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April 12, 2011 2300000

Laurel L. Impett
Shute, Mihaly & Weinberger LLC
396 Hayes Street
San Francisco, CA 94102

Dear Ms. Impett:

SUBJECT: Letter dated March 9, 2011 re: March 11, 2011 Board Meeting, Agenda Item 2 – Transportation and Land Use Modeling: Current Practice and Future Trends

The following is SANDAG's response to Shute, Mihaly & Weinberger LLP's letter to the SANDAG Board of Directors on behalf of the Cleveland National Forest Foundation dated March 9, 2011. The response letter summarizes and makes reference to its attachment which is the memorandum from Norm Marshall to Duncan McFetridge dated March 7, 2011, thus SANDAG's responses are to the points presented in that memorandum. The points being addressed are excerpts from the memorandum and are shown in **bold font**; page numbers refer to the pagination of the original memorandum.

The insensitivity of transit ridership in the most recent (2050) SANDAG RTP scenario analyses does not reflect the real world, but rather is evidence of serious deficiencies in the SANDAG model. Some of these deficiencies are documented in the following sections. (pg. 4)

Mr. Marshall has not provided a solid foundation for his claims, because he uses selective bits of information rather than a comprehensive review of the data. Mr. Marshall has chosen isolated examples from data that support his position; however, his choice of data reveals an incomplete understanding of the latest economic recession and appears to ignore the unique travel characteristics of the San Diego region. The SANDAG transportation model follows the guidelines and principles set forth in the California Transportation Commission Regional Transportation Plan (RTP) Guidelines and is consistent with state-of-the-practice transportation modeling in the United States. The following discussion highlights some of the deficiencies in Mr. Marshall's analysis.

In 1998, SANDAG found transit ridership could be increased greatly and VMT decreased greatly with "Transit-Centered" and "City-Centered" scenarios. *Reference: SANDAG, Region 2020: 2020 Cities/County Forecast Land Use Alternatives, 1998 – reported in*

Parsons Brinckerhoff, California Smart Growth Energy Savings, Table 2, p. 7, prepared for the California Energy Commission, 2001.

SANDAG's failure to build on the 1998 scenario process has been cited as a planning failure: "… several of the MPO sponsors did not connect the outcome of their scenario planning project to their regular regional transportation planning process (e.g., San Diego Association of Governments 1998)… a failure to connect one governmental function (visioning/scenario planning) with another (transportation planning and funding)." ***Reference: Bartholomew, Keith. Land use-transportation scenario planning: promise and reality. Transportation, 2006.*** **(pg. 4)**

Mr. Marshall's analysis relies on the Series 9 forecast from 1998. The draft Series 12 Regional Growth Forecast (accepted by the SANDAG Board of Directors for planning purposes in February 2010) is more focused on smart growth development and matching housing near jobs than the Series 9 forecast. For example, the Series 9 Forecast estimated the projected 400,000 new housing units by 2020 would require 600,000 acres of development.[1] The draft Series 12 Forecast also projects approximately 400,000 new housing units by 2050, but the local land use plans and policies can accommodate the new development on 300,000 acres. The land area needed for new development in the most recent forecast will be cut in half from previous estimates.

The greatest strength of the draft Series 12 Forecast is its reliance on existing plans and policies, and it enjoys unanimous support from the local jurisdictions. The Series 9 Forecast, on the other hand, relied on significant density assumptions not supported by the local jurisdictions at the time and with no local commitment to implement the density changes over time.

In conjunction with aggressive land use planning by the local jurisdictions, the transportation networks included in the current analysis of the draft 2050 RTP indicate transit ridership will double by 2050. In addition, the 2020 RTP (April 2000) projected daily vehicle miles traveled (VMT) for 2020 at approximately 99.7 million miles; current projections for 2020 in the draft 2050 RTP indicate VMT would be approximately 86.3 million miles, a 13 percent reduction in projected VMT for 2020 from the 2020 RTP projection.

Finally, Mr. Marshall leaves out one key finding from Mr. Bartholomew's article discussing the SANDAG planning process. Mr. Bartholomew states, "Most [metropolitan planning organizations] lack zoning and planning authority, a key component to implementing many of the regional strategies tested in scenario planning projects."

While SANDAG does not have land use authority, SANDAG is investing actively in smart growth planning and implementation through the Smart Growth Incentive Program (SGIP). The SGIP is funded by the local half-cent sales tax program known as *TransNet*, which was approved by San Diego County voters in 2004.

The goal of the *TransNet* SGIP is to fund public infrastructure projects and planning activities that will facilitate compact, mixed-use development focused around public transit, and that will increase housing and transportation choices. The projects funded under this program serve as models for how modest investments in infrastructure and planning can make smart growth an asset to communities around the region.

[1] 2020 Regional Transportation Plan. San Diego Association of Governments. April, 2000. Page 54.

SANDAG conducted an extensive onboard transit survey in 2009 (published in 2010)…Using the annual ridership numbers for each submode, the overall share of regional transit trips that are work trips is 30.7%…The SANDAG travel demand model estimates a much higher 47.1% of total transit trips as work trips for the base year 2008…this problem extends into the 2050 scenario analyses. (pg. 5)

Mr. Marshall relies on only one data point for comparison and overestimates the impacts of the current economic recession on future transportation trends. Looking back over the last 20 years, commute trips have historically made up 45 percent of transit trips in the San Diego region.[2] The SANDAG model relies on numerous data sources and analyzes long-term trends for its modeling assumptions, tempering isolated historical events like the recent economic recession. Unemployment due to the recent economic recession would logically result in fewer transit commuters, because there are fewer commuters in general. The number of unemployed workers grew more than 50 percent between 2008 and 2009.[3]

SANDAG Model Overestimates the Transit Share for "Low"-Income Travelers and Underestimates the Transit Share for "High"-Income travelers. (pg. 6) [and supporting arguments (pgs. 6-8)]

According to SANDAG estimates, the median household income in 2008 is $51,920 (in 1999 $). The median income is near the top of the medium income category, so nearly half of the households in the San Diego region fall within the high income category. According to the 2006 San Diego Household Travel Behavior Survey, high income households generate nearly 20 percent more person trips than medium income households and nearly 50 percent more person trips than low income households. Since high income households make up nearly half of San Diego households and high income households generate more trips, it is completely reasonable to assume that high income households would make more than half of the trips in 2008.

The mode choice module of the SANDAG transportation model relies on trips by income classification to identify the appropriate travel mode for each trip. Income directly affects household auto ownership, and transit usage is inversely correlated to auto availability in the household.[4,5]

SANDAG modelers have made total modeled transit trips approximately equal total observed transit trips. However, in this case, they are trying to make two wrongs equal a right. As discussed above, the model underestimates the number of transit nonwork trips. It inflates the number of transit work trips to compensate for this problem, but does so by exaggerating the number of transit work trips made by "low" income households (by almost a factor of three). (pg. 9)

[2] Results of the Onboard Transit Passenger Survey for the San Diego Region. San Diego Association of Governments. March 2004. Figure 9, Page 16.
[3] Annual Average Unemployment Rate. San Diego Workforce Partnership.
[4] 2006 Household Travel Study: Final Report. San Diego Association of Governments. June, 2008. Page 51.
[5] TCRP Web Document 12: Traveler Response to Transportation System Changes. Transportation Research Board. March 2000. Pages 1-13 and 10-37

As discussed earlier, the SANDAG transportation model correctly accounts for commute and non-work transit trips.

Mr. Marshall relies again on only one data source, in this case the American Community Survey (ACS), on which to base his transportation assumptions. In many places around the United States, relying on the ACS would be completely reasonable; however, in the San Diego region, residents of Mexico, who are not included in the ACS, have a significant impact on the San Diego transit system. In 2008, the Trolley station at the San Ysidro Port of Entry had more than 12,000 average weekday boardings, the most transit boardings anywhere in the region.

Mr. Marshall also does not account for the ACS margin of error in his memorandum. The margin of error for transit riders by income class from the ACS referred to in the memorandum is +/- 10 percent. Therefore, the low income commuter mode share for transit may be anywhere between 0 and 16 percent according to the U.S. Census Bureau. When travelers from Mexico are added to the ACS data, it is completely reasonable that low income commuter mode share for transit is 16 percent.

Mr. Marshall also states the SANDAG model exaggerates the number of transit work trips made by low income households. According to the 2009 On-Board Survey, more than 60 percent of transit trips are made by people from low income households, while low income households comprise only 25 percent of the total households in the region. These trip-making patterns are consistent with the results of the 2003 On Board Transit Survey as well.

...the SANDAG modeling does not account for transit ridership variation based on the quality of service provided. (pg. 10)

The SANDAG model includes five mode choices for transit: local bus, express bus, bus rapid transit, light rail (trolley), and commuter (heavy) rail. The desirability of each of these modes is based on a utility function reflecting a traveler's perception of the quality of service, travel times, wait times, proximity to service, and other factors. During the Mid-Coast Alternatives Evaluation process for the Federal Transit Administration (FTA) New Starts program, 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 were reviewed extensively by the FTA to ensure adequate sensitivity to transit mode alternatives. In November 2010, the FTA certified the technical methods of the SANDAG Mid-Coast alternatives analysis.

In conjunction with focused land use planning by the local jurisdictions, the draft 2050 RTP transportation network (which includes significant enhancements in transit quality of service) indicate transit ridership would double by 2050. The types of quality of service improvements included in the draft 2050 RTP include increasing transit frequency, adding new express bus and rail services, and new Trolley and streetcar expansion.

The SANDAG scenarios assume that the pattern of future land [use] is identical across scenarios, i.e. that a "Highway Emphasis" scenario will produce the same future land use pattern as a "Transit Emphasis" scenario will. This is wrong, and is an additional major factor in the vehicle miles traveled (VMT) insensitivity discussed above. (pg. 11)

In February 2010, the SANDAG Board of Directors accepted the 2050 Regional Growth Forecast for planning purposes. SANDAG staff held the accepted land use constant to evaluate each

transportation alternative on the basis of its transportation impacts. After the Board of Directors in December 2010 selected the preferred transportation network alternative for the draft 2050 RTP, (, SANDAG staff ran a comprehensive and iterative land use and transportation model that accounts for the relationship between transportation and land use in the draft 2050 RTP.

Given all of these problems, the current SANDAG model is useless for modeling future transit ridership. (pg. 10)

As described above, Mr. Marshall's critique of the SANDAG modeling framework fails to use a comprehensive review of data to support his claims. His choice of data reveals an incomplete understanding of the latest economic recession and appears to ignore the unique travel characteristics of the San Diego region.

Please direct technical questions to Kurt Kroninger, Technical Services Director, at 619-699-6996 or kkr@sandag.org.

Sincerely,

JEROME STOCKS
Chair, Board of Directors

JS/KK