FINAL

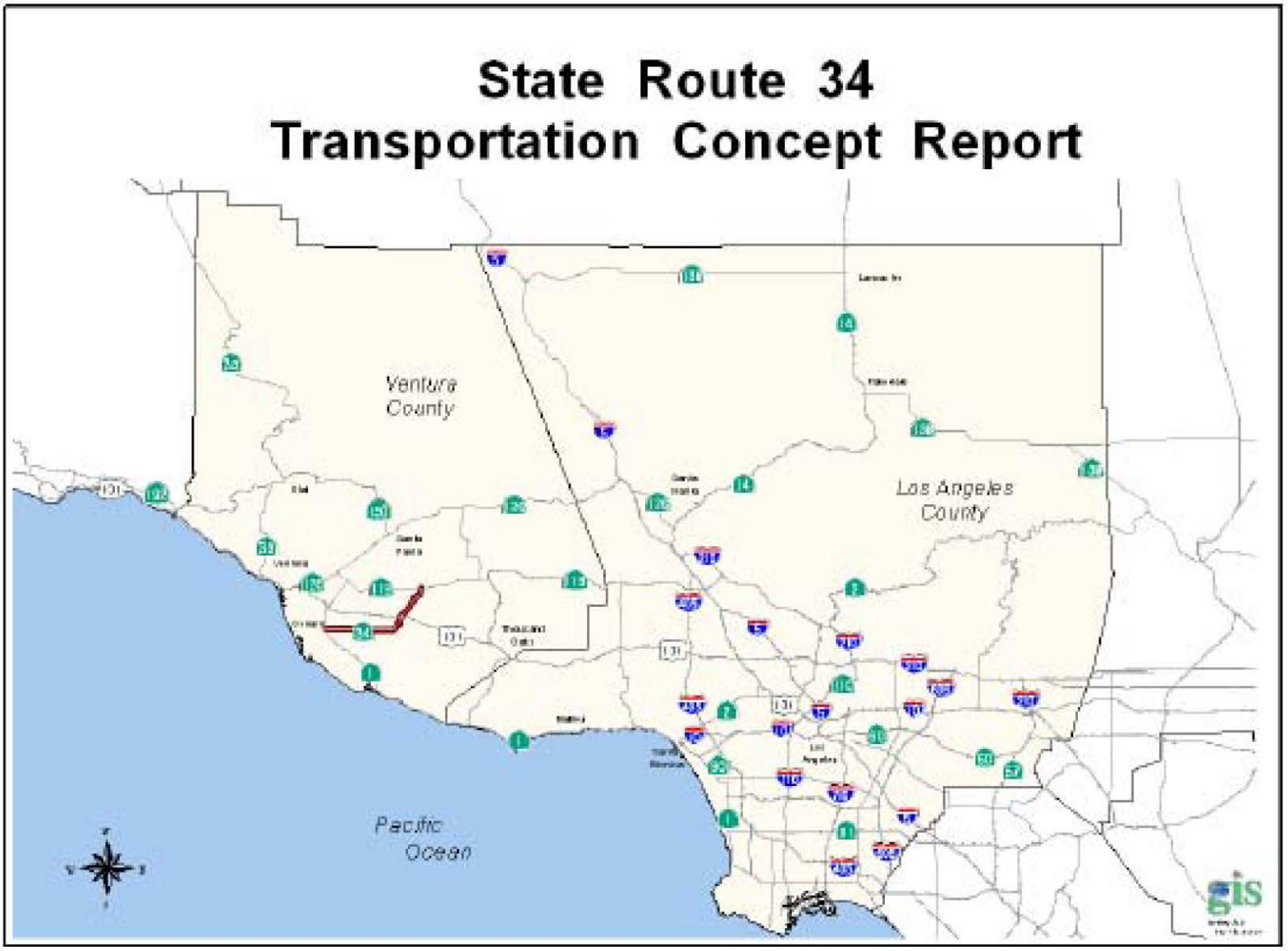
Transportation Concept Report

California Department of Transportation
District 7
Office of Advance Planning
System Planning Branch

Caltrans

December 2003

State Route 34
Transportation Concept Report



TRANSPORTATION CONCEPT REPORT

STATE ROUTE 34

P.M. 4.295 – 17.659

PREPARED BY DISTRICT 7 DIVISION OF PLANNING

December 2003

CALTRANS DISTRICT 07 APPROVAL

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TRANSPORTATION CONCEPT REPORT

STATE ROUTE 34

TABLE OF CONTENTS

I. Disclaimer

This Transportation Concept Report (TCR) is a planning document prepared by the California Department of Transportation (Caltrans) based on the data available up to the date of its publication.

This TCR identifies the present geometric and operational characteristics of the transportation facility for which it was prepared, the anticipated demand in 20 years, and the suggested improvements to satisfy the future demand.

The future improvements to the transportation facility identified in this TCR are recommendations for study purposes and shall not be binding upon the State of California and/or Caltrans for implementation. Caltrans, in collaboration with local and regional transportation agencies, and upon conduct of further studies and availability of funds, may proceed with implementation of any or all of the identified future improvements or may select improvements in lieu of those identified in this document. Any identified improvements should not be construed as being 100% publicly funded.

II. DOCUMENT SUMMARY

This Transportation Concept Report (TCR) is divided into twelve sections, three of the sections, VIII, X and XI are the heart of the document. They include detailed segment summaries (Section VIII), a list of suggested improvements (Section X) and Transportation Concept and Conclusions (Section XI). All of the other sections provide a context for analyzing the State Route 34 (SR-34) corridor and document the data resources studied.

The basic aim of this document is to suggest a configuration for SR-34 that will meet projected demands within a framework of programming, implementation constraints and regional policy.

The recommended concept for route 34 is Alternative Concept #2, which involves adding 1 conventional lane in each direction in both segments.

Segment	Limits	Existing Facility	Alternative Concept #1	Alternative Concept #2	Maintain Current D/C	LOS "D" Attainment
1	Rte. 1 to Rte. 101	1C	2C	2C	2C	2C
2	Rte. 101 to Rte. 118	1C	2C	2C	2C	3C

***C = Conventional**

III. DOCUMENT PURPOSE

This Transportation Concept Report (TCR) is an internal Caltrans planning tool intended to provide an initial look at developments within the State Route 34 (SR-34) corridor over the next twenty years. Its primary focus is to identify "need", which is defined as the difference between forecast demand and capacity. It analyzes this need in three primary ways: 1) it documents current conditions; 2) it contrasts projected future demand with planned facilities (capacity); and 3) it proposes future development alternatives to address the shortfalls between demand and capacity.

As an initial step in the planning process, its observations and conclusions serve as a reference for more complex and specific reports such as Feasibility Studies, Corridor Studies or Regionally Significant Transportation Investment Studies (formerly referred to as Major Investment Studies), and Project Studies.

This TCR is composed of a series of proposed alternatives for the development of SR-34. The alternatives are included in the Segment Summaries, Section VIII. Although the recommended alternative has not been included in the current 2001 SCAG RTP or the draft 2004 RTP, it has been included on SCAG's list of unconstrained projects. The Attain LOS "D" alternative is based on the number of "lane equivalents" necessary to reach LOS "D"--by definition, the lowest adequate level of service rating.[1] The Ultimate Transportation Corridor (UTC) alternative is considered the maximum reasonable development of a highway facility within the corridor. The UTC is intended to identify potential right of way needs.

1. Please note: The Attain LOS "D" alternative is provided as a way to illustrate future congestion and capacity needs and **not as a suggestion for programming.**

SYSTEM PLANNING:

An Overview

PURPOSE:

System Planning provides the basis for an effective transportation decision-making process, which is responsive to the public demand for mobility of people and goods.

OBJECTIVE:

- Identify, analyze and display transportation problems on a consistent statewide basis to enable fully informed decisions on the programming of system improvements and on system operations and maintenance.
- Allow department management to make short-term decisions that are consistent with long-term objectives.
- Communicate with the public on the levels of transportation service, which the state can or cannot provide.

PRODUCTS:

1) District System Management Plan (DSMP)

The DSMP is a strategic and policy-planning document that presents how the district envisions the transportation system will be maintained, managed and developed over the next twenty years and beyond. It is developed in partnership with regional and local transportation planning agencies, congestion management agencies, transit districts and air quality planning agencies. It considers the entire transportation infrastructure, regardless of jurisdiction, and addresses all modes and services, which move people, services, and goods. As a management tool, it informs

federal, state, regional and local agencies, the public and the private sector of the district's plan for developing, managing and maintaining the transportation system.

2) Route Concept Report (RCR), Transportation Concept Report (TCR) or Corridor Study

RCR's, TCR's and Corridor Studies analyze a route or corridor and establish a twenty-year transportation planning concept. They identify modal options and various needs to accomplish the twenty-year concept. The concept analysis considers operating level of service (LOS), modal facility type, vehicle occupancy of all modes and capacity needs. The studies identify "unconstrained" needs.

3) Transportation System Development Plan (TSDP)

The TSDP identifies transportation system improvements for the various options analyzed in the DSMP and TCR's. It covers the four-years immediately following the five-year STIP period and uses high and low funding scenarios. It provides a priority list for use in programming on- and off-system improvements.

Document Schedule:

DSMP - Generally, the same as the SCAG Regional Transportation Plan.

TCR's - Ongoing; updated as conditions change.

TSDP – Generally precedes STIP priority list; due from the District by March 15th of odd numbered years.

The Legislative Mandate

Long-Term System Planning

Added: Statutes of 1999, Chapter 2.5

65086 (a) The Department of Transportation shall carry out long-term state highway system planning to identify future highway improvements and new transportation corridor through route concept reports.

(b) The department, in conjunction with transportation planning agencies, shall develop specific project listing for the initiation of project studies reports resulting in project candidates for inclusion in regional transportation plans and the state transportation improvement program as required by Section 14529.

IV. Regional Threshold Criteria and Policies

I. CALTRANS: California Transportation Plan:

1) Provide safety and security
2) Maintain system/investment
3) Manage network as a seamless intermodal system
4) Develop airport ground access

II. CALTRANS: District System Management Plan:

1) District 7 has established **LOS F0** with freeway speeds of approximately 25 mph lasting from 15 minutes to 1 hour as the minimum acceptable LOS for the Freeway System.

III. 1997 Final Proposed Congestion Management Plan

LOS "E" unless base year is lower

III. SCAG 2001 Regional Transportation Plan Regional Goals

1) Improve transportation mobility for all people and enhance the movement of goods within the subregions and the Region.
2) Ensure that transportation investments are cost-effective, protect the environment (including improving air quality), promote energy efficiency and enhance the quality of life.
3) Serve the public's transportation needs in safe, reliable and economical ways that also meet the individual needs of those who depend on public transit.
4) Develop regional solutions that complement the subregional transportation systems and the land-use plans of communities within the subregions.

5) Promote transportation strategies that are innovative and market-based, encourage new technologies and support the Southern California economy.
6) Encourage land-use growth patterns that enhance the livability of our communities and maximize the productivity of transportation investments.

IV. TEA 21--Generally:

1) Maintain TDM
2) Provide for intelligent transportation systems (ITS)
3) Expands funding to include intermodal terminals at seaports

V. ROUTE DESCRIPTION

Pursuant to Statutes relating to the California Department of Transportation (Caltrans), SR-34 is from SR-1 (Pacific Coast Highway), between Point Mugu and the City of Oxnard, to SR-118 near Somis.

PURPOSE OF ROUTE:

The purpose of Route 34 is shown in the following table:

Segment	Description	Route Purpose	Facility Type
1	From Route 1 to Route 101	Local commute facility/ commercial/agricultural	Conventional Hwy.
2	From Route 101 to Route 118	Local commute facility/ commercial/agricultural	Conventional Hwy.

FUNCTIONAL CLASSIFICATION:

For the purpose of this analysis, Route 34 is examined in 2 segments based on traffic volumes and connections to freeway interchanges. The criteria used for segmentation and functional class for each segment is shown in the following table:

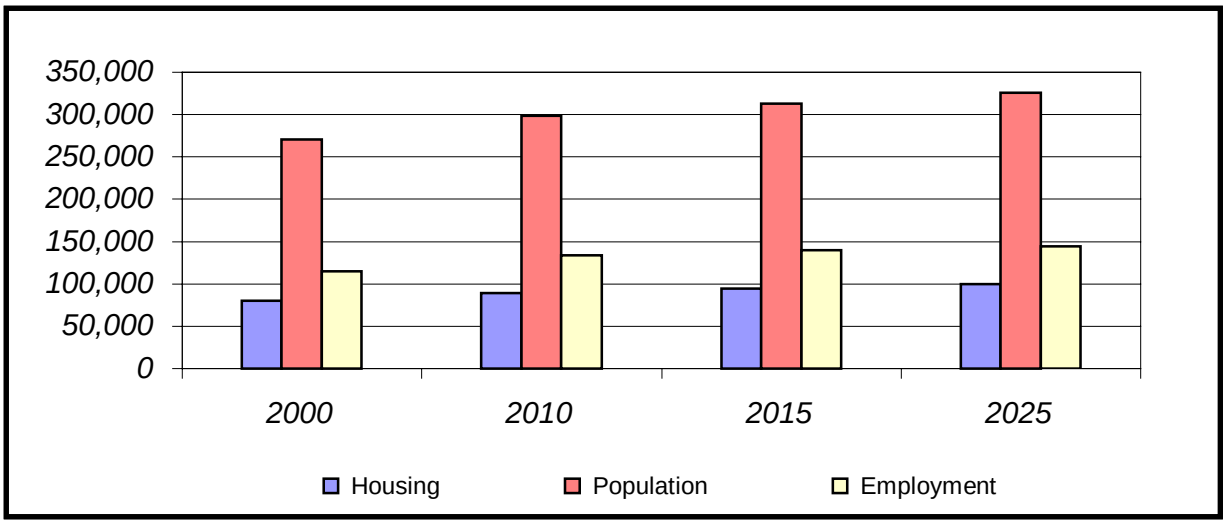
Segment	Criteria	Functional Classification
1	State Highway to State Highway	P1M-Extension of rural MA into Urban
2	State Highway to State Highway	P1M-Extension of rural MA into Urban

While the majority of the route is classified as P1M (Extension of rural minor arterial into an urban area), small rural areas within each segment are classified as MA (Minor Arterial).

VI. SOCIO ECONOMICS

State Route 34 traverses one Southern California Association of Governments' (SCAG) Regional Statistical Area, which is the City of Oxnard. Growth data for this area includes the City of Camarillo and is illustrated reflecting the percentage increase for population, employment and housing respectively in the following graph:

OXNARD REGIONAL STATISCAL DEMOGRAPHIC AREA



	2000	2010	2015	2020	% Change
Housing	*80,194*	*89,469*	*94,319*	*100,065*	*25%*
Population	*270,593*	*298,655*	*312,619*	*325,440*	*20%*
Employment	*114,532*	*133,805*	*139,778*	*144,533*	*26%*

Housing, population, and jobs are projected to grow by much greater percentages in the Ventura County area, though smaller in actual numbers. There is a projected 25% increase in housing in the Oxnard-Camarillo area. Underdeveloped and agricultural land is being converted to residential and commercial uses. In Camarillo, the State's residential mental hospital has been converted into a State University.

Land use along the Route 34 corridor varies and includes agricultural as well as low density residential and commercial land use. The major trip generators include the California State University Channel Islands in the City of Camarillo and the Oxnard Transportation Center in the City of Oxnard.

In Ventura County, the voters in the cities of Ventura, Moorpark, Camarillo, Oxnard, Simi Valley, and Thousand Oaks approved the SOAR (Save Open-Space and Agricultural Resources) Ordinances/Initiatives. SOAR ordinances and initiatives establish “City Urban Restriction Boundary” (CURB) lines around each city and requires city voter approval before any land located outside the CURB lines can be developed under the city’s jurisdiction for urban purposes. The County SOAR ordinance requires countywide voter approval of any change to the County General Plan involving the “Agricultural”, “Open Space” or “Rural” land use map designations, or any change to a General Plan goal or policy related to those land use designations.

VII. ACCIDENT RATES AND SAFETY INTRODUCTION

District traffic safety and accident data are based on the Traffic Accident Surveillance and Analysis System (TASAS). This database provides accident rates using a three-year average along selected routes. The TASAS data, which is displayed graphically on the following pages, covers the period of January 1, 2000 through December 31, 2002.

First Graph: Fatal Plus Injury Per Million Vehicle Miles

The first graph, "Fatal Plus Injury Per Million Vehicle Miles" (F+I/MVM), shows the rate of fatal and non-fatal injuries on State Route 34 during the coverage period. This graph has two graph lines, "Average" and "Actual". The "Actual" is based on specific data for accidents on State Route 34. The "Average" line represents a Statewide Average Accident Rate (SWA) for highway segments of the same type with similar characteristics within the state.

According to the accident data obtained from the TASAS database the actual percentage of Fatal + Injury accidents that occurred in segment one is higher than the SWA. However, the percentage of accidents begins to decline in segment 2 and falls below the SWA around the mid section of segment 2.

Second Graph: Total Accidents Per Million Vehicles Miles

The second graph, "Total Accidents Per Million Vehicle Miles" (Total/MVM) includes all accidents (fatal, non-fatal injury and accidents without injuries) within the coverage period. As in the first graph, the "Actual" is based on specific State Route 34 data and "Average" represents a statewide average for comparable road segments.

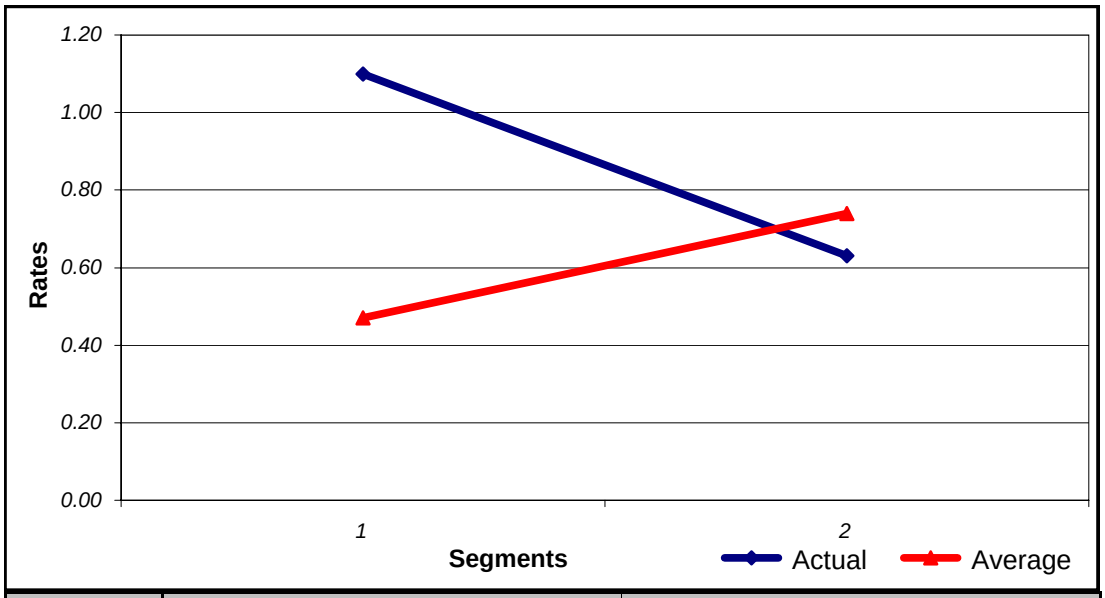
According to the accident data obtained from the TASAS database the total percentage of Fatal + Injury accidents that occurred in segment one is higher than the SWA. However, the total percentage of accidents falls below the SWA mid way through segment 2.

Safety

The accident data that is provided in this TCR is intended to support informed and responsible decision-making by transportation planners and programmers. Research into the connection between congestion and safety is being performed by Caltrans and within the national and international transportation communities. Future TCR's will document the state of that research.

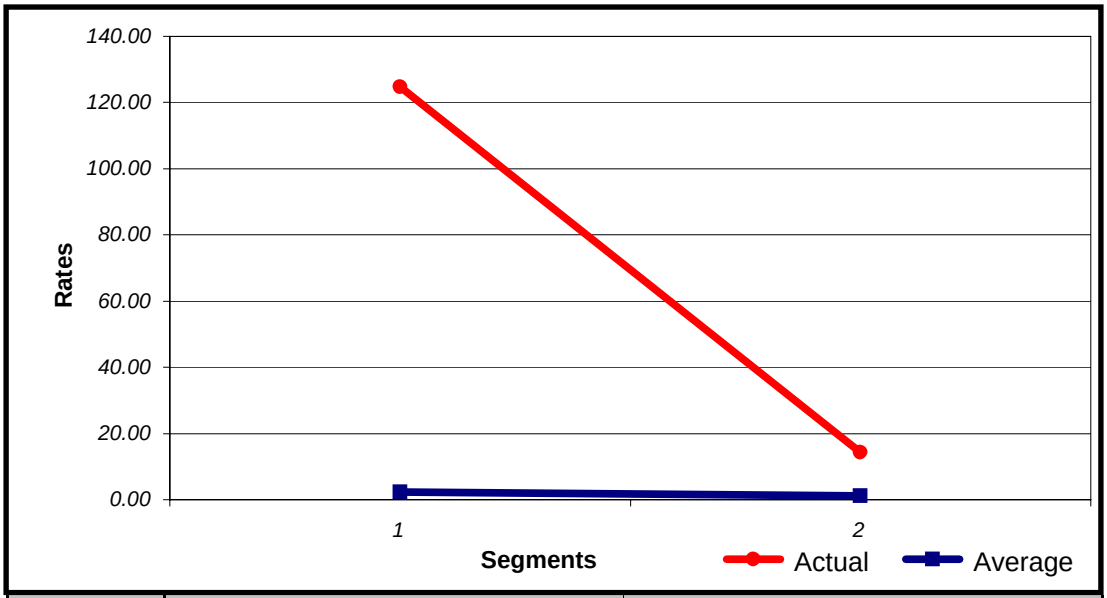
Route 34 Accident Rates

Fatal + Injury (Per Million Vehicle Miles)



	1	2
Actual	1.10	0.63
Average	0.47	0.74

Total Accidents (Per Million Vehicle Miles)

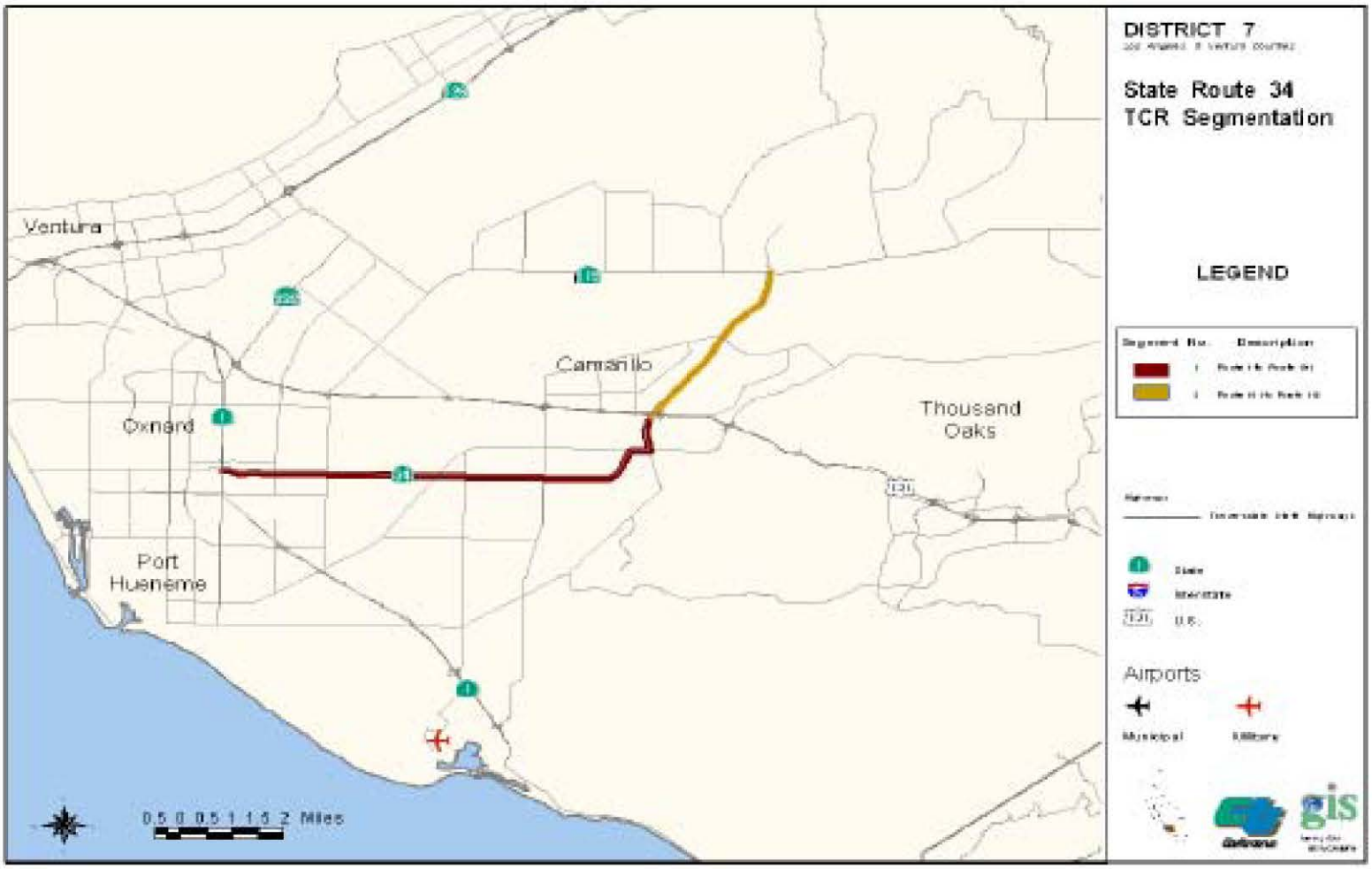


	1	2
Actual	124.68	14.30
Average	2.41	1.21

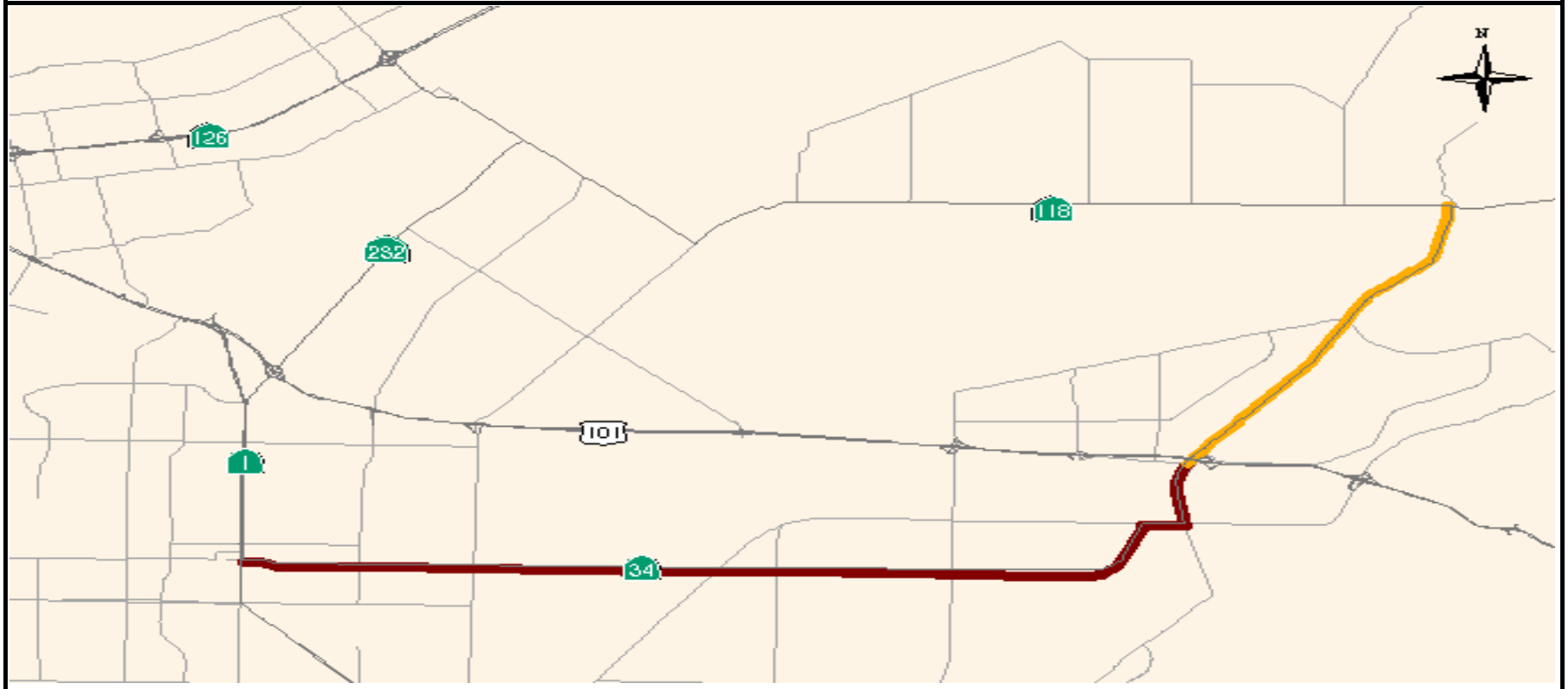
VIII. SEGMENT SUMMARIES INTRODUCTION

This TCR analyzes the conditions on SR-34 using the “segment” as the study unit. Segments are generally defined as “freeway interchange to freeway interchange”, “county line to freeway interchange”, or “freeway interchange to end of freeway”. The map on the following page illustrates these segments.

Each summary describes the segment’s current and projected operating characteristics, existing configuration, projected traffic demand and proposed alternative improvements.

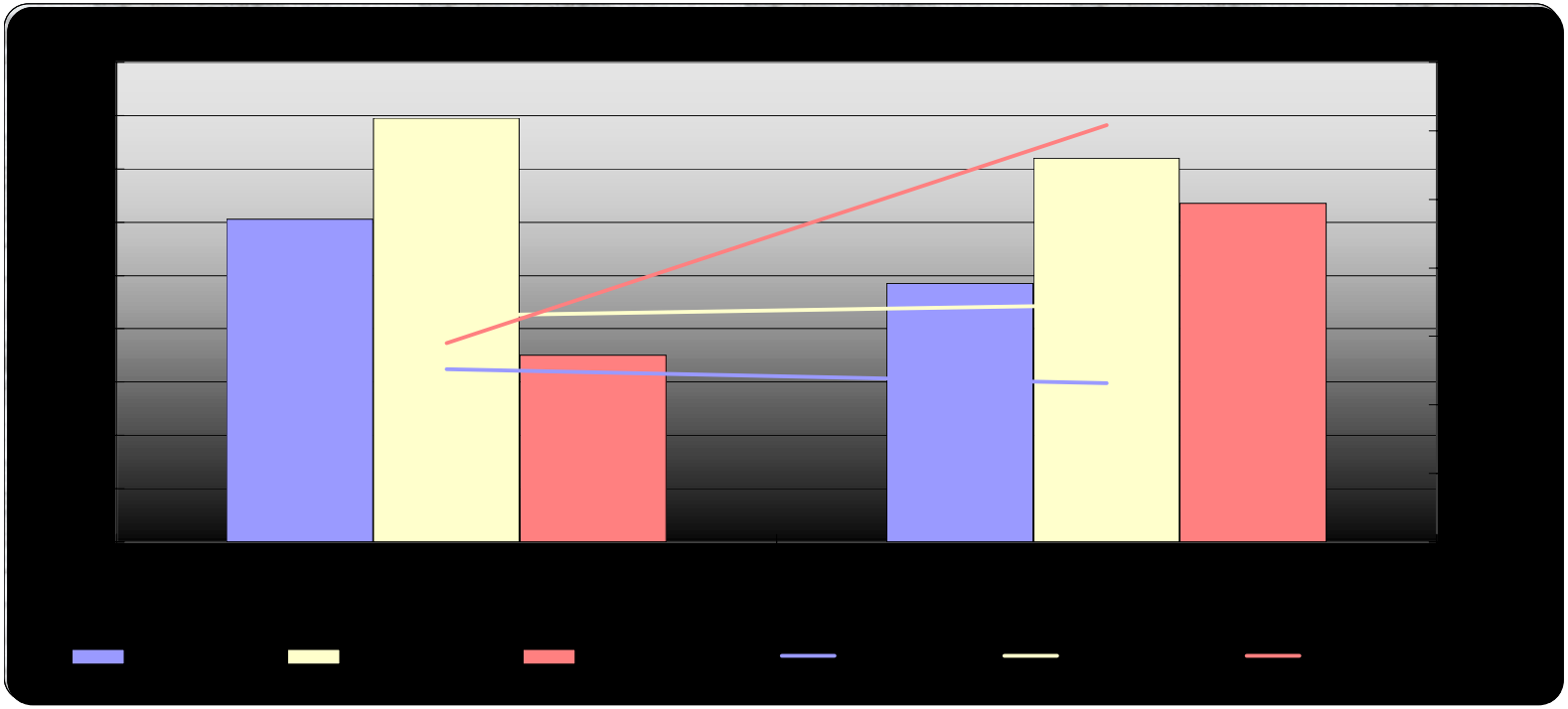

DISTRICT 7
State Route 34
TCR Segmentation
LEGEND
Ventura
Camarillo
Oxnard
Thousand Oaks
Port Hueneme
Airports
0 0.5 0 0.5 1 1.5 2 Miles

State Route 34
Concept Summary - Segment Configuration



Segment #	1	2
Existing		
Demand / Capacity	1.21	0.97
Avg. Daily Traffic (x1,000)	12.6	11.6
Number of Lanes	2	2
Pk.hour Level Of Service	F0	E
2020 Null With Route (Main Line)		
Demand / Capacity	1.59	1.44
Avg. Daily Traffic (x1,000)	16.5	17.3
Number of Lanes	2	2
Pk.hour Level Of Service	F3	F2
2020 Concept (Alternative #2)		
Demand / Capacity	0.70	1.27
Avg. Daily Traffic (x1,000)	14.5	30.4
Number of Lanes	4	4
Pk.hour Level Of Service	C	F1

STATE ROUTE 34
Concept Summary - Level of Service



Segment #	1	2
Existing		
Demand / Capacity	1.21	0.97
Avg. Daily Traffic (x1,000)	12.6	11.6
Number of Lanes	2	2
Pk.hour Level Of Service	F0	E
2020 Null With Route 710 (Main Line)		
Demand / Capacity	1.59	1.44
Avg. Daily Traffic (x1,000)	16.5	17.3
Number of Lanes	2	2
Pk.hour Level Of Service	F3	F2
2020 Concept (Alternative #2)		
Demand / Capacity	0.70	1.27
Avg. Daily Traffic (x1,000)	14.5	30.4
Number of Lanes	4	4
Pk.hour Level Of Service	C	F1

STATE ROUTE 34 - SEGMENT 1 SUMMARY

DESCRIPTION	
Limits:	Route 1 to Route 101
Post Miles:	4.295 to 13.603

Purpose

Local commute facility/commercial/agricultural (commute and non-commute) and Goods Movement

Classification	
Functional Classification:	P1M-Extension of rural MA into Urban
MPAH Designation:	State Route
Other Systems:	

Ultimate Concept

Main Line	HOV Lane(s)
2	

Physical Characteristics	
Terrain:	Flat
Mainline R/W	60'
Median / Outside Shoulder:	0/6'
Design Speed (MPH)	45
Bridge Structures:	N/A

Corridor Characteristics	
Trucks (% of ADT):	10.80%
Express Transit (lines):	N/A
Operators:	N/A
Rail Service:	Metrolink, Amtrak
Park & Ride Lots (Spaces):	none

Accident Rates

per Million Vehicle Miles (MVM)
(1/96 to 12/98)

ACTUAL		AVERAGE	
Fatal + Injury	Total	Fatal + Injury	Total
1.33	3.02	0.63	1.35

TRAFFIC DATA

	EXISTING (2000)		2020 NULL (w/o Route 710)		2020 NULL (with Route 710)		2020 CONCEPT (Alt1)		2020 CONCEPT (Alt2)	
	Main Line	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**
Average Daily Traffic (ADT)	12,600		16,900		16,500		14,500		14,500	
Lanes Configuration (ea. direction)	1		1		1		2		2	

Volume

AM Peak Hour	**E**	510		670		670		590		590	
AM Peak Hour	**W**	270		350		350		310		310	
PM Peak Hour	**E**	570		750		750		660		660	
PM Peak Hour	**W**	850		1,110		1,110		980		980	

Speed (mph)

AM Average	**E**	34		31		31		35		35	
AM Average	**W**	35		35		35		35		35	
PM Average	**E**	33		29		29		35		35	
PM Average	**W**	25		14		14		34		35	

Service Characteristics

Level Of Service, AM	**E**	C		E		E		B		B	
Level Of Service, AM	**W**	B		B		B		A		A	
Level Of Service, PM	**E**	D		F0		F0		B		B	
Level Of Service, PM	**W**	F0		F3		F3		C		C	
Directional Split (%) AM	**E**	65%		66%		66%		66%		66%	
Directional Split (%) PM	**E**	40%		40%		40%		40%		40%	

NOTES: 2020 Concept Alternates 1 & 2 are both modeled with I-710 gap closure built between I-10 and I-210
Speeds are estimated and are for comparative purposes only

STATE ROUTE 34 - SEGMENT 2 SUMMARY

DESCRIPTION	
Limits:	Route 101 to Route 118
Post Miles:	13.603 to 17.659

Purpose
Local commute facility/commercial/agricultural (commute and non-commute) and Goods Movement

Classification	
Functional Classification:	P1M-Extension of rural MA into Urban
MPAH Designation:	State Route
Other Systems:	

Ultimate Concept	
Main Line	**HOV Lane(s)**
2	

Physical Characteristics	
Terrain:	Flat
Mainline R/W	60'
Median / Outside Shoulder:	0/6'
Design Speed (MPH)	45
Bridge Structures:	N/A

Corridor Characteristics	
Trucks (% of ADT):	9.10%
Express Transit (lines):	N/A
Operators:	N/A
Rail Service:	Amtrak, Metrolink
Park & Ride Lots (Spaces):	1 lot

Accident Rates			
per Million Vehicle Miles (MVM) (1/96 to 12/98)			
ACTUAL		**AVERAGE**	
Fatal + Injury	Total	Fatal + Injury	Total
1.33	3.02	0.63	1.35

TRAFFIC DATA

	EXISTING (2000)		2020 NULL (w/o Route 710)		2020 NULL (with Route 710)		2020 CONCEPT (Alt1)		2020 CONCEPT (Alt2)	
	Main Line	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**	**Main Line**	**HOV Lane(s)**
Average Daily Traffic (ADT)	11,600		17,500		17,300		31,400		30,400	
Lanes Configuration (ea. direction)	1		1		1		2		2	

Volume

AM Peak Hour	**E**	320		480		480		870		840	
AM Peak Hour	**W**	400		610		600		1,080		1,050	
PM Peak Hour	**E**	680		1,030		1,010		1,840		1,780	
PM Peak Hour	**W**	560		850		830		1,520		1,460	

Speed (mph)

AM Average	**E**	35	34	34	35	35
AM Average	**W**	35	33	33	34	34
PM Average	**E**	31	17	18	22	23
PM Average	**W**	33	25	26	29	30

Service Characteristics

Level Of Service, AM	**E**	B		C		C		C		C	
Level Of Service, AM	**W**	C		D		D		C		C	
Level Of Service, PM	**E**	E		F3		F2		F1		F1	
Level Of Service, PM	**W**	D		F0		F0		F0		F0	
Directional Split (%) AM	**E**	44%		44%		44%		45%		44%	
Directional Split (%) PM	**E**	55%		55%		55%		55%		55%	

NOTES: 2020 Concept Alternates 1 & 2 are both modeled with I-710 gap closure built between I-10 and I-210
Speeds are estimated and are for comparative purposes only

IX. ROUTE ANALYSIS

EXISTING FACILITY: Route 34 is primarily a two lane conventional highway. Outside shoulders are six feet in width.

ALTERNATE ROUTES: Interstate 101 (Ventura Freeway) is located approximately 1 to 2 miles north of SR-34. Pleasant Valley Road is a two lane, north-south road that runs parallel to SR-34. Los Posas Road is primarily a two-lane road, which expands to four lanes in the city of Camarillo.

CURRENT OPERATING CONDTIONS: Existing daily traffic volumes along the SR-34 corridor range from 11, 600 to 12,600 ADT.

The area of concern is segment 1, which runs from SR-1 to US-101. This segment is congested during peak periods, with delays, backup, bottlenecks and stop and go conditions during the PM peak period on the westbound side of the highway.

OPERATING DEFICIENCIES: Congestion results primarily from a lack of capacity to accommodate existing and projected traffic demand. Operating deficiencies occur when the existing facility or projected LOS falls below the concept LOS. A deficiency also exists on urban freeways when the LOS is F0 or below (i.e. F1, F2, etc.).

Currently, an operating deficiency exists on westbound on segment 1 of SR-34. The level of service on this segment is F0 during the PM peak.

CONGESTION MEASURES: The following table shows the duration of delays, average speeds, demand/capacity ratios, levels of service, and the hours of delay segment by segment on SR-34.

STATE ROUTE 34 - CONGESTION MEASURES

SPEED

AVERAGE SPEEDS (MPH)

	2000* EXISTING		2020 NULL* (withouth I-710)		2020 NULL* (with I-710)		2020 CONCEPT* Alternate 1		2020 CONCEPT* Alternate 2	
	Main Line	HOV	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)
Segment 1	25		14		14		34		34	
Segment 2	31		17		18		22		23	

DEMAND / CAPACITY RATIOS

	2000* EXISTING		2020 NULL* (without I-710)		2020 NULL* (with I-710)		2020 CONCEPT* Alternate 1		2020 CONCEPT* Alternate 2	
	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)
Segment 1	1.21		1.59		1.59		0.70		0.70	
Segment 2	0.97		1.47		1.44		1.31		1.27	

LEVEL OF SERVICE

	2000* EXISTING		2020 NULL* (without I-710)		2020 NULL* (with I-710)		2020 CONCEPT* Alternate 1		2020 CONCEPT* Alternate 2	
	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)
Segment 1	F0		F3		F3		C		C	
Segment 2	E		F3		F2		F1		F1	

HOURS OF DELAY

	2000* EXISTING		2020 NULL* (without I-710)		2020 NULL* (with I-710)		2020 CONCEPT* Alternate 1		2020 CONCEPT* Alternate 2	
	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)	Main Line	HOV Lane(s)
Segment 1	100		450		450		0		0	
Segment 2	0		150		100		150		100	

Speed values are estimates and are to be used for comparative purposes only
Delay values are estimates and are to be used for comparative purposes only
*: Worst condition during peak hours

The Oxnard Transportation Center (OTC):

The OTC is one of the newer "Multimodal" facilities constructed in California in the last twenty years. The OTC is located at the corner of 4th Street and Oxnard Boulevard (California Rte 1). This facility was funded jointly by the California Department of Transportation (Caltrans) and the City of Oxnard. It provides facilities and stops for Amtrak intercity trains operating from San Diego to Santa Barbara and San Luis Obispo and from Los Angeles to Seattle, as well as Metrolink Commuter trains to the San Fernando Valley and Los Angeles.

Rail Transit Service:

Amtrak operates passenger trains daily through the County and has its major hub at the Oxnard Transportation Center. The Pacific Surfliner provides 11 daily round-trips between San Diego and Los Angeles. Metrolink commuter trains provide trips to the San Fernando Valley and Los Angeles.

Bus Transit:

The South Coast Area Transit (SCAT) is a publicly owned transit company that provides service within and between the cities of Ojai, Oxnard, Port Hueneme, San Buenaventura, and the unincorporated areas of Ventura County. Greyhound Bus also provides bus service, as well as Ventura Intercity Service Transit Authority (VISTA).

Park and Ride:

There is one park and ride lot located where SR-34 and US-101 cross at Lewis Road.

The transit component is only one facet in a multi-modal and multi-agency approach to a long-term solution.

GOODS MOVEMENT

The economic vitality and well being of the Los Angeles region depends upon the safe and timely transport of goods as well as people. Current levels of congestion are detrimental to this vitality, and future projections indicate that this situation will get much worse. In terms of freight alone, the 2001 SCAG RTP forecasts the amount of cargo brought into the Region by seaports and airports to greatly increase over the next 25 years as international trade volumes triple. According to the 2001 SCAG RTP, total Goods Movement traffic is expected to grow by more than 80%. Significant actions need to be taken to protect the economic well being of the region. These include improved rail service, including more grade separations; additional and improved intermodal transfer facilities; truck lanes on major truck routes; improved access to and enhanced cargo handling capabilities at seaports; and improved air cargo accessibility with separation from passenger activities at airports. Some of the specific conditions affecting SR-34 are as follows:

Truck:

Route 34 has been identified as having access to and from the National network by the STAA (Surface Transportation Assistance Act). Trucks are allowed for services, terminals and terminal access routes (State Highways). Truck volumes in 2000 range from 4.5% to 10.8% of ADT in Ventura County.

Airports:

State Route 34 is approximately 64 miles north of the Los Angeles International Airport. The Oxnard Airport is located on the coastal edge of Oxnard. It is a 216-

acre airport, which is classified as a non-hub commercial service airport with commuter flights currently serving the Los Angeles International Airport. Commuter service is provided by United Express Airline. The Camarillo Airport is located on the southwest corporate limits of the City of Camarillo. It is classified as a general aviation reliever airport for the Los Angeles area, supporting a wide range of general aviation activity.

Seaports:

The Oxnard Harbor District is an independent and a political subdivision of the State of California, which owns and operates the commercial Port of Hueneme. The Oxnard Harbor District has completed an aggressive port expansion program made possible by the 1997 acquisition of former Navy property immediately adjacent to the Commercial Port. The Port of Hueneme Terminal and Multimodal Expansion program completed in 1999 greatly enhanced the Port's ability to handle refrigerated containers and roll-on/roll-off cargoes. A new rail yard will create a flow of cargo in the terminal areas between ship, truck or rail.

X. IMPROVEMENTS

These seven programming documents provide a mechanism for project funding within the region. The following is a brief description of each.

Regional Transportation Improvement Program (RTIP) -- A five-year list of proposed transportation projects. The Regional Transportation Planning Agency (RTPA) submits the RTIP to the California Transportation Commission (CTC) as a request for State Funding. If RTIP projects have federal funding components, they will also appear in the FTIP once selected for the STIP (see below).

Interregional Improvement Program (IIP) -- A five-year program developed by Caltrans that includes projects developed through the Interregional Road System Plan, Intercity Rail, Soundwall, Toll Bridge, and Aeronautics programs.

State Transportation Improvement Program (STIP) -- A five-year list of transportation projects proposed in RTIP's and PSTIP's that the CTC adopts. Those projects that have federal funding components will also appear in the FTIP and FSTIP.

State Highway Operation and Protection Program (SHOPP) -- A ten-year Master Plan and a four-year program limited to projects related to State highway safety and rehabilitation.

Federal Transportation Improvement Program (FTIP) -- A 3 to 5 year list of all transportation projects proposed for federal funding under TEA-21, within the planning area of an MPO. An MPO develops the FTIP and the Director of Caltrans approves it. In air quality non-attainment areas, the plan must conform to a State Implementation Plan.

Federal State Transportation Improvement Program (FSTIP) -- A three-year list of transportation projects proposed for funding under ISTEA developed by the State in cooperation with MPO's and in consultation with local non-urbanized

governments. The FSTIP includes all FTIP projects as well as other federally funded rural projects.

Traffic Operations Program Strategies (TOPS) -- A program developed by Caltrans and the CHP to ensure the safety and service of California motorists by implementing the latest in interactive/integrated transportation management and information systems. Caltrans and the CHP uses sophisticated electronic technologies to process and analyze freeway traffic data, to monitor traffic flow in order to rapidly detect and effectively respond to incidents and resulting congestion. Implementation of TOPS includes minor operational improvements i.e. geometric upgrades and major capital improvements i.e., geometric upgrades fiber optics/closed circuit cable television monitoring system, changeable message signs and ramp meters) and major capital improvements (i.e., HOV lanes, ramp upgrades, auxiliary lanes, and freeway connector metering. Also included in the plan are additional freeway lanes, direct HOV connectors, and Changeable Message Signs (CMS) and Highway Advisory Radio (HAR).

PROGRAMMED IMPROVEMENTS

The following table lists major Route 34 capacity enhancement and operational improvement projects programmed for construction.

Segment	PPNO[1]	PM	Description	Est. Cost	Start	Complete[2]
1, 2	2322	06.3 to 17.7	Guardrails, stripes, traffic control device	$1.446 M (Capital Cost) $0.314 M (Support Cost)	10/99	01/05
2	2296	12.8 to 13.5	Widen from 2 to 4 lanes	$15 M (Capital Cost)	03/02	09/05

PPNO[1] : Planning and Program Number

Complete[2]: Target Completion Date

XI. TRANSPORTATION CONCEPT AND CONCLUSIONS

TRANSPORTATION CONCEPT: The transportation concept describes the operating conditions and physical facilities required to provide those conditions that could exist on SR-34 after considering the conclusions, priorities, and strategies discussed in the District System Management Plan (DSMP), the SCAG Regional Transportation Plan (RTP), and other planning documents. The route concept represents what could reasonably be accomplished to facilitate the mobility of traffic desiring to use the route. It assumes that management improvement strategies and system operation management improvements to maximize the efficiency on SR-34 will be implemented.

The transportation concept is composed of a Level of Service (LOS) and facility component. The concept LOS indicates the minimum level of service the District would allow on a route prior to proposing an alternative to improve operating conditions. The concept facility is the facility that could be developed to maintain or attain the concept LOS.

The recommended transportation concept for SR-34 is Alternative Concept #2, which involves adding 1 conventional lane in each direction.

CONCLUSIONS: Alternative Concepts #1 and 2 are identical improvements, however, alternative concept #2 shows a greater improvement in terms of speed, demand/capacity ratios and timesavings. This is due to the fact that in alternative #2 additional capacity is being added to the entire system in the vicinity of SR-34. The alternative concept that provides the greater benefit to SR-34 and the surrounding system is alternative concept #2.

XII. BIBLIOGRAPHY

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GLOSSARY

AADT: (Average Annual Daily Traffic) Denotes that the daily traffic is averaged over one calendar year.

ADT: (Average Daily Traffic) The average number of vehicles passing a specified point during a 24-hour period.

AQMD: (Air Quality Management District) A regional agency, which adopts and enforces regulations to achieve and maintain state and federal air quality standards.

AQMP: (Air Quality Management Plan) The plan for attaining state air quality as required by the California Clean Air Act of 1988. The plan is adopted by air quality districts and is subject to approval by the California Air Resources Board.

AVO: (Average Vehicle Occupancy) The average number of persons occupying a passenger vehicle along a roadway segment intersection, or area, as typically monitored during a specified time period. For the purpose of the California Clean Air Act, passenger vehicles include autos, light duty trucks, passenger vans, buses, passenger rail vehicles and motorcycles.

AVR: (Average Vehicle Ridership) The number of employees who report to a work site divided by the number of vehicles driven by those employees, typically averaged over an established time period. This calculation includes crediting vehicle trip reductions from telecommuting, compressed workweeks and non-motorized transportation.

Caltrans: (California Department of Transportation) The owner/operator of the state highway system. State agency responsible for its safe operation and maintenance. Proposes projects for intercity rail, interregional roads, and sound walls. The implementing agency for most state highway projects, regardless of program, and for the Intercity Rail program.

CBD: (Central Business District) The downtown core area of a city, generally an area of high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and service businesses.

CCTV: (Closed Circuit Television)

CE: (Commuter Express) Operated by Los Angeles Department of Transportation

CEQA: (California Environmental Quality Act) A statute that requires all jurisdictions in the State of California to evaluate the extent of environmental degradation posed by proposed development or project.

CMA: (Congestion Management Agency) The agency responsible for developing the Congestion Management Program and coordinating and monitoring its implementation.

CMAQ: (Congestion Mitigation Air Quality program) Part of ISTEA, this is a funding program designed for projects that contribute to the attainment of air quality goals.

CMP: (Congestion Management Program) A legislatively required countywide program, which addresses congestion problems.

CMS: (Changeable Message Sign)

CMS: (Congestion Management System) Required by ISTEA to be implemented by states to improve transportation planning.

COG: (Council of Governments) A voluntary consortium of local government representatives, from contiguous communities, meeting on a regular basis, and formed to cooperate on common planning and solve common development problems of their area. COGs can function as the RTPAs and MPOs in urbanized areas.

Commute Hours: AM and PM peak commute travel times. Generally, between the hours of 5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m., Monday through Friday.

Concept: A strategy for future improvements that will reduce congestion or maintain the existing level of service on a specific route.

Congestion: Defined by Caltrans as, reduced speeds of less than 35 miles per hour for longer than 15 minutes.

CTC: (California Transportation Commission) A body established by Assembly Bill 402 (AB 402) and appointed by the Governor to advise and assist the Secretary of the

Business, Transportation and Housing Agency and the Legislature in formulating and evaluating state policies and plans for transportation.

D/C: (Demand-to-Capacity ratio) The relationship between the number of vehicle trips operating on a facility, versus the number of vehicle trips that can be accommodated on that facility.

DSMP: (District System Management Plan) A part of the system planning process. A district's long-range plan for management of transportation systems in its jurisdiction.

Extended Commute: Service hours beyond the normal commute hours. Generally, in the evening, this refers to transit service until 10:00 p.m.

F+I Actual: (Fatal Plus Injury Actual) Contains specific data for accidents that are State highway related. Each accident record contains a ramp, intersection or highway postmile address that ties it to the Highway database.

F+I Average: (Fatal Plus Injury Average) The Statewide Average Accident Rate (SWA) is based on a rated segment. The accident-rating factor (ARF) indicates how the existing segment compares to other segments on the Sate Highway System. The ARF is a comparison of the segment's accident rate to the statewide average accident rate for roads of the same type and having similar characteristics. Accident severity as well as accident frequency is considered in calculating the ARF. If the total number of accidents is less than three, there will not be a calculation for the ARF. If there are more than two, but less than twenty-five total accidents, an accident-rating factor will be generated, but there will not be an accident severity flag listed. If there are more than twenty-five accidents, an accident rating factor and severity flag will be generated.

F+I/MVM: (Fatal Plus Injury per Million Vehicle Miles) The fatality rate of those killed in vehicles plus the injury rate of those injured in vehicles.

FAI: (Federal Aid Interstate) Highway program established in 1956 for national defense purposes, these roadways interconnect the major nationwide population and economic centers. Also, there is a federal funding category for these routes.

FHWA: (Federal Highway Administration)

Free-flow Speed: Speed that occurs when density and flow are “zero”.

Freeway Capacity: The maximum sustained 15 minute rate of flow that can be accommodated by a uniform freeway segment under prevailing traffic and roadway conditions in a specified direction.

FSP: (Freeway Service Patrol) A special team of tow truck drivers who continuously patrol freeways during commuter hours to help clear disabled automobiles.

HSR: (High Speed Rail) A regional system that will connect major regional activity centers and significant inter-/multi-modal transportation facilities.

I/C: (Interchange) A system of interconnecting roadways in conjunction with one or more grade separations providing for the interchange of traffic between two or more roadways on different levels.

ICES: (Intermodal Corridors of Economic Significance) Significant National Highway System Corridors that link intermodal facilities most directly, conveniently and efficiently to intrastate, interstate and international markets.

IRRS: (Interregional Road System) A series of interregional state highway routes, outside the urbanized areas, that provide access to, and links between, the state’s economic centers, major recreational areas, and urban and rural regions.

ISTEA: (Intermodal Surface Transportation Efficiency Act) Federal legislation and funding Program adopted in 1991. It provides increased funding and program flexibility for multi-modal transportation programs. Update: ISTEA expired on September 30, 1997. In December 1997, Congress passed and the President signed a six-month extension of the law, holding funding to current levels and keeping program structure and formulas intact. This extension expired on March 31, 1998, with an obligation deadline of May 1, 1998. On June 9, 1998, the President signed into law PL 105-178, the Transportation Equity Act for the 21st Century (TEA-21) authorizing highway,

highway safety, transit and other surface transportation programs for the next 6 years. TEA-21 builds on the initiatives established in the 1991 ISTEA.

ITIP: (Interregional Transportation Improvement Program) An improvement program that makes up 25% of the STIP. 60% of this program is for improvements on Interregional Routes in non-urbanized areas and intercity rail.
40% is to fund projects of interregional significance (for the interregional movement of people and goods).

ITMS: (Intermodal Transportation Management System) A quick-response statewide sketch planning tool to assist planners in evaluating proposals in order to improve spending decisions. It provides the capability to analyze the current transportation network and to evaluate the impacts of investment options at the
corridor area or statewide level.

ITS: (Intelligent Transportation Systems) The application of electronics and computer information systems to transportation.

ITSP: (Interregional Transportation Strategic Plan) Caltrans guiding framework for implementing the Interregional Improvement Program under Senate Bill 45.

IVHS: (Intelligent Vehicle Highway Systems) The development of application of electronics, communications or information processing (including advanced traffic management systems, public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems) used alone or in combination to improve the efficiency and safety of surface transportation systems.

LAX: (Los Angeles International Airport)

LOS: (Level of Service) A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

MF: (Mixed Flow) Traffic movement having automobiles, trucks, buses, and motorcycles sharing traffic lanes.

Model: (1) A mathematical or conceptual presentation of relationships and actions within a system. It is used for analysis of the system or its evaluation under various conditions. (2) A mathematical description of a real-life situation, that uses data on past and present conditions to make a projection about the future.

Model, Land Use: A model used to predict the future spatial allocation of urban activities (land use), given total regional growth, the future transportation system, and other factors.

Model, Mode Choice: A model used to forecast the proportion of total person trips on each of the available transportation modes.

Model, Traffic: A mathematical equation or graphic technique used to simulate traffic movements, particularly those in urban areas or on a freeway.

MPAH: (Master Plan of Arterial Highways)

MPO: (Metropolitan Planning Organization) According to U.S. Code, the organization designated by the governor and local elected officials as responsible, together with the state, for the transportation planning in an urbanized area. It serves as the forum for cooperative decision making by principal elected officials of general local government.

Multi-modal: Pertaining to more than one mode of travel.

NHS: (National Highway System) Will consist of 155,000 miles (plus or minus 15 percent) of the major roads in the U.S. Included will be all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

Night Owl: Evening transit service hours that extend beyond the normal commute service hours, but is less than 24 hour per day.

Null: A concept that includes only existing projects and those projects which may or may not be constructed but are programmed in the 1996 STIP.

OHC: Other Highway Construction.

Peak: (Peak Period, Rush Hours): (1) The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak. (2) The period during which the demand for transportation service is the heaviest. (AM Peak period represents 6:30 a.m. to 8:30 a.m. and PM Peak period represents 3:00 p.m. to 6:00 p.m.)

Performance Indicator: Quantitative measures of how effective an activity, task, or function is being performed. In transportation systems, it is usually computed by relating a measure of service output or use to a measure of service input or cost.

PM: (Post Mile) Is the mileage measured from a county line or the beginning of a route to another county line or the ending of the route. Each post mile along a route in a county is a unique location on the State Highway System.

PMT: (Passenger Miles Traveled) The number of miles traveled by all passengers on a transportation mode such as transit.

PPN: (Planning and Program Number) Used in the State Transportation Improvement Program (STIP) to identify projects.

PSR: (Project Study Report) The pre-programming document required before a project may be included in the STIP.

Public Transportation: Transportation service to the public on a regular basis using vehicles that transport more than one person for compensation, usually but not exclusively over a set route or routes from one fixed point or another. Routes and schedules may be determined through a cooperative arrangement. Subcategories

include public transit service, and paratransit services that are available to the general public.

Ridesharing: Two or more persons traveling by any mode, including but not limited to, automobile, vanpool, bus, taxi, jitney, and public transit.

RME: (Regional Mobility Element) SCAGs major policy and planning statement on the region's transportation issues and goals. It is comprised of a set of long-range policies, plans, and programs that outline a vision of a regional transportation system compatible with federal and state mobility objectives. Formerly called the Regional Mobility Plan (RMP).

RMP: (Regional Mobility Plan) The equivalent to the federal and state required Regional Transportation Plan (RTP) for the SCAG region.

Roadway Characteristics: The geometric characteristics of the freeway segment under study, including the number and width of lanes, lateral clearances at the roadside and median, free-flow speeds, grades and lane configurations.

RSA: (Regional Statistical Area) An aggregation of census tracts for the purpose of sub-regional demographic and transportation analysis within the Southern California Association of Governments (SCAG) area.

RTIP: (Regional Transportation Improvement Program) A list of proposed transportation projects submitted to the CTC by the regional transportation planning agency, as a request for state funding through the FCR and Urban and Commuter Rail Programs. The individual projects are first proposed by local jurisdictions (CMAs in urbanized counties), then evaluated and prioritized by the RTPA for submission to the CTC. The RTIP has a seven-year planning horizon, and is updated every two years.

RTP: (Regional Transportation Plan) A comprehensive 20-year plan for the region, updated every two years by the regional transportation-planning agency. The RTP includes goals, objectives, and policies, and recommends specific transportation improvements.

RTPA: (Regional Transportation Planning Agency) The agency responsible for the preparation of RTPs and RTIPs and designated by the State Business Transportation and Housing Agency to allocate transit funds. RTPAs can be local transportation commissions, COGs, MPOs or statutorily created agencies. In the Los Angeles area, SCAG is the RTPA.

SC: (Santa Clarita Transit)

SCAB: (South Coast Air Basin) A geographic area defined by the San Jacinto Mountains to the east, the San Bernardino Mountains to the north, and the Pacific Ocean to the west and south. The entire SCAB is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

SCAG: (Southern California Association of Governments) The Metropolitan Planning Organization (MPO) for Ventura, Los Angeles, Orange, San Bernardino, Riverside and Imperial counties that is responsible for preparing the RTIP and the RTP. SCAG also prepared land use and transportation control measures in the 1994 Air Quality Management Plan (AQMP).

SCAQMD: (South Coast Air Quality Management District) The agency responsible for preparing the Air Quality Management Plan (AQMP) for the South Coast Air Basin.

SCRRA: (Southern California Regional Rail Authority) Operates Metrolink.

SHELL: (Subsystem of Highways for the movement of Extra Legal Loads)

SHOPP: (State Highway Operation and Protection Program) A four-year program limited to projects related to State highway safety and rehabilitation.

SR: (State Route)

STAA: (Surface Transportation Assistance Act)

STIP: (State Transportation Improvement Program) A list of transportation projects, proposed in RTIPs and the PSTIP, which are approved for funding by the CTC.

STP: (Surface Transportation Program) Part of ISTEA, this is a funding program intended for use by the states and cities for congestion relief in urban areas.

STRAHNET: (Strategic Highway Corridor Network)

TASAS: (Traffic Accident Surveillance and Analysis System) A system that provides a detailed list and/or summary of accidents that have occurred on highways, ramps or intersections in the State Highway System. Accidents can be selected by location, highway characteristics, accident data codes or any combination of these.

TCM: (Transportation Control Measure) A measure intended to reduce pollutant emissions from motor vehicles. Examples of TCMs include programs to encourage ridesharing or public transit usage, city or county trip reduction ordinances, and the use of cleaner burning fuels in motor vehicles.

TCR: (Transportation Concept Report) Formerly Route Concept Report (RCR) this report analyzes a transportation corridor service area, establishes a twenty-year transportation planning concept and identifies modal transportation options and applications needed to achieve the twenty-year concepts.

TDM: (Transportation Demand Management) Demand based techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules enabling employees to commute to and from work outside of peak hours.

TEA-21: (Transportation Equity Act for the 21st Century) Signed by President Clinton on June 9, 1998. TEA-21 builds on the initiatives established in the ISTEA Act of 1991. This new Act combines the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety as traffic continues to increase at record levels, protecting and enhancing communities and the natural environment as we provide transportation, and advancing America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

TIA: (Transportation Impact Analysis) An analysis procedure to assist local jurisdictions in assessing the impact of land use decisions on the Congestion Management Program (CMP) system for Los Angeles County.

TL: (Truck Lane)

TMC: (Transportation Management Center) A focal point that can monitor traffic and road conditions, as well as train and transit schedules, and airport and shipping advisories. From here, information about accidents, road closures and emergency notifications is relayed to travelers.

TOPS: (Traffic Operations Strategies) An implementation plan to improve the overall operation of the State transportation system.

TOS: (Traffic Operation System) Computer based signal operation.

TOT/MVM: (Total Accidents Per Million Vehicle Miles)

TPMP: (Transit Performance Measurement Program) A state mandated program to evaluate transit operator system performance on the basis of operating statistics. The program monitors transit system performance of Los Angeles County operators that receive state and federal funds and analyzes the institutional relationships among operators to ensure coordination.

Traffic Conditions: Any characteristics of the traffic stream that may affect capacity or operations, including the percentage composition of the traffic stream by vehicle type and driver characteristics (such as the differences between weekday commuters and recreational drivers).

Transportation Management Association (TMA)/Organization (TMO): A private/non-profit association that has a financial dues structure joined together in a legal agreement for the purpose of achieving mobility and air quality goals and objectives within a designated area. There are fourteen operating TMA/TMO's in Los Angeles County.

TRO: (Trip Reduction Ordinances)

TSM: (Transportation System Management) That part of the urban transportation Process undertaken to improve the efficiency of the existing transportation system. The intent is to make better use of the existing transportation system by using short-term, low capital transportation improvements that generally cost less and can be implemented more quickly than system development actions.

TW: (Transitway)

VCTC: (Ventura County Transportation Commission)

Vehicle Occupancy: The number of people aboard a vehicle at a given time; also known as auto or automobile occupancy when the reference is to automobile travel only.

Vehicle Trip: A one-way movement of a vehicle between two points.

V/C: (Volume/Capacity).

VMT: (Vehicle Miles Traveled) (1) On highways, a measurement of the total miles traveled in all vehicles in the area for a specified time period. It is calculated by the number of vehicles multiplied by the miles traveled in a given area or on a given highway during the time period. (2) In transit, the number of vehicle miles operated on a given route or line or network during a specified time period.

VSM: (Vehicle Service Miles) The total miles traveled by transit service vehicles while in revenue service.