Comments on the 2015 RTP/SCS and DEIR

Prepared for:

Cleveland National Forest Foundation

Prepared by:

Norman L. Marshall, President
Smart Mobility, Inc.

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Executive Summary

The San Diego region has experienced monumental changes since the adoption of the 2007 Regional Transportation Plan including:

- A leveling off in vehicle miles traveled (VMT)
- A major shift in expected future land use towards compact mixed use development
- Climate change becoming a foremost regional planning priority in California.

The 2015 Draft Regional Transportation Plan (DRTP) has partially responded to these changes by forecasting much lower growth in VMT in the future. In fact, the 2015 DRTP forecasts that 2050 VMT will be lower than the VMT that was forecast for today only 8 years ago. Furthermore, there is evidence that even SANDAG's revised VMT forecast is too high. In addition, the DRTP and the draft environmental impact report (DEIR) state that: "By 2025, driverless cars are expected to begin replacing conventional cars." This will allow many more cars to travel safely in the same roadway space."

Nevertheless, the DRTP keeps all of the road projects that were in the 2007 and 2011 RTPs; however, the predicted cost of this increased roadway capacity soared by 27% in only the last 4 years. The DRTP covers this extra cost, in part, by cutting transit investments.

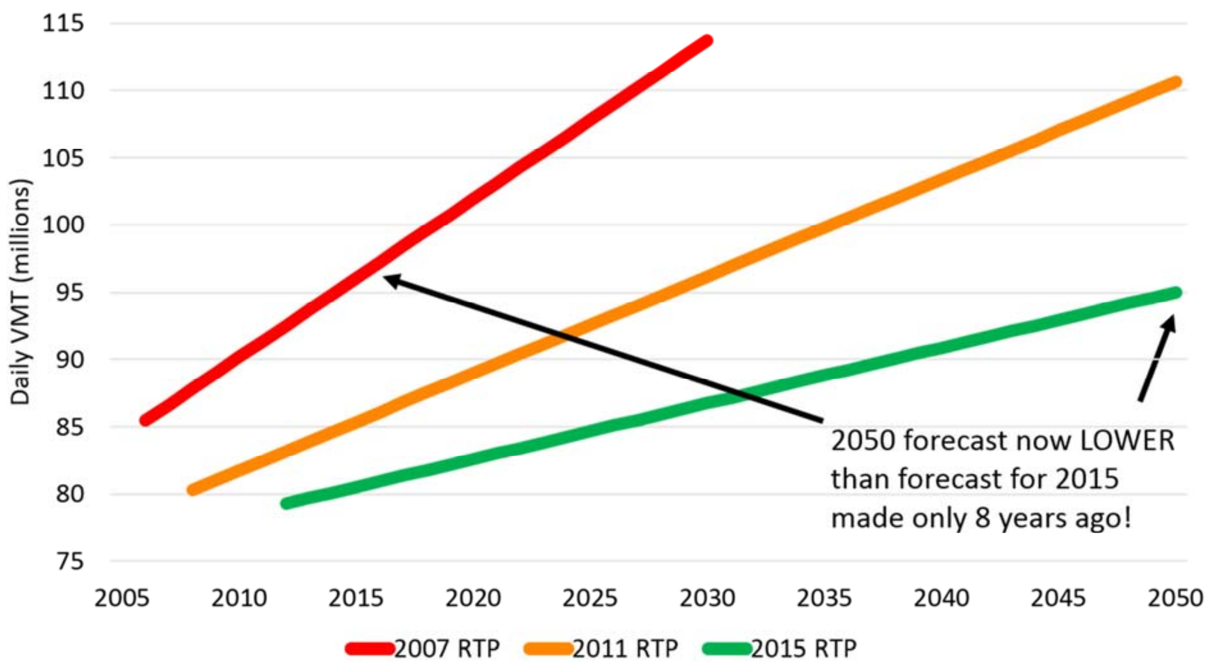
This DRTP/DEIR documents that this road-heavy plan will fail to meet California's 2050 goals for reducing CO_2 emissions from cars and trucks. While the DEIR identifies several "Type 5" alternatives which contain no additional roadway capacity and which would result in lower VMT and CO_2 emissions, it rejects Alternative 5A because of an arbitrary assumption that the transit projects cannot be built in the first 10 years of the 35-year planning horizon. Without this arbitrary assumption, Alternative 5A would have passed the fiscal constraint test. As discussed below, the DRTP/DEIR modeling protocol is insensitive to the timing of transportation investments, so the 2050 metrics would be the same whether the transit projects are constructed over 10 years or over 35 years. Then the DEIR adds other components to Alternatives 5B, 5C and 5D – before rejecting each of these additional components as being impractical. In effect, all of the environmentally-superior alternatives were constructed so that they would fail. The DEIR therefore fails to consider practical environmentally-superior alternatives.

The proposed plan also fails to meet the transit goals that SANDAG has set in its authoritative *Urban Area Transit Strategy (UATS).* To meet these goals SANDAG needs to drastically reshape the DRTP by removing all projects that increase roadway capacity, and shifting the saved money to invest in a world class transit system. The UATS was specifically designed to facilitate SANDAG's compliance with SB 375: "The goals of the transit strategy are twofold: first, maximize transit ridership in the greater urbanized area of the region; and second, test the role of the transit network to reduce vehicle miles traveled and greenhouse gas emissions. The second goal will help SANDAG comply with Senate Bill 375, which mandates that Metropolitan Planning Organizations develop a Sustainable Communities Strategy to align their transportation, housing, and regional land-use plans with the goal of reducing greenhouse gas emissions." The transportation and housing needs of future generations cannot be met without implementing the findings of the UATS.

SANDAG Now Expects Little Growth in Future VMT

In the eight years since SANDAG published its 2007 RTP, vehicle miles traveled (VMT) have decreased in most of the United States including the SANDAG region. SANDAG has been revising regional VMT forecasts downward. Figure 1 shows that the 2006 base year VMT in the 2007 RTP was higher than the 2010 base year VMT in the 2011 plan. The 2012 base year VMT in the 2015 draft RTP is even lower.

Figure 1: SANDAG VMT Forecasts in 2007, 2011 and 2015 Regional Transportation Plans[1]



As shown in Figure 1, SANDAG's forecast VMT growth rate also has declined. The growth rate in the 2011 RTP was lower than in the 2007 RTP. The VMT growth rate in the 2015 RTP is lower still. Remarkably, the latest forecast for 2050 VMT is lower than what VMT would be today if the 2007 RTP were correct.

[1] 2007: *2030 San Diego Regional Transportation Plan: Final*, November 2007, Table 2.3, p. 2-7; 2011: *Our Region: Our Future: 2050 Regional Transportation Plan*, Table 2.2 p. 2-8 and Table 3.2, p. 3-8, October 2011; 2015: *Draft Environmental Impact Report San Diego Forward: The Regional Plan*, Table 4.15-7, p. 4.15-24, May 2015

Forecast VMT is Still Overestimated

As shown in Figure 1, SANDAG has not forecasted VMT accurately in the past. Instead, it has just been resetting the base year, and reducing the forecast growth rate as the high rates forecast in the past have become increasing implausible. A recently-published research report introduces the term "assumption drag" to describe this problem: "the tendency to maintain assumptions based on past trends, even after they have lost their validity." [2] *The Effects of Socio-Demographics on Future Travel Demand* states:

> … forecasting's primary purpose is to generate information useful to decision makers for the specific types of decisions they are facing. The decisions are influenced by the degree of uncertainty associated with forecasts about the future. How many people will live in a region; in what types of households will they reside and by what modes will they travel; what will be the price of fuel; what are the rates of adoption of autonomous, self-driving vehicles? Good decisions (and good policies) should be robust across a wide range of socio-demographic futures. Therefore, to aid with this process, models should be viewed as tools for exploring scenarios, rather than providers of hard predictions, and should be designed to be flexible enough to explore scenarios, while avoiding (as much as possible) traps such as assumption drag.[3]

The SANDAG travel demand model used to forecast VMT is extremely complex. It has been developed over a multi-year period based on historical data. The most important dataset underlying the model is a 2006 household survey. [4] The 2006 survey year (nine years ago) was prior to the large changes in travel behavior that have occurred since then. *The Effects of Socio-Demographics on Future Travel Demand* argues that the type of complexity represented in the SANDAG model inhibits its usefulness by making it insensitive to change and differences between scenarios. It is imprudent to rely on the SANDAG travel demand model in planning for the future. It is telling us much more about how people traveled in 2006 than how they will travel in 2050. It is highly likely that when the next SANDAG draft RTP is published in 2019, it will be forecasting even lower VMT growth than in the 2015 DRTP or no growth at all.

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[2] Zmud, Johanna P., Vincent P. Barabba, Mark Bradley, J. Richard Kuzmyak, Mia Smuda and David Orrell. *Strategic Issues Facing Transportation Volume 6: The Effects of Socio-Demographics on Future Travel Demand*, p. 6. National Cooperative Highway Research Program Report 750, 2014.

[3] Zmud et. al. 2014, p. 6.

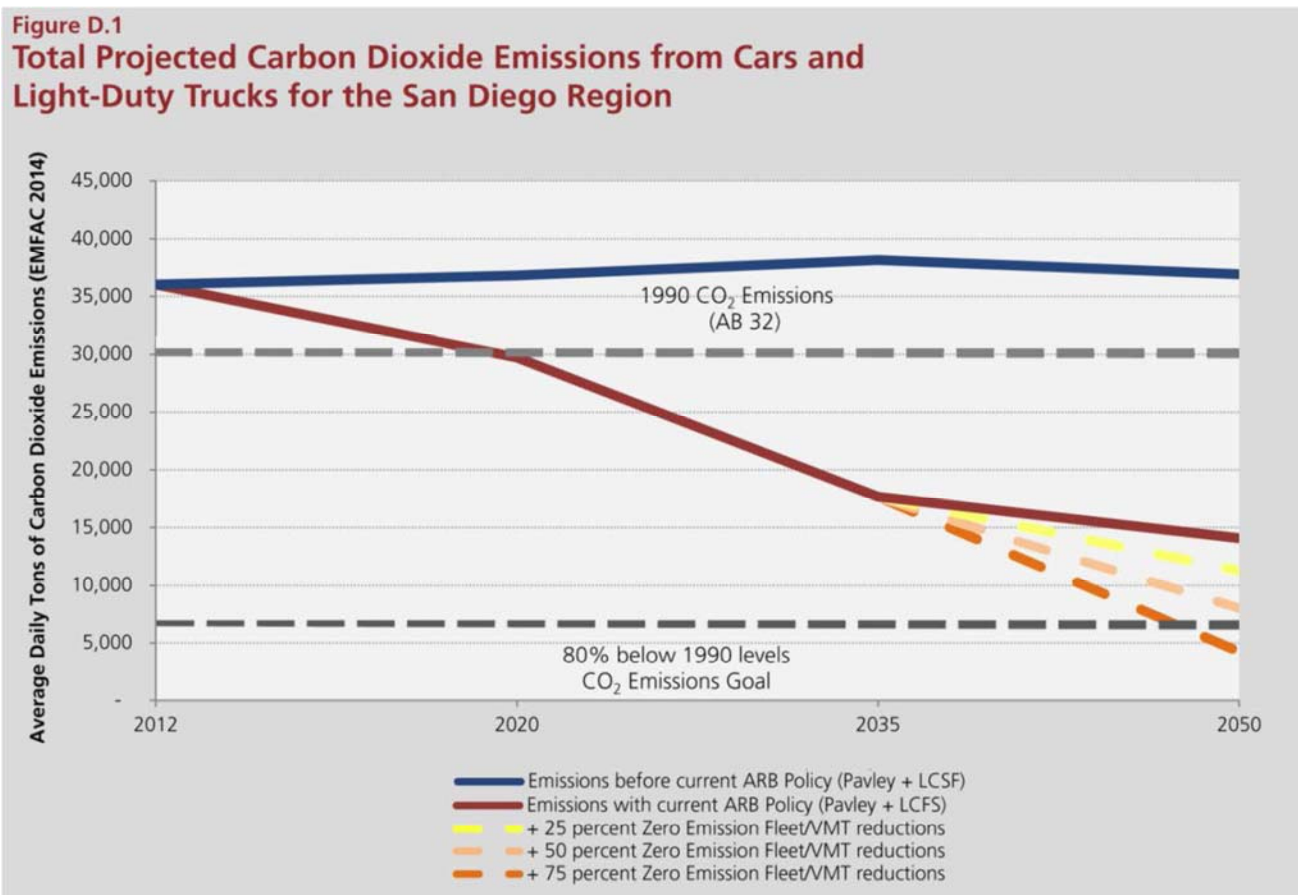
[4]

SANDAG Should Be Proactive About Limiting Future VMT

Although SANDAG is beginning to adjust its VMT forecasts downward, it is clear that the agency is unable to accurately forecast future VMT. Nevertheless, SANDAG is still operating within an outdated paradigm of A) forecasting VMT growth, and B) building new roads and widening roads to meet traffic demand associated with this assumed increase in VMT. Instead, SANDAG needs to radically change its approach to A) planning how much future VMT will best meet the region's needs including achieving climate reduction goals, and B) determining what investments and policies will achieve and support this desired level of VMT.

The 2050 VMT assumed in the DRTP/DEIR is too high to be compatible with California's GHG targets. Figure 2 reproduces DEIR Figure D.1 illustrating the large gap between forecast DRTP/DEIR emissions and the California emissions target. As shown in Figure 2, a further reduction of about 50 percent is needed to meet the 2050 target.

Figure 2: SANDAG DRTP Shows Need for Additional 50% Reduction in Carbon Emission Reductions from Cars and Light-Duty Trucks in 2050[5]



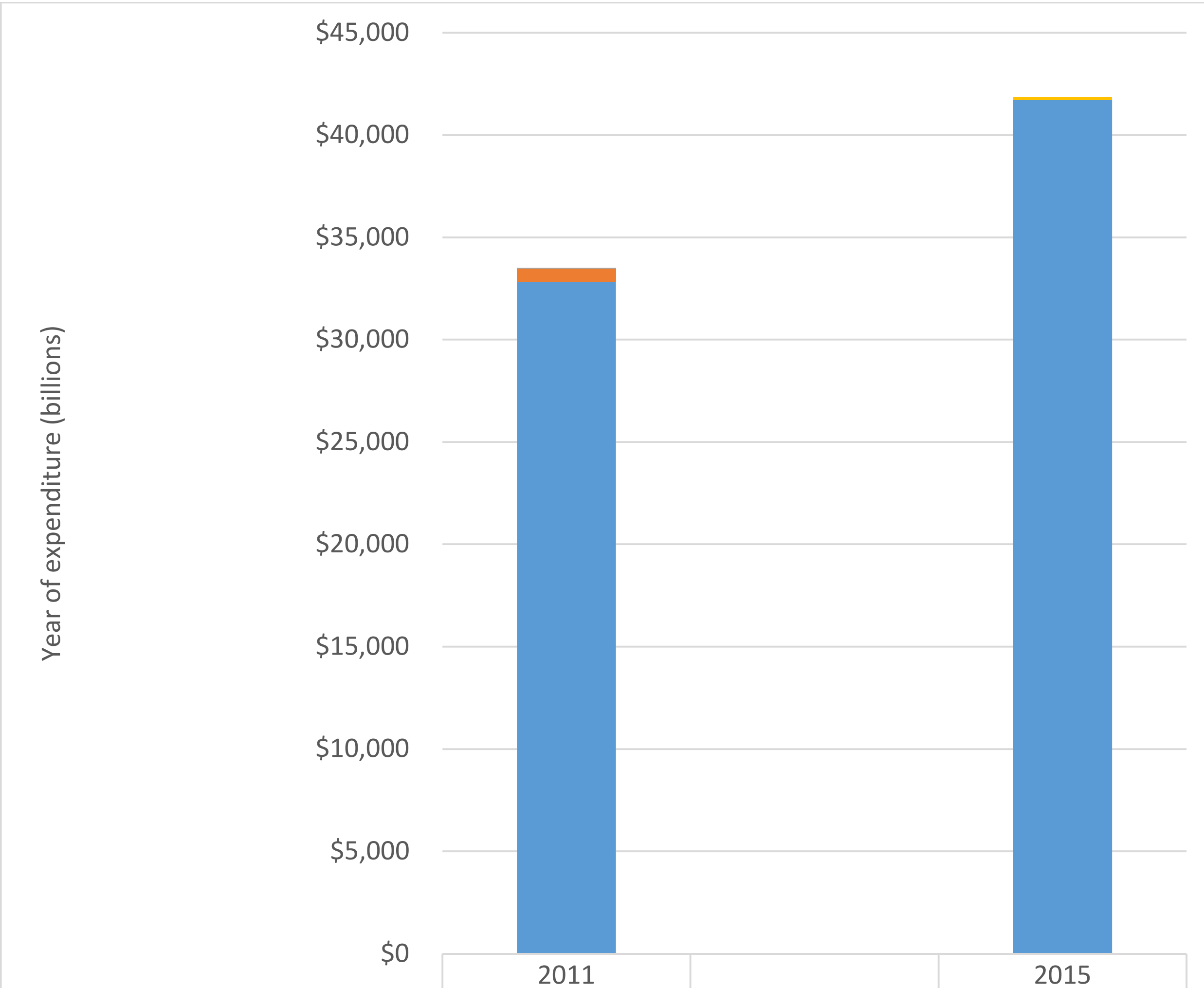
[5] Draft RTP Appendix D, Figure D.1, p. 39.

The first order of business for the region is to stop building a deeper GHG emissions hole by further investments in new freeway capacity. Then, the next order of business is to accelerate investments in other travel modes, especially transit.

Despite Huge Drop in Forecast VMT, SANDAG DRTP Includes Entire Road Program from Previous RTP/EIR

Table A-1, at the end of this report, documents how the roadway programs in the 2011 and 2015 RTPs are essentially identical. Figure 3 summarizes Table A-1 for year of expenditure total spending.

Figure 3: Comparison of Roadway Projects in 2011 and 2015 SANDAG RTPs (Summary Table A-2)



	2011		2015
Projects in 2015 Only			$118
Projects in 2011 Only	$47		
Projects Completed 2011-2015	$629		
Projects in Both RTPs	$32,835		$41,743

Except for two roadway projects completed between 2011 and 2015, [6] over 99% of the budget in the 2011 and 2015 RTPs is for the same projects. The primary difference is that the estimated cost for the group of projects in both RTPs has increased by 27% ($9 billion) between 2011 and 2015. [7]

SANDAG Must Stop Wasting Scarce Funding on Increasing Roadway Capacity.

Adding roadway capacity in the San Diego region is unnecessary for at least three reasons. First, SANDAG has overestimated VMT. Second, increased capacity induces additional travel. Third, technological advances will reduce the need for additional highway capacity.

As shown in Figure 1 above, SANDAG is forecasting 2050 VMT that is only 11 percent higher than the VMT estimated for 2006 in the 2007 RTP. As discussed above, it is likely that this forecast is inflated. However, even if it were accurate, it would not justify the wholesale roadway expansion planned for in the DRTP.

Transportation experts agree that increasing roadway capacity increases VMT and greenhouse gas emissions. The increased VMT is called "induced travel." Researchers study induced travel using a term from the economics field called "elasticity". The elasticity is the ratio between the change in demand and the change in supply or price. For example, if gasoline price increased by 100% and gasoline consumption dropped by 10% (in the short run), the elasticity of gasoline consumption to price would be 10%/100% = 0.10.

In work for the California Air Resources Board (ARB), researchers at the University of California and the University of Southern California reviewed the literature on induced travel and concluded:

> Thus, the best estimate for the long-run effect of highway capacity on VMT is an elasticity close to 1.0, implying that in congested metropolitan areas, adding new capacity to the existing system of limited-access highways is unlikely to reduce congestion or associated GHG in the long-run. [8]

This conclusion is based on a thorough review of 20 research papers on induced travel published between 1997 and 2012. An elasticity of 1.0 between VMT and roadway capacity means that there is no net reduction in congestion.

Induced travel can be split into two broad categories: 1) induced travel resulting from induced development that results in longer distance travel, and 2) induced travel resulting from more auto

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[6] As shown in Appendix A, the completed projects are I-15 managed lanes projects: 1) from SR 163 to SR 56 and 2) from Centre City Parkway to SR 78.
[7] The spreadsheet where 27% ($9 billion) are calculated is shown in Appendix A with the project descriptions and costs taken from 2011 RTP Appendix A and 2015 DRTP Appendix A..
[8] Handy, Susan and Marlon G. Boarnet. "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief" prepared for California Air Resources Board, September 30, 2014.

travel independent of induced development (more distant destinations, longer and less direct routes, and higher auto mode share).

The DEIR concludes that “the proposed Plan would not induce substantial vehicle travel.”[9] This conclusion is based on SANDAG’s travel demand model, and is inconsistent with real world data. If the model is not properly accounting for induced travel, the DEIR should have included post-processing to account for induced travel using the 1.0 elasticity documented in the ARB Policy Brief.

Furthermore, changes in vehicle technology will allow more cars to travel safely on the existing roadway system without additional capacity. The DRTP states:

> *By 2025, driverless cars are expected to begin replacing conventional cars. Autonomous vehicle technologies will transform public transit as well, increasing efficiency and accessibility while reducing congestion.*[10]

Even sooner, crash avoidance systems are likely to be just as common as airbags are today. The Insurance Institute for Highway Safety (IIHS) already is rating the first generation of these systems and has given top marks to seven mid-size models on the market today.[11] Researchers have estimated that full adoption of such crash avoidance systems will increase roadway capacity by 43 percent.

> Several automobile manufacturers are offering assisted driving systems that use sensors to automatically brake automobiles to avoid collisions. Before extensively deploying these systems, we should determine how they will affect highway capacity. The goal of this paper is to compare the highway capacity when using sensors alone and when using sensors and vehicle-to-vehicle communication. To achieve this goal, the rules for using both technologies to prevent collisions are proposed, and highway capacity is estimated based on these rules. We show that both technologies can increase highway capacity. The increase in capacity is a function of the fraction of the vehicles that use a technology. If all of the vehicles use sensors alone, the increase in highway capacity is about 43%. While if all of the vehicles use both sensors and vehicle-to-vehicle communication, the increase is about 273%.[12]

The 43% gain in capacity from complete adoption of crash avoidance systems is much greater than the 11% growth in VMT forecast in the DRTP/DEIR (relative to 2006); i.e. the combined result would be <u>less congestion than in 2006 without adding any lanes</u>. The driverless cars anticipated by 2025 in the DRTP would reduce congestion even more, i.e. by increasing capacity by up to 273 percent.

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[9] DEIR, p. 4.15-30.
[10] DRTP, p. 68.
[11] *IHS News*, September 27, 2013
[12] Tientrakool, P.; Ya-Chi Ho; Maxemchuk, N.F., "Highway Capacity Benefits from Using Vehicle-to-Vehicle Communication and Sensors for Collision Avoidance," *Vehicular Technology Conference (VTC Fall), 2011 IEEE*, vol., no., pp.1,5, 5-8 Sept. 2011.

Transit First

In order to achieve the region's climate change goals, SANDAG should immediately shift all planned roadway spending to other travel modes, and especially to transit investments. For many years, Caltrans and the region have over-invested in highways while under-investing in transit. Consequently, the region has an extensive highway system but a poor transit network that fails to serve many of its residents at all and under serves the rest.

The DRTP modeling appears to underestimate transit usage today. It identifies the transit mode share in 2012 as 1.8%.[13] According to California Household Travel Survey (CHTS) [14] data for 2012, the actual mode share for San Diego County residents is 4.4% (i.e. over twice as high) and the rate for home-based-work trips is higher yet – 6.5%. By underestimating transit ridership today, the SANDAG travel demand model almost certainly underestimates transit ridership in the future.

The DRTP also fails to acknowledge how poor the current regional transit system is. It gives an average transit travel time to work of 50 minutes.[15] In 2012 CHTS data, the mean door-to-door travel time reported for work commuting trips with at least one transit segment is 81 minutes. Unless otherwise specified, "average" generally means the mean. Therefore, the DRTP is missing the mark by 31 minutes. The median door-to-door time is 68 minutes. By underestimating transit travel times today, the SANDAG travel demand model is likely underestimating ridership gains that could be achieved by improving transit service.

Door-to-door travel times are almost always longer using transit than auto with convenient parking because transit times include walk and/or drive access time, wait time, generally lower average travel speeds, and sometimes transfer time. As a rule of thumb, a door-to-door travel time of about twice auto is fairly reasonable. Then, the benefits of transit can offset the extra travel time, at least for some travelers. These benefits can include saving money, avoiding stress from driving, time for other activities such as reading and social media, and exercise. However, as the travel time burden increases, fewer and fewer commuters will choose transit. As shown in Figure 4, the CHTS data show that the SANDAG has the highest ratio of median transit commute time to median auto commute time among the four large California regions – 68 minutes by transit vs. 25 minutes by auto for a ratio of 2.74. This difference of 43 minutes one-way adds up to almost an hour and a half per day with a roundtrip. That is a lot of extra time to spend commuting. Furthermore, it is important to remember that these data are from people who actually made these transit commutes. For many of those not choosing transit, transit options likely are very poor or nonexistent.

Transit statistics in the DEIR are similarly wrong or, at best, highly misleading. The DEIR states: "approximately 86 percent of the population was within 30 minutes of jobs and higher education

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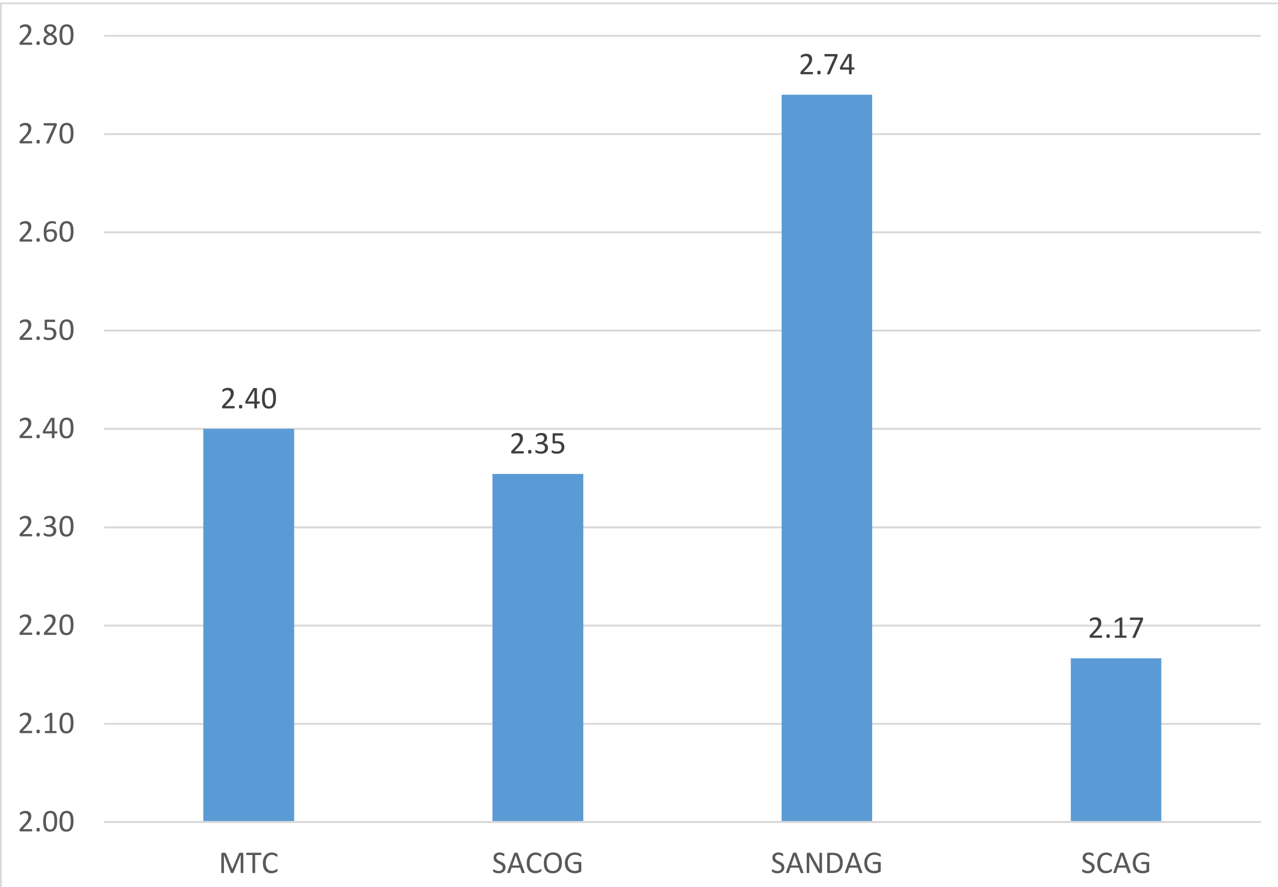
[13] DRTP Table N.1, Appendix N p. 3.

[14] Computed from data described in Nustats, *2010-2010 California Household Travel Survey Final Report*, June 2013. http://www.dot.ca.gov/hq/tsip/FinalReport.pdf

[15] DRTP Table N.1, Appendix N p. 3.

enrollment using transit as of 2012."[16] It is difficult to guess what this statement is intended to mean. For transit trips to be 30 minutes or less on a door-to-door basis generally requires short walks on both ends, a "one-seat ride" without transfers and frequent service. Such good transit situations are uncommon today in the San Diego region. Furthermore, this statement appears immediately above a table showing that only 77% of the population is within 0.5 miles of a transit stop.[17] How can 86% of the population be within 30 minutes by transit to jobs if only 77% have any reasonable transit access? It is possible that 30 minutes refers only to in-vehicle time. In this case, it is a worthless and misleading statistic. Any transit travel time statistics should include all components of door-to-door travel time.

Figure 4: Ratio of Median Transit Commute Time to Median Auto Commute Time in California Household Travel Survey Data



To be a world class region, it is essential to begin now to build a better transit system with better coverage and better service region-wide. This is a large undertaking that will take years to complete, but the more we delay in making the first steps, the more we set ourselves behind. Delay now makes progress increasingly difficult to achieve in the future. In CNFF's *50-10 Transit Plan,*[18] we explained that

[16] DEIR, p. 4.15-5

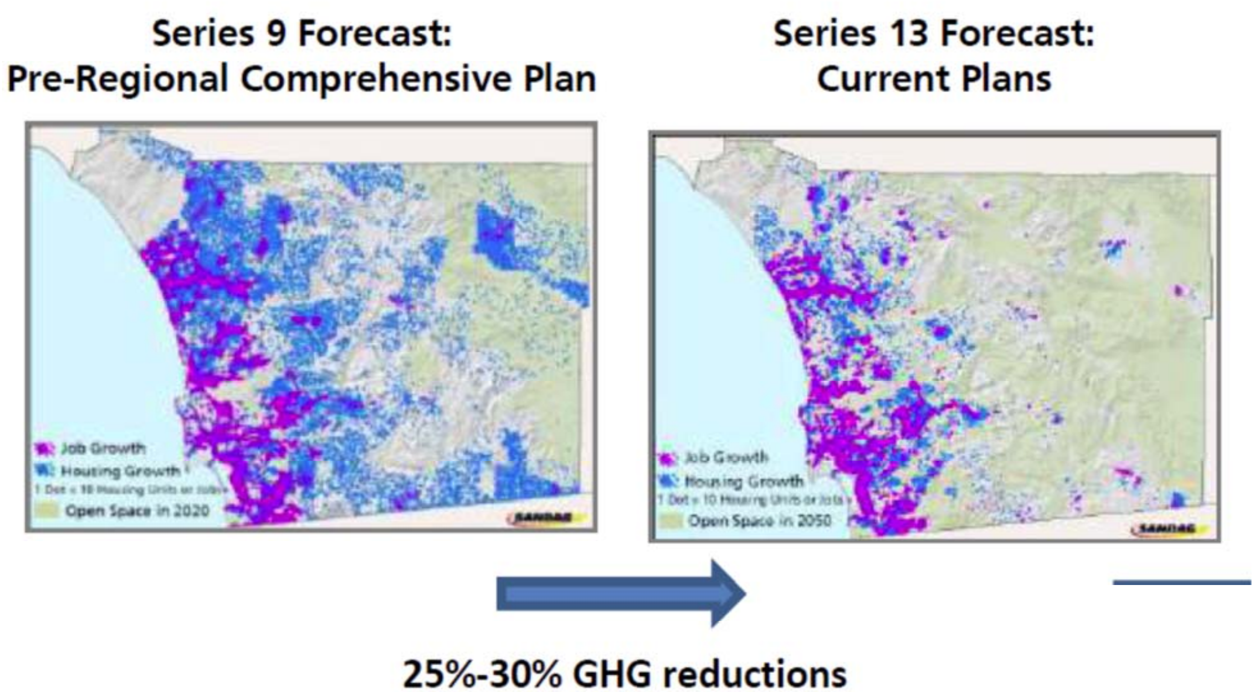
[17] DEIR, Table 4.15-2, p. 4.15-5. Table 4.15-14 on p. 4-15-31 further refines this to show that 35% of the population reside within 10 minutes of a "high frequency" transit stop.

[18] Marshall, Norman L. "The 50-10 Transit Plan: A World Class Transit System for the San Diego Region, July 2011.

progress could be made only by avoiding any further increase in road capacity and focusing all investments in the first decade on transit in the region's core.

In addition to serving residents' needs much better than the plan outlined in the DRTP, this Transit First approach is critical to encouraging local governments, developers, and businesses to invest in the compact mixed-use land development that the DRTP assumes for the future (as illustrated in Figure 5). It is critical that this land use vision be realized if the region is to attain its environmental goals such as significant reductions in GHG and criteria air pollutant emissions. Expanding freeway capacity that is focused on long trips to outlying areas would undermine the region's land use strategy, not to mention its environmental goals.

Figure 5: Large reductions in future GHG relative to past plans from more compact growth[19]



DEIR Alternatives Analysis is Severely Flawed

Chapter 6 of the DEIR compares the proposed plan to a "No Project" alternative (Alternative 1) and 7 "action" alternatives that are all variants of a Transit First strategy. The first 2 action alternatives are:

2) All revenue-constrained transit projects by 2025 + no change in road projects
3) All revenue-constrained transit projects by 2025 + road projects delayed until 2035-2050

[19] SANDAG, "San Diego Forward: The Regional Plan: Alternative Land Use Scenarios" presented to the Board of Directors December 6, 2013.

The SANDAG modeling process looks only at a snapshot of a single year at a time. The sequencing of transit and roadway projects makes no difference in the ultimate outcome. Whether all projects are assumed to be constructed in 2016 or all projects are assumed to be constructed in 2049, the 2050 modeling results will be identical. Therefore varying the sequencing in Alternatives 2 and 3 is an empty exercise, because the end results cannot be different. As discussed above, in the real world, making transit investments sooner will influence the decisions people make about where they want to live and work. The future land use pattern will be different in 2050 with a Transit First strategy than it would be with the proposed plan. The failure to account for these differences is a fatal weakness in SANDAG's analyses. The calculated metrics for Alternatives 2 and 3 are useless.

Alternatives 4, 5A, 5B, 5C and 5D all assume that all revenue constrained and unconstrained transit projects will be constructed by 2025. This 10-year time period has been influenced by CNFF's *50-10 Transit Plan* but appears to have been developed primarily to make sure these alternatives will <u>not</u> work. As discussed above, the *50-10 Transit Plan* called for focusing all investment over the next 10 years on transit in the region's core. It did not call for building out all of the transit in the SANDAG's 2011 RTP in 10 years.

The differences between Alternatives 4, 5A, 5B, 5C and 5D are:

4) Reduced managed lanes, no other highway investments, "Smart Growth Area intensification"

5A) Convert general purpose lanes to managed lanes, no other highway investments

5B) 5A + "Dense Cores"

5C) 5B + "New Transit and Parking Policies"

5D) 5C + increased auto operating cost

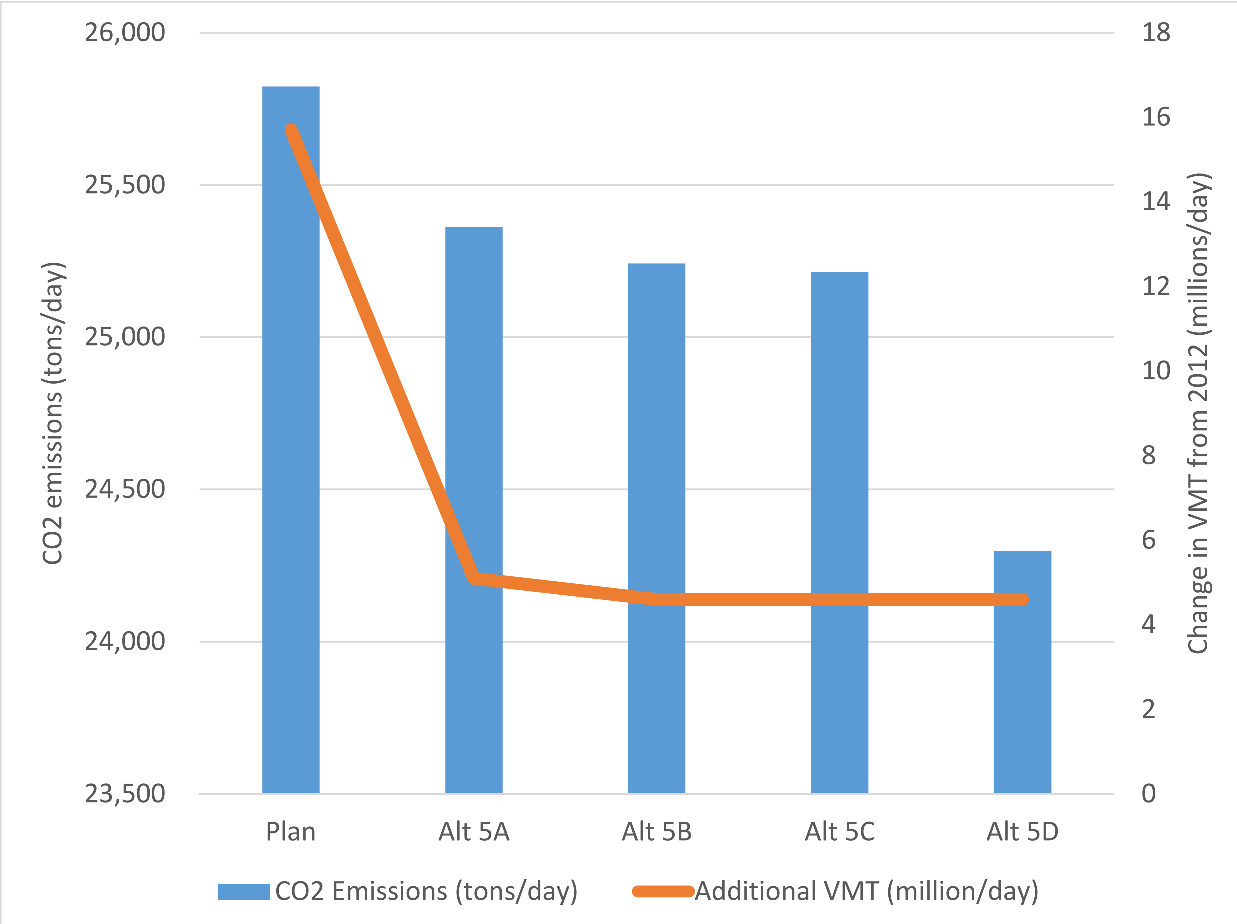
The DEIR identifies Alternative 5D as the "Environmentally Superior Alternative":

> Under Alternative 5D, total VMT would increase by about 7.2 million miles per year, or 9 percent, by 2050, compared to an increase of about 15.7 million miles per year, or 20 percent, by 2050 under the proposed Plan. Lower total VMT would reduce emissions of toxic air contaminants and particulates, and therefore lower exposure of sensitive receptors to such emissions. On-road CO2 emissions would be 24,298 tons per day by 2050 under this alternative, about 6 percent lower than emissions of 25,823 tons of CO2 per day under the proposed Plan by 2050. (DEIR, p. 6-27)

Although it is the Environmentally Superior Alternative, the DEIR concludes Alternative 5D is infeasible because it would require: "a major State road pricing policy change, and major changes in land use policies, parking, and transit funding."

All of the type “5” alternatives perform better than the proposed project as shown in Figure 6.

Figure 6 DEIR 2050 Alternatives Analysis Metrics for Alternatives 5A, 5B, 5C and 5D vs. Proposed Plan[20]



In particular, it is important to note that Alternative 5A performs better than the proposed plan for both CO_2 emissions and VMT. Relative to the proposed plan, Alternative 5A has the same future land use. The primary difference is that it removes all roadway projects except converting some current freeway lanes to managed lanes. Another difference is that unconstrained transit projects have been added to the revenue-constrained projects.

SANDAG should have also included a variant on Alternative 5A that omits the unconstrained transit projects; this variant would have enabled an apples-to-apples comparison with the proposed Plan. However, Alternative 5A clearly is less expensive than the proposed plan. The proposed plan includes roadway expenditures of $22 billion in 2014 dollars. The lane conversion component of Alternative 5A might cost 10% of that, so about $20 billion would be available to fund the unconstrained transit

[20] DEIR, Table 3 6.0-4, p. 6-70 – 6-105.

projects. This is more than enough to construct the unconstrained transit projects which are projected to cost about the $13 billion (2014 dollars). [21]

The DEIR includes two objections to shifting road funding to transit. [22] The first is the ridiculous assumption that all transit would need to be constructed by 2025. This is simply false. As discussed above, the DRTP/DEIR analyses assume that the timing of investments has no effect on the outcomes. The 2050 metrics only require that all transit be constructed by 2050. The second objection is also misleading. The DEIR assumes that revising TransNet is more or less impossible.

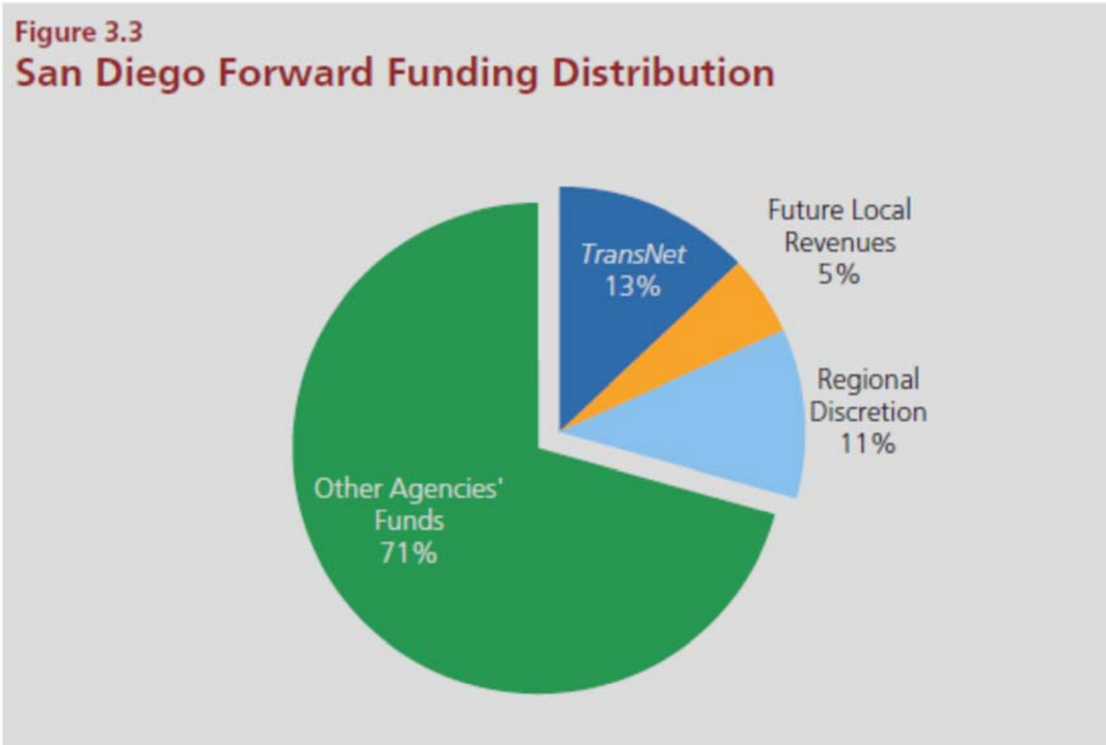
> Eliminating the proposed Plan's investments in several highway general purpose lanes, freeway connectors, managed lanes and connectors would require amending the *TransNet* Extension Ordinance with at least two-thirds approval of the SANDAG Board of Directors. (p. 6-20)

The Draft RTP indicates that TransNet represents only 13 percent of the total money budgeted so the tail should not be wagging the dog in any case. (See Figure 7 below.) More importantly, the drastically changed circumstances including much lower VMT growth than anticipated and the challenges of meeting GHG emission targets warrant that the SANDAG Board of Directors amend this antiquated, highway-oriented expenditure plan.

[21] $13 billion is the difference between the totals in DRTP Appendix A Tables A-1 and A-5

[22] DEIR, p. 6-8 – 6-13.

Figure 7 DRTP Funding[23]



None of the objections listed above relative to Alternative 5D apply to Alternative 5A if the transit investments are spread across the entire 2015 – 2050 period covered by the DRTP.

The DEIR's analyses show that it would be environmentally beneficial to eliminate the roadway projects from the proposed plan and only construct the other elements.

[23] DRTP, p. 108

Huge Potential for Improved Transit in the San Diego Region

The previous sections of this report have demonstrated that increased roadway capacity in the region is unnecessary. The DEIR analyses show that the Type 5 alternatives with less roadway capacity result in lower VMT and CO_2 emissions. Furthermore, a full accounting of the VMT and CO_2 benefits of less roadway capacity would require correcting the important flaws documented above in the DRTP/DEIR analysis framework. These include:

1) Relying on outdated 2006 household travel survey
2) Not accounting for induced travel from roadways
3) Not accounting for different land use future with Transit First
4) Poor modeling of existing transit use (both mode share and travel times)

Contrary to all of the evidence presented above that a sharp change in direction is warranted, it appears that the most important consideration for SANDAG when developing the DRTP was to arbitrarily maintain every single roadway project from the previous RTP. Otherwise, in the face of such large external changes and changes in planning priorities, there is no explanation for keeping every single roadway project.

Yet, all the roadway projects were kept, and it appears that the transit budget was developed by subtracting road funding from total funding; i.e. the money left over was assumed to be available for transit. Although the 2015 DRTP assumes more money will be available over the period until 2050 than did the 2011 RTP, project costs also have risen. Compared to the 2011 RTP, the road projects that are common to both plans have increased in estimated cost by 27% ($9 billion). Planned transit investment is decreased in the 2015 DRTP relative to the adopted 2011 RTP. [24]

The DRTP shows the transit mode share increasing from 1.8% today to 3.7% in 2050 with adoption of the proposed plan. As discussed above, the actual transit mode share for surveyed San Diego County residents today is 4.4% (i.e. over twice as high) and the rate for home-based-work trips is higher yet – 6.5%. As shown in Figures 7 and 8, SANDAG's *Urban Area Transit Study*[25] (an appendix to the DRTP) sets a goal of 150% for increase in transit mode share.[26]

[24] There are both additions and subtractions of specific transit projects between 2011 and 2015, but total planned investment is lower in the 2015 DRTP (2011 RTP Appendix A and 2015 DRTP Appendix A)..

[25] DRTP Appendix U.17 *Urban Transit Strategy,* San Diego Association of Governments (SANDAG) and Parsons Brinckerhoff, October 2011.

[26] UATS p. TA 7-16: "Mode share refers to the proportion of people using a particular form of transportation to get from one place to another. The most common transportation modes include: driving alone, using transit, carpooling, bicycling, and walking."

Figure 8 SANDAG Urban Area Transit Study Table TA 7.2

Table TA 7.2 –Peak Period, Home-to-Work Transit Mode Share Goals[1]

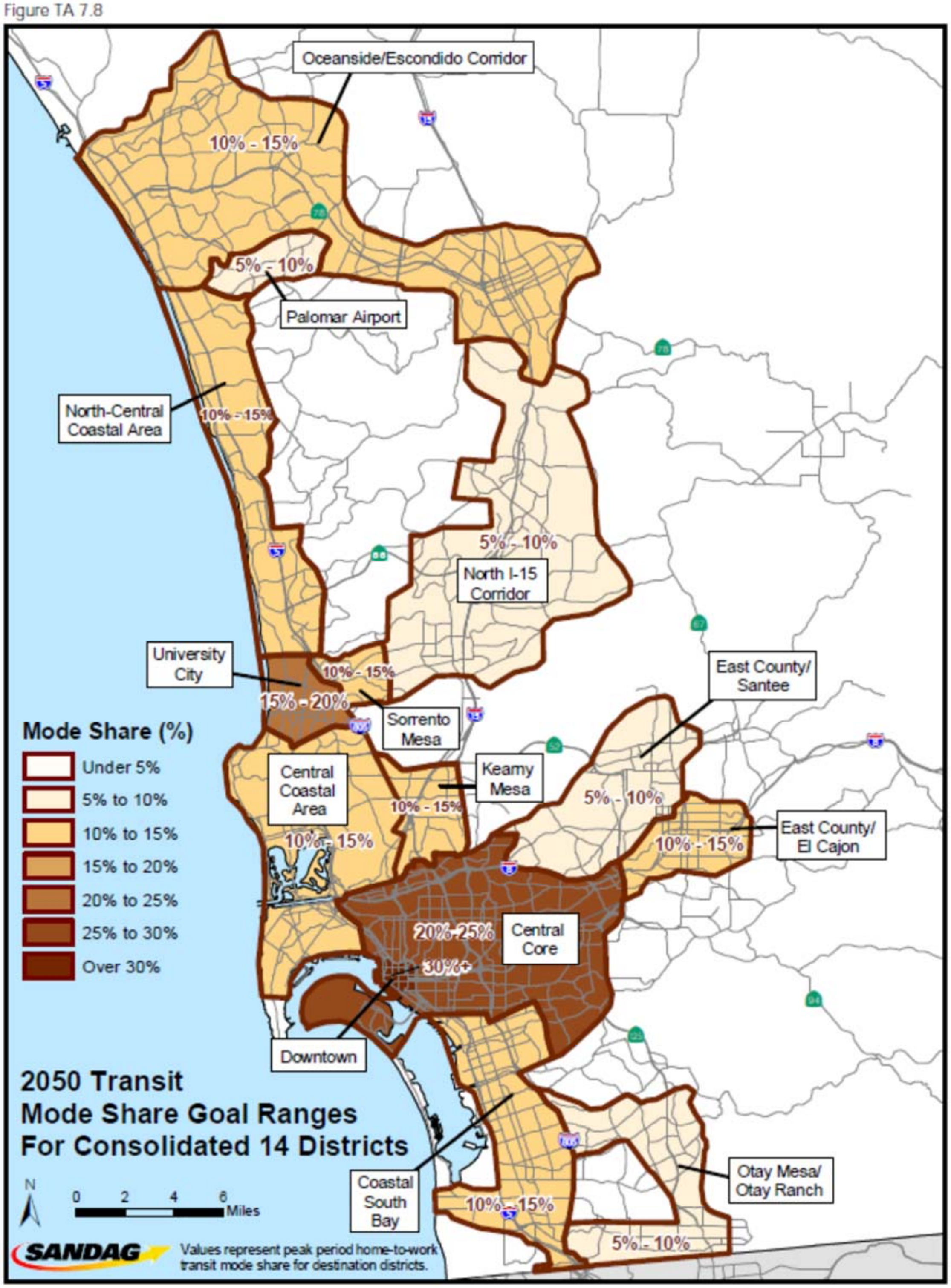
	Baseline Data		Supporting Data			Goals
Identified Corridors/Areas	**2008 Existing Transit Mode Share**	**2030 RTP With 2050 Land Uses Mode Share[2]**	**25% Increase Over 2030 RTP (Rounded)**	**Change From 2030 RTP**	**Change From 2008 Existing Transit**	**2050 Peak Period Transit Mode Share Goal Ranges**
Major Employment Areas						
Downtown San Diego	24.00%	25.00%	31%	24%	29%	30% +
University City	3.20%	13.00%	16%	23%	400%	15%-20%
Sorrento Mesa	1.90%	11.00%	14%	27%	637%	10%-15%
Kearny Mesa	2.60%	11.00%	14%	27%	438%	10%-15%
Otay Mesa/ Otay Ranch	2.70%	6.00%	8%	33%	196%	5%-10%
Palomar Airport	1.40%	5.50%	7%	27%	400%	5%-10%
High Activity Areas						
Central Core	11.80%	16.00%	20%	25%	69%	20%-25%
Oceanside/Escondido Corridor	2.90%	7.40%	9%	22%	210%	10%-15%
Other Urbanized Areas						
North I-15 Corridor	0.60%	6.10%	8%	31%	1233%	5%-10%
North Central Coastal Area	1.90%	7.70%	10%	30%	426%	10%-15%
Central Coastal Area	4.70%	10.00%	13%	30%	177%	10%-15%
Coastal South Bay	7.50%	10.70%	13%	21%	73%	10%-15%
East County/El Cajon	4.20%	8.30%	10%	20%	138%	10%-15%
East County/Santee	2.90%	6.30%	8%	27%	176%	5%-10%
UATS Study Area	**5.20%**	**10.10%**	**13%**	**29%**	**150%**	**10%-15%**

[1] Values represent peak period home-to-work trip transit mode share for destination districts.

[2] Values reflect projected mode share of either the currently adopted 2030 Reasonably Expected RTP or the 2030 Unconstrained RTP, whichever is higher, combined with 2050 land uses.

Figure 9 shows how this large increase could be achieved through higher transit mode shares in the more urban areas.

Figure 9: SANDAG Urban Area Transit Study Figure TA 7.8



The UATS states:

> The overarching goal of the UATS was to create a world-class transit system for the San Diego region in 2050, with the aim of significantly increasing the attractiveness of transit, walking, and biking in the most urbanized areas of the region.
>
> The vision called for a network of fast, flexible, reliable, safe, and convenient transit services that connect our homes to the region's major employment centers and destinations. Achievement of this vision would make transit a more appealing option for many trips, reducing the impact of vehicular travel on the environment and on public health. Other key goals included:
>
> - Making transit more time-competitive with automobile travel;
> - Maximizing the role of transit within the broader transportation system; and
> - Reducing vehicle miles traveled and greenhouse gas emissions in the region. (p. TA 7-5)

The DRTP fails to live up to the authoritative promise of the UATS which has been cast aside as an inconvenient truth in favor of a highway-centric plan based on unsupported, arbitrary assumptions about land use and transportation.

Table A-1: Comparison of Roadway Projects in 2011 and 2015 SANDAG RTPs

Freeway	From	To	Existing	Expanded	2011 CostYOE	2015 CostYOE	Notes
I-5	SR 905	SR 54	8F	8F+2ML	$500	$416	
I-5	SR 54	SR 15	8F	10F+2 ML	$393	$464	
I-5	SR 15	I-8	8F	8F+Operational	$2,689	$2,919	
I-5	I-8	La Jolla Village Dr	8F/10F	8F/10F+2ML	$1,261	$1,378	
I-5	La Jolla Village Dr	I-5/I-805 Merge	8F/14F	8F/14F+2ML	$260	$249	
I-5	I-5/I-805 Merge	SR 56	8F/14F+2HOV	8F/14F+4ML	$68	$137	
I-5	SR 56	Vandegrift Blvd	8F/8F+2HOV	8F+4ML	$4,286	$4,643	2015 splits into two sections
I-5	Vandegrift Blvd	Orange County	8F	8F+4T	$1,795	$4,497	
I-8	I-5	SR 125	8F/10F	8F/10F+Operational	$1,273	$1,654	
I-8	SR 125	2nd Street	6F/8F	6F/8F+Operational	$226	$413	
I-8	2nd Street	Los Coches	4F/6F	6F/8F+Operational	$129	$88	
SR 11 POE	SR 905	Mexico		4T & POE	$755	$876	
SR 15	I-5	SR 94	6F	8F+2ML	$214	$338	
SR 15	SR 94	I-805	8F	8F+2ML	$31	$52	
SR 15	I-805	I-8	8F	8F+2TL	$47		
I-15	I-8	SR 163	8F	8F+2ML	$1,849	$2,165	2015 splits out Viaduct
I-15	SR 163	SR 56	8F+2ML(R)	10F+4ML/MB	$419		completed
I-15	Centre City Parkway	SR 78	8F	8F+4ML	$210		completed
I-15	SR 78	Riverside County	8F	8F+4T	$2,392	$2,555	
SR 52	I-5	I-805	4F	6F	$262	$276	
SR 52	I-805	I-15	6F	6F+2ML	$314	$181	
SR 52	I-15	SR 125	4F	6F+2ML	$587	$662	2015 split into ML & HW projects
SR 52	Mast Blvd	SR 125	4F	6F		$131	
SR 54	I-5	SR 125	6F	6F+2ML	$238	$276	
SR 56	I-5	I-15	4F	6F	$244	$351	
SR 67	Mapleview St	Dye Rd	2C/4C	4C	$781	$1,418	
SR76	Melrose Drive	I-15	2C	4C	$404	$305	
SR 76	I-15	Couser Canyon	2C	4C/6C+Operational	$235	$261	
SR 78	I-5	I-15	6F	6F+2ML/Operational	$592	$1,720	
SR 94	I-5	SR 125	8F	8F+2ML	$1,310	$1,412	
SR 94	SR 125	Avocado Blvd	4F	6F	$214	$221	
SR 94	Avocado Blvd	Jamacha Rd	4C	6C	$71	$225	
SR 94	Jamacha Rd	Steele Canyon Rd	2C/4C	4C	$48	$100	
SR 125	SR 905	San Miguel Rd	4T	8F	$262	$661	
SR 125	San Miguel Rd	SR 54	4F	8F	$143	$438	
SR 125	SR 54	SR 94	6F	6F+2ML	$238	$188	
SR 125	SR 94	I-8	8F	10F+2ML	$421	$694	
SR 241	Orange County	I-5		4T/6T	$522	$598	
I-805	SR 905	Carroll Canyon Rd	8F/10F	8F/10F+4ML	$4,764	$6,132	2015 split into 3 projects
I-805	Carroll Canyon Rd	I-5 (north)	8F/10F	8F/0F+2ML	$81		
SR 905	I-805	Mexico		6F	$595		

Table A-1: Comparison of Roadway Projects in 2011 and 2015 SANDAG RTPs (concluded)

Freeway	Intersection	Movement	Connectors		2011 CostYOE	2015 CostYOE	Notes
I-5	SR 78	S-E,W-N,N-E,W-S			$377	$332	
I-5	I-805	N-N, S-S			$114	$66	
I-15	SR 52	W-N,S-E			$260	$326	
I-15	SR 78	E-S,N-W			$109	$139	
SR 15	SR 94	S-W,E-N			$126	$122	
SR 15	I-805	N-N,S-S			$94	$106	
I-805	SR 52	W-N,S-E			$146	$181	
I-805	SR 94	N-W,E-S			$166	$133	
I-5	SR 56	W-N,S-E			$253	$411	
I-5	SR 78	S-E,W-S			$166	$358	
I-15	SR 56	N-W			$186	$265	
SR 94	SR 125	S-E,W-N			$391	$210	2015 split into 2 projects
SR 11/SR 905	SR 125					$118	
				totals	$33,511	$41,861	
				apples to apples	$32,835	$41,743	
				projects		127%	

Source: 2011 RTP Appendix A and 2015 DRTP Appendix A

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