

TECHNICAL APPENDIX 4 GOALS AND PERFORMANCE MEASUREMENT

This Technical Appendix documents the process that SANDAG undertook to develop goals for the 2030 RTP and shows the performance of the 2030 Mobility Network against those goals.

On November 30, 2001, the SANDAG Board of Directors discussed transportation and land use policy issues relating to the 2030 RTP. The Policy Development Board meeting was designed to solicit comments and direction from Board members. Interactive electronic technology was used to collect and analyze the Board's opinion regarding transportation and land use policies. The Policy Development Board Meeting agenda item is included in this Appendix. The results from the interactive exercise were used to develop the seven goals of the 2030 RTP: Mobility, Accessibility, Reliability, Efficiency, Livability, Sustainability, and Equity.

On June 14, 2002, the SANDAG Board provided additional policy direction for the 2030 RTP. Three "extreme" 2030 transportation networks were developed - one emphasizing high occupancy vehicle (HOV) facilities, one emphasizing transit services and facilities, and one emphasizing development of general purpose highway lanes. Each network invested the same amount of funding. An analysis of the three "extreme" networks against a "no build" scenario was completed to see how well each network performed across the goals of the 2030 RTP.

Using the analyses of the "extreme" network scenarios, staff developed the 2030 Mobility Network. The 2030 Mobility Network provides the most beneficial results across all seven goals of the 2030 RTP. The network was refined over time based upon subsequent Board input, public comments, additional transportation modeling analysis (Technical Appendix 3), and evaluation criteria (Technical Appendix 7). The performance of the 2030 Mobility Network compared to other networks is shown in Table TA 4.1. Transportation network characteristics and mode share in peak periods for selected screenlines are included in Tables TA 4.2 and TA 4.3, respectively. Figure TA 4.1 displays the screenline locations.

Friday, November 30, 2001

SANDAG POLICY BOARD MEETING

Action: Discussion

2030 REGIONAL TRANSPORTATION PLAN

INTRODUCTION

Solutions to our region's transportation needs require a comprehensive planning effort that coordinates land use and transportation and develops an integrated, multi-modal transportation system. The Regional Transportation Plan (RTP) contains specific public policies, strategies, and projects and programs aimed at meeting the diverse mobility needs of our growing region.

KEY ISSUES

- **Goals**
- **Transportation System Policies**
- **Land Use Distribution Policies**

At its July 27, 2001 meeting, the SANDAG Board of Directors directed staff to develop a draft 2030 RTP by June 2002 and to complete the final 2030 RTP by February 2003. To help meet this schedule, the Board should provide policy direction regarding three basic issues: 2030 RTP goals, transportation system policies, and land use distribution policies. Interactive technology will be used at the meeting to help the Board discuss and debate the major policy issues.

KEY ISSUES AND QUESTIONS

1. Goals

The 2020 RTP was prepared based on five goals:

- The transportation system should provide for safe, equitable, and convenient travel for all persons and for the efficient movement of goods.
- The transportation system should be built and operated to minimize traffic congestion.
- The transportation system should be managed to ensure its maximum efficiency.
- The demand for transportation should be managed to minimize peak-period travel by single-occupant vehicles and encourage the use of alternative transportation modes.
- A balanced land use and transportation system should be developed which maximizes the opportunities for walking, bicycling, and using transit.

DISCUSSION

Below are broad goals drafted by staff for the 2030 RTP which expand upon goals from the 2020 RTP and incorporate recent Board policy discussions on smart growth and quality of life issues. Once finalized, performance measures will be developed for each of the goals.

- a. Are these the goals that the 2030 RTP should strive to accomplish?
- b. Are there any additional goals? Are there too many?

Mobility – *Improve the mobility of people and freight* – The transportation system should provide for convenient travel for persons and goods. The system should minimize both the time it takes to travel between home and major employment/regional activity centers as well as the total costs of travel.

Accessibility – *Improve accessibility to major employment/regional activity centers* – Jobs and other major regional activities should be accessible to all travelers within a reasonable amount of time. This includes allowing people convenient access from home to work and other major activities, as well as locating jobs and activities closer to where people live.

Reliability – *Improve the reliability of the transportation system* – The transportation system should be reliable so that travelers can expect relatively consistent travel times from day-to-day for the same trip by the same mode(s).

Equity – *Ensure an equitable distribution of the benefits among various demographic and user groups* – The transportation system should be designed to provide an equitable level of transportation service for low-income, minority, and elderly and disabled persons.

Livability – *Promote livable communities* – Transportation investments should foster compact and efficient patterns of development that maximize travel, housing, and employment choices. Public investments should encourage future growth away from rural areas and closer to existing and planned employment, regional activity centers, and public facilities. The transportation system should make it more convenient and safe to walk, bike, and ride transit.

Sustainability – *Minimize effects on the environment* – The transportation system should promote environmental sustainability by reducing smog-forming pollutants from motorized sources as well as by reducing reliance on non-renewable energy by motorized vehicles.

Efficiency – *Maximize the efficiency of the existing transportation system* – The transportation system should make the most efficient use of the existing transit and roadway networks by incorporating systems and demand management strategies. The transportation system should maximize the return on total public and private transportation investments.

2. Transportation System Policies

- a. Is the primary goal of the RTP to eliminate traffic congestion?
- b. To what extent should the RTP attempt to reduce drive alone travel? Should it focus on providing incentives for alternative modes and/or disincentives for driving alone?
- c. Should incentives be provided to local jurisdictions that are willing to intensify land uses in key transit corridors?
- d. Should the RTP focus on creating new freeway, transit, and regional arterial corridors, on improving existing corridors, or both?
- e. To what extent should transportation systems management strategies be pursued in order to postpone or obviate the need for major capital improvements?

Traffic Congestion

One of the main objectives of the 2020 RTP was to eliminate traffic congestion by reducing freeway bottlenecks. Some contend that this approach does not eliminate congestion in the long run, as new lanes fill up with more traffic over time. Many argue that we can't build our way out of congestion, and rather than trying to eliminate traffic congestion with major capital investments, we should focus on providing travelers with realistic transportation choices that can compete with the single occupant vehicle.

Reducing Drive Alone Travel/Promoting Alternative Modes

The Board should decide to what extent the 2030 RTP should attempt to reduce drive alone travel. Should we require employers to reduce the number of employees who drive alone during peak periods? Should we complete a regional network of high occupancy vehicle (HOV)/managed lanes to provide incentives to use transit and rideshare? Should we expand innovative pricing programs, such as the I-15 FasTrak™, to other major freeways throughout the region? Should we limit major capital investments only to high occupancy modes like transit and carpools and not widen roads to accommodate drive alone travelers?

The Board should determine if future investments in new capacity should focus primarily on capital improvements consistent with the Regional Transit Vision (RTV), which the Board approved at its November 16 meeting. Under the RTV, a regional HOV/managed lane network and improvements to regional arterials to implement transit priority measures would be needed in addition to increased transit services. To make transit a viable option, should we provide incentives to local jurisdictions that focus higher density development along major transit corridors? Should regional arterials that accommodate transit receive funding priority?

New Capacity

Prior RTPs have focused primarily on improving our existing freeway, transit, and regional arterial corridors, rather than identifying new corridors for development. Several major transportation corridors from previous plans have been eliminated because of environmental issues and/or community opposition. Should the RTP focus on creating new freeway and transit corridors to serve future growth? What role do regional arterials play in providing alternatives to freeways? Should regionally significant arterials be designated and expanded?

Transportation Systems Management (TSM)

While prior RTPs have included various TSM strategies, the Board should determine whether a more aggressive approach may be needed. In the 2020 RTP, it was assumed that TSM improvements could achieve a ten percent increase in system capacity. Should more priority (and funding) be placed on near-term TSM strategies like traffic signal coordination, ramp metering, traveler information, incident detection, and other traffic management systems?

3. LAND USE DISTRIBUTION POLICIES

- a. Should we provide enough housing opportunities within county limits for those who are forecasted to live and work in the San Diego region?
- b. Are these opportunities within the current general plans, or are changes necessary to the current plans?

- c. Where should these opportunities be provided – in urban and suburban areas (generally within the incorporated cities) or in rural areas (generally the unincorporated County)?
- d. Should funding priority and incentives be provided to local jurisdictions willing to accept more growth?

Three land use policy scenarios (described below) have been developed for possible analysis for the 2030 RTP:

19 Current Plans - This scenario includes the adopted general plans from each of the 18 cities and the County of San Diego. This scenario may or may not provide plan capacity for the 3.9 million people forecast for the San Diego region in the year 2030 and would require sprawl into rural areas across the entire county.

18 Current Plans with County Targets and Footprints - This scenario incorporates the adopted general plans from each of the 18 incorporated cities. In the unincorporated area, SANDAG will use population targets for each of the Community Plan and Sponsor Group Areas, plus the latest version of the distribution “footprints” under development by the County. This scenario will not provide plan capacity for the 3.9 million people forecast in the year 2030, and will likely result in lower vacancy rates, higher household sizes, and increased interregional commuting from Riverside and Orange Counties and Baja California, Mexico. Development in rural areas would be reduced compared to Current Plans.

Smart Growth – This scenario includes intensification of land uses in selected areas of the region and implementation of the Regional Transit Vision. Intensification will be modeled in the City of San Diego in accordance with its City of Villages proposal, and in the City of Chula Vista in accordance with its general plan update. In cities other than San Diego and Chula Vista, intensification will be modeled in areas identified by the jurisdictions as having a high potential for smart growth. In these cities, areas with redevelopment potential will be modeled at densities above those now shown in adopted general plans. In the unincorporated area, SANDAG will use population targets for each of the Community Plan and Sponsor Group Areas, plus the latest version of the footprints. By design, this scenario will provide the capacity for the 3.9 million people forecast in the year 2030 within county limits.

Friday, June 14, 2002

SANDAG POLICY BOARD MEETING
2030 REGIONAL TRANSPORTATION PLAN

Action: DISCUSSION

Introduction

Solutions to our region's transportation needs require a comprehensive planning effort that coordinates land use and transportation and develops an integrated, multimodal transportation system. SANDAG is currently developing the 2030 Regional Transportation Plan (RTP), which will contain specific public policies, strategies, and projects and programs aimed at meeting the diverse mobility needs of the growing San Diego region through the year 2030.

KEY ISSUES

- **Preferred Land Use Alternative**
- **Transportation System and Funding Alternatives**
- **Determining the Regionally Significant Transportation Network**

The Board should provide policy direction regarding three basic issues: (1) the preferred land use alternative for the 2030 RTP; (2) transportation system and funding alternatives; and (3) determining the extent of the regionally significant transportation network.

Board Guidance

In developing the 2030 RTP, staff has considered the SANDAG Board's past direction on a variety of land use and transportation issues. These include:

- Approving the Regional Transit Vision as a framework for the 2030 RTP
- Funding highway, transit, and regional arterial projects, and transportation demand management (TDM) strategies through the 2002 State Transportation Improvement Program (STIP)
- Support for the REGION2020 smart growth strategy and the development of a Regional Comprehensive Plan
- Approving transportation criteria for evaluating regional transit services and major highway corridors
- Support for TDM, including expanded promotion of teleworking and flexible work hours, and employer outreach and involvement

In November 2001, the Board reviewed seven draft goals for the 2030 RTP: Mobility, Accessibility, Reliability, Equity, Livability, Sustainability, and Efficiency. While all goals were considered interrelated and important, the Board ranked Mobility as the highest goal for the 2030 RTP.

Key Issues and Questions

1. Preferred Land Use Alternative

- e. Should Smart Growth be the preferred land use distribution alternative for the 2030 RTP?
- f. Is Smart Growth smart enough?

Three land use distribution scenarios¹ have been developed for the 2030 RTP: (1) Current Plans; (2) County Targets and Footprints; and (3) Smart Growth. The last several years have seen a steady increase in interregional and international commuting, as more people are opting to live in Riverside County or Baja California, Mexico while keeping their jobs here. Recognizing this trend, each of the scenarios accommodates different amounts of future housing either within the San Diego region or outside of the region's boundaries.

The magnitude of interregional and longer commute trips will depend largely on the characteristics of future land uses within the region. The location of housing and jobs directly influences the demand for transportation and the performance of the transportation system. In the year 2030, the region's projected population of 3.8 million people will need about 1.4 million housing units. About 1 million of these units already existed in 2000, leaving 400,000 future units that could be influenced by local land use policies. Of the three land use scenarios, Smart Growth accommodates the most housing units within the region (90 percent of the 400,000 future units), while County Targets and Footprints accommodates the least (82 percent). The Current Plans scenario falls between the other two in terms of housing units, but also consumes the most land and results in the most sprawl into the rural, unincorporated area.

Smart Growth – the Preferred Land Use Alternative?

A baseline transportation network was initially tested against each of the three land use scenarios to evaluate the effects of land use plans on regional travel patterns and use of transit. The evaluation showed fairly small numeric differences in the performance measures across the three land use scenarios. For example, there was less than a minute difference in average travel time per trip in the year 2030 across the three land use scenarios.

Of the three scenarios, however, Smart Growth generally performed the best, resulting in fewer interregional trips, shorter commute trips, and greater accessibility to and use of transit. By providing more multi-family housing within the region that is close to transit centers, Smart Growth would result in fewer vehicle miles traveled, fewer accidents and fatalities, less air pollution, fewer acres of vacant land consumed, lower home prices, and less overcrowding than the other two scenarios.

The critical policy issues facing the region cannot be addressed merely by comparing the numbers. Rather, we must ask ourselves what kind of a place do we want the San Diego region to be in the year 2030 (and beyond)? There is broad agreement that the preservation of our quality of life is our most important regional public policy objective. The land use scenario that we select will ultimately determine the path

¹ The three land use distribution scenarios include: (1) Current Plans – the adopted plans of the 19 local jurisdictions; (2) County Targets and Footprints – the adopted plans of the 18 cities with the proposed population targets and development footprints in the unincorporated area; and (3) Smart Growth – an alternative land use scenario based on the principles of SANDAG's smart growth strategy. The Smart Growth scenario includes the proposed general plan updates by the Cities of San Diego and Chula Vista and the County of San Diego targets and footprints, as well as intensified and mixed use development in the other local jurisdictions.

we've chosen for the San Diego region's future, and will be used for housing and other regional planning activities. Should Smart Growth be the preferred land use distribution alternative for the 2030 RTP?

Is Smart Growth Smart Enough?

The current Smart Growth alternative is clearly a step in the right direction, but there is room for improvement. The smart growth focus areas included in the alternative only minimally impacts the region's transportation system performance. The Smart Growth alternative does not go far enough with compatible development in the right locations to influence transportation patterns in a significant way. Except for certain areas, residential areas are largely segregated from major job centers, contributing to longer, more congested commutes, and hampering the opportunity of achieving an efficient transit system. Adding more smart growth focus areas over time could indeed improve future transportation system performance.

Staff is currently developing a simulation of the effects of maximizing smart growth development. This simulation will locate more of our future residential and employment growth close to public transit stations and integrate more housing and mixed uses with employment areas. This simulation is intended to evaluate the impacts different levels of smart growth have on the region's transportation system, livability, and quality of life. The results of the simulation will be brought back to the Board at a future meeting.

The success of Smart Growth will ultimately be measured by how well local jurisdictions incorporate its principles and proposed compatible land uses into adopted local plans. This process will be facilitated through iterative, ongoing updates of the local plans, the RTP, and the Regional Comprehensive Plan.

2. Transportation System and Funding Alternatives

- f. Is it realistic to try to reduce traffic congestion with the 2030 RTP? Should we focus on maximizing mobility through travel choices instead? Can we do both?
- g. Should the 2030 RTP focus primarily on existing and future transportation improvements in urban and suburban areas that adopt compatible land use strategies, such as higher residential and employment densities?
- h. How much should the 2030 RTP invest in systems management and demand management strategies and focused improvements to regional arterials?
- i. What are the roles and responsibilities of the private and public sectors in ensuring better mobility?

Traffic congestion continues to be the number one quality of life complaint among residents in the San Diego region, and relieving traffic congestion has been a key issue with past RTPs. Yet the rate of travel over the past 20 to 30 years has consistently outpaced the growth in population and employment. The SANDAG Board, as well as the two transit districts, have directed that the 2030 RTP help mitigate future growth and traffic congestion through a significant increase in transit ridership. The Regional Transit Vision (RTV) is the region's aggressive response to help achieve a double-digit transit mode share during peak periods. Transit's detractors, however, argue that roadway improvements are the most cost effective way to relieve traffic congestion, and that future funding should be invested almost exclusively in widened and new highways and local streets and roads.

Alternatives Analysis – “Extreme” Network Scenarios

To help shed light on this ongoing debate, three initial transportation network scenarios were developed for the 2030 RTP: (1) Highway Extreme; (2) Carpool Extreme; and (3) Transit Extreme. Each of these scenarios, which are depicted in Attachments 1 to 3, was modeled with the Smart Growth land use scenario. The three “extreme” networks were developed to illustrate “what if” scenarios, and are not being recommended individually as solutions for the 2030 RTP.

Each network scenario invests the same amount of funding -- the \$26 billion estimated to be available in the Reasonably Expected Revenue scenario – into the existing transportation system.² Also assumed is that the flexible funding sources, such as *TransNet*, STIP, and federal RSTP and CMAQ revenues, can be used entirely for either highway or transit improvements. Pie charts in Attachments 1 to 3 show the split in how revenues would be used between highway capital, transit capital, and transit operating costs under each scenario.

An analysis of the three “extreme” networks against a “no build” scenario was completed to see how well each network performed across the broad goals of the 2030 RTP. Results of this alternatives analysis are depicted in Attachment 4. As with the analysis of land use scenarios, the numeric differences between the transportation network analysis results are relatively small. Improving the regional transportation system either by focusing on transit or roadway improvements results in similar measures of Mobility and Accessibility at the regional level.

Of the “extreme” networks, the Carpool Extreme performed the best in regional Mobility, Accessibility, and Reliability measures; it includes the shortest average trip times, the greatest improvements in work and school trips accessible within 30 minutes, and greatest reduction in traffic congestion, but does not achieve a double-digit peak period mode share for transit. The Highway Extreme scenario performed about the same or slightly worse than the Carpool Extreme across the same measures.

The Transit Extreme performs the best in regional Livability and Sustainability measures; it includes the highest peak period transit mode share (15 percent) and results in the fewest vehicle miles traveled, and fewest accidents and fatalities, least smog-forming pollutants compared to the other two “extreme” scenarios. Notably, given the revenue available in the Reasonably Expected Revenue scenario, none of the “extreme” scenarios completely eliminate peak period traffic congestion.

Should the 2030 RTP be focused on *reducing* traffic congestion? Or, should we instead focus on providing more *travel choices*, particularly in our major regional corridors during the rush hours when most of traffic congestion occurs? Can we do both?

The Mobility Alternative

Using the analyses of the “extreme” network scenarios, staff has developed an initial Mobility Alternative (Attachment 5), along the following concepts:

- Focus on moving people, not just vehicles
- Provide competitive travel choices to major job centers during peak periods

² The Reasonably Expected Revenue scenario is based on a continuation of all existing local, state, and federal transportation revenue sources projected to the year 2030 consistent with recent growth trends. In addition, it assumes the passage of an extension of the *TransNet* program through 2030, as well as increases in the state and federal gas tax rates (or equivalent revenue increases) based on the average annual rate of increase in the gas tax over the last 20 years. More optimistic assumptions also are included for state and federal discretionary funds.

- Direct transit investment to areas that incorporate smart growth by providing the needed transportation infrastructure to support that development
- Focus transportation investments primarily in urban and suburban areas and away from rural areas

The initial Mobility Alternative is an attempt to provide the beneficial results across all of the seven broad goals of the 2030 RTP: Mobility, Accessibility, Reliability, Efficiency, Livability, Sustainability, and Equity. The Mobility Alternative includes an extensive high occupancy vehicle (HOV)/managed lane system throughout the region, including direct HOV to HOV connectors and value pricing on major managed lane facilities on I-5, I-15, and I-805. This HOV/managed lane system directly supports the rich regional network of 18 new Red and Yellow Car services³, which helps make transit trip times to our major employment areas more competitive with auto travel times. The Mobility Alternative also includes key border projects, such as SR 905 and SR 11, and proposes to complete major *TransNet* projects such as SR 76 and regional transit service in the Mid-Coast corridor. Missing freeway to freeway connectors in the urban areas also are included.

The Board should provide direction on whether the proposed regional transit and highway corridor improvements shown in the initial Mobility Alternative (Attachment 5) should be included in the Mobility Alternative. A revised Mobility Alternative will be developed based on Board direction and will be tailored to support the preferred land use alternative for the 2030 RTP.

Should the 2030 RTP focus primarily on providing transportation improvements in urban and suburban areas that accommodate existing and future compatible land use strategies, such as higher residential and employment densities and mixed uses? Should we exclude major transportation capacity improvements in rural and outlying areas? Do improvements to facilities at or near our borders encourage increased sprawl and interregional commuting?

Alternative Mobility Strategies

The initial Mobility Alternative focuses primarily on capital improvements, and spends nearly the entire \$26 billion on major transit and highway projects. Systems management and demand management strategies, as well as focused improvements to our system of regional arterials, also can play a role in improving regional mobility. As an assumption in the Mobility Alternative, slightly less than one-tenth of the total revenue has been reserved for regional management and arterial improvements.⁴ Over the past 10 years, about 17 percent of regional funds (e.g. STIP, RSTP, CMAQ, *TransNet*, etc.) have been programmed for systems and demand management, regional arterials, and non-motorized projects (Attachment 6).

The Board should provide direction on what levels of investment in these alternative mobility strategies should be included in the 2030 RTP. Should more priority (and funding) be placed on low cost, near-term transportation systems management strategies like traffic signal coordination, ramp metering, traveler information, incident detection, and other traffic management systems? What role does the regional arterial system play?

What are the roles and responsibilities of the private and public sectors in ensuring better mobility? Should employers be mandated or somehow rewarded to implement flex hours, telework programs, and financial incentives to reduce the number of employees who drive alone during peak periods? Are the

³ Red Car and Yellow Car services are high-end transit services that are fast and frequent and have limited stops. The Trolley is an example of an existing Red Car service, and the Coaster is an example of an existing Yellow Car service.

⁴ Alternative mobility strategies have not currently been included in the modeling of the mobility alternative.

public sector's responsibilities primarily in outreach and education, or should it provide financial incentives and disincentives to encourage use of transit, ridesharing, and reducing peak period travel?

3. Determining the Regionally Significant Transportation Network

- a. Which transit services should be included in the Regionally Significant Transportation Network? Should all proposed Red and Yellow Car services be considered regionally significant?
- b. Which regional arterials should be part of the Regionally Significant Transportation Network?

The Board has supported defining a Regionally Significant Transportation Network (RSTN) as part of the 2030 RTP. This network would include the implementation of regionally significant transportation projects. These projects would be SANDAG's highest priority projects for funding and for which the board of the new regional agency, if created, could override local objections to implement these projects.

While there may be general agreement that major freeways and highways are part of the RSTN, the Board should provide direction on defining which transit services and regional arterials should be included in the network. Existing Trolley and Coaster rail services are certainly regionally significant, but should all Red and Yellow Car services included in the 2030 RTP also be considered regionally significant and part of the RSTN?

The current 2020 RTP has a defined Regional Arterial System (RAS) that includes more than 120 arterials that cover over 600 miles. The current Congestion Management Program (CMP) roadway network includes only 11 CMP arterials that cover over 100 miles. The arterial system included in the RSTN should probably be less inclusive than those in the RAS, but a richer system than CMP network.

In March 2002, the Transportation Committee approved criteria to update the RAS for the 2030 RTP. These criteria focus on including arterials in the RAS that complete critical links, serve major population, employment, and other major activity centers, accommodate high traffic volumes, and accommodate regional transit services.

It is recommended that these criteria be used as a starting point to develop the arterial component of the RSTN. In addition to these criteria, the arterials included the RSTN should probably focus on longer, continuous facilities that facilitate higher volume, regional trip-making and provide alternative routes to congested highway corridors.

Next Steps

The current 2030 RTP schedule calls for a preliminary draft 2030 RTP at the August 2, 2002 Board meeting. The full draft, which includes the revenue-constrained plan required by state and federal law, would be issued for public review and comment in September/October 2002, and the final 2030 RTP would be presented to the Board for adoption by February/March 2003.

*The attachments to this item may be obtained by contacting
SANDAG's Clerk of the Board at (619) 595-5602.*

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES	CURRENT (2000)	"NO BUILD" (2030)	MOBILITY 2030	REVENUE CONSTRAINED (2030)
<i>Average travel time (peak periods) by mode for selected corridors (in minutes door-to-door)</i>				
Oceanside to Downtown San Diego				
➤ Carpool	66	97	49	54
➤ Transit (walk access)	91	91	81	90
➤ Transit (auto access)	72	73	66	74
➤ Auto	73	102	69	79
Escondido to Kearny Mesa				
➤ Carpool	34	66	30	31
➤ Transit (walk access)	117	165	51	56
➤ Transit (auto access)	132	162	48	48
➤ Auto	40	87	45	46
Escondido to Carlsbad				
➤ Carpool	24	38	26	28
➤ Transit (walk access)	75	93	50	75
➤ Transit (auto access)	72	90	44	75
➤ Auto	28	41	31	32
El Cajon to Downtown San Diego				
➤ Carpool	33	38	28	36
➤ Transit (walk access)	84	84	62	86
➤ Transit (auto access)	60	61	56	63
➤ Auto	35	40	36	39
Mid-City San Diego to Sorrento Valley				
➤ Carpool	29	43	24	24
➤ Transit (walk access)	89	100	39	64
➤ Transit (auto access)	67	76	38	64
➤ Auto	32	47	32	36
Chula Vista to Sorrento Valley				
➤ Carpool	44	66	33	33
➤ Transit (walk access)	103	106	66	99
➤ Transit (auto access)	88	89	55	95
➤ Auto	47	69	43	50
San Ysidro to Downtown San Diego				
➤ Carpool	30	39	28	31
➤ Transit (walk access)	46	46	46	46
➤ Transit (auto access)	44	44	44	44
➤ Auto	31	40	32	35
Average daily trip time per trip (in minutes) (1)	15	16	15	15
Work trip average daily travel time (in minutes) (2)	24	28	25	25
Work trip average travel speed (in m.p.h) (3)				
Work trip average travel speed (peak periods) per auto trip	29	22	25	27
Work trip average travel speed (peak periods) per transit trip	10	10	14	12
Work trip average travel speed (peak periods) per carpool trip	31	23	34	32

* Forecast conditions in 2030

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES		CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
ACCESSIBILITY					
Percent of work and higher education trips accessible in 30 minutes in peak periods	(1)	71%	60%	67%	66%
Percent of work and higher education trips accessible in 30 minutes in peak periods by mode	(2)				
Percent of work and higher education trips accessible in 30 minutes by auto		75%	63%	72%	70%
Percent of work and higher education trips accessible in 30 minutes by transit		8%	7%	12%	9%
Percent of work and higher education trips accessible in 30 minutes by carpool		79%	66%	84%	80%
Percent of non-work related trips accessible in 15 minutes	(3)	69%	65%	66%	66%
Percent of non-work related trips accessible in 15 minutes by mode	(4)				
Percent of non-work trips accessible in 15 minutes by auto		75%	71%	71%	71%
Percent of non-work trips accessible in 15 minutes by transit		3%	2%	5%	3%
Percent of non-work trips accessible in 15 minutes by carpool		78%	74%	76%	75%

* Forecast conditions in 2030

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES	CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
EQUITY				
Average travel time per person trip (in minutes) (1)				
Low income population - Average travel time	N/A	16	16	16
Non-low income population - Average travel time	N/A	16	15	15
Minority population - Average travel time	N/A	15	15	15
Non-minority population - Average travel time	N/A	16	15	15
Percent of work and higher education trips accessible in 30 minutes in peak periods (2)				
Low income population	N/A	64%	68%	67%
Non-low income population	N/A	59%	67%	66%
Minority population	N/A	61%	69%	69%
Non-minority population	N/A	59%	66%	65%
Percent of non work related trips accessible in 15 minutes (3)				
Low income population	N/A	61%	60%	60%
Non-low income population	N/A	66%	66%	67%
Minority population	N/A	67%	67%	67%
Non-minority population	N/A	64%	65%	66%

* Forecast conditions in 2030

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES	CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
RELIABILITY				
Projected number of accidents/ fatalities per day (1)				
	88	129	130	130
Congested Vehicle Miles of Travel (*) (2)				
Percent of total travel in congested conditions (peak periods)	29%	45%	25%	29%
Percent of total travel in congested conditions (all day)	20%	38%	17%	22%

* Non-recurrent congestion due to incidents, breakdowns, etc. is not included

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES		CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
LIVABILITY					
Percent of homes within 1/2 mile of a transit stop	(1)	63%	58%	63%	61%
Percent of jobs within 1/4 mile of a transit stop	(2)	39%	36%	45%	40%
Work trip mode split (peak periods)	(3)				
Drive Alone		78%	79%	74%	76%
Carpool		12%	12%	12%	13%
Transit		5%	4%	10%	7%
Bike/Walk		5%	5%	4%	4%

* Forecast conditions in 2030

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES		CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
SUSTAINABILITY					
Smog forming pollutants in tons per day	(1)	241.1	43.7	43.0	43.3
Total on-road fuel consumption (all day)	(2)	3,931,000	5,771,000	5,907,000	5,901,000
Systemwide VMT (all day)	(3)	74,698,000	109,657,000	112,234,000	112,123,000
Transit Passenger Miles (all day)	(4)	1,743,000	1,994,000	5,245,000	3,546,000
Gross acres of constrained lands consumed for transit and highway infrastructure (2000 to 2030)	(5)	N/A	N/A	138	87

* Forecast conditions in 2030

TABLE TA 4.1—2030 REGIONAL TRANSPORTATION PLAN PERFORMANCE MEASURES*

GOALS AND PERFORMANCE MEASURES	CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
EFFICIENCY				
Out-of-pocket user costs per trip	\$1.70	\$1.62	\$1.75	\$1.73
Total 30-year public and private travel costs per trip	\$1.80	\$1.66	\$1.88	\$1.81

* Forecast conditions in 2030

Methodology to Estimate Performance Measures

Mobility

- (1) Average daily travel time per trip = person hours of travel divided by person trips
- (2) Work trip daily average travel time = work trip person hours of travel divided by work trips
- (3) Work trip average travel speed = work trip travel time divided by work trip vehicles miles traveled (VMT) (peak periods by mode: auto, transit, and carpool)

Accessibility

- (1) Percent of work and higher education trips accessible in 30 minutes in peak periods = work and college trips within 30 minutes divided by total work and college trips
- (2) Percent of work and higher education trips accessible in 30 minutes in peak periods by mode = work and college trips within 30 minutes by mode divided by total work and college trips
- (3) Percent of non-work related trips accessible in 15 minutes = non-work related trips within 15 minutes divided by total non-work related trips (all day)
- (4) Percent of non-work related trips accessible in 15 minutes by mode = non-work related trips within 15 minutes by mode divided by total non-work trips (all day)

Equity

These measures compare low income to non-low income populations and minority to non-minority populations.

- (1) Average daily travel time per trip = person hours of travel divided by person trips
- (2) Percent of work and higher education trips accessible in 30 minutes in peak periods = work and college trips within 30 minutes divided by total work and college trips
- (3) Percent of non-work related trips accessible in 15 minutes = non-work related trips within 15 minutes divided by total non-work related trips (all day)

Reliability

- (1) Projected number of accidents and fatalities = VMT by facility type (freeway, prime arterial, other) and by area type (urban, suburban, rural) multiplied by basic average accident rate
- (2) Congested Vehicle Miles of Travel = VMT at Level of Service (LOS) E and LOS F (Volume/Capacity > 0.85) divided by Total VMT (peak periods and all day)

Livability

- (1) Percent of homes within ½ mile of a transit stop = number of homes within ½ mile of a transit stop divided by total number of homes
- (2) Percent of jobs within ¼ mile of a transit stop = number of jobs within ¼ miles of a transit stop divided by total number of jobs
- (3) Work trip mode split = percent of work trips by mode (peak periods)

Sustainability

- (1) Smog forming pollutants in tons per day = daily tons of Reactive Organic Gases plus daily tons of Nitrogen Oxides
- (2) Total on-road fuel consumption = vehicle miles traveled divided by on-road fleet fuel economy (Caltrans Direct Travel Impact Model)
- (3) Systemwide VMT = total sum of vehicles on roadway segment multiplied by length of roadway segment (all day)
- (4) Transit Passenger Miles = total sum of transit passengers on transit segment multiplied by length of transit segment (all day)
- (5) Gross acres of constrained lands consumed for transit and highway infrastructure (2000 to 2030)

Efficiency

- (1) Total 30-year public and private costs per trip = total 30-year capital, operating and user costs divided by total trips

**TABLE TA 4.2—2030 REGIONAL TRANSPORTATION PLAN
NETWORK CHARACTERISTICS***

SYSTEM CAPACITY	CURRENT (2000)	NO BUILD	MOBILITY	REVENUE CONSTRAINED
Network Miles				
Total freeway lane miles	2,205	2,205	3,039	2,788
Carpool (freeway) lane miles	27	27	490	340
Transit revenue miles	92,480	92,480	217,222	123,284

* Forecast conditions in 2030

**TABLE TA 4.3—2030 REGIONAL TRANSPORTATION PLAN
MODE SHARE IN PEAK PERIODS FOR SELECTED SCREENLINES***

SCREENLINES	CURRENT (2000 NETWORK & 2000 POPULATION)	NO BUILD (2000 NETWORK & SMART GROWTH)	BASELINE (BASELINE NETWORK & SMART GROWTH)	PROJECT (MOBILITY NETWORK & SMART GROWTH)	TRANSIT EXTREME (TRANSIT EXTREME NETWORK & SMART GROWTH)	HIGHWAY EXTREME (HIGHWAY EXTREME NETWORK & CURRENT PLANS)	HIGHWAY EXTREME SMART GROWTH (HIGHWAY EXTREME NETWORK & SMART GROWTH)	REVENUE CONSTRAINED (REVENUE CONSTRAINED NETWORK & SMART GROWTH)
1 I-5 Palomar Airport								
Drive Alone	65,213	87,963	83,270	93,315	80,052	100,372	99,457	92,096
Carpool	37,116	49,442	47,383	57,566	49,937	55,219	54,602	59,520
Transit	1,719	1,671	1,556	4,550	9,116	5,273	5,428	3,343
Total	104,048	139,076	132,209	155,431	139,105	160,864	159,487	154,959
2 SR 78 Vista								
Drive Alone	62,972	81,771	75,893	76,690	73,222	78,688	82,155	74,889
Carpool	22,615	30,737	29,880	34,397	29,645	32,390	32,503	28,289
Transit	1,372	1,085	4,448	11,425	13,051	8,344	8,612	7,063
Total	86,959	113,593	110,221	122,512	115,918	119,422	123,270	110,241
3 I-15 Rancho Bernardo								
Drive Alone	77,341	99,782	120,416	117,589	117,910	109,750	107,476	120,681
Carpool	30,886	46,368	63,209	63,331	64,006	59,753	57,509	61,867
Transit	461	395	424	12,397	11,968	5,509	5,193	5,754
Total	108,688	146,545	184,049	193,317	193,884	175,012	170,178	188,302
4 I-5 North of I-805 merge								
Drive Alone	106,007	130,824	149,114	158,274	140,936	172,480	164,278	155,068
Carpool	50,899	65,213	68,501	82,135	74,602	78,394	76,154	81,252
Transit	2,044	2,304	2,035	15,289	18,721	8,037	7,696	6,510
Total	158,950	198,341	219,650	255,698	234,259	258,911	248,128	242,830
5 I-15 Mira Mesa								
Drive Alone	131,086	151,033	154,144	154,051	151,638	148,318	149,367	159,345
Carpool	47,486	69,094	70,817	70,958	73,586	73,822	71,026	74,155
Transit	1,557	1,589	2,169	19,515	20,488	9,457	8,882	11,896
Total	180,129	221,716	227,130	244,524	245,712	231,597	229,275	245,396
6 I-5 Mission Bay								
Drive Alone	99,005	112,264	114,573	122,784	104,315	126,505	127,911	111,115
Carpool	37,027	45,365	47,513	51,319	43,416	51,866	52,464	37,973
Transit	6,196	6,952	7,011	18,596	20,587	26,910	26,624	23,338
Total	142,228	164,581	169,097	192,699	168,318	205,281	206,999	172,426

SCREENLINES	CURRENT (2000 NETWORK & 2000 POPULATION)	NO BUILD (2000 NETWORK & SMART GROWTH)	BASELINE (BASELINE NETWORK & SMART GROWTH)	PROJECT (MOBILITY NETWORK & SMART GROWTH)	TRANSIT EXTREME (TRANSIT EXTREME NETWORK & SMART GROWTH)	HIGHWAY EXTREME (HIGHWAY EXTREME NETWORK & CURRENT PLANS)	HIGHWAY EXTREME SMART GROWTH (HIGHWAY EXTREME NETWORK & SMART GROWTH)	REVENUE CONSTRAINED (REVENUE CONSTRAINED NETWORK & SMART GROWTH)
7 I-8/SR 94 west of SDSU								
Drive Alone	214,031	251,736	266,636	225,296	245,576	256,717	256,854	227,098
Carpool	74,878	95,518	101,899	89,186	93,761	101,407	100,759	87,127
Transit	27,832	29,462	37,545	70,272	89,268	50,839	48,537	59,457
Total	316,741	376,716	406,080	384,754	428,605	408,963	406,150	373,682
8 I-805 Chula Vista								
Drive Alone	79,596	93,765	85,857	94,212	98,649	103,264	101,718	97,072
Carpool	34,018	40,212	39,958	50,455	50,558	47,918	46,788	59,854
Transit	614	389	408	30,245	25,257	824	877	14,108
Total	114,228	134,366	126,223	174,912	174,464	152,006	149,383	171,034
9 I-5 National City								
Drive Alone	95,896	129,800	120,615	115,390	104,156	124,496	125,900	115,044
Carpool	32,791	51,046	47,846	46,090	40,253	48,931	50,508	34,330
Transit	35,864	48,508	51,086	46,914	53,745	61,476	58,651	56,005
Total	164,551	229,354	219,547	208,394	198,154	234,903	235,059	205,379
10 I-5/I-805 South Bay								
Drive Alone	146,532	209,049	182,374	186,465	181,584	191,216	194,423	187,763
Carpool	63,048	91,865	88,591	94,013	91,114	92,669	93,235	93,862
Transit	34,200	49,523	51,431	70,815	61,328	59,035	56,507	62,772
Total	243,780	350,437	322,396	351,293	334,026	342,920	344,165	344,397
11 SR 52 Kearny Mesa								
Drive Alone	60,547	67,666	67,829	70,942	65,803	82,633	79,777	70,129
Carpool	21,475	27,002	27,833	34,104	36,950	34,320	32,566	31,097
Transit	979	859	1,740	21,959	20,017	1,472	1,575	1,577
Total	83,001	95,527	97,402	127,005	122,770	118,425	113,918	102,803

* Forecast conditions for 2030

NOTE: See attached map for screenline location.



