the roadway. This justifies greater emphasis on nonmotorized improvements, traffic calming and landscaping.
Evaluating Problems and Solutions

Say a community experiences growing peak-period traffic congestion. A traffic perspective, which evaluates transport system performance based on roadway level-of-service or average traffic speeds, justifies adding traffic lanes. This primarily benefits motorists. Improvements to other modes, such as transit, cycling and walking, are only considered worthwhile if they significantly reduce vehicle traffic congestion.

A mobility perspective, which measures multi-modal level-of-service and travel speeds, considers delays, risks and costs to all travelers, and expands the range of solutions to include improvements to alternative modes and connections between modes. This tends to result in a wider distribution of benefits.

An accessibility perspective expands the range of problems and solutions further. It takes into account land use factors, the quality of travel modes and mobility substitutes. From this perspective, traffic congestion is just one indicator of transport system quality. Some areas with high levels of traffic congestion have good accessibility, and areas with little congestion have poor accessibility. Accessibility can be improved not only by increasing vehicle flow and personal mobility, but also by increasing land use clustering and mix, improving walkability, and improving mobility substitutes such as telecommunications and delivery services.

School Location Decisions

From a traffic perspective, the best location for a public school (or other major public facility) is adjacent to a major roadway at the urban fringe where land is available for abundant parking. This assumes that most staff and students will arrive by car or school bus. From a mobility perspective, the best location is on a major urban street with adequate parking, frequent public transit service, and perhaps a bike lane. This assumes that most staff and students will arrive by automobile, but some will bicycle or use transit. From an accessibility perspective, the best location for a school may be within a residential neighborhood, even if driving is inconvenient, because most students and some staff will walk or bicycle.

Figure 8 How Transport is Measured Affects School Location And Design

A school designed for convenient automobile access is located on a busy street at the urban fringe where there is abundant land for parking. A school optimized for multi-modal access is located in the center of a residential neighborhood, where most children can walk, although this may be inconvenient for access by automobile.
**Biased Transport Planning Language**

Many transport planning terms unintentionally favor motor vehicle travel over other forms of access. For example, increased road and parking capacity is often called an “improvement,” although wider roads and larger parking facilities, and the increased traffic volumes and speeds that result, tend to degrade pedestrian and cycling mobility. Calling such changes “improvements” indicates a bias in favor of one mode over others. Objective language uses neutral terms, such as “added capacity,” “additional lanes,” “modifications,” or “changes.”

The terms “traffic” and “trip” often refer only to motor vehicle travel. Short trips, non-motorized trips, travel by children, and non-commute trips are often undercounted or ignored in transport surveys, models, and analysis. Although automobile and transit trips often begin and end with a pedestrian or cycling link, they are often classified simply as “auto” or “transit” trips.

The term “efficient” is frequently used to mean increased vehicle traffic speeds. This assumes that faster vehicle traffic always increases overall efficiency. This is not necessarily true. High vehicle speeds can reduce total traffic capacity, increase resource consumption, increase costs, reduce transportation choice, create less accessible land use patterns, and increase automobile dependency, reducing overall system efficiency.

Transportation professionals often rate the overall quality of the roadway network based on Level of Service (LOS) ratings that evaluate conditions for automobile traffic, but apply no comparable rating for other travel modes. It is important to indicate which users are considered when level of service values are reported.

<table>
<thead>
<tr>
<th>Biased Terms</th>
<th>Neutral Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic</td>
<td>Motor vehicle traffic, pedestrian, bike traffic, etc.</td>
</tr>
<tr>
<td>Trips</td>
<td>Motor vehicle trips, person trips, bike trips, etc.</td>
</tr>
<tr>
<td>Improve</td>
<td>Change, modify, expand, widen</td>
</tr>
<tr>
<td>Enhance</td>
<td>Change, increase traffic speeds</td>
</tr>
<tr>
<td>Deteriorate</td>
<td>Change, reduce traffic speeds</td>
</tr>
<tr>
<td>Upgrade</td>
<td>Change, expand, widen, replace</td>
</tr>
<tr>
<td>Efficient</td>
<td>Faster, increased vehicle capacity</td>
</tr>
<tr>
<td>Level of service</td>
<td>Level of service for...</td>
</tr>
</tbody>
</table>

**Examples:**

**Biased:** “Level of service at this intersection is rated ‘D.’ The proposed improvement will cost $100,000. This upgrade will make our transportation system more efficient by enhancing capacity, preventing deterioration of traffic conditions.”

**Neutral:** “Level of service at this intersection is rated ‘D’ for motorists and ‘E’ for pedestrians. A right turn channel would cost $100,000. This road widening project will increase motor vehicle traffic speeds and capacity but may reduce safety and convenience to pedestrian travel.”
Conclusions

There are many ways to measure transportation system performance, each reflecting particular perspectives concerning who, what, where, how, when and why. Different methods favor different types of transport users and modes, different land use patterns, and different solutions to transport problems.

Vehicle traffic is easiest to measure, but this approach only considers a narrow range of transportation problems and solutions. Mobility is more difficult to measure, since it requires tracking people’s travel behavior. It still considers physical movement as an end in itself, rather than a means to an end, but expands the range of problems and solutions considered to include alternative modes such as transit, ridesharing, cycling and walking.

Accessibility is most difficult to measure, because it requires taking into account land use, mobility and mobility substitutes, but most accurately reflects the ultimate goal of transportation, and allows widest range of transport problems and solutions to be considered. For example, an accessibility perspective may identify low-cost solutions to transportation problems, such as improving local walkability; encouraging land use mix so common destinations such as stores, schools and parks are located near residential areas; and improving communications services for isolated people and communities.

There is no single way to measure transportation performance that is both convenient and comprehensive. Transportation professionals should become familiar with the various measurement methods and units available, learn about their assumptions and perspectives, and help decision makers understand how they are best used to accurately evaluate problems and solutions.

Figure 9  How Transport Is Measured Affects Planning Decisions

Conventional ways of measuring transportation system performance, such as roadway Levels of Service and traffic speed, tend to favor vehicle travel over other forms of access. Only by developing better methods of measuring mobility and accessibility will the full value of multi-modal transport systems and more accessible land use patterns be recognized.
Endnotes


4. Access To Destinations (www.cta.mun.ca/access-study/links/index.html) is a comprehensive research program by the University of Minnesota’s Center for Transportation Studies (CTF) to develop practical methods for evaluating accessibility for transportation and land use planning applications.


6. ITE Smart Growth Task Force, Smart Growth Transportation Guidelines, Institute of Transportation Engineers (www.ite.org), 2003.


R-43
SANDAG has read and acknowledges the submission of the letter attachment referred to as Exhibit B entitled “Smart Congestion Reductions” by Victoria Transport Policy Institute. Please refer to Master Response 5 for a discussion on responses to general studies attached to Draft EIR comment letters.
Introduction

Recent publications argue that expanding urban highways is a cost effective and desirable way to reduce traffic congestion (TDA 2003; AIUJA 2004; Cox and Pisarski 2004; Hartgen and Fields 2006; Poole 2006). They claim that highway expansion provides congestion relief, a seductive term since congestion is stressful and costly. People understandably want relief. But this may be an example of a misguided solution that exacerbates the problem it was intended to solve and has undesirable unintended consequences.

As an analogy, consider the role laxatives should play relieving constipation. Laxatives are sometimes appropriate, but it is generally best to address constipation by changing diet (more fiber and liquids) and exercise (take a walk), because laxatives’ effectiveness declines with frequent use, they can hide more severe diseases, and they can exacerbate other medical problems. A physician who prescribes laxatives without investigating why the patient is constipated or considering other solutions is guilty of malpractice.

Similarly, chronic traffic congestion is often a symptom of more fundamental problems, such as inadequate mobility options that force people to drive for every trip, and dispersed land use patterns that increase travel distances. Where this is true, expanding roads may reduce symptoms in the short term but exacerbate problems over the long term.

Although roadways projects (particularly safety and surface quality improvements) can be an appropriate part of a city’s transport program, continually expanding congested highways tends to be inefficient. The first highways in an area often provide large economic returns, but marginal benefits diminish as more capacity is added for the following reasons:

- The first highway projects are generally the most cost effective, because planners are smart enough to prioritize improvements. For example, if there are several possible highway alignments on a corridor, those with the greatest benefits and lowest costs are generally built first, leaving less cost effective options for subsequent implementation.
- Interregional highways (those connecting cities) are generally constructed first. They tend to provide greater economic benefits and have lower unit costs than local highway expansion, due to numerous conflicts and high land costs in urban areas.
- Adding capacity tends to provide declining user benefits, since consumers are smart enough to prioritize trips. For example, if highways are congested consumers organize their lives to avoid peak automobile period trips. As highway capacity increases they travel more during peak periods, perhaps driving across town during rush hour for an errand that would be deferred, or moving further away from their workplace. Each additional vehicle mile provides smaller user benefits, since the most valued vehicle-miles are already taken.

This paper investigates claims that highway expansion is a cost effective way to reduce urban traffic congestion, and evaluates the role that roadway capacity expansion should play in improving transportation. This is a companion to the report Smart Transportation Investments II: Reevaluating The Role Of Public Transit For Improving Urban Transportation (Litman 2006b).
Context

Highway expansion advocates are responding to changes in transportation planning practices during the last two decades. Traditional transport planning is reductionist; individual organizations are expected to solve narrowly defined problems. For example, transport agencies (then called highway departments) were responsible for improving vehicle traffic flow, while transit agencies were responsible for providing mobility for non-drivers, and environmental agencies were responsible for reducing pollution emissions. This type of planning often results in organizations implementing solutions to problems within their mandate that exacerbate other problems facing society, and tends to undervalue strategies that provide multiple benefits.

Modern planning is more comprehensive, taking into account additional impacts and options. It measures transport system performance differently (Litman, 2003). Traditional planning primarily measures vehicle traffic using indicators such as roadway level of service (LOS) ratings, average travel speeds, and travel time indices that only reflect roadway conditions. Planners increasingly evaluate transport based on mobility (the movement of people and goods) and accessibility (the ease of reaching desired goods, services, and activities), which expands the range of possible solutions to transport problems. For example, measuring transport based on mobility allows improvements to alternative modes to be considered, and based on accessibility allows more accessible land use development to be considered as possible solutions to transport problems.

Highway expansion advocates contend that efforts to increase transport system diversity and encourage more efficient use of the transportation system have been tried and failed, or are harmful to users, and so advocate a return to older transportation planning practices that define transportation simply in terms of motor vehicle traffic.

There is an alternative narrative. During the last century the U.S. built an extensive roadway system that serves users relatively well. Motorists can drive to most destinations with relative convenience, comfort and safety, except under urban-peak conditions. The main transport problems in most urban communities are traffic congestion, inadequate mobility for non-drivers, and various external costs of motor vehicle traffic, including road and parking facility costs, accidents and pollution emissions, all problems reduced with improved travel options, more efficient travel behavior, and more accessible land use development. With a mature roadway system, it may be better to increase transport diversity and encourage efficiency rather than continuing to expand highway capacity.
Evaluating Congestion

Highway expansion advocates tend to exaggerate congestion costs and bias their analysis to favor highway expansion over other types of transportation improvements.

Traffic congestion can be measured in various ways, some of which only reflect motorists’ perspective and ignore congestion reduction benefits to travelers who shift modes or from more accessible land use patterns. Table 1 compares various congestion indicators and indicates whether they are comprehensive in terms of considering impacts of alternative modes and more accessible land use.

**Table 1 Roadway Congestion Indicators (Litman, 2006)**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Comprehensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Level Of Service (LOR)</td>
<td>Intensity of congestion delays on a particular roadway or at an intersection, rated from A (uncongested) to F (most congested).</td>
<td>No</td>
</tr>
<tr>
<td>Travel Time Rate</td>
<td>The ratio of peak period to free flow travel times, considering only recurring delays (normal congestion delays).</td>
<td>No</td>
</tr>
<tr>
<td>Travel Time Index</td>
<td>The ratio of peak period to free flow travel times, considering both recurring and incident delays (e.g., traffic crashes).</td>
<td>No</td>
</tr>
<tr>
<td>Percent Travel Time In Congestion</td>
<td>Portion of peak-period vehicle or person travel that occurs under congested conditions.</td>
<td>No if for vehicles, yes if for people.</td>
</tr>
<tr>
<td>Congested Road Miles</td>
<td>Portion of roadway miles that are congested during peak period.</td>
<td>No</td>
</tr>
<tr>
<td>Congested Time</td>
<td>Estimate of how long congested &quot;rush hour&quot; conditions exist.</td>
<td>No</td>
</tr>
<tr>
<td>Congested Lane Miles</td>
<td>The number of peak-period lane miles of congested travel.</td>
<td>No</td>
</tr>
<tr>
<td>Annual Hours Of Delay</td>
<td>Hours of extra travel time due to congestion.</td>
<td>No if for vehicles, yes if for people.</td>
</tr>
<tr>
<td>Annual Delay Per Capita</td>
<td>Hours of extra travel time divided by area population.</td>
<td>Yes</td>
</tr>
<tr>
<td>Annual Delay Per Road User</td>
<td>Extra travel time hours divided by peak period road users.</td>
<td>No</td>
</tr>
<tr>
<td>Excess Fuel Consumption</td>
<td>Total additional fuel consumption due to congestion.</td>
<td>Yes</td>
</tr>
<tr>
<td>Fuel Per Capita</td>
<td>Additional fuel consumption divided by area population.</td>
<td>Yes</td>
</tr>
<tr>
<td>Annual Congestion Costs</td>
<td>Hours of extra travel time multiplied times a travel time value, plus additional fuel costs. This is a monetized value.</td>
<td>Yes</td>
</tr>
<tr>
<td>Congestion Cost Per Capita</td>
<td>Additional travel costs divided by area population.</td>
<td>Yes</td>
</tr>
<tr>
<td>Congestion Burden Index (CHI)</td>
<td>Travel time index multiplied by the proportion of commuters subject to congestion by driving to work.</td>
<td>Yes</td>
</tr>
<tr>
<td>Avg. Traffic Speed</td>
<td>Average peak-period vehicle travel speeds.</td>
<td>No</td>
</tr>
<tr>
<td>Avg. Commute Travel Time</td>
<td>Average commute trip time.</td>
<td>Yes</td>
</tr>
<tr>
<td>Avg. Per Capita Travel Time</td>
<td>Average total time devoted to travel.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

This table summarizes various congestion cost indicators. Some only consider impacts on motorists and so ignore congestion reduction benefits of shifts to alternative modes and more accessible land use.
For example, indicators such as the Travel Time Index (TTI, the ratio of actual vehicle travel times over freeflow travel times) measure roadway congestion intensity but ignore exposure. They do not consider the degree to which travelers can avoid roadway congestion by shifting to alternative modes (such as grade-separated High Occupancy Vehicles and public transit, or telecommuting), nor the effects of land use patterns on trip distances. The TTI actually implies that congestion declines if vehicle mileage on uncongested roadways increases, as can occur if urban fringe highway expansion stimulates more dispersed land use patterns. Other indicators, such as Congestion Costs Per Capita, are more comprehensive, because they account for alternative modes and travel distance, and so expand the range of possible solutions.

In addition, the TTI calculates delays relative to freeflowing traffic speeds. Most economists consider this is inappropriate, since it is equivalent to suggesting that a restaurant should be sized to accommodate all the patrons it could attract if it gave food away. This methodology exaggerates congestion cost values. A more appropriate approach is to measure delays beyond a moderate level of congestion (LOS C or D), reflecting what is economically optimal (Hertini, 2005). Winston and Langer (2004) estimated that congestion costs are actually about half of those published by the Texas Transportation Institute. Through intention or ignorance, highway expansion advocates generally select the Travel Time Index and therefore exaggerate congestion problems and undervalue alternative modes and smart growth as congestion reduction strategies.

**Figure 1** Costs Ranked by Magnitude ('Transportation Costs,' VTPI, 2005)

![Costs Ranked by Magnitude](image)

*This figure compares various costs of automobile transportation. Congestion is a moderate cost, far lower than vehicle costs, crash damages, parking and roadway costs.*
Smart Congestion Reductions: Evaluating Highway Expansion Benefits
Victoria Transport Policy Institute

Congestion is a moderate cost compared with other transportation costs, as indicated in Figure 1. Per capita vehicle expenses average about $4,000, crash costs (including lost productivity and monetized values for pain) more than $1,500, parking facilities costs more than $1,000, and roadway costs total about $400, compared with approximately $350 per capita congestion costs estimated by the Texas Transportation Institute.

Highway expansion advocates argue that because VMT grew faster than lane-miles in recent years, there is a roadway capacity “deficit.” But highway lane-miles growth rates during the Interstate Highway development period (1950s-70s) should not be compared with later periods, after the highway system was complete, when capacity expansion is only needed to address specific problems. In addition, the greatest increases in VMT involved personal and off-peak travel, and increased urban-peak travel means that more corridors achieve volume thresholds needed for efficient transit and HOV facilities. It is therefore wrong to assume that roadway lane-miles should increase with VMT.

Highway expansion advocates often extrapolate past trends to predict huge future growth in vehicle travel and traffic congestion, although demographic (aging population), economic (rising fuel prices), market (increase consumer preferences for alternative modes), transportation (declining per capita vehicle travel) and management (increased application of transportation systems management) trends are likely to reduce future traffic growth rates (Litman, 2005a). They often use older traffic models that exaggerate future congestion problems by ignoring the tendency of congestion to be self-limiting; congestion tends to limit peak-period traffic growth, as consumers respond by shifting travel time, route, mode and destination (“Traffic Model Improvements,” VTPI, 2006). Predictions that roads will reach “gridlock” are generally wrong. This indicates that congestion problems will only increase significantly in areas with rapid population or freight traffic growth, and only if they fail to implement mobility management strategies.

Advocates use exaggerated analysis to justify highway expansion. For example, Cox and Pisarski (2004) cite an obscure French study (Proudhon and Lee 1998) showing a positive relationship between employment accessibility and regional productivity to predict huge economic returns from highway capacity expansion. Although the basic concept is appropriate—urban economists find plenty of evidence that improved accessibility increases productivity (Haughcout 2000)—the particular application is inappropriate since urban highway expansion tends to stimulate more dispersed development that reduces rather than increases accessibility (Muro and Puentes 2004).

This is not to suggest that congestion problems should be ignored and congestion reduction efforts are unwarranted, but other costs should be considered when evaluating congestion reduction strategies. For example, it would be misguided to implement a policy or program that reduces congestion costs by 10% if doing so increased vehicle expenses, road or parking facility costs, crashes or environmental damages by yet 3% each. On the other hand, a congestion reduction strategy provides far more total benefit if it also helps reduce these other costs even by small amounts.
Congestion Reduction Impacts

As mentioned earlier, traffic congestion tends to maintain self-limiting equilibrium: it grows to the point that congestion delays constrain further peak-period vehicle trips, causing travelers to shift to alternative times, routes and modes, and forego lower-value trips. For example, when roads are congested you might choose a closer destination or defer a trip until later, but if congestion is reduced you make those peak-period trips. Similarly, when considering a new home or job you might accept a maximum commute 20 miles if the main highway is congested, but up to 30 miles if the highway is widened and congestion reduced. Figure 2 illustrates this effect. As a result, congestion seldom gets as severe as worst-case predictions warn, and expanding roadways tends to generate traffic (increase peak-period vehicle travel, including shifts in time and route) and induce travel (increase total vehicle mileage) compared with what would otherwise occur.

(Litman 2001)

Figure 2

How Road Capacity Expansion Generates Traffic (Litman, 2001)

Traffic grows when roads are uncongested, but growth rates decline as congestion develops, reaching a self-limiting equilibrium (indicated by the curve becoming horizontal). If capacity is added, traffic growth continues until it reaches a new equilibrium. The additional peak-period vehicle travel that results is called "generated traffic." The portion that consists of absolute increases in vehicle travel (as opposed to shifts in time and route) is called "induced travel."

This additional vehicle travel provides direct benefits to travelers, which can be calculated and incorporated into economic evaluation using consumer surplus analysis, and imposes various external costs (Litman 2001).
Various studies have quantified the amount of vehicle travel generated and induced by roadway expansion (TRB, 1995; Litzman, 2001). Below are summaries of this research:

- Using data on California freeway expansion, traffic volumes, and various demographic and economic factors between 1989 and 1994, Cervero (2003) found the long-term elasticity of VMT with respect to traffic speed to be 0.64, meaning that a 10% increase in speed increases VMT 6.4%, so about 80% of added road capacity is filled with additional peak-period traffic.
- Time-series data indicates an elasticity of vehicle travel with respect to lane miles of 0.5 in the short run, and 0.8 in the long run (Nolte, 2001). This means that half of increased roadway capacity is filled with added travel within about 5 years, and 80% of the increased capacity eventually fills. Urban roads, which tend to be most congested, had higher elasticity values than rural roads, as expected due to their greater congestion and latent demand.
- The medium-term elasticity of highway traffic with respect to California state highway capacity was measured to be 0.6-0.7 at the county level and 0.9 at the municipal level (Hansen and Huang, 1997). This means that 60-90% of increased road capacity is filled with new traffic within five years. Each 1% increase in highway lane-miles increased VMT about 0.65%.

A major study found the following elasticity values for vehicle travel with respect to travel time: urban roads, -0.27 in the short-term and -0.57 over the long term; rural roads, -0.67 in the short term and -1.33 in the long term (Goodwin, 1996). These values are used by the U.S. Federal Highway Administration for highway project evaluation.

Because of these effects it is unsurprising that urban highway expansion provides modest congestion reduction (STPP 2001). As stated in the Urban Mobility Study (TTI 2005), “This analysis shows that it would be almost impossible to attempt to maintain a constant congestion level with road construction alone.” Winston and Langer (2004) calculate that each dollar spent on highway expansion provides 11¢ worth of congestion reduction in the first year, and this value declines rapidly in subsequent years. Zapun (2001) found that each 1% increase in VMT in a U.S. urban region was associated with an increase in congestion delays in that region during the 1980s, but this relationship declined during the 1990s, so a 1% increase in VMT increases delays only 1%. This change may reflect increased ability of travelers to avoid peak-period driving, through flextime, telework and suburbanization of destinations, reducing the congestion delay caused by increased travel.

Highway expansion advocates generally ignore or severely underestimate generated traffic and induced travel impacts. For example, Cox and Pucher (2004) use a model that only accounts for diverted traffic (trips shifted in time or route) but ignores shifts in mode, destination and trip frequency. Hartgen and Fields (2006) assume that generated traffic would fill just 15% of added roadway capacity, a figure they base on generated traffic rates during the 1960s and 1970s, which is unrealistically low when extremely congested roads are expanded. They also ignore the incremental costs that result from induced vehicle travel, such as increased downstream traffic congestion, road and parking costs, accidents and pollution emissions. They claim that roadway capacity expansion reduces fuel consumption, pollution emissions and accidents, because they measure impacts per vehicle-mile and ignore increased vehicle miles. As a result they significantly exaggerate roadway expansion benefits and underestimate total costs.
Figure 3 illustrates the relationship between highway lane-miles and congestion costs. Considering all cities, congestion declines with highway supply but the relationship is weak (green line): a large supply increase provides modest congestion reduction. Among the ten largest cities (orange diamonds) the relationship is negative (orange line): those with more highways tend to have more congestion. Congestion costs are significantly lower in cities with multi-modal transport systems, as illustrated in Figure 4.

Figure 4: Congestion Costs Compared (Litman 2004)

This matched pair analysis indicates that multi-modal cities have much lower per capita congestion costs than automobile-dependent cities with comparable population size.
Economic Value of Roadway Expansion

Advocates claim that highway expansion provides huge economic benefits, but their economic analysis is faulty. If roadway capacity expansion significantly increased economic productivity, this effect would be easy to measure, but numerous studies show that economic returns on highway expansion investments are modest and declining (Barnett and Haughwout 2000; Shirley and Winston 2004, “Economic Development Impacts,” VTPI 2006). Figure 5 shows how highway investments provided high annual economic returns during the 1950s and 60s, far higher than returns on private capital, but these declined to below that of private capital investments by the 1980s. This is what economic theory would predict, since the most cost-effective investments have already been made, so more recent projects provide less value at a higher cost.

Figure 5  Annual Rate of Return (Nadri and Marmuneas 1998)

During the 1950s-70s, highway expenditures provided a high return on investment, but this has declined over time as economic theory predicts.

Hymel (2009) examined the impact of traffic congestion on employment growth in large U.S. metropolitan areas. The study found that congestion dampens subsequent employment growth, particularly over the long run in highly congested places. The analysis suggests that a highly congested city such as Los Angeles (50 annual hours of delay per capita) a 10% increase in congestion would reduce subsequent long-run employment growth by 4%. The author concludes that reducing inefficient traffic congestion by expanding highways or efficient road pricing has the added benefit of increasing employment growth.

To the degree that highway expansion induces additional vehicle travel and stimulates sprawl it tends to be economically harmful since this increases public infrastructure and service costs (“Land Use Evaluation,” VTPI 2006) and shifts consumer expenditures to goods that provide relatively small regional business activity and employment, as indicated in Table 2. Other congestion reduction strategies provide more positive economic impacts (“Economic Development Impacts,” VTPI 2006).
Table 2  Economic Impacts of $1 Million Expenditure (Miller, Robinson, and Lahr 1999)

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>Motorists' Impact</th>
<th>Non-Motorists' Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile Expenditure</td>
<td>$379,000</td>
<td>3.4</td>
</tr>
<tr>
<td>Nonautomobile/Commute Expenditure</td>
<td>$576,000</td>
<td>17.5</td>
</tr>
<tr>
<td>Travel Expenditure</td>
<td>$1,206,000</td>
<td>42.3</td>
</tr>
</tbody>
</table>

This table shows economic impacts of commuter expenditures in Texas.

Urban Highway Expansion Costs

Highway expansion advocates underestimate the true costs of the projects they propose. For example, Cox and Psarianis (2003) assume that highway widening costs would average $3 million per lane-mile for arterials and $6 million per lane-mile for freeways, and Hartgen and Fields (2006) assumes that severely congested highways could be expanded for $3.8 million per lane-mile on average, although these projects are mostly in dense urban areas, often requiring land acquisition, complex intersections, bridges, tunneling and community mitigation, plus the delay costs during project construction.

Many recent urban highway projects have much higher unit costs, as illustrated in Figure 6. Of 36 highway projects studied by the Washington State Department of Transportation 13 of them had costs in excess of $10 million per lane mile (WSDOT, 2005). Future projects are likely to have higher unit costs since most jurisdictions have already implemented the cheapest highway projects, and both construction costs and urban land values have increased much faster than inflation in recent years.

Figure 6  Urban Highway Expansion Costs (WSDOT, 2005)

This figure illustrates costs per lane-mile for recent U.S. highway projects.
Economic Principles

Economic principles require that costs be borne directly by users unless subsidies are specifically justified ("Market Principles," VTPI 2000). This means that roadway expansion is only efficient and equitable if projects are fully financed by peak-period tolls. Few highway expansion projects could meet this test. Current U.S. road user revenues (fuel taxes, vehicle registration fees and road tolls) only finance about two-thirds of roadway expenditures – a growing portion of roadway funding comes from general taxes (Wachs 2003; Litman 2006a). Highway expansion advocates recommend increasing these taxes to finance their proposed projects. This is inefficient and unfair.

Proponents argue that roadway expansion would only cost a few cents per vehicle-mile, but only about 20% of total vehicle travel occurs under urban-peak conditions, only about half of this (10%) takes place on highways (as opposed to surface streets), less than half of this (<5%) experiences congestion, and less than half of this (approximately 2%) experiences severe congestion. Highway expansion proposals therefore significantly increase taxes on all consumers (even non-motorists would pay increased general taxes) to finance projects that only improve approximately 2% of vehicle mileage.

Assuming, as proponents optimistically claim, that urban highway expansion costs average just $3.8 million per lane-mile, or $140,000 annualized (assuming 7% interest over 30 years), that such lanes normally carry up to 2,000 vehicles per hour, and each lane is congested two hours daily, 300 days a year, the costs would average 12¢ per peak vehicle-mile, or about $1.00 per 8-mile trip. This is the minimum toll needed to efficiently finance the project. Of course, motorists would sometimes willingly pay such a fee for uncongested travel, but experience indicates that tolls exceeding 10¢ per vehicle-mile cause demand to decline significantly as travelers shift time, mode, route or destination to save money ("Road Pricing," VTPI 2006).

The most effective and efficient solution to traffic congestion is to apply variable tolls on existing highways, with higher prices under congested conditions, to manage demand and test users' willingness to pay for roadway improvements, called congestion pricing or value pricing ("Road Pricing," VTPI 2006; PSRC 2008). This gives motorists an incentive to reduce peak period vehicle trips to the level a roadway can accommodate. This is more efficient than letting congestion limit traffic, as currently occurs because it allows higher-value vehicle trips (emergency, high-occupant, freight, and service vehicles) outbid lower value trips (vehicle travel that is lower value or could shift relatively easily to another mode, routes or times), and provides revenue. Such pricing has proven successful in several cities, including Singapore, London and Stockholm.

In practice, revenues are seldom sufficient to finance major highway expansion since pricing reduces travel demand. Tolls can generally only finance a minor portion of total expansion costs. This represents an economic trap, since highway expansion is justified when road use is underpriced but demand is insufficient to finance expansion. Current proposals to fund highway expansion using other funding sources will be ineffective at reducing traffic congestion, are economically inefficient and unfair.
Road Pricing Traps

Road pricing (road tolls) can help reduce traffic congestion in two different and sometimes conflicting ways. In some cases, road pricing policies can create a trap, resulting in inefficient and unfair tolls. It is important that decision-makers understand these differences and their ultimate impacts when evaluating road pricing options.

Congestion pricing refers to tolls structured to reduce peak-period vehicle traffic, and therefore congestion, with higher rates during peak periods and lower rates during off-peak periods, plus features to encourage travelers to shift to alternative routes and modes. Congestion pricing and public transit improvements are complements since improved transit service reduces the fee needed to convince some travelers to shift from driving to public transit, therefore reducing the congestion toll needed to achieve a given reduction in traffic congestion. As a result, congestion pricing revenues are often used to improve public transit services.

Roadway financing tolls are designed to fund highway expansion projects. This type of road pricing is designed to maximize revenue, and so tolls are applied during both peak and off-peak periods (even though off-peak travelers do not benefit from roadway expansion), and sometimes include provisions that intentionally discourage development of alternative routes or modes, in order to force travelers to pay tolls.

Congestion pricing is a preventive strategy: it reduces congestion on existing roads and avoids the need to expand highways. It is comparable to a healthy diet, exercise, and cholesterol reduction medicine, which prevent medical problems. Highway tolling to finance roadway capacity expansion is a more difficult and costly treatment, comparable to major heart surgery. Because highway capacity expansion projects have high costs, require maximum revenues (so tolls are applied to off-peak travel, and are often augmented by general taxes), sometimes include provisions that reduce route and mode options, and tend to induce additional travel that imposes additional downstream external costs, using tolls only for highway expansion is inefficient, unfair and generally undesirable.

However, there is often institutional and political resistance to pricing existing roadways. This creates a trap: efficient pricing can only be implemented after problems develop and high costs are incurred, rather than as a preventive strategy to avoid major costs. The result is comparable to a medical system that only major surgery, but not cost-effective preventive health programs.

Only if peak-period toll revenues can fully fund roadway capacity expansion can such projects be considered efficient and equitable. In practice, peak-period road toll revenues are seldom sufficient to fully fund roadway capacity expansion, typically they can finance only 20-40% of project costs. As a result, additional funds are needed from off-peak users or general taxes. The result is inefficient and unfair highway expansion projects.

If highways expansion projects are to be implemented, it is more efficient and equitable to fund them through tolls as much as possible, to prevent induced demand from quickly filling the additional capacity and creating downstream traffic problems, and so that the costs are born directly by users. But it is even more efficient to apply congestion pricing on existing highways before implementing expansion projects, in order to avoid or defer the need to expand highways, and test motorists' willingness-to-pay for additional capacity. Efficient congestion reduction therefore requires reforms to allow congestion pricing on existing roadways.
Efficient Investment Example

Here is a simple example illustrating “smart” congestion reduction investments. Imagine a four-lane highway on a corridor with demand of 3,000 peak period trips at zero price (if use of the road is free). Because the road can only accommodate a maximum of 4,000 peak period users (2,000 vehicles per lane) it experiences congestion that causes 1,000 potential peak-period travelers to shift to other times, routes or modes.

The efficient solution to this congestion is to price peak-period use of the highway with tolls set to maintain optimal traffic flow. This also causes 1,000 potential peak period trips to shift, preventing congestion and providing revenue. The optimal toll would vary from minute to minute and day to day to reflect demand, perhaps 2¢ per vehicle-mile for most of the commute period (such as 7:00 until 9:00 in the morning, and 4:00 until 6:00 in the evening), but up to 10¢ per vehicle-mile at the maximum peak (such as 7:30 until 8:00 in the morning, and 5:10 until 5:20 in the evening).

Expanding the highway would only be efficient if peak-period revenues are sufficient to repay all additional costs, which tests users' willingness-to-pay. Highway expansion advocates often violate efficiency principles by requiring off-peak highway users to also pay for such projects, but it is inefficient and unfair to force them to pay for projects that provide them no benefit. Off-peak users should only be required to pay for project features that benefit them, such as improved safety guards.

Assume that highway expansion would cost $8 million per lane-mile, which equals approximately $300,000 per lane-mile in annual costs, or $1,000 per day if there are 300 congested days per year. Since the expanded highway can efficiently carry up to 6,000 vehicles per hour, tolls would need to average at least 17¢ per vehicle-mile ($1,000/6,000 = $0.17) if each lane is only congested and priced one hour per day (inbound in the morning, outbound in the evening), or 8.5¢ per vehicle-mile if congested and priced twice daily. If tolls high enough to recover costs would reduce peak-period travel below 4,000 vehicles the project would not be cost effective; users would be better off with a four-lane highway and lower tolls than a six-lane highway with higher tolls.

It may be efficient to use some toll revenue to improve travel options on the corridor, such as subsidizing vanpool and bus service, contributing to construction of a rail-transit line, or supporting commute trip reduction programs (VTPI 2006) if doing so reduces peak-period automobile travel demand and therefore highway congestion (Litman 2006b). Many factors affect the degree to which such services reduce congestion, including their quality and speed, the ease of accessing destinations (such as worksites) by these modes, and community attitudes about their use. In some situations, alternative modes may attract few motorists and do little to reduce congestion, so highway widening is more cost effective. On the other hand, improving alternative modes provides other benefits besides highway congestion reduction, including improved mobility for non-drivers, reduced downstream congestion, parking cost savings, consumer cost savings, accident reductions, energy conservation and reduced pollution, and so may be the preferred solution even if highway widening is cheaper (Litman 2005b).
Comparing Roadway Expansion With Alternatives

There are various possible congestion reduction strategies ("Congestion Reductions," VTPI 2006). The best is the one with the largest net benefits per dollar invested ("Least Cost Planning," VTPI 2006). Highway expansion advocates often fail to compare their proposals with alternatives so it is impossible to determine which is truly optimal.

Public transit improvements can reduce congestion and provide other benefits (Litman 2006b). Virtually any corridor with enough travel demand to experience congestion has enough to support high quality vanpooling and public transit services. High quality public transit services cost about $100 annually per capita in additional subsidies but reduce consumer costs about $500 annually per capita, reduce congestion 30-50% (Figure 4); and reduce traffic fatality rates 36% compared with peer cities (Litman 2004).

Road pricing reduced congestion in Singapore, London and Stockholm ("Road Pricing," VTPI 2006). Reduced traffic volumes provide proportionately larger reductions in delay: pricing in London and Stockholm reduced vehicle traffic about 20% and congestion delays about 30%. Harvey and Doakins (1990) predicted that in Southern California:

- A $1 per vehicle-mile congestion fee reduces VMT 2.3% and congestion delay 22.5% (a 9.8 ratio).
- A $3.00 (1991 dollars) daily parking fee reduces VMT 2.7% and delay 7.5% (a 2.8 ratio).
- A $2 per vehicle-mile VMT fee reduces VMT 4.4% and congestion delay 9.0% (a 2.0 ratio).

Smart growth development tends to increase the intensity of costs such as congestion and roadway construction, due to increased density, but reduces per capita costs, since residents drive less and have better travel options.

As more impacts and options are considered, the value of roadway capacity expansion tends to decline and the relative benefits of alternative congestion reduction strategies increases (JEDC 2006; VTPI 2006), as illustrated in Table 3.

Table 3 Roadway Expansion and Mobility Management Benefits (Litman 2006a)

<table>
<thead>
<tr>
<th>Planning Objective</th>
<th>Expand Road Capacity</th>
<th>Public Transit Improvements</th>
<th>Mobility Management</th>
<th>Smart Growth Land Use</th>
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</thead>
<tbody>
<tr>
<td>Congestion reductions</td>
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<td>✔</td>
<td>✔</td>
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<tr>
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<td>Transport diversity</td>
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<tr>
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<tr>
<td>Energy conservation</td>
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<td>✔</td>
</tr>
<tr>
<td>Efficient land use</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Improved health &amp; safety</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

( ✔ = helps achieve that objective; × = Contradicts that objective.) Roadway capacity expansion helps reduce congestion but by inducing additional vehicle travel it exacerbates other transport problems. Transit improvements, mobility management and smart growth help achieve many objectives.
Smart Congestion Reductions: Evaluating Highway Expansion Benefits
Victoria Transport Policy Institute

What Does Modeling Indicate?

Older four-step traffic models are not very accurate at predicting long-term traffic congestion effects because they have fixed trip table which assumes the same number of trips will be made between locations regardless of the level of congestion between them. As a result, they account for shifts in route and mode, and sometimes in time, but not in destination or trip frequency (“Model Improvements,” VTPI 2006).

Newer models incorporate more factors and so are more accurate at predicting impacts of specific transportation and land use policies. Johnston (2006) summarizes results from more than three dozen long-range modeling exercises performed in the U.S. and Europe using integrated transport, land use and economic models. These indicate that the most effective way to reduce congestion is to implement integrated programs that include a combination of transit improvements, pricing (fuel taxes, parking charges, or tolls) and smart growth land use development policies. These studies indicate that a reasonable set of policies can reduce total vehicle travel by 10% to 20% over two decades, maintain or improve highway levels-of-service ratings (i.e., they reduce congestion), expand economic activity, increase transport system equity (by distributing benefits broadly), and reduce adverse environmental impacts compared to the base case. Many studies indicate that roadway expansion increases long run congestion by stimulating vehicle travel, dispersed development, and reduced travel options. Expanding road capacity, along with transit capacity, but without changing market incentives to encourage more efficient use of existing roads and parking, results in expensive transit systems with low ridership.

Recent traffic modeling of Puget Sound region transportation improvement options reached similar conclusions (WSDOT 2006). It found that neither highway widening nor transit investments are by themselves cost effective congestion reduction strategies (although the model has fixed trip tables so it exaggerates highway expansion benefits and underestimates transit improvement benefits). The most effective congestion reduction program includes both transit service improvements and road pricing to give travelers better options and incentives. Table 4 summarizes estimated congestion reduction benefits and project costs. Both have costs that exceed congestion reduction benefits, but transit improvements are more cost effective overall since they provide many additional benefits including road and parking cost savings, consumer cost savings, crash reductions, improved mobility for non-drivers, energy conservation, emission reductions, and support for strategic land use.

Table 4  Congestion Reduction Economic Analysis (WSDOT, 2006)

<table>
<thead>
<tr>
<th></th>
<th>Highway Expansion</th>
<th>Transit Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Estimate</td>
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<td>$790</td>
</tr>
<tr>
<td>Lower Estimate</td>
<td>$1,500</td>
<td>$750</td>
</tr>
<tr>
<td>Upper Estimate</td>
<td>$3,500</td>
<td>$850</td>
</tr>
<tr>
<td>Direct Project Costs</td>
<td>$2,500</td>
<td>$750</td>
</tr>
</tbody>
</table>

This table includes estimated highway and transit congestion reduction benefits and costs, in millions of annualized dollars. Neither approach provides congestion-reduction benefits that exceed costs, but transit provides many additional benefits.
Have Alternatives Failed?

A common theme among highway expansion advocates is that alternatives, such as transit service improvements and mode shift incentives, have been tried but have failed and so should be abandoned in favor of highway expansion. They are wrong.

Only a small portion of total transportation funding is devoted to alternative modes and mobility management programs. For example, in 2004 governments in the U.S. spent about $140 billion on roads and about $26 billion dollars to support public transit. Transit therefore receives about 16% of the total (FHWA 2005). About half of transit funding is intended to provide basic mobility to non-drivers, such as special mobility services and bus services in suburban and rural areas, so only about 8% of surface transportation budgets are spent on transit services to attract discretionary travelers (people who have the option of driving). In addition, U.S. consumers, businesses and governments devote more than $300 billion in resources to off-street parking, so only about 3% of total investment in surface transport is devoted to transit services intended to attract discretionary users. Nonmotorized transport receives an even smaller portion of transportation budgets, probably less than 1%, although it represents 5-10% of total trips (“Evaluating Walking and Cycling,” VTPI 2006). This does not include other external costs, such as accidents and pollution impacts, which are often reduced when travel shifts from automobile to transit (Litman 2006).

Similarly, it is wrong to claim that mobility management strategies, such as commute trip reduction programs, HOV priority and parking pricing have been tried and failed. Although many communities have implemented some mobility management programs, most efforts are modest, representing a minority of employees, roads and parking facilities. Where appropriately implemented such programs have been successful, typically reducing vehicle trips by 10-30% among affected travelers, usually with lower total costs than accommodating an additional urban peak trip, taking into account road, parking and vehicle costs (USEPA, 2005; VTPI, 2006).

Highway expansion advocates exaggerate the portion of transportation resources devoted to alternative modes and mobility management programs because they focus on particular budgets, such as regional capital investments in cities developing major new transit systems, where more than half of total expenditures may be devoted to alternative modes for a few years. However, when all transportation budgets are considered, including parking facility expenditures, and averaged over a longer time period, the portion devoted to alternative modes is generally reasonable. Proportionately large investments in alternative modes can be justified in most communities to offset decades of planning and investments skewed toward automobiles.

Highway expansion advocates argue that it is unfair and inefficient to devote significant resources to improve public transit that carry only a small portion of total trips. But transit carries a much greater portion of travel on major urban corridors, where roadway expansion is costly and transit demand is high, and so is often the most cost effective way of reducing congestion and improving mobility.
Conclusions

Modern transportation planning consider a wider range of impacts and options than was previously common, which supports policies and programs that improve transport options, encourage more efficient travel patterns, and increase land use accessibility. These provide multiple benefits. Some people want to return to traditional planning practices that favor automobile travel and ignore other planning objectives. They advocate highway expansion to reduce congestion. Their analysis tends to:

- Exaggerate highway expansion congestion reduction impacts and economic benefits.
- Ignore or understate generated traffic and induced travel effects.
- Overtake many economic, social, and environmental costs of wider highways, increased vehicle traffic, and sprawled land use.
- Underestimate the true costs of expanding major urban highways.
- Fail to compare highway expansion with other transportation improvement options.

Some of these errors are subtle, technical, and even counter-intuitive. It is therefore important that decision makers and the general public become informed about issues such as the implications of different congestion indicators, the impacts of generated traffic and induced travel, the economic returns on roadway capacity expansion, and more comprehensive planning techniques.

Such projects are only cost effective if they can be funded by peak-period users. Even based on proponents’ optimistic projections, highway expansion projects would cost $300 to $400 annually per urban commuter. When faced with such tolls motorists often prefer to shift routes, mode or destination, so such projects cannot recover their costs. As a result, they would require funding from people who do not directly benefit, which is inefficient and inequitable. Described differently, traffic congestion results from market distortions that underprice driving and stimulate sprawl, resulting in economically excessive motor vehicle travel (“Market Principles,” VTPPI, 2006). Under such circumstances, expanding highways cannot reduce long term congestion, and would increase other transport problems such as downstream congestion, parking demand, accidents, pollution emissions, sprawl, and inadequate mobility for non-drivers.

Alternative strategies can reduce traffic congestion and provide other benefits. Advanced modeling indicates that the most cost effective solution to traffic congestion reduction includes a combination of transit improvements, road pricing and smart growth land use policies. This is most efficient and equitable overall because it reflects market principles, including viable consumer options, cost-based pricing and more neutral public policies.

This is not to suggest that driving is bad or that highways should never be improved. However, when all impacts and options are considered, highway expansion is significantly more costly than advocates claim and provides less overall benefit than many alternative policies and programs.
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Todd Litman (2006b), Smart Transportation Investments II: Reevaluating The Role Of Public Transit For Improving Urban Transportation, VTPI (www.vtpi.org).


PSRC (2008), Traffic Choices Study: Summary Report, Puget Sound Regional Council (http://psrc.org) or http://psrc.org/assets/77/summary-report.pdf. This federally-funded study examined the feasibility and impacts on congestion pricing on urban roadways.


www.vtpi.org/cong_relief.pdf
Exhibit C
R-44
SANDAG has read and acknowledges the submission of the letter attachment referred to as Exhibit C entitled “Growing Cooler: Evidence on Urban Development and Climate Change by Urban Land Institute. Please refer to Master Response 5 for a discussion on responses to general studies attached to Draft EIR comment letters.
About ULI

The mission of the Urban Land Institute is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. ULI is committed to:

- Bringing together leaders from across the fields of real estate and land use policy to exchange best practices and serve community needs;
- Fostering collaboration within and beyond ULI’s membership through mentoring, dialogue, and problem-solving;
- Exploring issues of urbanization, conservation, regeneration, land use, capital formation, and sustainable development;
- Advancing land use policies and design practices that respect the uniqueness of both built and natural environments;
- Sharing knowledge through education, applied research, publishing, and electronic media; and
- Sustaining a diverse global network of local practice and advisory efforts that address current and future challenges.

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American.
Executive Summary

The phrase “you can’t get there from here” has a new application. For climate stabilization, a commonly accepted target would require the United States to cut its carbon dioxide (CO₂) emissions by 60 to 80 percent as of 2050, relative to 1990 levels. Carbon dioxide levels have been increasing rapidly since 1990, and so would have to level off and decline even more rapidly to reach this target level by 2050. This publication demonstrates that the U.S. transportation sector cannot do its fair share to meet this target through vehicle and fuel technology alone. We have to find a way to sharply reduce the growth in vehicle miles driven across the nation’s sprawling urban areas, reversing trends that go back decades.

This publication is based on an exhaustive review of existing research on the relationship between urban development, travel, and the CO₂ emitted by motor vehicles. It provides evidence on and insights into how much transportation-related CO₂ savings can be expected with compact development, how compact development is likely to be received by consumers, and what policy changes will make compact development possible. Several salient issues are not fully examined in this publication. These include the energy savings from more efficient building types, the value of preserved forests as carbon sinks, and the effectiveness of pricing strategies—such as tolls, parking charges, and mileage-based fees—when used in combination with compact development and expanded transportation alternatives.

The term “compact development” does not imply high-rise or even uniformly high-density, but rather higher-average “intensified” densities. Compact development also features a mix of land uses, development of strong population and employment centers, interconnection of streets, and the design of structures and spaces at a human scale.

Driving Up CO₂ Emissions

The United States is the largest emitter worldwide of the greenhouse gases that cause global warming. Transportation accounts for a full third of CO₂ emissions in the United States, and that share is growing as others shrink in comparison, rising from 31 percent in 1990 to 33 percent today. It is hard to envision a “solution” to the global warming crisis that does not involve slowing the growth of transportation CO₂ emissions in the United States.

The Three-Legged Stool Needed to Reduce CO₂ from Automobiles

Transportation CO₂ reduction can be viewed as a three-legged stool, with one leg related to vehicle fuel efficiency, a second to the carbon content of the fuel itself, and a third to the amount of driving or vehicle miles traveled (VMT). Energy and climate policy initiatives at the federal and state levels have put their hopes almost exclusively on shorter the first two legs of the stool, through the development of more efficient vehicles (such as hybrid cars) and lower-carbon fuels (such as biodiesel fuel). Yet a stool cannot stand on only two legs.
As the research compiled in this publication makes clear, technological improvements in vehicles and fuels are likely to be offset by continuing, robust growth in VMT. Since 1990, the number of miles Americans drive has grown three times faster than the U.S. population, and almost twice as fast as vehicle registrations (see Figure 6-1). Average commute times in metropolitan areas have risen steadily over the decades, and many Americans now spend more time commuting than they do vacationing.

This raises some questions, which this report addresses. Why do we drive so much? Why is the total distance we drive growing so rapidly? And what can be done to alter this trend in a manner that is effective, fair, and economically acceptable?

The growth in driving is due in large part to urban development, or what some refer to as the built environment. Americans drive so much because we have given ourselves little alternative. For 60 years, we have built homes ever farther from workplaces, created schools that are inaccessible except by motor vehicle, and isolated urban destinations—such as shopping—from work and home. From World War II until very recently, nearly all new development has been planned and built on the assumption that people will use cars virtually every time they travel. As a larger and larger share of our built environment has become automobile dependent, car trips and distances have increased, and walking and public transit use have declined. Population growth has been responsible for only a quarter of the increase in vehicle miles driven over the last couple of decades. A larger share of the increase can be traced to the effects of a changing urban environment, namely longer trips and people driving alone.

As with driving, land is being consumed at a rate almost three times faster than population growth. This expansive development has caused CO₂ emissions from cars to rise even as it has reduced the amount of forest land available to absorb CO₂.

**How Growth in Driving Cancels Out Improved Vehicle Fuel Economy**

Carbon dioxide is more difficult to control through vehicle technology than are conventional air pollutants. Conventional pollutants can be reduced in automobile exhaust with sophisticated emission control systems (catalytic converters, on-board computers, and oxygen sensors). Carbon dioxide, meanwhile, is a direct outcome of burning fossil fuels; there is no practical way to remove or capture it from moving vehicles. At this point in time, the only way to reduce CO₂ emissions from vehicles is to burn less gasoline and diesel fuel.

An analysis by Steve Wandelman of the Center for Clean Air Policy, one of the coauthors of this publication,
Fuels that CO₂ emissions will continue to rise, despite technological advances, as the growth in driving overwhelms planned improvements in vehicle efficiency and fuel carbon content. The U.S. Department of Energy's Energy Information Administration (EIA) forecasts that driving will increase 12 percent within this time frame, primarily as a result of new federal fuel economy standards for light trucks (green line, Figure 6-2). Despite this improvement in efficiency, CO₂ emissions would grow by 11 percent (dark blue line, Figure 6-2).

U.S. fuel economy has been flat for almost 15 years, as the upward spiral of car weight and power has offset the more efficient technology. Federal and state efforts are underway to considerably boost vehicle efficiency and reduce greenhouse gas emissions. In June 2005, the U.S. Senate passed corporate average fuel economy (CAFE) standards that would increase new passenger vehicle fuel economy from the current 28 miles per gallon (mpg) to 35 mpg by 2020. As of this writing, the House has not acted. California plans to implement a low carbon standard for transportation fuels, specifically a 10 percent reduction in fuel carbon content by 2020.

Even if these more stringent standards for vehicles and fuels were to go into effect nationwide, transportation-related emissions would still far exceed target levels for stabilizing the global climate (see Figure 6-3). The rapid increase in driving would overwhelm both the increase in vehicle fuel economy (green line) and the lower carbon fuel content (purple line). In 2010, CO₂ emissions would be 12 percent above the 2005 level, and 40 percent above the 1990 level.

**Figure 6-2**
Projected Growth in CO₂ Emissions from Cars and Light Trucks

**Figure 6-3**
Projected Growth in CO₂ Emissions from Cars and Light Trucks Assuming Stringent National Vehicle and Fuel Standards
(turquoise line). For climate stabilization, the United States must bring the CO₂ level to 15 to 30 percent below 1990 levels by 2020 to keep in play a CO₂ reduction of 60 to 80 percent by 2050.

As the projections show, the United States cannot achieve such large reductions in transportation-related CO₂ emissions without sharply reducing the growth in miles driven.

**Changing Development Patterns to Slow Global Warming**

Recognizing the unsustainable growth in driving, the American Association of State Highway and Transportation Officials (AASHTO), representing state departments of transportation, is urging that the growth of vehicle miles driven be cut in half. How does a growing country—one with 200 million residents and another 100 million on the way by mid-century—slow the growth of vehicle miles driven? Aggressive measures certainly are available, including imposing user-sticker fees and taxes on driving and parking or establishing one-driveway zones or flexible zones. Some countries are experimenting with such measures. However, many in this country would view such steps as punitive, given the reality that most Americans do not have a viable alternative to driving. This body of research surveyed here shows that much of the rise in vehicle emissions can be curbed simply by growing in a way that will make it easier for Americans to drive less. In fact, the weight of the evidence shows that, with more compact development, people drive 20 to 40 percent less, at minimal or reduced cost, while reaping other fiscal and health benefits.

**How Compact Development Helps Reduce the Need to Drive**

Better community planning and more compact development help people live within walking or bicycling distance of some of the destinations they need to get to every day—work, shops, schools, and parks, as well as transit stops. If they choose to use a car, trips are short. Rather than building single-use subdivisions or office parks, communities can plan mixed-use developments that put housing within reach of those other destinations. The street network can be designed to foster connections, rather than create cul-de-sacs and funnel traffic onto oversized arterial roads. Individual streets can be designed to be “complete,” with safe and convenient places to walk, bicycle, and wait for the bus. Finally, by building more homes as condominiums, townhomes, or detached homes on smaller lots, and by building offices, stores, and other destinations “up” rather than “out,” communities can shorten distances between destinations. This makes neighborhood stores more economically viable, allows more frequent and convenient transit service, and helps shorten car trips.
This type of development has seen a resurgence in recent years, and gone by many names, including “walkable communities,” “new urbanist neighborhoods,” and “transit-oriented developments” (TODs). “Infill” and “brownfield” developments put unused lots in urban areas to new uses, taking advantage of existing nearby destinations and infrastructure. Some “lifestyle centers” are now replacing single-use shopping malls with open-air shopping on connected streets with housing and office space as part of the new development. And many communities have reinvigorated and revitalized their traditional town centers and downtowns, often adding more housing to the mix. These varied development types are collectively referred to in this publication as “compact development” or “smart growth.”

How We Know that Compact Development Will Make a Difference: The Evidence

As these forms of development have become more common, planning researchers and practitioners have documented that residents of compact, mixed-use, transit-served communities do less driving. Studies have looked at the issue from varying angles, including:

- research that compared overall travel patterns among regions and neighborhoods of varying compactness and auto orientation;
- studies that followed the travel behavior of individual households in various settings; and
- models that simulate and compare the effects on travel of different future development scenarios at the regional and project levels.

Regardless of the approach, researchers have found significant potential for compact development to reduce the miles that residents drive.

A comprehensive sprawl index developed by consultant Neil Tursi of the Natural Center for Smart Growth at the University of Maryland ranked 85 of the largest metropolitan areas in the United States by their degree of sprawl, measuring density, mix of land uses, strength of activity centers, and connectedness of the street network (Tursi, Paddock, and Shen 2002, 2003). Even accounting for income and other socioeconomic differences, residents drove far less in the more compact regions. In highly sprawling Atlanta, vehicles racked up 14 miles each day for every person living in the region. Toward the other end of the scale, in Portland, Oregon, vehicles were driven fewer than 24 miles per person, per day.

The relationship holds up in studies that trace the travel habits of individual households while measuring the environment surrounding their
homes and/or workplaces. The link between urban development patterns and individual or household travel has become the most heavily researched subject in urban planning, with more than 100 rigorous empirical studies completed. These studies have been able to control for factors such as socioeconomic status, and can account for the fact that higher-income households tend to make more and longer trips than lower-income families.

One of the most comprehensive studies, conducted in King County, Washington, by Larry Frank of the University of British Columbia, found that residents of the most walkable neighborhoods drive 26 percent fewer miles per day than those living in the most sprawling areas. A meta-analysis of many of these types of studies finds that households living in developments with twice the density, diversity of uses, accessible destinations, and interconnected streets when compared to low-density sprawl drive about 13 percent less.

Many studies have been conducted by or in partnership with public health researchers interested in how the built environment can be better designed to encourage daily physical activity. These studies show that residents of communities designed to be walkable both drive fewer miles and also make more trips by foot and bicycle, which improves individual health. A recent literature review found that 17 of 20 studies, all dating from 2002 or later, have established statistically significant relationships between some aspect of the built environment and the risk of obesity.

Two other types of studies also find relationships between development patterns and driving. Simulations that project the effect of various growth options for entire regions and simulations that predict the impact of individual development projects when sited and designed in different ways. In regional growth simulations, planners compare the effect of a metropolitan-wide business-as-usual scenario with more compact growth options. Coauthors Keith Bartholomew of the University of Utah analyzed 12 of these studies and found that compact scenarios averaged 8 percent fewer total miles driven than business-as-usual ones, with a maximum reduction of 31.7 percent (Bartholomew 2005, 2007). The better-performing scenarios were those with higher degrees of land use mixing, infill development, and population density, as well as a larger amount of expected growth. The travel models used in these studies would be expected to underestimate the impacts of site design, since most only crudely account for travel within neighborhoods and disregard walk and bike trips entirely.

Of the project-level studies, one of the best known evaluated the impact of building a very dense, mixed-use development at an abandoned waste mill site in the heart of Aurora versus spreading the equivalent amount of commercial space and number of housing units in the prevailing patterns at three suburban locations. Analysis using transportation models enhanced by coauthor Jerry Walters of Fehr & Peers Associates (Walters, Ewing, and Allen 2005), supplemented by the EPWP Smart Growth Index (to capture the effects of site design) found that the infill location would generate about 31 percent less driving and emissions than the comparison sites. The results were so compelling that the development was deemed a transportation control measure by the federal government for the purpose of helping to improve the region’s air quality. The Atlantic Station project has become a highly successful reuse of central city industrial land.
What Smart Growth Would Look Like

How would this new focus on compact development change U.S. communities? Many more developments would look like the transit-oriented developments and new suburban neighborhoods already going up in almost every city in the country, and these developments would start filling in vacant lots or filling strip shopping centers, or would revitalize older town centers, rather than replacing forests or farmland. Most developments would no longer be single-use subdivisions or office parks, but would mix shops, schools, and offices together with homes. They might feature ground-floor stores and offices with living space above, or townhouses within walking distance of a retail center. Most developments would be built to connect seamlessly with the external street network.

The density increases required to achieve the changes proposed in this publication would be moderate. National work shows that the average density of residential development in U.S. urban areas was about 7.6 units per acre in 2005. His predictions of shifting market demand indicate that all housing growth to 2025 could be accommodated by building condominiums, apartments, townhomes, and detached houses on small lots, while maintaining the current stock of homes on large lots. Under this scenario, while new developments would average a density of 13 units per acre, the average density of metropolitan areas overall would rise modestly, to about nine units per acre. Much of the change would result from stopping the sprawling development that has resulted in falling densities in many metropolitan areas.

Several publications provide a glimpse of what this future might look like. Images of compact development are available in This is Smart Growth (Smart Growth Network 2006) and Visualizing Density (Lincoln Institute of Land Policy 2007).
The Potential of Smart Growth

The potential of smart growth to curb the rise in greenhouse gas emissions will, of course, be limited by the amount of new development and redevelopment that takes place over the next few decades, and by the share of it that is compact in nature. There seems to be little question that a great deal of new building will take place as the U.S. population grows toward 460 million. According to the best available analyses, by Chris Nelson of Virginia Tech, 460 million new or replaced homes—and 180 billion square feet of new offices, institutions, stores, and other nonresidential buildings—will be constructed through 2050. If that is so, two-thirds of the development on the ground in 2050 will be built between now and then. Pursuing smart growth is a low-cost climate change strategy, because it involves shifting investments that have to be made anyway.

Smart Growth Meets Growing Market Demand for Choice

There is no doubt that moving away from a fossil fuel-based economy will require many difficult changes. Fortunately, smart growth is a change that many Americans will embrace. Evidence abound that Americans are demanding more choices in where and how they live—and that changing demographics will accelerate that demand.

While prevailing zoning and development practices typically make sprawling development easier to build, developers who make the effort to create compact communities are meeting a responsive public. In 2005, for the first time in the country’s history, the sales prices per square foot for attached housing—that is, condominiums and townhouses—was higher than that of detached housing units. The real estate analysis firm Robert Charles Lesser & Co. has conducted a dozen consumer preference surveys in suburban and urban locations for a variety of builders to help them develop new projects. The surveys have found that in every location examined, almost two-thirds of respondents prefer smart growth housing products and communities. Other studies by the National Association of Homebuilders, the National Association of Realtors, the Vannevar Bush Foundation, high-construction builders, and other researchers have corroborated these results—some estimating even greater demand for smart growth housing products. When smart growth also offers shorter commutes, it appeals to another one-quarter of the market, because many people are willing to trade lot or house size for shorter commutes.

Because the demand is greater than the current supply, the price-per-square-foot values of homes in mixed-use neighborhoods show price premiums ranging from 40 to 100 percent, compared to houses in nearby single-use subdivisions, according to a study by Chris Leinberger of the Brookings Institution.

This market demand is only expected to grow over the next several decades, as the share of households with children shrinks and those made up of older Americans grows with the retiring of baby boomers. Households without children will account for close to 50 percent of new housing demand, and single-person households will account for a one-third. Nelson projects that the demand for attached and small-lot housing will exceed the current supply by 35 million units (71 percent), while the demand for large-lot housing will actually be less than the current supply.

These findings include Albuquerque, Atlanta, Boise, Charlotte, Chattanooga, Denver, Orlando, Phoenix, Providence, Savannah, and Tampa.
Total Estimated VMT Reduction and Total Climate Impact

When viewed in total, the evidence on land use and driving shows that compact development will reduce the need to drive between 20 and 40 percent, as compared with development on the outer suburban edge with isolated homes, workplaces, and other destinations. It is realistic to assume a 30 percent cut in VMT with compact development.

Making reasonable assumptions about growth rates, the market share of compact development, and the relationship between CO2 reduction and VMT reduction, smart growth could, by itself, reduce total transportation-related CO2 emissions from current trends by 7 to 10 percent as of 2050. This reduction is achievable with land-use changes alone. It does not include additional reductions from complementary measures, such as higher fuel prices and carbon taxes, peak-period road tolls, pay-as-you drive insurance, paid parking, and other policies designed to make drivers pay more of the full social costs of auto use.

This estimate also does not include the energy saved in buildings with compact development, nor the CO2-absorbing capacity of forests preserved by compact development. Whatever the total savings, it is important to remember that land use changes provide a permanent climate benefit that would compound over time. The second 50 years of smart growth would build on the base reductions from the first 50 years, and so on into the future. More immediate strategies, such as gas tax increases, do not have this degree of permanence.

The authors calculate that shifting 60 percent of new growth to compact patterns would save 81 million metric tons of CO2 annually by 2050. This savings over that period equates to a 26 percent increase in federal vehicle efficiency standards by 2020 (to 32 mpg), comparable to proposals now being debated in Congress. It would be as if the fueleconomy efficiency for new vehicles had risen to 32 mpg by 2020. Every resident of a compact neighborhood would realize the environmental benefit expected from, say, driving one of today’s efficient hybrid cars. That effect would be compounded, of course, if that person also drove such an efficient car whenever he or she chose to make a vehicle trip. Smart growth would become an important “third leg” in the transportation sector’s fight against global warming, along with more efficient vehicles and lower-carbon fuels.

A Climate-Sparing Strategy with Multiple Payoffs

Addressing climate change through smart growth is an attractive strategy because, in addition to being in line with market demand, compact development provides many other benefits and will cost the economy little or nothing. Research has documented that compact development helps preserve farmland and open space, protect water quality, and improve health by providing more opportunities for physical activity.

Studies also have confirmed that compact development saves taxpayers money, particularly by reducing the costs of infrastructure such as roads and water and sewer lines. For example, the Edmonton-Ram scenario planning process resulted in the selection of a compact growth plan that will save the region about $4.5 billion in infrastructure spending over a continuation of sprawling development.

Finally, unlike hydrogen-fueled vehicles and cellulosic ethanol, which get a lot of mention in the climate-change debate, the “technology” of compact, walkable communities exists today, as it has in one form or another for thousands of years. We can begin using this technology in the service of a cooler planet right now.
Policy Implications

In most metropolitan areas, compact development faces an uneven playing field. Local land development codes encourage auto-oriented development. Public spending supports development in the metropolitan fringe more than in already developed areas. Transportation policies remain focused on accommodating the automobile rather than alternatives.

The key to substantial GHG reductions is to get all policies, funding, incentives, practices, rules, codes, and regulations pointing in the same direction to create the right conditions for smart growth. Innovative policies often are in direct conflict with the conventional paradigm that produces automobile dependence.

Here, we describe three major policy initiatives at the federal level that would benefit states, metro regions, cities and towns in their efforts to meet the growing demand for compact development: These initiatives, as well as potential actions on the part of state and local governments, discussed more fully in Chapter 7 of Greater Cody.

Federal Actions

Require Transportation Conformity for Greenhouse Gases. Federal climate change legislation should require regional transportation plans to pass a conformity test for CO₂ emissions, similar to those for other criteria pollutants. The Supreme Court ruling in Massachusetts v. EPA established the formal authority to consider greenhouse gases under the Clean Air Act, and a transportation planning conformity requirement would be an obvious way for the EPA to exercise this authority to produce tangible results.

Enact "Green-TEA" Transportation Legislation that Reduces GHGs. The Intermodal Surface Transportation Efficiency Act of 1991 (known as ISTEA) represented a revolutionary goal from past highway bills with its greater emphasis on alternatives to the automobile, community involvement, environmental goals, and coordinated planning. The next surface transportation bill could bring yet another paradigm shift: it could further address environmental performance, climate protection, and green development. We refer to this opportunity as "Green-TEA."

Provide Funding Directly to Metropolitan Planning Organizations (MPOs). Metropolitan areas contain more than 80 percent of the nation's population and 85 percent of its economic output. Investment by state departments of transportation in metropolitan areas lags far behind these percentages. The issue is not just the amount of funding; it is also the authority to decide how the money is spent. What is necessary to remedy the long history of structural and institutional causes of these inequities is a new system of allocating federal transportation funds directly to metropolitan areas. The amount of allocation should be closer to the proportion of an MPO's population and economic activity compared to other MPOs and non-MPO areas in the same state.
Exhibit D
The 50-10 Transit Plan:
A World Class Transit System for the San Diego Region

Prepared for:
Cleveland National Forest Foundation

Prepared by:
Norman L. Marshall, Principal
Smart Mobility, Inc.

July 2011

R-45
SANDAG has read and acknowledges the submission of the letter attachment referred to as Exhibit D entitled "50-10 Year Transit Plan" by Smart Mobility, Inc. SANDAG has responded to all significant environmental issues raised in this attachment not otherwise addressed in the response to the primary comment letter. Please see Responses to Comments 46-66.
Refer to Master Response 7 for a discussion of SANDAG’s 2050 RTP/SCS components, which demonstrates how the 2050 RTP/SCS is not a “continuation of past policies” and does emphasize transit. The 2050 RTP/SCS transit plan represents a dramatic increase in transit services for the region versus past RTPs, including enhancing the existing bus and trolley network to create a network of high frequency (10 minute all day) services; introduction of new service types (Rapid Bus, BRT, express LRT, streetcar/shuttles) designed to create faster transit connectivity throughout the region and enhanced first mile/last mile services in key areas; new rail, BRT, Rapid Bus services in corridors that are currently underserved areas/travel corridors that provide a much richer network of transit services in the Urban Core areas. In addition, the RTP includes the operating subsidies needed to operate and maintain this network of services throughout the RTP period.
1) Introduction

The Urban Land Institute (ULI) is a respected trade association of land use and real estate development disciplines. In June 2010, ULI released its Senate Bill 375 Impact Analysis Report, which reviewed the expected economic impacts of California’s pioneering S.B. 375. The summary of this report states:

- SB 375 requires Regional Transportation Plans (RTPs) to include the SCS (sustainable communities strategies) and be internally consistent, and thereby better align transportation, housing, and land use planning as part of the plan to reduce transportation emissions. Regions have broad freedom to design SCSs that align these plans and reduce emissions. The SCSs are expected to respond to SB 375 by:

  - Promoting compact development patterns located near transit;
  - Coordinating between the location of employment and housing;
  - Supporting transit use;
  - Concentrating economic activities into existing communities; and
  - Incorporating a mix of housing types.

This, in turn, is expected to produce:

- Shorter commutes, vehicle miles traveled (VMT) reduction, and congestion relief;
- Reduced greenhouse gases (GHG) emissions and air pollution;
- Less fossil fuel consumption;
- Greater conservation of farmlands and habitat;
- Opportunities for more housing choices for all economic segments of the population including anticipated population and employment growths;
- Reduced infrastructure costs;
- Higher quality of life; and
- Greater certainty for the development community.

Adopting the 50-10 Transit Plan will maximize these benefits in the San Diego region by effecting a transition to a multi-modal future as quickly as possible. In contrast, following the recommendations of SANDAG’s RTP would perpetuate a business-as-usual future and the benefits described in the ULI report would not be realized.

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*The 50-10 Plan acknowledges that, due to existing regional highway conditions, there may need to be new roads. Safety-related highway improvements cannot, however, be used as a pretext for expansion in highway capacity.

2) The Benefits of Compact Development

The draft 2050 RTP states:

The forecasted growth in housing is projected to increase by approximately 33 percent, by about 388,000 additional units, totaling 1.53 million homes in 2050. Of the 388,000 units, nearly 85 percent are expected to be multi-family homes. Over 80 percent of all homes in 2050 are projected to be located within the UAT (Urban Area Transit) boundary (Figure TA 7.3).

The region is also projected to experience an increase of approximately 500,000 jobs over the next 40 years, resulting in a total of nearly two million jobs in 2050. Of the two million total jobs, over 85 percent are projected to be located in the UAT study boundary in 2050 (Figure TA 7.4).

R-49
Cont.

R-50

It appears that the Vision California plan conclusion on benefits from higher density development is consistent with SANDAG’s RCP and 2050 RTP/SCS aim of promoting a regional Smart Growth strategy and the 2050 RTP/SCS transit plan that strongly links the planned smart growth sites with future transit improvements. Please refer to the discussion in Master Response 17 regarding the 50-10 plan and further discussions of the Vision California report.
The Vision California project, funded by the California High Speed Rail Authority in partnership with the Strategic Growth Council, is developing two new modeling tools—the "Urban Footprint" map-based model and the "Rapid Fire" spreadsheet-based tool—to formulate and compare scenarios for how California can accommodate growth. The Vision California project has estimated that there are enormous benefits to higher density development. As shown in the table below, "compact" development results in less than half as much auto travel as "standard" development, and "urban" development results in only about one fifth as much auto travel as "standard".¹

A fundamental problem in the 2030 RTP is that it takes credit for the benefits of more compact development while assuming that such a future will be achieved regardless of what transportation system is provided—whether auto-oriented, transit-oriented or a mix of the two. In reality, developers, home buyers and renters, and business owners are all strongly influenced by transportation investments. Investments in freeways have encouraged sprawl. This phenomenon has resulted in a vicious cycle whereby sprawl causes high traffic growth leading to more freeway investments leading to more sprawl. The RTP is in error when it assumes that compact development can be achieved with continued investments in suburban freeways. Accordingly, the agency is taking credit for benefits that will result from compact land use that will not result if the RTP is followed.

For many years, SANDAG and Caltrans have over invested in highways while under investing in transit. Consequently, the region has an extensive highway system but an incomplete transit system. Without a comprehensive, well-integrated transit system, public transportation has been unable to meet the region’s transportation mobility needs. The 50-20 Plan would break this cycle by authorizing the funds for a transit system that is capable of replacing travel by the automobile.
Please refer to Master Response 15 for a discussion of parking pricing policies. SANDAG recognizes the role that parking policy can play as part of a regional transportation network plan – it is anticipated that parking policies will be addressed during the update of the Regional Comprehensive Plan which will be initiated in Fall 2011.

A Tale of Two Cities – Los Angeles and San Francisco

For a downtown concert hall, Los Angeles requires, as the minimum, 50 times more parking spaces than San Francisco allows as the maximum. These different priorities help explain the very different parking arrangements for Louise Davies Hall (home of the San Francisco Symphony) and Disney Hall (home of the Los Angeles Philharmonic). San Francisco built Louise Davies Hall with no parking garage, while Los Angeles completed Disney Hall’s 2,100-space, $110 million parking garage three years before it had raised the $274 million needed to start building the 2,265-seat Disney Hall itself.

Los Angeles County borrowed the money to finance the $50,000-per-space parking garage, with the debt to be repaid from the expected revenues. Because the garage was completed in 1996, but Disney Hall did not open until 2003, parking revenues fell far short of the debt payments for seven years. As a result, the county had to subsidize the garage from general revenues at a time when it was nearly bankrupt.

The difference in parking policy helps explain why almost everyone prefers downtown San Francisco to downtown Los Angeles. After a concert or theater performance in San Francisco, people stream out onto bustling sidewalks where all the restaurants, bars, bookstores, and flower shops seem to be open and busy, and where it is a long walk to your parking space, if you even drove. In Los Angeles, the sidewalks are empty and threatening at night. Even a spectacular new concert hall does not help to create a vibrant downtown if every concertgoer drives straight into its underground garage and finds the sidewalks empty and unsafe.

From Shoup, Donald. The High Cost of Free Parking, p. 260-261, Chicago: Planners Press, 2004

The public strongly supports compact transit-oriented development as shown in a recent county-wide survey.
The 2050 RTP/SCS plans for existing and future needs of the region which includes increased emphasis and significant investment in upgrading existing transit and implementing new rail and bus services in areas currently underserved. Please refer to Master Response 7 for a discussion of how the 2050 RTP/SCS transportation network components do emphasize transit investments.

See response to comment R-51.
Adoption of the 50-10 Transit Plan will result in a complete transit network for the urban core that:

- Is high quality, frequent and serves most regional trips,
- Is accompanied by walk and bicycle infrastructure investments,
- Attracts travelers in all income groups,
- Promotes transit-oriented development patterns, and
- Will operate within a decade or sooner.

The transit projects included in the 50-10 Transit Plan would be generally consistent with the transit projects proposed for implementation over a 40-year period in the 2050 RTP. They include service improvements for the Trolley, Coaster, Sprinter and development of new light rail and streetcar lines in the urban core. The difference between the 50-10 Plan and the 2050 RTP is that the former (1) would fund several of the most important transit projects within 10 years, and (2) any future roadway expansion would be postponed until after a complete high-quality transit network is established in the region's urban core. The 50-10 transit system would be designed to achieve, at minimum, the transit mode share goals identified in the 2050 RTP, but would achieve them much earlier than 2050. These mode share goals are shown in the adjacent figure, which overlays important transit corridors on top of the draft RTP Figure TAP-7. (Note: The Coaster is identified as the blue line, while the red lines show the light rail system).

R-55

See Master Response 17 for a comparison of the 50-10 Plan and the 2050 RTP/SCS.
The transit projects identified in the draft 2050 RTP serve as the core of the SD 10 Plan. Additional effort will be required to flesh out a complete transit system; this effort is beyond the scope of this report. Focusing too early on specific transit projects too often leads to "analysis paralysis," as projects move on and off project lists while the roadway system continues to be expanded. These analyses are often unsatisfactory because transit projects cannot achieve their full potential without a comprehensive system that makes transit a practical alternative to driving for a large share of regional trips. The intent of this report, then, is to focus on the "big picture." It proposes a critical change in the timing and implementation of transit: a complete transit system must be implemented first within the urban core; SANDAG would then build a comprehensive system from that initial program.

Accordingly, the concept of "transit before highways" is the critical component of the SD 10 Plan. While SANDAG is proposing, in the 2050 RTP, to fund transit simultaneously with highway expansion, this approach to regional transportation is doomed to fail. In addition to the land use considerations discussed above, substantial increases in highway capacity significantly undermine transit patronage, since the presence of traffic congestion is an incentive to transit usage. Moreover, we are aware of other transportation planning agencies' empty promises when it comes to future transit funding. For example, in the early 1990s, the Atlanta region included major rail transit expansions in its long-range transportation plan, including construction of a new comprehensive commuter rail system. However, these projects were in the "out years" of the long-range plan and the focus of studies only in the initial years. Not surprisingly, none of these projects were ever constructed, and they have since been omitted from recent plans. In fact, because of the large roadway investments and resulting sprawl over the past 20 years, providing transit to the Atlanta region has become even more difficult than it was two decades ago.

Without a commitment to the SD 10 Transit Plan, the Atlanta scenario is the likely outcome for the San Diego region. Roadway expansions will proceed forward now. Planning studies will be done for transit, but those projects will be postponed into the future. Meanwhile, sprawl development will continue its outward march, making the implementation of a comprehensive transit solution that much more difficult.
The survey referenced in the comment was not conducted to ask voters if they would be willing to pay for the transit system improvements instead of a balance of investments in the region; rather it was conducted in the context of a climate change survey. The TransNet Extension Ordinance was passed by two-thirds of the voters who supported the measure in 2004. The projects in the measure represent a balance of highway investment (that supports carpooling and transit on Managed Lanes), transit and local streets and roads. Funding also supports bicycle and pedestrian improvements, the Smart Growth Incentive Program, and the Environmental Mitigation Program. The measure includes a provision whereby the SANDAG Board of Directors will re-evaluate the expenditure plan to ensure future investments reflect the region’s priorities. The first evaluation will occur in 2018.

Building a fully functional, regional transit network is impossible without a long-term revenue source. The region has a revenue source. The problem is that it is targeted at the automobile.

The TransNet extension, a regional half-cent sales tax for transportation that was approved by more than two-thirds of San Diego County voters in 2004, runs to 2044. This tax is expected to raise $32 billion to help fund transportation projects. Most of these projects, however, are strictly highway-oriented. Accordingly, SANDAG currently proposes to use TransNet to fund major highway expansion projects along I-5, I-8, I-15, I-805, SR-52, SR-54, SR-56, SR-67, SR-SR-76, SR-78, SR-94, and SR-125.

Importantly, TransNet is not locked in stone. The measure allows flexibility in the event of changing technology, new priorities, or other factors during its 40-year term. The San Diego region has clearly experienced a dramatic change in

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6 SANDAG’s “Hybrid Transportation Scenario” contains a variety of multi-modal projects with an emphasis on “Fusion” and “Highway Emphasis” scenarios. Draft 2050 RTP, Technical Appendix 5, page TA 7.17. The “Fusion Scenario” includes an emphasis on new public transit services (rail and bus), highway improvements (bottleneck relief and new lanes), and increased frequencies to existing transit routes. Id., page TA 7.57.

7 The initial 20-year TransNet program was initially approved by voters in 1987.

8 The projected TransNet revenue is calculated in year of planned expenditure. 2050 RTP/SCS DEIR, page 4.18-15.
See Master Response 7 for a discussion of managed lanes. The Managed Lanes are part of a multimodal transportation strategy that seeks to promote both BRT and carpooling/vanpooling usage by creating facilities that allow these modes travel times that are competitive with single-occupant vehicle use. Transit is an important part of the transportation puzzle, but certainly not the only solution to future mobility. Ridesharing is an equally important component, especially in areas outside of the urban core where transit services will be limited.
R-59

A lack of variation does not imply the SANDAG transportation model is “useless for modeling future transit ridership”. In the Final Comparative Evaluation of Alternatives Report for the Mid-Coast Corridor Transit Project (http://www.sandag.org/midcoast) report for FTA NewStarts, SANDAG compared light rail alternatives to bus rapid transit and expanded express bus service in the Mid-Coast corridor. The SANDAG model and alternatives analysis was reviewed extensively by the Federal Transit Administration to ensure adequate sensitivity to alternatives. In November, 2010, the Federal Transit Administration certified the Technical Methods of the SANDAG Mid-Coast analysis. The Draft 2050 RTP/SCS and EIR uses the same modeling methodologies included in the Mid-Coast Analysis. Further, the CARB (2011) has accepted SANDAG’s transportation model, including its modeling of transit ridership, as an appropriate methodology for demonstrating that the 2050 RTP/SCS will achieve SB 375’s regional GHG reduction targets. The CARB staff report outlining their review and concurrence on SANDAG’s SCS is available on the CARB website at http://www.arb.ca.gov/cc/sb375/sandagscs.pdf.

In regards to SANDAG estimates of transit usage among higher income individuals, CNFF comment is contradicted by their own charts. In both charts derived from American Community Survey data, transit usage clearly declines as incomes increase. Further, a comparison of San Francisco county to San Diego county is not an accurate comparison. San Francisco county is a relatively small and completely urban county sharing its boundaries with the City of San Francisco. San Diego county is over 4,200 square miles with diverse land use including urban, suburban, and rural communities with over half of the county preserved as open space or protected habitats.

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5) SANDAG’s Tools Are Inadequate to Evaluate the 50-10 Transit Plan

SANDAG relies on a computer simulation model to evaluate the outcome of the RTP. This model has serious deficiencies making it almost useless for modeling future transit ridership. As shown in the figure below, SANDAG’s modeling shows there is a only a minor difference in future transit ridership between a transportation alternative that emphasizes transit compared to one that emphasizes highway expansion.

Similarly, the SANDAG computer model estimates that automobile travel would be almost identical across these alternative scenarios.

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8 For a more detailed discussion of SANDAG’s modeling issues see Smart Mobility, Inc. Report entitled “Deficiencies in SANDAG’s Transit Modeling.” March 7, 2011, attached.
A primary cause of this model insensitivity is the extremely exaggerated emphasis on income in the model's transit assumptions. SANDAG assumes that higher income people will not use transit. Despite contrary data for the SANDAG region and for regions with higher-quality transit systems, the adjacent graphic shows the transit mode share for residents' work trips in three California counties. As shown, higher income residents are slightly less likely to use transit for commuting, especially in San Diego County, which has the poorest transit system of the three counties.

Nevertheless, the SANDAG model assumes that income produces a much greater effect than transit. The figure below shows the San Diego County data from the figure above (grouped by the three model categories) along with SANDAG's modeled transit shares for 2008 and 2050.

As shown, SANDAG greatly exaggerates the importance of income today and then expands that differential to a highly unrealistic level in the future, as compared to the data shown for other California regions. In 2050, SANDAG presents the low income transit share as 10 times that of the high income share, even though only small differences exist in San Francisco and Alameda Counties today.

The non-work trip transit share for high-income travelers in the SANDAG model is even smaller than 0.2 percent—despite the assumption that billions of dollars would be spent to upgrade rail (and other transit) in high-income areas in the San Diego region. These assumptions about high income residents dominate the 2050 results because the model presupposes, based on optimistic economic assumptions, that 73% of all trips will be made by "high" income residents.
In summary, SANDAG is relying on a crude and unrealistic modeling tool to evaluate the 2050 RTP transportation alternatives. Modeled transit ridership is based almost entirely on income. The modeling assumes that lower income residents have a propensity to use transit even if service is relatively poor. The modeling also assumes that lower income residents will become much less prevalent in the future. At the same time, the modeling assumes that high income residents are increasing in numbers and that these residents will not use transit even if it is high quality. According to SANDAG, then, the level and quality of transit service have little consequence on overall transit ridership. Consequently, SANDAG lacks a valid tool for evaluating its own proposed RTP, let alone the 50-10 Transit Plan. It is essential that the flaws in SANDAG’s modeling be corrected so that the 50-10 Transit Plan can be evaluated properly.

6) Benefits of the 50-10 Transit Plan

Adoption of the 50-10 Transit Plan will result in the following benefits, based on criteria articulated in the UII report (excerpted above):

Shorter commutes, reduction of vehicle miles traveled (VMT), and congestion relief

The 50-10 Plan’s investment in public transit will achieve these benefits through encouraging a more compact and walkable land use future.

The Vision California report, discussed above, describes three general land use futures for the state of California: (A) Trend Growth, which represents a future based on past market trends, development patterns and transportation investments, (B) Mixed Growth which combines past and future patterns of growth and investment, and (C) Smart Growth, which aggressively meets the shift towards compact growth with corresponding investments in transit infrastructure.

The Report concludes that Trend Growth is not likely to continue due to dramatic shifts in the economy. Instead, Mixed Growth is likely to occur due to “changing demographics and lifestyles, trends in construction, the under-supply of compact units on the market, and projected energy price increases.” Notably, the Mixed Growth scenario assumes that “growth will be supported by transportation investments that balance roadway and transit infrastructure, and a move towards planning for compact development by regions and cities.” This “Mixed Growth” approach exactly summarizes the SANDAG RTP because it attempts to balance traditional demand for freeway expansion simultaneously with demand for transit infrastructure.

But how does a community achieve Smart Growth, the optimal planning objective? Accordingly to UII, “significant investments in transit and other infrastructure will be made to support smart growth.” The Vision California “Smart Growth” approach thus contemplates aggressive transit investment to strengthen and lead future trends while abandoning past development patterns. The 50-10 Transit Plan is designed to foster this vision for Smart Growth.

The Vision California graphic (reproduced on p. 4 of this report) shows that Mixed Growth will result in much less growth in vehicle miles traveled (VMT) than Trend Growth, and Smart Growth will result in even less VMT growth. The figure below applies the Vision California data to the SANDAG region. Using direct calculations from the Vision California the blue columns show about half as much VMT per person for new residents in the Smart Growth future as compared with the Trend Growth future. The red columns make a very conservative assumption that this regional transformation will not change the behavior of those living in residences that exist today; in other words, they will continue to generate 25.7 VMT per person per day, (according to the RTP).

R-59 Cont.

R-60
See Response to Comment R-50.

R-61
It is not clear where the 25.7 VMT per person per day at the bottom of page 15 of the 50-10 plan is derived. The draft EIR presented the VMT per capita in 2050 at 24.2 VMT per person per average weekday. As for the Vision California scenarios and calculations, these are not SANDAG studies, so SANDAG cannot comment on their validity or accuracy. Also, see Master Response 17 and response to comment R-50.
As this graphic shows, the Mixed Growth future is not sufficient to lower VMT per person. Instead, it would increase from today's value of 25.7 percent. In contrast, the RTP assumes (due to optimistic land use assumptions) that VMT per person will drop in the future with the RTP. These decreases in VMT are not realistic if the highway expansion projects identified in the RTP are implemented.

With the extremely conservative assumption discussed above, regional VMT would be 12.4% less in 2050 in the Smart Growth future (i.e., the 50-30 Transit Plan) than in SANDAG's Mixed Growth scenario. This is because the Smart Growth scenario will result in more walk and bike trips, more transit trips, and shorter auto trips. The actual reduction in VMT is likely to be considerably greater because the multimodal infrastructure and new multimodal behavior will have far-reaching effects on older neighborhoods as well.

Despite the large scale nature and expense of the highway expansion program contemplated by the 2050 RTP, it would not result in reduced congestion compared to today's congestion levels. It would not even result in less future congestion than if the 50-10 Transit Plan were followed with no highway expansion. This may seem counterintuitive but an analogy might help. Expanding roadways is equivalent to fighting a weight problem by buying larger pants. Clearly, one must address the weight problem directly by reducing calorie intake. As illustrated in the box below, the 50-30 Transit Plan addresses the highway congestion problem directly by getting cars off the road; it does not contemplate filling more roads and wider roads with more cars.

[^1]: The RTP does increase freeway lane miles by more than 12.4% but adds little capacity to the larger arterial and local roadway system. Not this begins or ends on a limited access highway. The impacts of implementing the RTP would include greatly increased congestion on the arterial and local roadway system. Yet these impacts are seldom disclosed or analyzed in freeway project EIR documentation.
The Futility of Widening Highways

In the Chicago area, one particularly bad bottleneck on the Eisenhower Expressway, referred to as the "Hillside Strangler," was improved at a cost of $140 million. According to many local sources, the congestion at that particular location improved, but the traffic bottleneck only shifted to adjacent areas. In fact, "the commute time from the suburbs to the Loop, via the Eisenhower and its extension, is one hour - exactly what it was before the Hillside Strangler was repaired." \(5\)

The Boston Globe reported that the $15 billion invested by the state and federal taxpayers for the "Big Dig" increased mobility on the expanded roadway. "But most travelers who use the tunnels are still spending time in traffic jams - just not in the heart of the city, where bumper-to-bumper was a way of life on the old elevated artery." \(6\)

The Globe documented no apparent overall travel time savings; rather, it reported a number of trips where travel times have increased, including one case where peak period travel time has doubled from 12 minutes to 25 minutes.

Reduced greenhouse gas (GHG) emissions and air pollution

The 12.4 percent reduction in VMT would translate into a similar reduction in greenhouse gas emissions and criteria air pollutants.

Less fossil fuel consumption

The 12.4 percent reduction in VMT would translate into a similar reduction in gasoline consumption. At $4/gallon, the region is currently spending approximately $5.6 billion per year on automobile fuel. 12.4 percent of that would be $700 million in savings for the region's households, a similar number to annual capital expenditures in the RTP.

Cumulative New Land Consumption to 2050

- A1
- B1
- C1
- C2

Greater conservation of farmlands and habitats

As shown to the right, Vision California estimates that the Smart Growth future will involve less than half as much additional land consumption as the Mixed Growth future. The impacts in San Diego County would be similar to those shown statewide. (Note: C1 and C2 are two slightly different Smart Growth scenarios that both involve the same land consumption.)

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The comment is focused on the proposed Balboa Park plan, not the 2050 RTP/SCS. The RTP has LRT, Rapid Bus, streetcar, and local bus services on both sides of the park, providing a rich network of access to the park.

It is unknown how the 50-10 plan addresses housing needs, other than calling for increased density near transit, which is what the 2050 RTP/SCS is based upon. The 2050 RTP/SCS also significantly increases funding for senior and disabled services in recognition of the projected increase in the senior population.

Higher density development also has significant infrastructure costs as well including retrofitting existing water, sewer, electrical, and storm drain infrastructure to support higher densities. The cost of opening streets in order to expand the water/sewer pipes would not be inconsequential or (potentially) well received in certain communities. Also, light rail transit is not inexpensive. SANDAG is spending nearly $1.5 billion on Mid-Coast were the right-of-way is largely already publically owned. Density still requires transportation and transportation like light rail in existing neighborhoods will be expensive. SANDAG will be studying these costs as part of the FY 12 Overall Work Element adopted by the SANDAG Board of Directors in May, 2011.
The quality of life will be enhanced by creating a multimodal transportation plan that creates a wide range of transportation "choices" for how people can get around the region, thereby reducing dependency to the often current problem of only being able to get around by SOV driving.

SANDAG agrees with the urgency of improving the transit system as quickly as possible, and the 2050 RTP/SCS plan maximizes the flexibility of projected future funding (capital and operating) opportunities to make the improvements.
This comment provides introductory remarks. No further response is required.

S-2
SANDAG did not include Census 2010 information in the RTP due to the schedule conflicts between the two, i.e. the 2050 RTP/SCS and the Census 2010 data releases. However, SANDAG believes the statistical differences in the early years of the forecast are negligible over the planning horizon of the RTP, and would not agree that there is any evidence to suggest a 10 percent over-projection. SANDAG has a strong record of accurately producing population forecasts over the past four decades, even in cases where the starting point was not a Census data year. In addition, the Series 12 forecast is in alignment with a variety of other projections. The 2050 Regional Growth Forecast projections are also somewhat lower than those produced based on the California Department of Finance estimate. By 2050, SANDAG forecasts 2.7
required to use population data from the California Department of Finance for the beginning of 2010. The TPCPB would like to bring to SANDAG’s attention that based upon the Federal 2010 Census, the actual number of people living in San Diego County is 3,095,313. This data can be verified by going to the San Diego County Redistricting website. The County of San Diego used the Census Data to establish new County Districts. SANDAG staff has verified that the California Department of Finance data is overstated when compared to the official 2010 Federal Census. Therefore, SANDAG’s starting 2010 population is overstated by 129,119 people. When attempting to reconcile population data by city, it became clear that the SANDAG Demographic database was using outdated census tracts from the 2000 Census. What is the impact of this population overestimate on the final prediction of 1,160,436 new residents in San Diego County? What is the statistical impact of this false starting point over the 40-year projections? Would SANDAG agree that the population prediction is at least 10% overstated?

How does this overstatement of population impact the Vehicle Miles Traveled (VMT)? Without a valid starting point of population per city, what is the impact on highway expansion by major highway corridor? Would a given SANDAG highway project no longer be justified as a ‘congestion relief’ necessity?

In Chapter 4-13, Table 4.13-4, indicates that existing Housing in 2010 is 1,149,426 and that 379,664 new units will be required to house the population needs by 2050. SANDAG data is from the San Diego County Assessor, building permits, housing unit records from the Dept. of Defense and aerial imagery. The total count of all Housing Units in the 2010 Census was 1,164,865. Some of the underestimation of 15,439 Housing Units can be explained by the four- (4) month difference in starting point of January 1 versus April 1, 2010.

The underestimation of current housing is only the tip of the iceberg in regards to overestimating the future regional housing needs. The SANDAG staff when questioned about this issue agreed that there are about 80,000 vacant housing units in the San Diego region. The exact number of vacant units, as confirmed by the Union-Tribune on June 23, 2011, is 77,921. How has SANDAG taken this high vacancy rate into consideration in justifying the need for more housing units by 2050?

On Table 4.13.5 –Existing and Forecasted Jobs by Jurisdiction, SANDAG’s starting employment data is from the year 2008. The footnote at the bottom of the table states “SANDAG uses 2008 employment data from EDD for planning purposes in the 2050 RTP/SCS.” Are there not more current EDD estimates available to SANDAG to adjust the 2008 starting point to a more current 2010 jobs by jurisdiction starting point? The TPCPB was able to review the CA Employment Development Department website and cannot find where SANDAG collected its data for 2008. EDD Excel spreadsheet for May 2008 indicated 1,326,980 employed residents in San Diego County. The San Diego Workforce Partnership data for June, 2008 was 1,304,000 jobs (non-seasonally

SANDAG 2050 RTP/SCS EIR  G-627  October 2011

1 More information about the DEFM is available at http://www.sandag.org/index.asp?subclassid=118&fuseaction=home.subclasshome
The San Diego region. The 2050 vacancy rate is lower than the vacancy rate at any time during the past
decade.

Further detail regarding the accuracy of the 2050 Regional Growth Forecast is provided in
Master Response 12.

S-5
The EDD and San Diego Workforce Partnership numbers cited (e.g., 1,304,000 jobs) refer only
to civilian wage-and-salary workers, and do not include the nearly 90,000 uniformed military jobs
and 100,000 self-employed workers in the region, which comprise a substantial portion of the
region’s workforce. The SANDAG estimates and projections are consistent with the EDD data
for wage-and-salary jobs, but also include uniformed military and self-employed workers, which
EDD data does not include.

Moreover, recent trends indicate that a recovery is underway. When comparing each month with
the same month from the prior year, based on figures from EDD, the region has been steadily
adding jobs since July 2010.

Finally, the SANDAG forecast does take the recession into account. The forecast shows
regionwide job losses during the recession years, followed by a period of high unemployment
during the first few years of the economic recovery. To date, the region-level SANDAG
projections for wage-and-salary jobs and unemployment have tracked almost perfectly with the
peak of the recession and beginning of the recovery, when compared with data published by EDD.
(Source: California Employment Development Department, Labor Market Information
Division, Industry Employment – Annual Average, San Diego County, July 22, 2011,
http://www.calmis.ca.gov/htmlfile/county/sdiego.htm. Further detail regarding the accuracy of the
2050 Regional Growth Forecast is provided in Master Response 12.

S-6
See Responses to Comments S-2 through S-5. The 2050 Regional Growth Forecast baseline
and forecast projections have not been and do not need to be revised because any statistical
differences pointed out in the preceding comments are negligible. EIRs are not held to a
standard of absolute perfection, and will be upheld if they make a good faith effort at full
disclosure (See CEQA Guidelines §15151; Residents Ad Hoc Stadium Committee v. Board of
Trustees (1979) 89 Cal.App. 3d, 274, 285-287.) Further detail regarding the accuracy of the
Series 12 Regional Growth Forecast is provided in Master Response 12.

S-7
As a result of comments received during the Draft EIR’s public review period and a re-review of
data presented in the Draft EIR, clarifications and modifications were made to the Draft EIR
content as listed and discussed in detail in Master Response 3. These revisions from the Draft
EIR to the Final EIR do not represent significant new information that requires recirculation of the
EIR.

S-8
See Responses S-2 through S-7. The 2050 Regional Growth Forecast baseline and forecast
projections have not been and do not need to be revised, because any statistical differences
pointed out in the preceding comments are negligible. EIRs are not held to a standard of
absolute perfection, and will be upheld if they make a good faith effort at full disclosure (See
CEQA Guidelines §15151; Residents Ad Hoc Stadium Committee v. Board of
Trustees (1979) 89 Cal.App. 3d, 274, 285-287.) Therefore, there is no need to withdraw the 2050 RTP/SCS to
correct the alleged errors. Further detail regarding the accuracy of the Series 12 Regional Growth Forecast is provided in Master Response 12.
T-1

This comment provides introductory remarks. No further response is required.

T-2

The comment is noted.
The comment summarizes the Draft EIR’s description of project alternatives. A detailed discussion on the range of alternatives selected for analysis in the Draft EIR is provided in Master Response 16.

The proposed 2050 RTP/SCS provides one No Project alternative and six build alternatives. Alternative 2a/2b: Modified Funding Strategy, Alternative 3a/3b: Transit Emphasis/modified Phasing, Alternative 4: RTP/SCS Transportation Network/Modified Land Use, and Alternative 5: Slow Growth. The 2050 RTP is estimated to cost $196.3 billion and take 40 years to complete.

The so-called No Project Alternative actually includes a number of projects currently under construction, Table 6.2-1, and Transit Projects indicated on Table 6.2-2 which includes the I-15 Bus Rapid Transit between Downtown San Diego and University Town Center. These projects would move forward under separate environmental documents. Alternative 2a: Modified Funding Strategy indicates that this funding strategy would differ in that there would be fewer highway improvements overall and some improvements would be phased in at a later time. The majority of highway projects would stay the same from 2010 to 2020, with the majority of later phase highway projects not being developed. This alternative does not fund the expansion of I-5.

Alternative 2b: Modified Funding Strategy/Modified Land Use is based on the Smart Growth Concept Map of 2008 compared to 2050 RTP/SCS. This modified pattern would add infill and redevelopment to increase density within the Urban and Town Center designations and increase employment with the Job Centers.

Alternative 3a: Transit Emphasis/Modified Phasing/2050 Growth Forecast Land would emphasize transit and modify phasing of transportation improvements. This alternative would advance some transit projects earlier in the project phasing process. The transit emphasis strategy would also implement the majority of highway projects in the 2050 RTP/SCS. Alternative 3b: Transit Emphasis/Modified Phasing/Modified Land Use is similar to 3a together with a modified land use pattern as seen in Alternative 2b. Alternative 4: 2050 RTP/SCS Transportation Network/Modified Land Use would implement the modified land use pattern in Alternatives 2b and 3b. Alternative 5: Slow Growth would implement the 2050 RTP/SCS but with implementation of each improvement delayed for 5 years.

The Torrey Pines Community Planning Board (TPCB) comments will mainly focus on the proposed 2050 RTP/SCS alternatives within its jurisdiction or community planning area. The relevant boundaries are the northerly San Diego City limits (Vía De La Valle), Interstate 5, and the Sorrento Valley Industrial Park, the Pacific Ocean and the city of Del Mar. Sensitive environmental settings include the watersheds associated with the Los Penasquitos Creek and the San Dieguito River and lagoons. Other protected environments within our boundaries include the Torrey Pines State Reserve and Extension and Crest Canyon.

Since the Caltrans I-5 North Coast Corridor plan and the Caltrans I-5/SR-56 Connector projects are part of the SANDAG 2050 RTP/SCS DEIR, the TPCB will partially focus on the environmental impacts of these projects on the Torrey Pines community. Under Alternative 3a: Transit Emphasis, Table 6.2-6 on page 6-25, indicates Project I-5, from SR-56 to Manchester, is estimated to cost $1,230,000 billion and is part of a larger I-5 projects costing up to $4.3 billion. The I-5/SR-56 Connector project is estimated to cost $185 billion available by that decision will be shifted to transit, pedestrian and smart growth projects. The description of the I-5 North Coast Corridor highway project and funding allocation were revised in the 2050 RTP/SCS EIR.
T-4

CEQA requires a 45-day period for public review of a Draft EIR submitted to the State Clearinghouse for review by state agencies. (CEQA Guidelines §15105). The public review period for the 2050 RTP/SCS Draft EIR was 55 days, 10 days longer than the review period required by CEQA.

T-5

The EIR is a Program EIR for a regional plan that analyzes the broad environmental effects and program-wide mitigation measure of the 2050 RTP/SCS, and acknowledges that project-specific impacts, mitigation measures, and alternatives will be analyzed as needed in future project-specific CEQA documents (see CEQA Guidelines §15168(c)). The decision on the type of CEQA document required will be made by the appropriate lead agency at the time specific projects are proposed and will depend on the individual project components and associated degree of environmental impacts. Please refer to Master Response 1 for further discussion of the purposes and requirements for a Program EIR.

T-6

Under CEQA Guideline 15162, SANDAG, as the lead agency, is allowed to determine that subsequent activities are within the scope of the Program EIR. If SANDAG finds "no new effects would occur or no new mitigation measures would be required pursuant to CEQA Guideline 15162, the subsequent project would be considered to be within the scope of the Program EIR and no further environmental documentation would be required." For comparison sake, the I-5 NCC DEIR section on NOISE impacts is larger than the entire 2050 RTP/SCS DEIR. In Chapter 4.12 Noise on page 4.12-17 of the 2050 RTP, "while project level analysis would be required and site specific measures to reduce noise impacts would be required upon implementation of the 2050 RTP/SCS, there is no assurance that noise impacts would be reduced to a less than significant level. Therefore, this is a significant impact." On page 4.12-15, SANDAG states that "the 2050 RTP/SCS is a program-level document; detailed, site-specific information is not available to predict either the site-specific noise impact of future land use changes, or the effectiveness of existing laws, regulations, and programs in reducing any such site-specific impacts. This is a significant impact."

T-7

Under CEQA Guideline 15151, a "good faith effort at full disclosure" must be made. "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences." SANDAG has failed to exercise "careful judgement" based on available "scientific and factual data" as required by CEQA Guideline 15064(b). Furthermore, SANDAG has a legal duty to consider alternatives and is not conditioned upon project opponents demonstrating that other feasible alternatives exist (Practice Under CEQA 15.40). In what manner, has the SANDAG 2050 RTP/SCS abided by the requirements of CEQA Guidelines 15151? Where are the scientific and factual data incorporated within the 2050 RTP/SCS DEIR?

How can the elected public decision makers and local organizational leaders make a careful judgement on the merits and environmental impacts on a regional plan that contains little more than project titles?
Thanking you in advance for your careful consideration and review of the TPCP’s specific comments. We look forward to your detailed responses to our comments, which are as follows:

Outline of Comments

I. General Considerations and Comments
   A. Torrey Pines Community Plan and its relationship to the SANDAG 2050 RTP DEIR
      1. Transportation Element
      2. Visual Element
      3. Mass Transit Element
   B. The City of San Diego General Plan –Mobility Element
   C. Omissions and Errors in SANDAG 2050 RTP/SCS DEIR
      1. Generated Traffic and Induced Travel
      2. Biased Data Analysis and Statical Errors in Presentation
      3. Parking Strategies effect on Transit Usage
      4. Alternatives not Considered
      5. Impacts to Arterial Streets within the Torrey Pines Community
      6. Corridor of the Future – California Interstate 5 –Modal Characteristics 2010-2040
      7. AB 1358 (Leno) The Complete Streets Act
      8. Independent Transit Peer Review Panel – Public Transit Demand

II. Comments on sections of the SANDAG 2050 RTP DEIR
   A. Cumulative Environmental Impacts
      1. Environmental Justice
      2. Climate Change legislation SB375 & AB 32 Compliance
      3. Atherosclerosis (hardening of arteries) and traffic pollution
      4. Asthma linkage to Freeway Pollution (ultrafine particles)
      5. Human Impact Assessment (HIA)

III. Conclusion

T-8
Please see responses T-6 and T-7 regarding analysis of project-level impacts. The difference between programmatic and project-level analysis is discussed in greater detail in Master Response 1. Consistency with the TPCP is discussed in responses T-10 through T-12.

T-9
The Draft EIR evaluated a reasonable range of alternatives. Seven alternatives to the proposed project were evaluated in detail, including alternatives with features suggested by the public. The alternatives evaluated included several that placed a greater emphasis on transit projects, and incorporated features such as moving transit projects earlier in priority, and planning for a modified, more compact land use pattern. Please see Master Response 16 for a discussion of CEQA’s requirements for the selection and analysis of alternatives.

Furthermore, this comment misunderstands the purpose of and legal requirements for the Program EIR prepared for the 2050 RTP/SCS. An advantage of a Program EIR is that it allows the lead agency to consider broad policy alternatives and “program wide mitigation measures” at
The Torrey Pines Community Planning Board asserts that the SANDAG DEIR is in error and has misinterpreted or ignores the intent of the TPCP Transportation Vision. The proposed 2050 RTP/SCS is not consistent with the goals of the TPCP. The DEIR project causes further encroachment on residential neighborhoods and amenities including the Del Mar Hills Elementary School. This encroachment will raise noise levels along the I-5 corridor and reduce air quality as a result of increased particulate matter and other by-products of automobile pollutants.

2. Torrey Pines Community Plan – Visual Element

On page 58, the TPCP speaks to the issue of Visual Impacts that include permanent landform change as a result of new cut slopes, fill slopes, bridge structures, traffic movement, and retaining walls. Under Residential Element on page 66, a stated Policy #4, is “Residential neighborhood’s should be preserved and protected from encroachment by adjacent uses and the construction of public roads and utilities.”

How does this SANDAG 2050 RTP/SCS DEIR protect the residential Torrey Pines’ neighborhoods when the I-5 NCC and I-590/I-56 are integral parts of the total 2050 RTP/SCS?

This DEIR is particular lacking in its handling of Visual Impacts. Under Specific Proposals on page 31 of the TPCP, item 4 clearly states that development adjacent to the lagoon should be designed to reduce visual impacts and that development should be low profile and screened from view by landscape buffers. Under VISUAL RESOURCES on page 118 of the TPCP, the overview states “the State Coastal Act states that the scenic and visual qualities of the coastal area shall be protected and provided as a resource of public importance.” Since the I-5 NCC project is part of the SANDAG 2050 RTP it would result in permanent loss of 1.2 acres within the San Dieguito River Park and the bridge over the river would be enlarged by 39 feet on both sides.

SANDAG’s 2050 RTP/SCS admits to impacting Viewers on the Freeway, and even Caltrans DEIR I-5 NCC accepts that views from the freeway would be diminished in quantity and quality by the introduction of walls and visual access to the ocean views would be obstructed. Under the heading, Expansive Paving with Large Walls and Structures, Caltrans states that each build alternative would increase pavement appearing to double the width of the existing freeway. How does SANDAG justify that the creation of 33 to 40 foot high retaining walls, which are not low profile and that, adds enormous bulk and scale within a natural public view shed, supports the Torrey Pines Community Plan? Changing land mass forms from sloping tree lined and vegetated hillsides too massive retaining walls creates a “tunnel effect”. Would you not agree that this SANDAG 2050 RTP/SCS DEIR, which includes the maximum build out of I-5 from T-9

an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. (CEQA Guidelines §15168(b)(4).) The impacts of particular projects in particular communities, including Torrey Pines, will be analyzed in appropriate project-level CEQA documents, where there will be the opportunity to fully analyze all project-specific impacts, mitigation measures, and alternatives. Please refer to Master Response 1 for further discussion of the differences between programmatic and project-level CEQA documents.

T-9 Cont.

The comment notes that the 2050 RTP/SCS is not consistent with the goals of the TPCP. However, several sections of the TPCP are cited in the 2050 RTP/SCS, including those policies that “emphasize mass transit” and “encourages the use of mass transit, rather than building and/or widening roads and freeways.” The TPCP was adopted in 1995 and was based on a traffic study for the year 1992, and there have been significant changes in the transportation system and volume of vehicles since that time. The TPCP acknowledges the need to address improvements that benefit the regional system, and the first goal of the TPCP is to “provide an efficient, safe and environmentally sensitive transportation system.”

The goals of the 2050 RTP/SCS are based on (1) Quality of Travel & Livability, and (2) Sustainability. Quality of Travel & Livability relates to how the transportation system functions from the customers’ perspective. Sustainability relates to making progress simultaneously in each of the Three “Es” (Social Equity, Healthy Environment, and Prosperous Economy) from a regional perspective (2050 RTP/SCS, Chapter 2).

The 2050 RTP/SCS is developed based on input from the local jurisdictions within the region, including the City of San Diego and the Torrey Pines Community. Chapter 6 of the 2050 RTP/SCS discusses the mass transit options that will benefit the region. The 2050 RTP/SCS incorporates projects and policies consistent with the General Plans and Specific Plans of the local jurisdictions to the extent possible. As discussed above, the 2050 RTP/SCS does not ignore the TPCP Transportation Vision and is not inconsistent with the goals of the TPCP. The 2050 RTP/SCS goals are consistent with the goals discussed in the TPCP.

The TPCP also discusses specific road improvements that are recommended to: 1) protect the health and safety of pedestrians, bicyclists and motorists; 2) accommodate existing and future traffic with minimum disruption to residents and businesses; and 3) protect the sensitive environmental resources contained within the community planning area. As noted in the TPCP, “because of its location at the northern extent of the City of San Diego and its long, thin shape, the Torrey Pines circulation system must also carry through traffic (i.e., traffic without an origin or destination within the community).” The plan includes Caltrans projects that are located immediately east of the Torrey Pines planning area, and will be constructed in order to alleviate the extremely congested regional traffic conditions projected to occur on I-5, I-805 and I-15. The TPCP notes that the potential exists for “significant environmental impacts to the Torrey Pines area, including, but not limited to, air quality impacts, visual impacts, impacts to wetlands, noise impacts and erosion impacts.” The comment does not provide any additional information that the 2050 RTP/SCS is inconsistent with these sections of the TPCP. As discussed in previous
responses, project-specific impacts, including impacts to air quality and noise, will be analyzed in project-specific CEQA documents, along with project-specific mitigation and alternatives. The TPCP notes that “existing noise levels at some points within the Torrey Pines area along I-5 exceed federal guidelines...sound walls at several locations are proposed as mitigation measures.” These types of impacts and mitigation measures are determined at the project level. Please refer to Master Response 1 regarding differences between programmatic vs. project-specific impact analysis, and Master Response 19 for a discussion of air quality impacts and health risks related to the increase in diesel particulates associated with increased traffic operations and expanded highways/arterial networks.

The Draft EIR analyzes the visual impacts associated with full build out of the transportation network, including sound walls, and acknowledges that the aesthetics impacts of the 2050 RTP/SCS associated with blocking views, light and glare, and degrading the character of an area are significant and unavoidable even with implementation of Mitigation Measures VIS-A through VIS-E. Please note that any individual projects within the program which are located in Torrey Pines have or will undergo separate environmental review pursuant to CEQA, including full analysis of visual impacts, and evaluation of site-specific mitigation measures and their side-effects. Please see Master Response 1 for discussion of the difference between program and project-level CEQA review.

The comment is noted. Please see Master Response 7 for further discussion of managed lanes and Master Response 10 for further discussion of transit project funding. Chapter 5 of the 2050 RTP/SCS includes all the financial assumptions for the improvements identified in the plan. Chapter 5 also includes the revenue and expenditure assumptions for the transit services that will be operated by the North County Transit District and the Metropolitan Transit System. While the comment specifically asks how allowing single-occupant vehicles in the Managed Lanes supports carpooling, it is the objective of the plan to provide the region with transportation choices. Carpools can enter the managed lanes without paying and single-occupant vehicles can enter the Managed Lanes by paying a toll. The toll revenue that is collected from these single-occupant vehicles supports the operation of transit in the same corridor.

The comment is noted. Please see also response T-14 below.

The 2050 RTP/SCS supports the general plans of all SANDAG member jurisdictions, including the City of San Diego’s General Plan and its City of Villages Strategy. Furthermore, the 2050 RTP/SCS seeks to encourage the use of public transit and carpooling. In fact, the 2050 RTP/SCS includes a greater investment in transit and alternative modes of transportation than any previous RTP, with transit expenditures making up over half of the expenditures in the Plan. A map has been added to the 2050 RTP/SCS that illustrates how transit serves the higher density mixed use and smart growth areas in the region, many of which are in the City of San Diego (see figure 3.23 in the RTP/SCS). Additionally, this map reflects that the majority of transportation investments are being made in the western third of the region. Please refer to Master Response 7 for further discussion of the 2050 RTP/SCS’s transportation project prioritization and its HOV/Managed Lanes approach.

In response to the comment regarding the provision of more general purpose lanes, Caltrans and the Federal Highway Administration selected the preferred alternative for the I-5 North Coast Corridor. While the preferred alternative will still result in the widening of I-5, it is an
8F+4ML facility which is a reduced widening project from what was included in the Draft EIR, and the Final 2050 RTP/SCS and EIR reflect this change. The cost savings from the reduced widening project has resulted in an additional $300 million for Smart Growth Incentives, an additional $200 million for Safe Routes to Transit, and an additional $300 million for Rail Grade Separations.

**T-15**
The comment is noted. Please refer to Response T-7 for a discussion of project-specific visual impacts of the I-5 project. Please also refer to Master Response 1 for a discussion of programmatic and project-level CEQA review.

**T-16**
The 2050 RTP/SCS is a plan for meeting land use and transportation needs for a region expected to experience substantial growth over an approximately 40-year period. It is unreasonable to assume that the overall amount of paved surfaces will be reduced in this time period when compared to existing conditions. However, the 2050 RTP/SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region as envisioned by SB 375, thus reducing paved surfaces as compared to past development trends. See Master Response 11 for further discussion of how the SCS meets the sustainability goals and intent of SB 375.

**T-17**
The San Diego region has been designated a non-attainment area for the federal 8-hour ozone standard and a maintenance area for the federal carbon monoxide standard. SANDAG, as the Metropolitan Planning Organization for the San Diego region, is responsible for conducting an air quality analysis for the 2050 RTP/SCS to demonstrate that it conforms to the State Implementation Plan for air quality. Transportation strategies included in the RTP/SCS assist in meeting more stringent air quality standards established by the State of California, including PM standards, which the San Diego region attains at the federal level. While it is unrealistic to expect that 2050 RTP/SCS alone could “improve air quality,” it is part of a larger regional effort to attain and maintain federal and state air quality standards.
The 2050 RTP/SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region, which is consistent with the City of Villages strategy for the City of San Diego. Further discussion of how the 2050 RTP/SCS is consistent with the City of Villages plan is provided in response T-14 and further discussion regarding the SCS land use plan is provided in Master Response 11.

The comment is noted. Please refer to Master Response 8 for a discussion of how SANDAG’s transportation modeling accounts for induced demand and Master Response 10 for a discussion on the allocation of funds between highways and transit. Chapter 6 of the 2050 RTP/SCS includes a discussion on providing a variety of transportation options to meet a diverse set of transportation needs, including the transportation needs of people with financial constraints. The Draft EIR does include an analysis of a “no build” alternative, Alternative 1: No Project, and provides a comparison of its impacts with those of the 2050 RTP/SCS.
The EIR does comply with the CEQA Guidelines §15151 requirement for a good faith effort at full disclosure of the regional, programmatic impacts of the 2050 RTP/SCS. The transportation modeling underlying the EIR impact analysis does account for induced travel demand, as explained in Master Response 8. Please also refer to Master Response 16 for a discussion of the reasonable range of alternatives analyzed in the Draft EIR.

The comment is noted. Please refer to Master Response 16 for a discussion of the reasonable range of alternatives analyzed in the Draft EIR, and Master Response 17 for a discussion of why two specific “transit first” plans were not included as EIR alternatives.

The comment is noted. Please refer to Master Response 8 for a discussion of how SANDAG’s transportation modeling accounts for induced demand.
2. Biased Data Analysis and statistical Errors in DEIR Presentation

In Chapter 4.13 Population and Housing, SANDAG provides the following key San Diego County starting data for the year 2010: Population – 3,224,412; Housing Units – 1,149,426; and Employment – 1,501,080. Jobs-to-Housing Ratio –1.3. SANDAG is required to use population data from the California Department of Finance for the beginning of 2010. The TPCPB would like to bring to SANDAG’s attention that based upon the Federal 2010 Census, the actual number of people living in San Diego County is 3,095,313. This data can be verified by going to the San Diego County Redistricting website. The County of San Diego used the Census Data to establish new County Districts. SANDAG staff has verified that the California Department of Finance data is overstated when compared to the official 2010 Federal Census. Therefore, SANDAG’s starting 2010 population is overstated by 129,119 people. When attempting to reconcile population data by city, it became clear that the SANDAG Demographic database was using outdated census tracts from the 2000 Census. What is the impact of this population overestimate on the final predication of 1,160,435 new residents in San Diego County? What is the statistical impact of this false starting point over the 40-year projections? Would SANDAG agree that the population prediction is at least 10% overstated? How does this overstatement of population impact the Vehicle Miles Traveled (VMT)?

Without a valid starting point of population per city, what is the impact on highway expansion by major highway corridor? Would a given SANDAG highway project no longer be justified as a ‘congestion relief’ necessity?

In Chapter 4-13, Table 4.13-4, indicates that existing Housing in 2010 is 1,149,426 and that 379,664 new units will be required to house the population needs by 2050. SANDAG data is from the County Assessor, building permits, housing unit records from the Dept. of Defense and aerial imagery. The total count of all Housing Units in the 2010 Census was 1,184,865. Some of the underestimation of 15,439 Housing Units can be explained by the four-(4) month difference in starting point of January 1 versus April 1, 2010. The underestimation of current housing is only the tip of the iceberg in regards to overestimating the future regional housing needs. The SANDAG staff when questioned about this issue agreed that there are about 80,000 vacant housing units in the San Diego region. The exact number of vacant units, as confirmed by the Union-Tribune on June 23, 2011, is 77,921. How has SANDAG taken this high vacancy into consideration in justifying the need for more housing units by 2050?

On Table 4.13.5—Existing and Forecasted Jobs by Jurisdiction, SANDAG’s starting employment data is from the year 2008. The footnote at the bottom of this table states “SANDAG uses 2008 employment data from EDD for planning purposes in the 2050 RTP/SCS.” Are there not more current EDD estimates available to SANDAG to adjust the 2008 to a more current 2010 jobs by Jurisdiction starting point? The TPCPB was able to review the CA Employment Development Department website and cannot find where SANDAG collected its data for 2008. EDD Excel spreadsheet for May 2008 indicated 1,326,380 employed residents in San Diego County. The San Diego Workforce Partnership data for June, 2008 was 1,304,000.
Upon adoption of the 2050 RTP/SCS, SANDAG will develop a formal scope of work for the Regional Comprehensive Plan (RCP) update. The concept of zoning will be considered in the scoping process. Parking will be considered in the RCP update, and the outcomes will be incorporated into the next RTP/SCS update. Further detail regarding parking mitigation strategies is discussed in Master Response 15.

With regards to supporting smart growth goals and policies, the 2050 RTP/SCS supports a reduction in system-wide VMT (all day) per capita, a decrease in mode share by solo driving, and an increase in total walk and bike trips compared to existing conditions and the No Build scenario, as shown in Table TA 3.1 in the 2050 RTP/SCS.

The 2050 RTP/SCS includes a discussion and actions relating to Complete Streets in Chapters 3 and 6, which discuss balancing the needs of all modes of transportation. A new action has been included in the 2050 RTP/SCS to consider development of a regional Complete Streets policy.

As described in Master Response 11, SANDAG does work closely with local jurisdictions to provide incentives and tools to encourage smart growth. These incentives include giving higher priority to transit investments in areas where local jurisdictions are planning for smart growth and providing planning and capital grants. The SANDAG Smart Growth Design Tool Box includes additional tools including visualization tools and a photo library to illustrate smart growth development in a variety of settings, Smart Growth Design Guidelines, a Smart Growth Trip Generation/Parking Study and other tools. SANDAG’s efforts to provide incentives and tools to encourage smart growth help ensure that the SCS can be implemented; there is nothing in the Draft EIR that is consistent with SANDAG’s commitment to smart growth policies.
4. Alternatives not Considered

The Melbourne Australia CityLink is an outstanding example of how imaginative design can tackle a problem (sound mitigation) and produce a practical and attractive solution. Its main structural element is a pair of sweeping, curved and tapered C-shaped elements that are 140 feet wide and soar to 26 feet above the middle and is 985 feet long. It is done in a galvanized steel finish. Why has Caltrans chosen standard acoustic walls that are unsightly and do not effectively attenuate proposed freeway noise? Why wasn’t a similar sound tube considered for the SANDAG highway expansion plans?

Why has SANDAG failed to consider the alternative of cars-only parkways that were developed around New York, Connecticut and the Washington DC area. Such parkways can be built with narrower lanes and lower overhead clearance at underpasses. All car roads can be designed with more forgiving standards for sight distances, curvature, grades, and ramp design. The weight mismatch between tractor-trailers and a car makes many collisions fatal to car occupants. Why has SANDAG failed to consider truckways that would separate cars from trucks and allow for Longer Combination Vehicles that can haul up to 50 % more payloads? Many more Innovative Roadway Design features can be reviewed in Peter Samuel’s report called Reason Foundation - Innovative Roadway Design –Making Highways More Likable. This paper states that “many of our highways have gotten too big, not because anyone wanted them to be that way, but because widening existing highways was the simplest thing to do.” “Highways needn’t get ever wider.”

The TPCR asserts that the SANDAG 2050 DEIR has failed to consider innovative design alternatives and has not met the standards set forth under CEQA. Furthermore, SANDAG has a legal duty to consider alternatives and is not conditioned upon project opponents demonstrating that other feasible alternatives exist (Practice Under CEQA 15.40). Why was SANDAG failed to consider innovative design alternatives?

5. Impacts to Arterial Streets within the Torrey Pines Community

Is it not reasonable to conclude that the SANDAG 2050 RTP/SCS Project will force additional traffic to the major and minor arterial streets in the Torrey Pines Community? Won’t this happen at two different phases of the various 2050 Highway projects:

1. During construction, users will opt for surface streets that would allow them to avoid traffic and avoid unsafe travel conditions.
2. Upon completion of the project(s), the increased volume of travelers will introduce more traffic to the arterial streets.

Isn’t the increased arterial traffic in the Torrey Pines area, strictly a result of the I-5 NCC Project which is fully supported by the SANDAG 2050 RTP/SCS? It is not contributed to by the population of Torrey Pines or the City of Del Mar. The populations of Torrey Pines and Del Mar will not substantially increase in the future. These communities are mature in the sense that there is very little developable land remaining. Why should our communities who will not be contributing to the increased traffic conditions be forced to live with the results of more traffic on our arterial streets?

The SANDAG 2050 RTP/SCS DEIR omits any consideration for the indirect impacts of arterial traffic for the following reasons:

1. The DEIR does not study or present any facts associated with this “foreseeable impact” caused by additional traffic and associated with the dated infrastructure of the Torrey Pines neighborhood.

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The Melbourne Australia CityLink is an outstanding example of how imaginative design can tackle a problem (sound mitigation) and produce a practical and attractive solution. Its main structural element is a pair of sweeping, curved and tapered C-shaped elements that are 140 feet wide and soar to 26 feet above the middle and is 985 feet long. It is done in a galvanized steel finish. Why has Caltrans chosen standard acoustic walls that are unsightly and do not effectively attenuate proposed freeway noise? Why wasn’t a similar sound tube considered for the SANDAG highway expansion plans?

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The SANDAG 2050 RTP/SCS DEIR omits any consideration for the indirect impacts of arterial traffic for the following reasons:

1. The DEIR does not study or present any facts associated with this “foreseeable impact” caused by additional traffic and associated with the dated infrastructure of the Torrey Pines neighborhood.

The comment is noted. Sound mitigation is selected and implemented at a project specific level. Mitigation Measure NOI-B in Section 4.12.5 has been revised as indicated below, and now includes a condition that an analysis of alternative designs for noise reduction components is completed. Revisions are shown in strikethrough and bold text:

**NOI B**

SANDAG shall and other implementing agencies responsible for design and operation of individual projects that would generate transportation noise (i.e., transportation network improvements and other changes in service or changes to routes or infrastructure related to rail or motor vehicles) **can and should** implement the following design features, in locations that are near noise-sensitive receptors:

- New and expanded transit corridors and features such as new rail tracks, double-tracking, interstate ramps, transit stations, and transit-only lanes will receive a full project-level environmental acoustical analysis to ensure that noise level increases are within acceptable limits.
- Noise reduction components such as buffer zones, barriers, corridor routing, site design, grade separation, and electric-powered vehicles will be implemented as determined by project-level analysis to ensure that noise level increases are within acceptable limits. **An analysis of alternative designs for noise reduction components is also recommended.**
- For all new at-grade rail crossings, Federal Rail Administration Quiet Zones requirements will be met and approved by both the FRA and the local government, as funding is available. Quiet Zones are at grade rail crossings that have met specific Federal Rail Administration FRA safety criteria for reducing or eliminating the requirement for locomotives to blast their horns.

Therefore, designs, such as that used for the Melbourne CityLink and mentioned in the comment, will be evaluated when applicable. In addition, please refer to Master Response 1 for discussion of the difference between programmatic and project-level analysis. Please also see Master Response 16 for a discussion of the reasonable range of alternatives analyzed in the Draft EIR. As discussed in Master Response 16, CEQA does not require analysis of alternatives to particular components of a project, and federal and state law require the RTP/SCS to include a comprehensive plan that encompasses land use and transit as well as highways.

A Goods Movement action is included in the 2050 RTP/SCS(Chapter 6) to evaluate a variety of strategies, including moving freight by rail, air and sea, and using Managed Lanes facilities for moving freight during off-peak periods, all of which would provide separation between cars and trucks. The action items related to goods movement included in the 2050 RTP/SCS are only the shared freight and passenger components for aviation, border, rail, and roadway systems that are included in the San Diego Regional Goods Movement Strategy (GMS). Please refer to response T-32 for additional discussion on truckways and bypasses.
The comment is noted. The Draft EIR for the 2050 RTP/SCS provides a program-level analysis of regional traffic impacts. When individual transportation projects within the program are proposed, project specific traffic studies will be prepared which will include analysis of traffic impacts on local arterials, along with mitigation measures and alternatives to reduce these impacts. Please refer to Master Response 1 for further discussion of the difference between programmatic and project-level analysis.

The comment is noted. The Draft EIR for the 2050 RTP/SCS provides a program-level analysis of regional traffic impacts. The traffic study for the I-5 North Coast Corridor project EIR/EIS conducted a thorough analysis of primary east-west and north-south arterials (125 individual local roadway segments) in the existing, No Build, 8+4 scenarios, and 10+4 scenarios. For the most part, local arterials were found to be under capacity with the I-5 NCC Project, including arterials that cross or are within the Torrey Pines Community Plan Area (I-5 North Coast Traffic Report: A Summary of Traffic Reports Prepared for the I-5 North Coast Corridor Project. California Department of Transportation, District 11, San Diego, CA. November 2008)

Please see response T-26. Please also refer to Master Response 1 for further discussion of the difference between programmatic and project-level analysis.
2. The DEIR does not present or analyze any alternative or mitigation measures to help the community understand the indirect traffic impacts of the Project.

Since SANDAG must comply with CEQA guidelines, as stated above, the following sections of the CEQA guidelines must be addressed:

- Under CEQA 15061, “An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.”
- Under CEQA Guidelines 15151, a “good faith effort at full disclosure” must be made. “An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences.” SANDAG has failed to exercise “careful judgment” based on available “scientific and factual data” as required by CEQA Guideline 15064(b). Furthermore, SANDAG has a legal duty to consider alternatives and is not conditioned upon project opponents demonstrating that other feasible alternatives exist (Practice Under CEQA 15.40).

Why are the above guidelines not being addressed in this DEIR?

The Torrey Pines Community needs to understand how our major arterial streets will be impacted. Also, we need to understand how SANDAG plans will mitigate these harmful traffic impacts. The following questions need to be answered:

- How has SANDAG budgeted dollars outside of the 2050 RTP project to improve traffic for our arterial streets?
- How does SANDAG plan to address the implementation of a mass transit project(s) to ease traffic on our arterial streets?
- How does SANDAG plan for the expansion of current Park and Ride systems along the I-5 corridor that will lessen traffic impacts on Del Mar Heights Road, Carmel Valley Road, and Via de Las Valles Road?
- Has SANDAG discussed the traffic impacts within the Torrey Pines Community with the City of San Diego and Councilmember Lightner? If so what were the results?

6. Corridor of the Future – California Interstate 5 – Modal Characteristics 2010-2040

On September 10, 2007, the U.S. Department of Transportation announced six interstate routes to be part of a development plan to help reduce congestion. This federal initiative was entitled Corridor of the Future. The modal concept included “building truck-only lanes and bypasses.” On page 106 ([112]/[154]) of the U.S. Department of Transportation study under Freight Growth, the Freight Analysis Framework (FAF) identifies projected freight volumes and flow to the year 2020. This FAF is a tool used to “assist in matching infrastructure supply to demand and for assessing operational strategies.” “In 1998 over 1.1 billion tons of freight was moved, from and within California by truck freight, more that 81 percent of all freight by mode type. The FAF projects that by 2020 highways will carry 83 percent of all freight and 73 percent of the total statewide value.”

Why has SANDAG failed to support this Federally funded I-5 initiative, which supports building truck-only lanes and bypasses?

What traffic congestion relief studies related to ‘weaving’ and truck traffic has SANDAG commissioned and reviewed?

SANDAG 2050 RTP/SCS DEIR 12 August 1, 2011

T-29

Please see response T-26. Please also refer to Master Response 1 for further discussion of the difference between programmatic and project-level analysis and Master Response 16 for a discussion of the reasonable range of alternatives analyzed in the Draft EIR.

T-30

The comment is noted. The Draft EIR was prepared in compliance with all applicable CEQA Guidelines, including the §15151 requirement for a good faith effort at full disclosure of the regional, programmatic impacts of the 2050 RTP/SCS. Therefore, the Draft EIR evaluated the impacts of the 2050 RTP/SCS on the performance of the transportation system overall, rather than the impacts to all arterials within the region, which would be both impractical and infeasible. Please refer to Master Response 1 for a discussion of the appropriate level of detail provided in a program EIR. Please also refer to Master Response 16 for a discussion of the reasonable range of alternatives evaluated in detail in the Draft EIR.

T-31

These comments pertain to localized projects and impacts affecting the Torrey Pines Community. Please refer to Master Response 1 for a discussion of the appropriate level of detail provided in a program EIR. Park and ride improvements, in addition to parking structures at key COASTER stations, are included in the 2050 RTP/SCS. Impacts, alternatives, and mitigation for individual projects will be evaluated during the project-specific CEQA reviews. SANDAG staff has met multiple times with Councilmember Lightner to discuss the development of the Draft 2050 RTP/SCS. Additionally, a member of the Torrey Pines Community Planning Group served on the Regional Planning Stakeholders Working Group, which was an advisory group for developing the 2050 RTP/SCS.

T-32

The commenter correctly notes that the U.S Department of Transportation’s Freight Analysis Framework (FAF) data indicates significant future growth in truck traffic. SANDAG commissioned a Freight Gateway Study, which concluded that although the region’s urban and rural freeways are not expected to expand significantly, the region’s roadway network must serve a growing international trade community in addition to goods movement that satisfies the local demand of area residents and tourists (domestic truck flows). Regional domestic truck flows will continue to account for most of the region’s truck traffic. Truckload traffic is projected to grow from 10 million truckloads per year to over 35 million truckloads per year by 2050, and about 97 percent of the region’s freight is anticipated to move by truck by 2050. Trucks are vital to the local, regional, and national economies; regional rail capacity is highly constrained and cannot match the flexibility and reliability of regional truck distribution. Trade in the region, therefore, is heavily dependent on truck movements (SANDAG - San Diego and Imperial Valley Comprehensive Freight Gateway Study, March 2010).

For clarification, neither Caltrans nor SANDAG received Corridor of the Future funds to study or improve truck capacity on I-5. Instead, the I-5 Study (which received $15 million of the Interstate Maintenance Discretionary funds) went to the Columbia River Bridge Crossing (CRBC) project between Oregon and Washington.
In 2008, SANDAG created a first generation Heavy Duty Truck Trip model to assist in analyzing the impact of freight movements in the San Diego Region. Freight movement is considered as part of the analysis of alternatives and reported on in the RTP/SCS performance measures for Daily Truck Hours of Delay. In addition, SANDAG has improved the truck modeling methodology in the 2050 RTP/SCS, resulting in more accurate calibration on major truck routes compared to the previous RTPs.

The 2050 RTP/SCS discussed the need to improve freight movements and applied a set of evaluation criteria in order to assist with prioritizing those improvements. However, there is limited funding for freight improvements and sometimes a specific funding criterion will determine how dollars are invested (for example, funding may be available for truck/roadway improvements along the border only). Due to the limited availability of funding and high costs of building and maintaining transportation infrastructure, truck-only bypasses have not been identified as a priority and were not included in the 2050 RTP/SCS.

A study to assess issues related to trucks use of managed lanes would be a first step in assessing the potential for truck managed lanes (TMLs). The 2050 RTP/SCS has been revised to include this action in Chapter 6. The process of assessing TMLs involves many stakeholders and levels of approval. SANDAG recently received grant funding to conduct such a study. Major work on the study will begin in July 2013 and will include an assessment of opportunities and feasibility for improved operations, safety, and efficiency on freeways in the San Diego region, including I-5, by exploring options for TMLs. Based on the evaluation of TML strategies, the study will identify two test corridors to determine the most effective and feasible set of alternatives for TML on regional freeways. Please refer to response T-25 for additional discussion on Goods Movement.

Chapters 3 and 6 of the 2050 RTP/SCS include discussion of and actions relating to Complete Streets. In addition, a new action has been included in the 2050 RTP/SCS to consider development of a regional Complete Streets policy. Please refer to Master Response 9 for a more detailed discussion on how the 2050 RTP/SCS is consistent with AB 1358.

Please refer to Master Response 7 for a discussion of the 2050 RTP/SCS funding priorities for transit and transit expenditures, transportation network components and project phasing. Please also refer to Master Response 10 for discussion of financing limitations on funding additional transit projects, and Master Response 17 for discussion of why two specific transit-first plans were not included as EIR alternatives.
Please note that CEQA does not require responses to environmental justice comments, since environmental justice is a socio-economic issue rather than a “significant environmental issue” for which responses are required. Nevertheless, responses are provided here. SANDAG, and other agencies have conducted studies over the past 15 years relating to perceived equity issues concerning value pricing. The studies concluded that lower-income residents were generally supportive of HOT lane improvements. The following studies have been conducted and address the issue of equity:

- I-5 North Coast Value Pricing Planning Study, Volumes 1 and 2, SANDAG, April 2006
- I-15 Managed Lanes Value Pricing Project Planning Study- Environmental Justice Assessment, SANDAG, January 2022
- I-15 Managed Lanes Value Pricing Project Planning Study Concept Plan –Volumes 1 and 2, SANDAG, February 2002
- Assessing the Equity Implications of HOT Lanes, Santa Clara Valley Transportation Authority, November 2004
- Issues and Options for Increasing the Use of Tolling and Pricing to Finance Transportation Improvements Final Report Work Order 05-002, Office of Transportation Policy Studies, FHWA, June 2006

SANDAG conducted detailed corridor surveys for both the I-5 North Coast and I-15 corridors. The benefit to travel time is a summary of both the I-15 Managed Lanes Value Pricing Studies (2002) and the I-5 North Coast Value Pricing Studies (2006) The benefit in travel time on average is approximately 0.5 minutes per mile, but users typically perceive a greater benefit. The 2050 RTP/SCS includes $582 million (year of expenditure) of FastTrak revenues (2050 RTP/SCS, Page 5-5). The revenue projections for the 2050 RTP/SCS are based on actual FastTrak revenues on the I-15 corridor, plus a growth rate consistent with inflation, and the expectation that a new 20-mile managed lane segment along the region’s major freeways will be completed each decade. Revenues generated on Managed Lanes contribute to transit services in the same corridor.

The commenter references key issues from the Sacramento Area Council of Governments Metropolitan Transportation Plan 2035 regarding how improvements to transit systems mainly accrue to those who live close to these facilities. Additionally, the commenter references a 2009 Metropolitan Transportation Commission (MTC) study of Bay Area housing and transportation
affordability in which San Diego is included in a statistics analysis detailing the total average annual housing and transportation costs and affordability (considered to be a percent of area median income).

SANDAG has not conducted a similar study as part of the 2050 RTP/SCS Draft EIR, although an analysis is available online at: http://htaindex.cnt.org/mapping_tool.php?region=San%20Diego%2C%20CA&theme_menu=0&layer1=23&layer2=24. SANDAG disagrees with the comment because the cited MTC study used thresholds in the affordability index that assume housing is considered affordable when the costs consume no more than 30 percent of household income. Because this threshold is not calibrated to the higher housing costs present in Southern California, SANDAG does not believe that it applies to the 2050 RTP/SCS. Instead, SANDAG has coordinated with local community groups and leaders to determine various thresholds to determine which communities should be considered in the environmental justice analysis (see Technical Appendix 6) and has evaluated a range of performance measures. Input from affected communities was incorporated into the performance measures ultimately recommended to the SANDAG Board. Eight social equity indicators were approved by the SANDAG Board on July 23, 2010. The social equity indicators include: average travel time; job access; access to transit; access to schools; access to San Diego International Airport (SDIA); access to parks or beaches; and distribution of proposed RTP expenditures per capita. Chapter 4 of the 2050 RTP/SCS further defines the performance measures and includes an analysis of the Revenue Constrained Scenario that was conducted to determine whether it would conform with the requirements of Title VI of the Civil Rights Act or other applicable social equity laws that require that the benefits and burdens of the projects in the 2050 RTP be equitably distributed between LIM (low income and minority) and non-LIM populations (also defined in Chapter 4 of the 2050 RTP/SCS).

The commenter is correct that the I-5 NCC will affect a number of homes directly adjacent to the proposed project. In fact, the homes adjacent to all proposed transportation network improvements may experience project impacts. Mitigation Measure EJ-A of the Draft EIR states that analyses would be required at the project level to accurately ascertain any potential disproportionate impacts, and, in the event that environmental justice impacts are determined to occur, additional mitigation measures shall be developed at the project level to improve communication and involvement between the agency and community stakeholders. Please refer to Master Response 1 for further discussion of the difference between programmatic and project-level analysis.

The TPCPB asserts that the 2050 RTP DEIR is lacking in creativity since it appears that the 3.1 million new residents are still following the same travel habits as today’s residents. Doesn’t SANDAG's 2050 RTP encourage the same old habit of driving along to work? Doesn’t the funding support for Highway expansion during the first ten years, create a further disincentive to those who would be willing to use rapid Transit? Under 7.3 Significant irreversible impacts, SANDAG states that development of currently undeveloped land would result in significant irreversible impacts to agricultural resources and forest lands. The 2050 RTP/SCS would induce irreversible population growth. The environmental consequences in the unincorporated and northern portions of San Diego Country are not adequately addresses in the DEIR. SANDAG should consider revising its DEIR and re-issue this document. SANDAG has not provided sufficient information to allow meaningful evaluation and analysis by the public which is a requirement under CEQA.
Additionally, SB 375 states that, “the metropolitan planning organizations shall consider financial incentives for cities and counties that have resource areas or farmland.” SANDAG manages and implements the TransNet Environmental Mitigation (EMP) Program. EMP funds have been used for the conservation of critical habitat areas. Some EMP funds could be used to preserve land that can include working landscapes, agricultural lands, and forest lands.

**T-39**
All transportation improvements in the 2050 RTP/SCS, including highway projects, combined with the assumed land use pattern, result in GHG emission reductions of 14 percent and 13 percent for 2020 and 2035, respectively (per capita GHG emissions reduction from a 2005 base year for passenger vehicles). It is not possible at this point to evaluate any single project for its individual contribution to GHG emissions or reductions; such analysis will occur at the project-level. Please see Master Response 23 for further discussion of the effect of individual transportation and land use components of the 2050 RTP/SCS on GHG reduction. The regional transportation model inputs used in the 2050 RTP/SCS include all of the land use, motorized network, and TDM assumptions in the SCS. All of the SCS inputs interact and fuse with one another in the transportation model, making it difficult to identify the individual contribution of each component to the overall GHG reductions. Chapter 3 of the 2050 RTP/SCS includes an overview of the regional transportation model used as a basis for forecasting GHG emissions and detailed information can be found in Technical Appendix 15: SANDAG Travel Demand Model Documentation. Please also refer to Master Response 7 for a detailed discussion of 2050 RTP/SCS project prioritization and phasing.

**T-40**
A comparison of impacts by project alternative is available in Tables E-2 and E-4-1 of the Draft EIR (pages ES-49 and 6-33, respectively). Tables 6.3-1 through 6.3-7 provide more detail on pollution caused by each alternative. Please see Master Response 16 for a discussion of the alternatives analysis level of detail appropriate for a Program EIR.

**T-41**
Further discussion of transportation network components and project phasing is provided in Master Response 7. The economic feasibility of funding for transportation projects is discussed in greater detail in Master Response 10. Also see Master Response 17 for a discussion of why two specific transit-first alternatives were not included as EIR alternatives.

**T-42**
Please refer to Master Response 3 for discussion of why changes between the Draft and Final EIRs do not require recirculation.
3. **Atherosclerosis** (hardening of arteries) and traffic pollution

A recent research article entitled, 'Ambient Air Pollution and the Progression of Atherosclerosis in Adults,' was quoted by Margot Roosevelt of the Los Angeles Times on February 14, 2010. The article in the LA Times is entitled, 'Study finds traffic pollution can speed hardening of arteries.' People living within 328 feet of a LA freeway were found to have twice the average progression of atherosclerosis—thickening of artery walls that can lead to heart disease and stroke.

This paper is the first to link automobile and truck exhaust to the progression of atherosclerosis in humans. Measurements were taken every six months for three years at homes within 100 meters (328 feet) of the Los Angeles freeways. The researchers from the University of Southern California, University of California at Berkeley, research centers in Switzerland and Spain, found that artery wall thickness in study participants accelerated annually by 5.5 micrometers, more than twice the average progression.

According to co-author Howard Hodis, director of the Atherosclerosis Research unit at USC’s Keck School of Medicine, the finding show that “environmental factors may play a larger role in the risk for cardiovascular disease than previously suspected.” This study shows that air pollution contributes to the early formation of heart disease, which is connected to nearly half the deaths in Western societies.

The TPCB asserts that the SANDAG 2050 RTP/SCS DEIR does not address this correlation between highway air pollution and the progression of atherosclerosis. Has SANDAG considered this major health threat to residential neighborhoods and school children along the various proposed highway expansions? What did the SANDAG studies show? If no studies were published, why not? SANDAG should consider revising its DEIR and re-issue this document to include sufficient information to allow meaningful evaluation and analysis by the public which is a requirement under CEQA. If not, please state how this document fulfills the requirements of sufficient information?

4. **Asthma linkage to Freeway Pollution** (ultrafine particles)

A July 5, 2010 article (UPI), states that "brief exposure to ultrafine pollution particles near a Los Angeles freeway can boost the allergic inflammation that makes asthma worse." Dr. Andre Nel, of the David Geffen School of Medicine at the University of California, Los Angeles said "ultrafine particles are primarily from vehicular emissions and are found in highest concentration along freeways." This study was published in the American Journal of Physiology – Lung Cellular and Molecular Physiology. This study showed that "ultrafine pollution particles may play an important role in triggering additional pathways of inflammation that heighten the disease" (asthma).

Environmental health researchers from University of Southern California and the California Air Resources Board have found during hours before sunrise, freeway air pollution extends as far as 1.5 miles from the freeway. This June 10, 2009 article by Sarah Anderson, entitled Air pollution from freeway extends further than previously thought, highlights a joint research study along Interstate 10 in Santa Monica. "This distance is 10 times greater than previously measured" and "has significant exposure implications."

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**T-43**

Please refer to Master Response 19 for a discussion of the health risks associated with expanded highways and arterials. Please also refer to Master Response 3 for discussion of CEQA’s requirements for recirculation.

**T-44**

The Final EIR air quality setting contains more details on the health effects of diesel particulates and other toxic air contaminants, including asthma. See Section 4.3.3 [SLG1]. Although the Draft EIR Impact AQ-4 analysis met applicable CEQA requirements for analysis of air quality impacts on sensitive receptors, SANDAG has nevertheless added a discussion of regional transportation corridor impacts to the Impact AQ-4 analysis. Health risks to specific sensitive receptors from specific projects can be most accurately determined only through project-specific analysis. Revised Mitigation Measure AQ-C calls for project-level hot spot analysis and health risk assessments to analyze and mitigate the health risks associated with specific projects.

SANDAG recognizes the continuing publication of studies linking the proximity of residences to freeways and major roadways to adverse health effects in children, specifically lung function and asthma. These generic studies are not substantial evidence that the 2050 RYTP/SCS would have any particular air quality related health impacts. Health risks to specific sensitive receptors from specific projects can be most accurately determined only through project-specific analysis.

A summary of the studies is as follows:

The East Bay Children’s Respiratory Health Study, conducted in 2001, included more than 1,100 students between the 3rd and 5th grades (ARB 2004). This study found higher concentrations of black carbon, oxides of nitrogen (NOx), and nitrogen oxide (NO) at schools located downwind from freeways as compared with those schools upwind or farther from major traffic sources.
SANDAG has commented that some locations are considered more sensitive to adverse effects from air pollution than others. These locations are commonly term sensitive receptors and include hospitals, schools, day care centers, nursing homes, and parks/playgrounds. Sensitive receptors in proximity to localized CO sources, toxic air contaminants or odors are of particular concern. For example, the Caltrans I-5 NCC shows that Sensitive Receptors, indicates 32 schools and 40 Preschools within the envelope of the I-5 NCC project. The Santa Fe Montessori School in Solana Beach is the nearest to the I-5 at 352 feet and the Del Mar Hills Elementary is listed as 431 feet from I-5. The Del Mar Hills playground and play fields are next to the Caltrans sound wall and may be even closer than the list measurement.

The TPCPB asserts that the SANDAG 2050 RTP/SCS DEIR has not adequately researched or considered the long-term impact to school children’s health regarding asthma and ultrafine freeway air pollution. The TPCPB is aware of all the Sensitive Receptors along the I-5 corridor within the County of San Diego but will SANDAG provide a list of such schools, day centers and parks. Per the other highway expansion projects? Would you not agree that this is vital information the public should have access to? What are the health implications of expanding, to the fullest extent, the highway Right of Way (ROW) next to schools, preschool and school playgrounds and play fields? Medical and scientific research clearly indicates a causal relationship between freeway air pollution and childhood diseases such as asthma. Does SANDAG agree with these medical and scientific findings? If not Why? Is SANDAG willing to establish a baseline medical study of the school area population listed under the Sensitive Receptors locations? Is SANDAG willing to establish a baseline medical study that would provide a long-range health tracking measurement to indicate the current health levels of children within the Sensitive Receptors areas? If not why?

5. Human Impact Assessment (HIA)/ I-710 Expansion

Interstate 710 is a major transportation artery linking the Ports of Long Beach and Los Angeles to Southern California and San Diego County. The proposed I-710 expansion would run through 15 cities and unincorporated areas of Los Angeles County. This I-710 Caltrans project is very similar to the I-5 and other highway expansion projects as it is in close proximity to schools, day care centers, hospitals and residential neighborhoods. Health concerns about the additional impacts of this proposed project were raised with Caltrans and other decision-making agencies. As a direct result of these community concerns, LA Metro, Gateway Cities Council, ICF International, Aridillo Associates, Human Impact Partners and Western Solution has agreed that a Human Impact Assessment and an Air Quality Action Plan (AQAP) should be provided for the I-710 project and the 15 Gateway Cities. LA Metro and their contractor, ICF International will conduct this HIA and AQAP. The LA County Department of Public Health has become a Coordinating Agency in this EIR process.

On July 13, 2010, the San Diego County Board of Supervisors released a Health Strategy Agenda for Building Better Health. Under the heading “Pursuing Policy Changes for a Healthy Environment, Section 2 – Call for Active Communities, item 2.A Explore integrating health impact assessments, where feasible for land use and transportation decision making in order to facilitate active communities.” Grant money is available through the Center for Disease Control for some type of study.

For children residing at their current address for at least 1 year, investigators found a modest but significant increase of 5 to 8 percent in bronchitis and asthma symptoms in children in environments with higher concentrations of traffic pollutants.

In the Air Quality and Land Use Handbook: A Community Health Perspective (ARB 2005a), the discussion of traffic emissions and health effects, the key health findings included the following:

- Increased asthma hospitalizations were associated with living within 650 feet of heavy traffic and heavy truck volume (Lin et al. 2002).
- Asthma symptoms increased with proximity to roadways and the risk was greatest within 300 feet (Venn et al. 2001).
- Asthma and bronchitis symptoms in children were associated with proximity to high levels of traffic in a San Francisco Bay Area community with good overall regional air quality (Kim et al. 2004).

A study published in 2006 examined the relationship of residence near a freeway and susceptibility to childhood asthma (McConnell et al. 2006). This study found residence within 75 meters (245 feet) of a major road was associated with an increased risk of lifetime asthma, prevalent asthma, and wheeze. The higher risk of asthma near a major road decreased to background rates at 150 to 200 meters (490 to 655 feet) from the road. In children with a parental history of asthma and in children moving to the residence after 2 years of age, there was no increased risk associated with exposure.

The revised 2050 RTP/SCS EIR does address long-term impacts to school children’s health near roadways. In addition to children’s asthma, in Section 4.3.1.2 under recent studies, additional studies on children’s health are discussed and summarized here:

The Children’s Health Study.

A 10-year study conducted by the USC School of Medicine, found strong evidence that exposure to pollutants related to vehicle emissions such as nitrogen dioxide and elemental carbon (or soot) is linked to a slowing of lung function growth; the resulting deficits in lung function are likely permanent and may increase the risk for respiratory and other diseases later in life. Also the children in the study who lived nearest to roadways with heavy traffic, such as freeways, showed increased risk for having asthma (SCAQMD 2005).

East Bay Children’s Respiratory Health Study (discussed above under asthma)

California Office of Environmental Health Hazard Assessment (OEHHA) School Study

The OEHHA studied public schools in California, various socioeconomic factors, and their proximity to major roads, and found that about 2 percent of all the public schools in California, incorporating about 150,000 students, are within 150 meters (500 feet) of a very busy roadway. The study also provided recommendations on ways to mitigate exposure of students to traffic.
related pollutants in the event that a school is located near busy roadways (SCAQMD 2007; OEHHA 2004a). The related fact sheet includes the following (OEHHA 2004b):

- If a school is near a street with very heavy traffic, does it mean that children are exposed to high levels of traffic-related air pollution?

Not necessarily. The prevailing wind direction strongly affects exposure to air pollution from nearby traffic. Locations that are both near and “downwind” of a freeway tend to have higher levels of traffic pollution compared with locations that tend to be “upwind” of a freeway. (“Downwind” means that the wind generally blows from the road toward your location. “Upwind” means that the wind generally blows away from your location, toward the road.)

**Air Quality and Land Use Handbook**

In the discussion of traffic emissions and health effects, the key health findings included the following:

- Reduced lung function in children was associated with traffic density, especially trucks, within 1,000 feet and the association was strongest within 300 feet (Brunekreef et al. 1997).

- A San Diego study found increased medical visits in children living within 550 feet of heavy traffic (English et al. 1999).

The ARB concludes their analysis with the following recommendation: Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.

**Traffic and Lung Development**

One of the most recent studies was published in February 2007, *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study* (Gauderman et al. 2007). This study examined the pulmonary function of more than 3,500 children over a period of 8 years. The study shows that the residential proximity to freeway traffic is associated with substantial deficits in lung-function development in children. The effects were greater for those children who lived within 500 meters (1,640 feet) of a freeway than for those who lived at least 1,500 meters (4,920 feet) from a freeway. Since lung development is nearly complete by age 18 years, an individual with a deficit at this time will probably continue to have less than healthy lung function for the remainder of his or her life. The study did not find any evidence that traffic effects varied depending on background air quality, which suggests that even in an area with low regional pollution, children living near a major roadway are at increased risk of health effects. The results also suggest that children who live close to a freeway in a high pollution area experience a combination of adverse developmental effects because of both local and regional pollution (Gauderman et al. 2007).
The TPCPB believes that the Human Impact Assessment and Air Quality Action Plan approach is justified due to the similar proximity of schools, day care centers, and large tracks of housing adjacent to the SANDAG 2050 RTP highway projects. The scientific establishment of numerous health and wellness benchmarks will establish a baseline health index for the communities bordering the proposed SANDAG 2050 highway projects. This HIA and AQAP will help answer one of the key scientific and health issues, which is, What is the current state of health along the proposed highway expansion projects? Plus, what are the projected health risks associated with these highway projects? Based on these studies and taking into consideration other medical research, how would the SANDAG 2050 highway expansion projects further impact children and residents living along these freeways?

SANDAG should wait for the results from these joint research studies along the I-710 freeway and incorporate the HIA and AQAP findings into the 2050 RTP DEIR process. Furthermore, SANDAG should support both the County of San Diego and the City of San Diego’s Health Department efforts to provide similar HIA and AQAP studies for these highway expansion projects. Why would SANDAG not support such Public Health efforts? Cost concerns are not a justifiable reason to exclude this HIA or AQAP request. The possible long-term damage to children’s health will cost society much more in the future.

III. CONCLUSION

The Torrey Pines Community Planning Board requests that SANDAG respond to the comments contained in this document as required by CEQA. At this point in time, the Torrey Pines Community Planning Board cannot support the SANDAG 2050 RTP/SCS as submitted. The TPCPB believes that any decision to increase highway capacity rather than support Transit First, especially along the I-5 corridor has some severe regional and local drawbacks. The large amounts of early funding of highway expansion increases vehicle miles traveled, thwarts efforts to increase transit ridership, and does not support the climate change mandates and goals in any meaningful way. The transit phasing plans do not support local community infill development but continue to negatively impact current and future Communities of Low Mobility.

Of the six (6) Build Alternatives as proposed by SANDAG, Alternative 2a Modified Funding Strategy/2050 Growth Forecast Land Use, with its criteria for the majority of highway projects from 2035 to 2050 not being developed, is more aligned to the City of San Diego’s concept of Transit First. The TPCPB cannot support the SANDAG highway projects involving the I-5 corridor within Torrey Pines. The TPCPB has voted to only support the Alternative 2a: with the caveat that a modified alternative include the Transit plans from Alternative 3a. Alternative 3a: advances some transit projects earlier in the project phasing process.

The three pillars that the 2050 RTP/SCS rest on, Population, Housing, and Jobs, are seriously flawed. If the starting data does not reflect the actual numbers for the year 2010, then the SANDAG projections over the next 40 years are biased and contain a predisposition to favor highway expansion over transit.

It is our belief that for the City of San Diego to remain a world class city, we all need to learn that it takes more than cars to effectively take advantage of what the city offers its residents throughout our metropolitan region and county. San Diego will not remain world class if Caltrans and SANDAG fail to

Particulates at a Sacramento School Site

A multi-year study in the Sacramento area, described in a 2006 report, analyzed atmospheric particulate matter at a school site downwind of a busy secondary road (Cahill 2006). The study was not a health effects study. The study is of interest for the following reasons: (1) The study indicates that exhaust from automobiles may be a greater source of toxic pollutants than diesel exhaust, and (2) a barrier of dense vegetation can be one element in a pollutant mitigation strategy. The study also emphasizes that the most important mitigation for exposure near roadways is the distance from the road to the receptor.

Please refer to Master Response 19 for a discussion of the health risks associated with expanded highways and arterials. Each project-specific CEQA review will undertake a full analysis of project-specific air quality impacts on sensitive receptors and will impose feasible mitigation measures to reduce significant impacts. Please refer to Master Response 1 for further discussion of the difference between programmatic and project-level analysis.
Impacts to communities of concern, including communities with low mobility, are addressed in the Section 4.6 of the 2050 RTP/SCS EIR (Environmental Justice, a section that is not required to be included in CEQA documents). This section concluded that implementation of the 2050 RTP/SCS would result in less than significant impacts related to mobility benefits for all horizon years. For some mobility performance measures, projects associated with the 2050 RTP/SCS provide a greater degree of mobility benefits for communities of concern (communities with high percentages of minority residents, low-income communities, communities with low mobility, and communities with low levels of community engagement) than non-communities of concern.

The comment is noted. Please see Master Response 16 for a detailed discussion of the reasonable range of alternatives analyzed in the Draft EIR, and differences among the alternatives.

T-48

The comment is noted. Please see response T-23. Further detail regarding the accuracy of the Series 12 Regional Growth Forecast is provided in Master Response 12.

T-49

The Draft EIR was prepared in compliance with all CEQA Guidelines, including those referenced by the commenter. Please see Master Response 1 for a discussion of CEQA’s requirements for a program EIR, Master Response 3 for a discussion of why recirculation is not required, and Master Response 16 for a discussion of the reasonable range of alternatives analyzed in the Draft EIR.

Thank you for your consideration of these comments and concerns.

Best regards,

Dennis E. Ritz, Chair TPCPB

A special thanks to Co-authors and Editors
Co-authors Michael Foster, Bob Shopes, and Michael Yanicelli
Editors Patti Ashton, Roy Davis and Bob Lewis
The key to the Draft 2050 RTP/SCS is a balanced approach that provides many choices for people to get to work, school, or play. The Draft 2050 RTP/SCS includes the most investment in transit and alternative modes compared to any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are 5 new light rail transit lines, new express bus services, and increased frequencies. The Draft 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs. Please refer to Master Responses 7 and 10 for additional discussion regarding the phasing and funding of transportation network components.
Letter V
Attorney General Letter

Please note that this comment was received after the close of the Draft EIR public review period. Responses are nevertheless provided below.

September 16, 2011

Honorable Jerome Stocke
Chair, Board of Directors
San Diego Association of Governments
401 B Street, Suite 700
San Diego, CA 92101

R: Draft Environmental Impact Report for 2050 Regional Transportation Plan and Sustainable Communities Strategy

Dear Chairman Stocke and Honorable Members of the Board:

Attorney General Kamala D. Harris submits the following comments on the Draft Environmental Impact Report (DEIR) prepared for the San Diego Association of Governments' (SANDAG) 2050 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). While we recognize the difficulty of SANDAG's task— to prepare the first SCS in the State as required by SB 375— our review of the DEIR for the RTP/SCS has revealed some significant legal problems, as set forth below. We believe that SANDAG has the ability to correct these problems and improve the RTP/SCS, which will benefit not only the San Diego region, but will help to set the standard for other Metropolitan Planning Organizations across California.

V-1

SANDAG has provided responses to specific legal concerns related to the Draft EIR in specific responses below.

1 The Attorney General submits these comments pursuant to her independent power and duty to protect the environment and natural resources of the State from pollution, impairment, or destruction, and in furtherance of the public interest. (See Cal. Const., art. V, § 13; Gov. Code, §§ 12511, 12600-12612; D’Amico v. Bd. of Medical Examiners (1974) 11 Cal.3d 1, 14-15.) This letter is not intended, and should not be construed, as an exhaustive discussion of the DEIR’s compliance with the California Environmental Quality Act (CEQA).

2 Senate Bill 375 (Chapter 728, Statutes of 2008).
SANDAG agrees that the San Diego Air Basin (SDAB) has serious air quality problems, as described in Draft EIR Section 4.3.1.2 (pp. 4.3-2 through 4.3-8), caused, in substantial part, by motor vehicle emissions. The region has, however, made tremendous strides in reducing pollution, as reported below. This reduction has been achieved, in part, by SANDAG’s transportation control measures. (See response to comment V3.)

Responses to comments on air quality impact significance thresholds and sensitive communities are provided in specific responses below. In sum, SANDAG’s significance thresholds for analyzing air quality impacts comply with all CEQA requirements.

V-3
Although air quality standards for ozone have not yet been achieved, substantial progress has been made in reducing SDAB ozone concentrations over the last three decades. For example, as noted in the San Diego Air Pollution Control District (SDAPCD) 2009 Regional Air Quality Strategy (RAQS) Revision (2009 RAQS Revision p. 4, which may be found at http://www.sdapcd.org/planning/2009-RAQS.pdf) and the SDAPCD’s 2009 Annual Report (p.3, which may be found at: http://www.sdapcd.org/info/reports/2009_annual_rpt.pdf):

The State one-hour ozone standard was exceeded on 168 days in 1977, improving significantly to 21 days over that standard in 2007 (an 88% improvement). In 2009, the State one-hour standard was exceeded on only eight (8) days. Over the same 30-year period (1977-2007), the region’s population grew by 82% (from 1.7 million to 3.1 million) and daily motor vehicle mileage more than doubled (from 34 million to 84 million miles). This air quality improvement despite regional growth clearly shows emission control measures are working.

The number of days that federal and state ozone and particulate standards were exceeded in 2009 that was cited by the Attorney General was based on incorrect information in the Draft EIR. The number of exceedance days has been revised in Table 4.3-2 of the Draft EIR to accurately reflect data shown in the 2009 SDAPCD Annual Report.

The 2009 RAQS accurately portrays the difficulty in achieving the 5% per year ozone precursor reduction target, which is a responsibility of the SDAPCD, not SANDAG. If the 5% reduction target is not met, an air basin is required to implement all feasible mitigation measures. The SDAPCD has implemented all feasible mitigation measures 2009 RAQS Revision (p. 2).

V-SANDAG implements the RAQS through commitments made in the current 2030 RTP (adopted in 2007) and the 2010 Regional Transportation Improvement Program. The six RAQS Transportation Control Measures (TCMs) included in the 2009 RAQS are: (1) Transit Improvements; (2) Vanpools; (3) High Occupancy Vehicle (HOV) Lanes; (4) Park-and-Ride Facilities; (5) Bicycle Facilities; and (6) Traffic Signal Improvements. The 2050 RTP/SCS provides additional commitments and TCMs to assist the APCD in reaching the annual 5% reduction. These include the transit and bikeway improvements, as well as projects and development that reduce emissions.

4 Guademan, et al., The Effects of Air Pollution on Lung Development from 10 to 18 Years of Age (Sept. 9, 2004) 351 The New England Journal of Medicine 1057-1068.
programs included in the Transportation Systems Management and the Transportation Demand Management chapters (Chapters 7 and 8, respectively). Specific TCMs include: ridesharing, transit service improvements, traffic-flow improvements, and bicycle facilities and programs.
The statement that the Draft EIR’s analysis air quality impacts “focuses almost exclusively” on conformity analysis is inaccurate. While federal law (USC 7506(c)) requires the RTP to conform to the applicable State Implementation Plan, the Draft EIR’s air quality analysis does not focus exclusively on conformity. The air quality analysis uses four significance criteria, each of which was derived from the CEQA Guidelines. Only two of the Draft EIR significance criteria are based on conformity analysis. Criterion AQ-1 addresses whether the project conflicts with or obstructs implementation of the applicable air quality plan. Criterion AQ-3 addresses whether the project would result in a cumulatively considerable net increase of emissions of any nonattainment criteria pollutants. (Draft EIR, Impact AQ-3, pp. 4.3-29 to 4.3-30.)

Criterion AQ-2 addresses whether the project would violate any air quality standard or contribute substantially to an air quality violation. Criterion AQ-4 addresses whether the project would expose sensitive receptors to substantial pollutant concentrations. The AQ-2 analysis addresses CO, the ozone precursors NOx and ROGs (VOCs), and particulate matter (PM10 and PM2.5) for each of the analysis years. In addition to the data presented in the body of the Draft EIR, Appendix B of the Draft EIR provided all of the detailed data output from emissions modeling of all of the criteria pollutants.

The comment references an “expected” EPA reclassification of the SDAB as in “serious” nonattainment of the federal ozone standard, reflecting worse air quality than the current classification. The date on which the EPA would reclassify the SDAB as a “serious” nonattainment area for ozone is speculative. In any event, significance conclusions and mitigation measures for Impacts AQ-2 and AQ-4 did not reference or use conformity analysis as the analytical basis for their two significance conclusions. Contrary to the comment, the Draft EIR adequately analyzed the region’s air quality impacts in a manner consistent with CEQA. The AQ-2 analysis addresses CO, the ozone precursors NOx and ROGs (VOCs), and particulate matter (PM10 and PM2.5) for each of the analysis years. In addition to the data presented in the body of the Draft EIR, Appendix B of the Draft EIR provided all of the detailed data output from emissions modeling of all of the criteria pollutants.
Footnote 5 of the comment appears to call for ambient air quality modeling to determine whether the 2050 RTP/SCS would meet federal air quality standards, and whether emissions for the 2050 RTP/SCS would cause public health impacts. The Draft EIR meets CEQA requirements for determining air quality impacts. CEQA Guidelines § 15125(a) provides, in part, that the “environmental setting will normally constitute the baseline physical condition by which a lead agency determines whether an impact is significant.” Comprehensive modeling analyses determined air quality impacts above the baseline. Impact AQ-2 addresses the issue of whether the 2050 RTP/SCS would meet federal air quality standards, and Impact AQ-4 addresses whether emissions for the 2050 RTP/SCS would cause public health impacts. Draft EIR Table 4.3-5 quantifies the changes in criteria pollutant emissions levels caused by the 2050 RTP/SCS. Impact AQ-2 and AQ-4 reasonably use these emissions forecasts to arrive at impact significance without the need for more expensive and time-consuming ambient air quality modeling. To determine a project’s significant environmental effects, a Lead Agency need not conduct every study recommended by interested parties. (See Association of Irritated Residents v. County of Madera (2003) 107 Cal. App. 4th 1383, 1395–1396.)

V-6
As explained in responses V-4 and V-5, Impact AQ-2 expressly addresses whether the project would violate state as well as federal air quality standards, including state ozone standards. Under Impact AQ-2, an impact is considered significant if it “would violate any air quality standard (NAAQS or CAAQS) or contribute to an existing or projected violation of NAAQS or CAAQS (Draft EIR, Impact AQ-2, pp. 4.3-22 to 4.3-23.) (NAAQS stands for national ambient air quality standard, CAAQS stands for California ambient air quality standard.) For ozone precursors, Draft EIR Table 4.3-5 shows that on-road emissions would be substantially reduced in 2020, 2035, and 2050, compared to the 2010 baseline, a beneficial impact of 2050 RTP/SCS implementation. These decreases are illustrated in Figure 1 below based on emissions (in tons/day) from Table 4.3-5, are due to a variety of technological improvements, and are achieved notwithstanding increases in VMT.

Figure 1: Forecasted On-road Emissions (tons/day) for Ozone Precursors by RTP/SCS Horizon Year
In contrast, Table 4.3-5 shows increases in PM10 and PM2.5 on-road emissions in 2020, 2035, and 2050, compared to the 2010 baseline. The Impact AQ-2 impact analysis therefore concludes that on-road emissions would have a less-than-significant impact on air quality standards violations with respect to ozone precursors, but a significant impact with respect to PM10 and PM2.5.

The AQ-2 impact analysis uses net decreases in ozone precursor pollutant emissions, compared to 2010 baseline conditions, as the basis for concluding that the 2050 RTP/SCS on-road emissions would not contribute to violations of state or federal ozone standards. It was conducted independently of any assumptions regarding RAQS effectiveness in achieving the 5% annual ozone precursor reduction target. The 5% reduction target is not a CEQA requirement.

While it is true that under CEQA the significance of any added air pollutant emissions should be judged in the context of whether an air basin already exceeds air quality standards, if a project results in decreases in air pollutant emissions in such a degraded air basin, the net impact of the project is beneficial, not adverse and significant. In addition, as discussed in V-3 above, the TCMs developed as part of the 2050 RTP/SCS will assist in meeting the 5% target.

SANDAG appreciates the concern expressed by the Attorney General’s office regarding impacts of air pollution on sensitive communities. At a programmatic level, the health effects and sources of toxic air contaminants (TACs) and mobile source air toxics (MSATs, which include diesel particulates and exhaust) are described in the Draft EIR environmental setting, Section 4.3.1.2 (pp. 4.3-7, 4.3-8, and 4.3-12). The Draft EIR’s environmental setting discussion of health effects and TACs meets CEQA requirements for an environmental setting. This section has nevertheless been revised to include an expanded discussion of the health risks of diesel particulates. In summary, this expanded discussion contains the following information:

APCD further defines a TAC as an air pollutant that may increase a person’s risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Other factors, such as the amount of the chemical; its toxicity, and how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health (APCD 2010b Toxic Air Contaminants: Fact Sheet. January. Accessed at http://www.sdapcd.org/info/facts/toxics.pdf). The most common exposure to diesel PM is breathing the air that contains diesel PM, which contains fine and ultra fine particles that are respirable (similar to PM2.5), avoiding many of the human respiratory system defense mechanisms and allowing the particles to enter deeply into the lung. Exposure to diesel PM comes from both on-road and off-road engine exhaust that is either directly emitted from the engines or aged through lingering in the atmosphere.

Diesel exhaust causes health effects from both short-term or acute exposures, and long-term chronic exposures. The type and severity of health effects depends upon several factors including the amount of chemical exposure and the duration of exposure. Individuals also react differently to different levels of exposure. There is limited information on exposure to just diesel particulate matter but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes acute and chronic health effects.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs, some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure in experimental animal inhalation studies have shown a range of dose dependent lung inflammation and cellular changes in the lung and...

Regarding impacts on low income and minority (LIM) communities, at a programmatic level, the Draft EIR analyzed air pollution impacts on sensitive receptors, and recognized that the impacts of transportation project operations on air toxics would be significant and unavoidable (Impact AQ-4, pp. 4.3-37, 4.3-39, and 4.3-49). The Draft EIR did not specifically call out LIM communities already experiencing air pollution impacts as a particular type of sensitive receptor, but they are included within the definition of sensitive receptor. As explained below, the Draft EIR Impact AQ-4 analysis has been revised to provide more detail on particular impacts to both LIM and non-LIM communities, and discuss potential mitigation measures to reduce impacts of particulate emissions on these sensitive communities. This analysis is summarized in response to comment V-11.

V-8
SANDAG acknowledges that California studies and studies in other regions generally have shown that LIM communities may be exposed unhealthful air more frequently and at higher levels than other groups. The Draft EIR does identify LIM communities in the Environmental Justice setting (pp. 4.6-1 to 4.6-7).

Also, please note that the OEHHA 2010 report on cumulative impacts cited in this comment has a disclaimer indicating that it was developed “for use as a basis for further scientific evaluation and discussion.” The disclaimer states that the scientific screening methodology discussed in the report is not to be used for regulatory purposes, including CEQA compliance. (OEHHA, 2010, Cumulative Impacts: Building a Solid Foundation, p. iii.)

V-9A
As noted in the Draft EIR, diesel particulates pose a particular risk to public health. Because facility designs and site-specific information on background concentrations are needed for accurate dispersion modeling for health risk assessments, these assessments are meaningful only at the project level. Mitigation Measure AQ-C has been modified in response to this comment to recognize that particulate matter hot spot analysis, which indicates health risks, will be conducted for individual transportation projects consistent with EPA guidance (2010). The Guidance may be found at http://www.epa.gov/otaq/stateresources/transconf/policy/420b06902.pdf. The revised mitigation measure is presented in response to comment V-15.

Please also refer to Master Response 1, which discusses why CEQA does not require project-level analysis for Program EIRs. For example, project-specific particulate and health impacts of particular transportation improvement projects in communities adjacent to large-scale industrial or commercial operations are most meaningfully assessed using established methodologies in project-specific environmental documents.

Although the Draft EIR’s analysis of impacts to sensitive receptors in Impact AQ-4 meets applicable CEQA requirements, in response to the Attorney General’s request, SANDAG has added a discussion of regional transportation corridor impacts of diesel particulates on low income and minority communities to the Final EIR; see response to comment V-11 for a summary of this analysis.
SANDAG acknowledges research indicating that increases in GHG emissions may result in localized ozone increases, which could adversely affect public health. However, there are no readily available studies showing whether and to what extent this effect would occur in the San Diego region. Also, it should be recognized that substantial decreases in ozone precursors are associated with implementation of the 2050 RTP/SCS, as shown by Figure 1 in response to comment V-6.

SANDAG acknowledges that diesel particulates are of particular public health concern; see response V-7 and V-9A.

Contrary to the Attorney General’s comment, the Draft EIR does provide a detailed discussion of the impacts of the 2050 RTP/SCS on emissions of toxic air contaminants and mobile source air toxics, including diesel particulates. (Draft EIR Impact AQ-4, pp. 4.3-36 to 4.3-41.) Public health impacts of these pollutants are discussed in that section, as well as recognized in Draft EIR Section 4.3.1.2, pp. 4.2-7 – 4.3-8. The public health impacts discussed in that section include cancer, poisoning, nausea, difficulty in breathing, immunological, reproductive, developmental and respiratory problems. In the case cited by the comment, Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal.App.4th 1184, 1219-1220), the EIR in question was judged inadequate because there was “no acknowledgement or analysis of the well-known connection between reduction in air quality and increases in specific respiratory conditions and illnesses.” (Id., at p. 1220.) In contrast, the 2050 RTP/SCS Draft EIR acknowledges and analyzes this connection, and further detail on the public health impacts of localized pollutant concentrations has been provided in the Final EIR, as explained below.

Although the Impact AQ-4 analysis meets applicable CEQA requirements for analysis of air quality impacts on sensitive receptors, SANDAG has nevertheless added a discussion of regional transportation corridor impacts on LIM and non-LIM communities to the Final EIR in Section 4.3.4 Impact Analysis, AQ-4. This discussion amplifies the Impact AQ-4 impact analysis by providing more detail on the specific sensitive receptors of concern to the commenter. It does not change the conclusion that Impact AQ-4 is significant and unavoidable.

Generally, the localized air quality index analysis added to the Final EIR identifies more LIM and non-LIM communities could potentially be exposed to increases in localized CO and particulate concentrations and concomitant health risks over the horizon years of the 2050 RTP/SCS. However, due to variables discussed in the analysis, health risks to specific communities from specific projects can be most accurately determined only through project-specific analysis. EIR mitigation measure AQ-C has been revised in the Final EIR to provide more detail on project-specific hot spot analyses and health risk assessments. The conclusion reached in the Draft EIR for Impact AQ-4 indicates that sensitive receptors, such as residential areas in both LIM and non-LIM communities, would be potentially exposed to substantial pollutant concentrations, a significant and unavoidable impact. The localized air quality index analysis included in the Final EIR does not change that conclusion, and Impact AQ-4 remains significant and unavoidable.

Also, the comment requests information on what portion of predicted increases in particulates would be carcinogenic diesel particulate matter, which the Draft EIR acknowledges has potentially serious health impacts (see Draft EIR Section 3.3.1.2 (p. 4.3-8)). However, an accurate cancer risk analysis, compared to baseline, can only be prepared on a project level basis, as part of a toxic hot spot analysis using an appropriate emission dispersion model for...
roadway emissions. An appropriate model will take into account project-specific information such as the locations of sensitive receptors, existing levels of particulate pollution, and project design features in order to assess the impacts of the project to particulate emissions.

V-12
The analysis summarized in Response V-11 evaluates existing and projected particulate and public health impacts on low income and minority communities. This analysis considers impacts of the 2050 RTP/SCS as a whole, which include impacts from the Goods Movement Strategy. SANDAG’s transportation model, which has been accepted by CARB as appropriate for the RTP/SCS analysis, cannot feasibly isolate the transportation impacts of particular components of the RTP/SCS such as Goods Movement Strategy (CARB 2011). Because the 2050 RTP/SCS is a regional plan, the regional land use pattern and transportation system were evaluated in its entirety in order to analyze the full interaction of projects. It is infeasible for SANDAG’s current transportation model to provide the information requested because it is dynamic, and looks at land use and transportation strategies and projects as an integrated whole. Due to these types of interactions and modeling constraints, the 2050 RTP/SCS and EIR are unable to provide detailed impact information for a subpart of the project such as the Goods Movement Strategy.

CEQA does not require an EIR for an integrated project to analyze the impacts of individual project components, just the project as a whole. This is especially the case for a Program EIR, which is prepared for a series of actions that can be characterized as one project. An advantage of a Program EIR is that it allows the lead agency to consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. (CEQA Guidelines § 15168(b)(4).)

Please see Master Response 23 for further discussion of why the EIR does not and is not required to analyze the impacts of individual project components.
Although the topic was already covered in general by Impact AQ-4, SANDAG has chosen to include the expanded discussion of particulate and public health impacts LIM and non-LIM communities in the air quality section rather than the environmental justice section of the EIR. (Please note that an environmental justice section is not required by CEQA.) See response to comments V-14 and V-15 regarding mitigation measures for these impacts.

V-13

SANDAG has adopted all feasible particulate emission programmatic mitigation measures. Please note that this comment does not propose any specific potentially feasible mitigation measures for localized air quality impacts that SANDAG should evaluate. Nevertheless, the Final EIR has been revised to add a mitigation measure for reduction of growth-related ozone emissions (AQ-A1), and Mitigation Measure AQ-C has been expanded to provide more detail on mitigation of localized CO and particulate impacts. Mitigation Measure AQ-A1 has been included in Section 4.3.5 under Impact AQ-1 as follows:

AQ-A1

For land use plans and projects, cities in the San Diego region and San Diego County can and should assess increases in ozone precursors during project-specific design and CEQA review, and mitigate significant increases to the extent feasible. Measures described in Mitigation Measure GHG-B would generally be applicable to ozone precursors, since most measures reducing GHG emissions also reduce ozone precursor emissions.

Specifically, at the plan level, land use plans should, when appropriate, incorporate planning and land use measures from the California Attorney General’s list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, they should also incorporate, when appropriate, policies to encourage implementation of the Attorney General’s list of project specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/
GW_mitigation_measures.pdf, including, but not limited to measures from the web page such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following web page: http://ag.ca.gov/globalwarming/ceqa/resources.php.

Revisions to Mitigation Measure AQ-C are shown in bold text below:

**AQ-C Transportation Network Improvements**

For transportation network improvements, during project-specific design and CEQA review, SANDAG shall and other implementing agencies can and should evaluate the potential localized CO impacts of each project using procedures and guidelines contained in the CO Protocol (UCD ITS 1997) to determine the level of local CO “hot spot” analysis required (qualitative or quantitative) at the project level, if any, for the project. If required from the project analysis, mitigation measures would be added to the project design concept or scope to reduce local CO emissions.

For transportation network improvements, during project-specific design and CEQA review, SANDAG shall and other implementing agencies can and should evaluate the potential localized particulate (PM10 and PM2.5) impacts and their health risks of project using procedures and guidelines for PM hotspot analysis consistent with USEPA (2010)PM guidance. If required from the project analysis, mitigation measures would be added to the project design concept or scope to reduce local particulate (PM10 and PM2.5) emissions. Per USEPA (2010) PM guidance, potential mitigation measures to be considered include but are not limited to: providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones, and replacing older buses with cleaner buses.

**Land Use Plans and Development Projects**

For land use plans and projects, cities in the San Diego region and San Diego County can and should assess health risks associated with CO and particulates during project-specific design and CEQA review, and mitigate them to the extent feasible. These assessments should focus on sensitive communities already experiencing high levels of air pollution and related diseases, and on other sensitive receptors.
For development projects, mitigation measures to reduce air pollution-related health risks include but are not limited to:

- Avoiding siting new sensitive land uses within 500 feet from the right of way of a freeway
- Implementing the construction mitigation measures listed in Mitigation Measures AQ-A and AQ-B
- Buffering residential, public assembly, and other sensitive land uses from industrial uses generating air pollutants that may pose public health risks
- Including landscaping, barriers, ventilation systems, and air filters or cleaners in project designs

Health Risk Assessments for Projects Involving Transportation Network Improvements or Land Use Plans and Development Projects

During project specific design and CEQA review, SANDAG shall and other implementing agencies can and should require, where warranted, the completion of health risk assessments using dispersion modeling. A health risk assessment (HRA) is the quantitative evaluation of the risk of cancer (and sometimes non-cancer health effects) that may result from human exposure to pollutants such as toxic air pollutants. HRAs are complex and typically involve emissions quantification, air dispersion modeling, and risk modeling. Dispersion modeling is a modeling tool capable of predicting concentrations of pollutants in air in the vicinity of the pollutant sources. It is typically used to predict PM concentrations at receptor locations around a source of PM. AERMOD and CALPUFF are two of several dispersion modeling tools.

V-15
Please see response to comment V-14 for a discussion of expanded air quality mitigation measures added to the Draft EIR. Regarding mitigation for fine (PM 2.5) particulate matter impacts, Expanded mitigation measure AQ-C mitigates PM 2.5 impacts as well as PM 10 impacts. For transportation network improvements, during project-specific design and CEQA review, the potential localized particulate impacts at the project-level are assessed using procedures and guidelines for PM hotspot analysis consistent with USEPA (2010) PM guidance. If required from the project analysis, a health risk assessment using dispersion modeling would be completed, and mitigation measures would be added to the project design concept or scope to reduce local PM.

SANDAG does not have legal authority to directly implement additional PM mitigation measures. While passenger vehicles and light trucks contribute to PM emissions, the primary sources of particulates include on-road diesel (mostly heavy duty diesel trucks) and off-road diesel (construction, farm equipment, trains and ships). Under § 209(a) of the federal Clean Air Act, only EPA has the authority to regulate emissions from trucks, trains, ships and off-road sources. Under § 209(b) of the Clean Air Act, EPA can grant a waiver allowing states (but not MPOs) to regulate these sources. The U.S. EPA has retained the responsibility for regulating trains and ships. The California Air Resources Board (CARB), as authorized by § 209(b) of the federal Clean Air Act, regulates truck emissions and has implemented regulations such as restricting
idling times and vehicle turnover, retrofitting (e.g. filters) and inspections. CARB also regulates off-road construction, cargo handling and farm equipment.
Comments on the importance of air quality mitigation are noted. Please refer to response V-14 and V-15 regarding modifications to the EIR’s air quality mitigation made in response to the Attorney General’s comments.

Climate Change Impacts: Greenhouse Gas Emissions

Before discussing the DEIR’s treatment of GHG emissions, it is important first to establish the relevant context for evaluating significance. The climate is affected by the concentration of GHGs in the atmosphere. The concentration of carbon dioxide, the primary GHG, has increased from approximately 280 parts per million (ppm) in pre-industrial times to well over 380 ppm, according to the National Oceanic and Atmospheric Administration’s (NOAA) Earth Systems Research Laboratory. The current rate of increase in carbon dioxide concentrations is about 1.9 ppm/year; present carbon dioxide concentrations are higher than any time in at least the last 650,000 years. GHGs persist in the atmosphere for decades and in some cases millennia.

The atmosphere and the oceans are reaching their capacity to absorb GHGs without significantly (and perhaps abruptly) changing the Earth’s climate. California is already seeing the effects of climate change. As the Resources Agency observed in its 2009 report, we already are experiencing sea level rise, coastal erosion, increased average temperatures, more extreme hot days and increased heat waves, fewer shifts in the water cycle, and increases in the frequency and intensity of wildfires. (Resources Agency, 2009 Climate Adaptation Strategy at p. 3.)

These effects are expected to increase with rising GHG levels in the atmosphere.

The burdens of climate change will not be shared equally. Future climate scenarios are expected to disproportionately affect, for example, the urban poor, the elderly and children, traditional societies, agricultural workers and rural populations. (Office of Environmental Health Hazard Assessment, Indicators of Climate Change in California: Environmental Justice Impacts (Dec. 2010) at p. 2.)

CARB set targets for SANDAG of a 7% reduction below 2035 levels by 2020 and 13% below 2005 levels by 2035. The 2050 RTP/SCS meets these requirements.

AB 32 was enacted after the EO-3-S-05 was signed. The Legislature declined to include the Executive Order’s aspirational 2050 goal in AB 32. In fact, the AB 32 Scoping Plan notes that while “the measures needed to meet the [Executive Order] 2050 goal are too far in the future to define in detail, we can examine the policies needed to keep us on track through at least 2030.” (Scoping Plan, p. 117.)

The AB 32 Scoping Plan recognizes that achievement of SB 375’s regional GHG reductions targets will be the main process for achieving this 2020 emissions reduction target from the land use and transportation sectors. Other sectors, such as the energy, industry, and commercial and residential sectors must also play a significant role in making changes to bring about the GHG reduction targets in AB 32 and those efforts are not addressed by SB 375. To meet the targets in AB 32 and the goals of EO S-3-05, major contributions to the emission reduction effort...
must be made by these other sectors as is recognized the Scoping Plan” (Sections 2C7-18, pages 51-67).

**Relationship of SB 375 to Executive Order**

SB 375 requires new RTPs to include Sustainable Communities Strategies (or Alternative Planning Strategies) to meet regional emissions reduction targets for light duty passenger vehicles. In adopting SB 375, the Legislature in Section 1 expressly found that improved land use and transportation systems are needed in order to achieve AB 32’s 2020 GHG emissions reduction target. Further, the staff analysis for the bill prepared for the Senate Transportation and Housing Committee August 29, 2008 hearing on SB 375 (hereby incorporated by reference) started with the following statement: “According to the author, this bill will help implement AB 32 by aligning planning for housing, land use, transportation and greenhouse gas emissions for the 17 MPOs in the state.”

Thus SB 375’s text and legislative history demonstrate that the SB 375 and its per capita GHG emission reduction targets are directly derived from AB 32 requirements. In contrast, SB 375 legislative findings do not mention achievement of the ambitious 2050 EO S-3-05 GHG emissions reductions target. Thus, there is no direct legislative policy linkage between SB 375 and the Executive Order.

The Executive Order establishes state GHG emission targets of 1990 levels by 2020 (the same as AB 32) and 80% below 1990 levels by 2050. It does not call for implementation measures other than the Secretary of CalEPA being responsible for coordination of state agencies and progress reporting. It is uncertain what role regional land use and transportation strategies can or should play in achieving the Executive Order’s emissions reduction target for 2050. A recent California Energy Commission (2011) report concludes, however, that the primary strategies to achieve this target should be major “decarbonization” of electricity supplies and fuels, and major improvements in energy efficiency (CEC 2011).

The 2050 RTP/SCS complies with SANDAG’s SB 375 emissions reductions targets, which in turn are based on AB 32 implementation. SANDAG recognizes the aspirational nature of the EO S-3-05 target for 2050, but the 2050 RTP/SCS emissions reductions are not legally required to be consistent with this target, and as explained below, this target is not an appropriate CEQA thresholds of significance. Please note that the SCS includes specific implementation actions that are expected to result in GHG emission reductions in addition to those modeled for the Draft EIR. While all the SCS implementation actions can be found in the Action Element of the SCS, some specific actions include:

- Implement the Regional Energy Strategy and the Climate Action Strategy, in coordination with state and local jurisdiction efforts.
- Support the increased use of clean, alternative fuels in SANDAG and local jurisdiction-owned vehicle fleets, and the vehicle and equipment fleets of contractors and funding recipients, such as the vehicle fleet for the SANDAG Vanpool Program or for local jurisdiction waste haulers.
- Support planning and infrastructure development for alternative fueling stations and plug-in electric vehicle (EV) chargers.
- Develop or facilitate a regional approach to long-term planning for alternative fuel infrastructure that includes the continued development of public-private strategic alliances.
• Monitor research and independent assessments of the impact that increasing the use of clean, alternative fuels would have on gas tax revenues.
• Integrate alternative fuel considerations into the development of the regional transportation network by, for example, integrating infrastructure for electric vehicle charging into regional park-and-ride lots and transit stations.
• Work with San Diego Gas & Electric and other stakeholders to mitigate the potential impacts of electric vehicles on the electric grid.
• To the extent possible, address climate adaptation issues in the design of new projects, and when improvements are made to existing infrastructure.
• Seek funding to develop healthy community or active design guidelines that integrate smart growth, sustainability, walking and bicycling, parking, and street design.

GHG Significance Thresholds

Footnote 21 of the comment suggests that the ability to meet the Executive Order’s goals should be considered a significant impact under CEQA, and that SANDAG cannot ignore the Executive Order since it is an official State policy.

The CEQA Guidelines (§ 15064.4(a)) confirm that lead agencies retain the discretion to determine the significance of GHG emissions. The Guidelines advise lead agencies to consider the following factors in determining the significance of GHG emissions: whether the project increases or reduces GHG emissions compared to the existing environmental setting, whether project emissions exceed a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with regulations or requirements of certain adopted GHG reduction plans. But fundamentally, the courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project. (See Citizens for Responsible Equitable Development v. City of Chula Vista (2011) 197 Cal.App. 4th 327, upholding an AB 32-based approach to setting significance thresholds.)

The Draft EIR used three thresholds of significance: increase in GHG emissions compared to existing conditions (GHG-1), conflict with SB 375 GHG emission reduction targets (GHG-2), and conflict with applicable GHG reduction plan (GHG-3). SANDAG selected the SB 375-based threshold because the 2050 RTP/SCS must comply with regional per capita GHG emissions reduction targets. The other two thresholds are also consistent with CEQA Guidelines suggestions.

SANDAG chose not to use the Executive Order emissions reduction target for 2050 as a threshold of significance because the Executive Order is not an adopted GHG reduction plan within the meaning of CEQA Guidelines § 15064.4(b)(2). Although the Executive Order target for 2050 can inform CEQA analysis, there is no legal requirement to use it as a threshold of significance. Under the CEQA Guidelines and case law, SANDAG retains the discretion to select certain GHG emissions reduction thresholds and not select others.

Furthermore, even if SANDAG had used the Executive Order emissions reduction target for 2050 as a threshold of significance, the Impact GHG-1 impact conclusions for 2035 and 2050 would not have changed. These impacts would be significant and unavoidable using either the net increase threshold used in Impact GHG-1, or an Executive Order based threshold.

Executive Order S-3-05 Creates No Legal Requirements for SANDAG
Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger on June 1, 2005. It established GHG emission reduction targets for California, and directed the Secretary of the California Environmental Protection Agency (“Secretary”) to coordinate oversight of the efforts made to meet these targets with the heads of certain State agencies. An executive order is generally regarded as a formal written directive of the Governor to subordinate state agencies. (75 Ops. Cal. Atty. Gen. 2673 (1992).) Each agency head is appointed by the Governor, and each is therefore a “subordinate executive officer” that can be required to implement an executive order.

SANDAG, to the contrary, is a regional planning agency comprised of 19 local governments. SANDAG may voluntarily consider the emissions reduction targets and other provisions of Executive Order S-3-05 in its regional planning, but SANDAG plays no formal role in implementing the Executive Order, as an executive order has no binding legal effect on agencies and personnel outside of the Governor’s chain of command.

Please see Master Response 2 for further discussion of the relationship between SB 375, AB 32, and Executive Order S-3-05.
The Draft EIR's GHG impact analysis complies with all applicable CEQA requirements. As explained in Master Response 2, it uses impact significance thresholds consistent with the CEQA Guidelines and case law requirements. CEQA Guidelines § 15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project. (See Citizens for Responsible Equitable Development v. City of Chula Vista (2011) 197 Cal.App. 4th 327, upholding an AB 32-based approach to setting significance thresholds.)

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The 2050 RTP/SCS does show that per capita GHG emissions increase in 2035 and 2050 compared to 2020. However, this increase is already reflected in the EIR analysis of Impact GHG-1, which compares total GHG emissions in 2020, 2035, and 2050 to the 2010 EIR baseline, as required by CEQA. Increased per capita GHG emissions in 2035 and 2050 compared to 2020 only reflect in the legal adequacy of the EIR's GHG impact analysis, since 2010 is the legally-required EIR baseline, and these increases are already reflected in the EIR analysis of Impact GHG-1.
The 2050 RTP/SCS correctly includes a discussion of VMT of all vehicle classes between 2008 and 2050, establishing the changes in VMT expected from existing (2008) conditions to the horizon year (2050) (Table TA 3.1: Performance Measure 22). This analysis shows a -1% change in daily per capita VMT for all vehicle classes. Section 3 of the 2050 RTP/SCS includes a discussion of changes in daily per-capita GHG emissions only for passenger vehicles (Table 3.1). That analysis showed a -9% change in GHG emissions from 2005 to 2050. (Please note that the 1 percent change and 9 percent numbers taken from the draft 2050 RTP/SCS have changed in the final 2050 RTP/SCS due to modifications to the network and rounding to the nearest whole number. The final 2050 RTP/SCS includes 2 percent and 10 percent numbers, respectively. The project description changes are described in Master Response 13.)

Some of the comments have incorrectly compared these numbers. In order to clarify the differences in the analyses, the tables below show the relationship between two data sets that are not comparable. Table 2 shows the RTP/SCS impacts on per-capita emissions of CO$_2$, while Table 3 shows impacts on VMT through 2050.

**Table 2: RTP/SCS Impacts on Per Capita CO$_2$ Emissions through 2050**

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<th>All Vehicles</th>
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<tr>
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<tr>
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<tr>
<td>2050</td>
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<td>-10%</td>
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**Table 3: RTP/SCS Impacts on Per Capita VMT through 2050**

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<tr>
<th>Year</th>
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<td>-4%</td>
</tr>
<tr>
<td>2010</td>
<td>23.4</td>
<td>24.2</td>
<td>-9%</td>
</tr>
<tr>
<td>2020</td>
<td>22.3</td>
<td>23.6</td>
<td>-12%</td>
</tr>
<tr>
<td>2035</td>
<td>22.8</td>
<td>24.3</td>
<td>-10%</td>
</tr>
<tr>
<td>2050</td>
<td>23.5</td>
<td>25.2</td>
<td>-7%</td>
</tr>
</tbody>
</table>

The analysis of vehicle-related GHG emissions in the 2050 RTP/SCS and Draft EIR focuses on 1) impacts from all vehicle types, and 2) impacts related to compliance with SB 375, which has targets of per capita GHG reductions for light-duty (passenger) vehicles only. Comments regarding the 2050 RTP/SCS and Draft EIR questioned why the 2050 RTP/SCS estimates a 9% decrease in per capita GHG reductions by 2050 (Table 2-2 of the Draft RTP/SCS), but only a 1% decrease in. This response presents reasons for the differences in those reductions, which are related to differences in (1) base year, and (2) analysis of total vehicle versus only light-duty vehicles, as required by SB 375. These differences can result in apparent discrepancies.
between information presented in various sections of the RTP and EIR. However, the information in both documents is consistent in both documents once base year and vehicle class are taken into account.

In addition, these comments misinterpret information provided in the Draft 2050 RTP/SCS. In that document, SANDAG forecasts a 1 percent drop in total Vehicle Miles Traveled (VMT) between 2008 and 2050. Over the same time period, SANDAG forecasts a 29 percent reduction in per capita GHG (based on CARB vehicle and fuel standards) (2050 RTP/SCS Table TA 3.1: Performance Measure 31).

As shown in Table 2, the per-capita CO₂ emissions decrease by 14% in 2020 and 13% in 2035 compared to 2005 conditions, meeting the targets of SB 375. Per-capita GHG emissions from all vehicle classes also decline, as does VMT (Table 3). However, the percent change in GHG emissions is not the same as the percent change in VMT over time, as explained above. Thus, a small reduction in VMT over time (e.g., 8% decrease in VMT 2005 – 2050) does not accurately reflect the vehicle-related impact to climate change (11% decrease in transportation-related CO₂ emissions 2005 – 2050), which includes vehicle fleet makeup, efficiency, and fuel carbon content, in addition to VMT.

See Master Response 20 for further discussion of the per capita GHG emission trajectory.

Comment-18 refers to Exhibit A attached to the Attorney General’s letter as supporting the need for aggressive reductions in per capita GHG emissions after 2020, as required by AB 32. Exhibit A, although taken from the AB 32 Scoping Plan, is actually the emissions trajectory for achieving the EO S-03-05 year 2050 emissions reductions. As explained in response V-17, AB 32 sets a GHG emissions reduction target for 2020 only.

V-19
As explained in Master Response 2 and response to comment V-18, the Draft EIR’s GHG impact analysis complies with all applicable CEQA requirements. It uses impact significance thresholds consistent with the CEQA Guidelines and case law requirements. CEQA Guidelines § 15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project. (See Citizens for Responsible Equitable Development v. City of Chula Vista (2011) 197 Cal.App. 4th 327, upholding an AB 32-based approach to setting significance thresholds.)

SANDAG had the discretion to choose not to use increases in total VMT as a significance criterion for GHG emissions, but rather to use significance criteria more directly based on the CEQA Guidelines and AB 32. Thus increases in total VMT have no effect on the legal adequacy of the EIR’s GHG impact analysis.

Absolute VMT increases under the 2050 RTP/SCS by 51% between 2010 and 2050, from approximately 78 million VMT to 118 million VMT per weekday under the plan (Table 4.3-3). This is VMT that includes all vehicle classes, not only passenger vehicles as discussed earlier related to the analysis for the GHG emission reduction targets for SB 375. VMT increases are attributable to several factors, including anticipated improvements to the economy which are directly correlated with fluctuations in VMT, as well as population growth between 2010 and 2050. In addition, as the economy recovers, SANDAG projects unemployment rates to drop in the region, spurring more commute- and recreational-trip making. Finally, as described in the GHG trajectory response above, absolute VMT increases due to several conservative modeling assumptions made for the 2050 RTP/SCS. These assumptions result in average trip length
increasing by 2050. As modeling approaches evolve, future versions of the RTP/SCS may project lower total VMT in 2050 than projected in the 2050 RTP/SCS.

V-19
Cont.

V-20
The comment’s statements of Draft EIR GHG emission data are noted.

V-21
As the comment states, the Draft EIR finds Impact GHG-1 (increase in GHG emissions over 2010 levels) to be less than significant in 2020, but significant in 2035 and 2050. These impact analyses do consider the impacts of the “project as a whole;” the entire project consists of two major parts, growth and land use changes associated with the SCS, and transportation network improvements. Impacts of both components are accounted for in the GHG-1 impact analysis. The Draft EIR meets CEQA requirements by reporting, in detail, the impacts for the transportation and land use impacts for each of the target years (pp. 4.8-16-4.8-26). Regarding the sustainability of GHG reductions in the long-term, please refer to response to comment V-20, which documents the conservative assumptions leading to an increase in per capita GHG emissions by 2050. There is no evidence showing that infrastructure and land use decisions made in the early years of the RTP/SCS would “lock in” transportation inefficiencies and preclude longer-term reductions in GHG emissions. To the contrary, the TransNet Early Action Program includes implementation of several transit projects and transit service improvements, as outlined below:

- Blue and Orange Line Trolley Improvements: Track and station rehabilitation, including purchase of low-floor vehicles
- I-15 Bus Rapid Transit (BRT) Stations (SR 163 to SR 78): Modify Escondido transit center, construct transit centers at Del Lago, Rancho Bernardo, Sabre Springs, and Mira Mesa
- SR 15 BRT Stations & Service: Construct transit centers at University Avenue and El Cajon Boulevard, Sabre Springs station parking structure, and downtown BRT stations, operate BRT service between Escondido and downtown San Diego
- LOSSAN Coastal rail double tracking and increased and expanded passenger rail service
- Mid-City Rapid Bus: Construct and operate Rapid Bus service between San Diego State University (SDSU) and downtown San Diego along El Cajon and Park Boulevards
- Mid-Coast Trolley: Construct and operate light rail transit (LRT) service between Old Town transit center, University of California, San Diego (UCSD), and University Towne Centre (UTC)
- South Bay BRT Construct and operate BRT service between Otay Mesa and downtown San Diego via Otay Ranch/Millenia and eastern Chula Vista
• SPRINTER Oceanside to Escondido Rail (completed)
• LOSSAN Coastal rail double tracking and increased and expanded passenger rail service
• Mid-City Rapid Bus Construct and operate Rapid Bus service between San Diego State University
• (SDSU) and downtown San Diego along El Cajon and Park Boulevards
• Mid-Coast Trolley Construct and operate light rail transit (LRT) service between Old Town transit center, University of California, San Diego (UCSD), and University Towne Centre (UTC)
• South Bay BRT Construct and operate BRT service between Otay Mesa and downtown San Diego via Otay Ranch/Millenia and eastern Chula Vista
• SPRINTER Oceanside to Escondido Rail (completed)
• SuperLoop: High-frequency circulator route in University City serving UCSD and UTC (completed); construct and operate eastern loop

Further, both federal and state law recognize that regional transportation planning must be evaluated every four years and require a new RTP drafted that reflects the changes and needs in the region. Both near-term as well as long-term transportation investments are re-evaluated when RTPs are revised. While SANDAG recognizes the importance to the State of achieving major long-term reductions in GHG emissions from all sources, as stated in response to comment V-17, the 2050 RTP/SCS is not required to meet the 2050 GHG reduction goals established by EO S-03-05, or to use the Executive Order as an impact significant criterion.

The 2050 RTP/SCS achieves SB 375’s sustainability goals and intent through achievement of regional GHG reduction targets for 2020 and 2035. The 2050 RTP/SCS focuses on transportation and land use strategies that SB 375 is intended to promote. The key to the 2050 RTP/SCS is a balanced approach that provides many choices for people to get to work, school, or play. The 2050 RTP/SCS does not represent “business as usual” investments in primarily highway expansion. The 2050 RTP/SCS includes more investment in transit and alternative modes than any previous RTP. Transit expenditures make up over half of the expenditures in the Plan. There are five new light rail transit lines, new express bus services, and increased frequencies for all transit modes (see 2050 RTP/SCS Chapter 6). The Draft 2050 RTP/SCS also fully funds Active Transportation, Transportation Demand Management, and Transportation System Management Programs (see 2050 RTP/SCS Chapters 6, 7, and 8).

The SCS land use pattern demonstrates that the San Diego region is planning for compact, higher density development located near transit and within the already urbanized areas of the region as envisioned by SB 375. Much of the San Diego region will remain undeveloped in the future because of the designated park, open space, national forest, and habitat lands. More than 80% of new housing will be higher density. Seventy-nine percent of all housing and 86% of all jobs will be located within the areas where the greatest investments in public transit are being made (within the Urban Area Transit Strategy Study Area). Meanwhile, the Plan will maintain more than 50% of the region’s land area as open space and parkland (see 2050 RTP/SCS Chapter 3).

V-22
The Draft EIR meets applicable CEQA requirements for mitigation measures. In addition to Mitigation Measure GHG-A referenced in the comment, the 2050 RTP/SCS has many policies and actions that reduce GHG emissions. It includes Mitigation Measures GHG-B and GHG-C, as well as Mitigation Measure GHG-A. As explained below, the 2050 RTP/SCS also has many policies and actions that reduce GHG emissions.
Consistency of RTP/SCS and EIR Mitigation Measures the AG Mitigation Recommendations

As required by Government Code § 65080(b)(3), the RTP/SCS includes an “action element that describes the programs and actions necessary to implement the plan and assigns implementation responsibilities”. The 2050 RTP/SCS contains many policies and actions that would implement the plan with respect to GHG reductions, and the Draft EIR contains additional GHG reduction mitigation measures.

The policies, actions and mitigation measures are consistent with recommendations of the California Attorney General’s (AG) Office (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), which provides example policies to include in plans to address climate change. This list was consulted during development of the 2050 RTP/SCS and EIR, and represents potentially feasible policies that would achieve GHG reductions at the plan level to meet CEQA requirements. Table 1 of Master Response 21 includes each of the AG-recommended policies and the corresponding RTP/SCS policies and actions, and EIR measures.

Revisions to Mitigation Measure GHG-B

Although Draft EIR Mitigation Measure GHG-B meets CEQA requirements, in response to the Attorney General’s and other’s comments, Mitigation Measure GHG-B has been revised as follows with added revisions shown in bold text:

GHG-B San Diego region cities and the County government can and should adopt and implement Climate Actions Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines § 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that contain the following information:

a) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within their respective jurisdictions;
b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;
d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
e) Establish a mechanism to monitor the plan’s progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and
f) Be adopted in a public process following environmental review.

CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change at both the plan and project level.

Specifically, at the plan level, land use plans should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:
- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, they should also incorporate, when appropriate, policies to encourage implementation of the Attorney General’s list of project specific mitigation measures available at the following website: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf, including, but not limited to measures from the website such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following webpage: http://ag.ca.gov/globalwarming/ceqa/resources.php.

SANDAG will assist local governments in preparing CAPs and other climate strategies through continued implementation of the SANDAG Climate Action Strategy and Energy Roadmap Program. The Climate Action Strategy provides a toolbox of land use, transportation, and related policy measures and investments that help implement the 2050 RTP/SCS through reducing GHG emissions. Policy measures also are identified for buildings and energy use, protecting transportation and energy infrastructure from climate impacts, and to help SANDAG and local jurisdictions reduce GHGs from their operations. Through the Energy Roadmap Program, SANDAG will continue to provide energy planning assistance to local governments to reduce local energy-related GHG emissions. SANDAG’s Climate Action Strategy can be found at: http://www.sandag.org/uploads/publicationid/publicationid_1481_10940.pdf

In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation (San Diego Foundation Focus 2050 report) and in conjunction with Executive Order S-13-08, which seeks to enhance the State’s management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State’s first climate adaptation strategy.

These changes reflect the addition of resources that can and should be used by local jurisdictions when implementing Mitigation Measure GHG-B.
EIR Mitigation Measures Implemented by Others

Specific mitigation measures are included in the Draft EIR to further address potentially significant impacts associated with increases in GHG emissions. Mitigation Measure GHG-B states that “San Diego region cities and the County government can and should adopt and implement Climate Actions Plans”. As shown in Table 2, this mitigation measure is already in the process of being implemented. Cities and the County government are currently working to address global climate change by completing GHG inventories for municipal and communitywide emission sources. Many jurisdictions are also in the process of developing or have scheduled development of Climate Action Plans.

Table 2: Local Jurisdiction Efforts to Address Global Climate Change

<table>
<thead>
<tr>
<th>Agency</th>
<th>GHG Inventory (Year Completed)</th>
<th>Climate Action Plan (Year Completed or Anticipated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of San Diego</td>
<td>2005</td>
<td>2012</td>
</tr>
<tr>
<td>City of San Diego</td>
<td>2005</td>
<td>2005/2012</td>
</tr>
<tr>
<td>City of Encinitas</td>
<td>2005, 2010 (draft)</td>
<td>2011</td>
</tr>
<tr>
<td>City of Vista</td>
<td>2009</td>
<td>24 months after General Plan Update</td>
</tr>
<tr>
<td>City of Escondido</td>
<td>2010</td>
<td>To be completed after General Plan Update (estimated 2012)</td>
</tr>
<tr>
<td>City of Solana Beach</td>
<td>2009</td>
<td>N/A</td>
</tr>
<tr>
<td>City of La Mesa</td>
<td>2009</td>
<td>N/A</td>
</tr>
<tr>
<td>City of Del Mar</td>
<td>2010</td>
<td>late 2011/early 2012 (Draft)</td>
</tr>
<tr>
<td>City of National City</td>
<td>2009</td>
<td>2011</td>
</tr>
</tbody>
</table>

Source: AECOM 2011
Notes: N/A indicates that although the jurisdiction has completed a GHG Inventory, they are not yet developing a Climate Action plan at this time.

For those agencies that have not adopted a Climate Action Plan, the Draft EIR includes the recommendation that those agencies should adopt one.

As discussed in Master Response 4, CEQA provides that an EIR can include feasible mitigation measures that are within the responsibility and jurisdiction of another agency. The appropriate CEQA finding in such instances is that such mitigation measures have been or “can and should be” adopted. (Public Resources Code §21081(a)(2); CEQA Guidelines §15091(a)(2)). Based on the above analysis of climate action planning and routine incorporation of GHG-reducing BACT into project construction and operation, it is reasonable to expect that the other agencies will actually implement GHG-B and GHG-C, respectively.

V-23
Please see response to comment V-22. Mitigation Measure GHG-B addresses mitigation of GHG emissions related to both transportation and to land use.
V-24
Please see responses to comments V-22. The Draft EIR included feasible mitigation measures to be implemented as soon as the 2050 RTP/SCS is adopted. Mitigation Measure GHG-B calls for SANDAG to assist local governments in preparing CAPs and other climate strategies, and Mitigation Measure GHG-C calls for SANDAG to implement BACT on transportation projects it implements. (See response to comment V-22 for revisions made to Mitigation Measure GHG-B in the Final EIR.) As stated in response to comment V-22, local governments in the San Diego region are already implementing GHG-B by completing GHG inventories for municipal and communitywide emission sources. Many jurisdictions are also in the process of developing or have scheduled development of Climate Action Plans. It is therefore inaccurate to characterize the EIR's GHG mitigation as “postponed.”

Further, the Draft EIR (Section 4.8.6, p. 4.8-37) discusses three additional potential mitigation measures to reduce GHG emissions, and explains why they are infeasible. Discussion of additional potential mitigation measures raised in Draft EIR comments, and why they are infeasible, is contained in Master Response 21. The comment does not suggest any additional ostensibly feasible, specific GHG mitigation measures (whether land use or transportation) that SANDAG should have considered in the EIR.

V-25
SANDAG appreciates the Attorney General's observation that SANDAG is charting new territory by adopting the first SB 375-compliant RTP/SCS. As explained in prior responses, SANDAG has fully disclosed the project's significant adverse impacts and developed feasible mitigation measures, at a Program EIR level of detail. SANDAG has met CEQA's standards for a legally adequate EIR, which are expressed as follows in the CEQA Guidelines (§ 15152):

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.
SANDAG recognizes that the Attorney General is not commenting directly on the adequacy of the RTP/SCS under SB 375. As explained in Master Response 2, the 2050 RTP/SCS does comply with the goals, intent, and requirements of SB 375; in particular, it meets SB 365's regional GHG reduction targets, and includes all content required for an SCS. As explained in response to comment V-18, the Draft EIR's GHG impact analysis complies with all applicable CEQA requirements. Increased per capita GHG emissions in 2035 and 2050 compared to 2020 have no effect on the legal adequacy of the EIR's GHG impact analysis, since 2010 is the legally-required EIR baseline, and these increases are already reflected in the EIR analysis of Impact GHG-1.

Details of SANDAG's transportation modeling methodology and assumptions have been made publicly available, and are provided in Final EIR Appendix F, as well as several 2050 RTP/SCS documents. The 2050 RTP/SCS Technical Appendix 15 includes the travel demand model documentation, the off-model methodology, the travel demand model validation report and the sensitivity analysis report. The 2050 RTP/SCS Appendix B includes a summary of model documentation to support the air quality conformity analysis. EIR Appendix F and these two 2050 RTP/SCS appendices, among other documents in the administrative record, provide substantial evidence supporting the Final EIR's conclusions about the significance of transportation, air quality, and GHG impacts.

The Office of Planning and Research (OPR) request referenced in the comment (at pp. 2-3) inquired about how SANDAG's transportation model captures the effects of individual land use and transportation strategies on VMT and GHG emissions. As explained in response to comment V-12 and Master Response 23, because the 2050 RTP/SCS is a regional plan, the regional land use pattern and transportation system were evaluated in its entirety to analyze the full interaction of projects. For example, it is well understood that smart growth land use policies and increased public transit, when implemented together, produce more GHG reductions than the sum of their individual contributions. It was also infeasible for SANDAG's transportation model to provide the information requested because it is dynamic, and looks at land use and transportation strategies and projects as an integrated whole. CEQA does not require an EIR for an integrated project to analyze the impacts of individual project components, just the project as a whole. This is especially the case for a Program EIR, which is prepared for a series of actions that can be characterized as one project. An advantage of a Program EIR is that it allows the lead agency to consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. (CEQA Guidelines §15168(b)(4).) See Master Response 1 for further discussion of the purposes of the Program EIR prepared for the 2050 RTP/SCS.
All land use and transportation strategies and projects in the 2050 RTP/SCS meet SB 375 Regional GHG reduction targets, resulting in GHG emission reductions of 14 percent and 13 percent for 2020 and 2035, respectively (per capita GHG emissions reduction from a 2005 base year for passenger vehicles). The SANDAG transportation model has been accepted by CARB (2011) as an appropriate methodology for demonstrating the SB 375 regional GHG reduction targets have met (p. ES-2). CARB has found that using SANDAG’s transportation model, SANDAG has demonstrated implementation of Draft SCS described in DEIR would achieve GHG reduction targets, without the need to evaluate individual project components (pp. 43-44).

SANDAG is actively pursuing improvements to its transportation model for the next version of the RTP/SCS including the development of an Activity Based Transportation Model (ABM) and an improved subregional land use model called PECAS. These new models are being developed under “open source” licenses (Apache License, Version 2 <http://www.apache.org/licenses/LICENSE-2.0.html>), which will allow stakeholders to evaluate directly the transportation (and therefore GHG) impacts of alternative land use and transportation strategies.

The SANDAG transportation model has been accepted by CARB (2011) as an appropriate methodology for demonstrating the SB 375 regional GHG reduction targets have met (p. ES-2). CARB has found that using SANDAG’s transportation model, SANDAG has demonstrated implementation of Draft SCS described in Draft EIR would achieve GHG reduction targets, without the need to evaluate individual project components (pp. 43-44).

V-28
As explained in the detailed responses above, the Draft EIR fully satisfies CEQA requirements. Nevertheless, in response to Attorney General comments, additional explanations and amplifications related to the Attorney General’s concerns have been provided in this response to the Attorney General’s comment letter and in the Final EIR. These explanations and amplifications do not constitute “significant new information” that would trigger Draft EIR recirculation under CEQA Guidelines § 15088.5.
would be happy to work with SANDAG to take the additional steps needed to take full advantage of this opportunity. We appreciate your consideration of our comments.

Sincerely,

Timothy R. Patterson
Supervising Deputy Attorney General

Susan Durbin
Deputy Attorney General

For Kamala D. Harris
Attorney General

cc: Gary Gallegos, Executive Director, San Diego Association of Governments
    Julie D. Wiley, General Counsel, San Diego Association of Governments

Attachment
Please refer to Response to Comments V-17, V-18, and V-19.

(ARB, Scoping Plan, Figure 6, at p. 118.)
REFERENCES

Air Pollution Control District (APCD)

Air Resources Board (CARB)

California Department of Transportation (Caltrans)

California Energy Commission (CEC)

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County of San Diego

Environmental Protection Agency (EPA)

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Our Region. Our Future.

2050 Regional Transportation Plan/Sustainable Communities Strategy

Final Environmental Impact Report
Appendix G - Public Comments and Responses
October 2011

State Clearinghouse #2010041061

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