Transportation Concept Report
ROUTE 47
District 7
June 2015

Approvals:

for Carrie Bowen
District Director
Date: 6/26/15

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Date: 6/23/15

DISCLAIMER

Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Transportation Concept Report (TCR) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, the District 7 Division of Planning and Local Assistance makes every effort to ensure the accuracy and timeliness of the information contained in the TCR. The information in the TCR does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.

Mission – Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability

California Department of Transportation

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ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) by identifying deficiencies and proposing improvements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' major goals of safety, efficiency, sustainability, system performance and excellence.

The System Planning process is primarily composed of several parts: the District System Management Plan (DSMP), the Transportation Concept Report (TCR), the Corridor System Management Plan (CSMP) and the Priority Listing of Projects for the District (formerly known as the Transportation System Development Plan).

The District wide DSMP is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. The CSMP is a complex, multi-jurisdictional planning document that identifies future needs within corridors experiencing or expected to experience high levels of congestion. The Priority Listing of Projects is a list of planned and partially programmed transportation projects used to recommend projects for funding. These System Planning products are also intended as resources for public/stakeholders, the regional and local agencies.

TCR Purpose

California's State Highway System needs long range planning documents to guide the logical development of transportation systems as required by law and as necessitated by the public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20-25 year planning horizon. The TCR is developed with the goals of increasing safety, stewardship and efficiency, sustainability, livability and economy, and system performance.

STAKEHOLDER PARTICIPATION

Stakeholder participation was sought throughout the development of the SR-47 TCR. Outreach involved internal and external stakeholders.

Both internal and external stakeholders including MPO and RTPAs were asked to review the document for comments, edits, and for consistency with the intent of existing plans, policies, and procedures. The process of including and working closely with stakeholders adds value to the TCR, allows for outside input and ideas to be reflected in the document, increases credibility and helps strengthen public supports and trust.

EXECUTIVE SUMMARY

The main purpose of this TCR is to evaluate current and projected conditions along the route and suggest a configuration for SR-47 that will meet projected demand. Historically the freeway system in Southern California is highly congested and this trend will continue into the future. Due to financial, environmental, right of way and political constraints, it is very difficult for Caltrans to continue to add more lanes to the system. Recognizing these constraints, the planned/programmed projects and strategies in the TCR are within a framework of programming and implementation constraints and regional policy.

In addition to these planned/programmed projects and strategies, the TCR also suggest a configuration for SR-47 that will meet future demand on this route. The suggested configuration is meant only to show the severity of future conditions and what it would take to attain those LOS. It is our Mission to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

The SR-47 Transportation Concept Report (TCR) is divided into several major sections; three of the sections – the Corridor Performance, System Characteristics and Corridor Concept – are the core of the document. All of the remaining sections provide a context for analyzing the Route 47 corridor and document the data resources.

Concept Summary Table

CONCEPT – 2035 FACILITY

Segment	ADT	Dir. Split	Peak Hour	Truck Peak Hour	2035 Baseline RTP*		Concept LOS "D" Attainment*	Concept LOS "F0" Attainment*
1A (Vincent Thomas Bridge)	56,200	56.1%	4,550 (8%)	300 (6.5%)	4		4	4
					V/C	LOS		
					0.66	C		
1B (Seaside Blvd)	56,300	63.2%	4,000 (7.1%)	160 (4.1%)	6		9	6
					V/C	LOS		
					1.05	F0		
2 (Ocean Blvd to Henry Ford)	20,000	58.5%	1,300 (6.4%)	750 (58.0%)	6		6	6
					V/C	LOS		
					0.15	A		
3 (Henry Ford Ave to I-10)	Paper Route (Unconstructed)							

Source: SCAG's 2012-2035 RTP/SCS

** The number of lanes in the LOS D Attainment column is for both directions. LOS D Attainment indicate how many lanes it would require to achieve LOS D. It is meant to show the severity of future conditions and what it would take to achieve LOS D. Caltrans is not suggesting that it is our plan to build the facility to achieve the LOS D.*

** The number of lanes in the LOS F0 attainment column is for both directions. The data in the LOS FO attainment column is only meant to show the severity of congestion on our system and what it would require to achieve that level of service. We recognize the difficulty in achieving the desired LOS given the financial, environmental, right of way and political constraints.*

** Sometimes the model output implies that there would be aux. lanes (each direction) and aux. lanes are given only half capacity. That is why there are instances where we have odd number of lanes for both direction.*

** The 2035 Baseline includes all planned and programmed projects in the SCAG's 2012-2035 RTP/SCS*

** For consistency with the SCAG's 2012-2035 RTP/SCS, year 2008 and 2035 were used.*

** 2008 & 2035 data are derived from the SCAG's 2012-2035 RTP/SCS model. Data in this report is meant to be used for comparision purposes only and are not to be use for specific projects without further analysis.*

Concept Rationale

Route 47 extends from Route 110 in San Pedro to Route 10 via the Vincent Thomas Bridge. Route 47 shall also include that portion of Henry Ford Avenue from Route 47 to Alameda Street and that portion of Alameda Street from Henry Ford Avenue to Route 91. Route 47 shall not include that portion of the adopted route from Route 1 to Willow Street and that portion of the adopted alignment from Willow Street to Route 405.

Traffic volume is forecasted to increase on SR-47 in 2035 and will require additional lanes to achieve the concept level of service. Several capacity improvements are planned, programmed, and recommended for this corridor.

Proposed Projects and Strategies

There are several improvements currently under construction or are planned/programmed for SR-47 throughout the corridor in SCAG's 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

- The segment of Seaside Street PM 2.302 to PM 3.423 is unconstructed and is not part of the State Route 47, however, it will be part of Rte 47 when the Gerald Desmond Bridge (GDB) replacement is complete. The GDB replacement is anticipated be complete in 2018
- The Rte 47 at PM 3.576 "Schuyler Heim Bridge" is being under construction and will be replaced in 2017.
- The Rte 47 (ramp connector) would connect Rte 710 at Terminal Island Freeway.
- The new Rte 47 on/off-ramps to terminal Island freeway will be completed in 2017.
- Southbound SR-47 to Northbound I-110 Connector widening (in construction)
- Northbound I-110 @ J.S. Gibson Blvd off-ramp improvements (in construction)
- Northbound I-110 @ C Street interchange reconstruction (in construction)
- SR-47 @ Front Street Interchange Reconstruction (RFP for PSR has been issued)

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

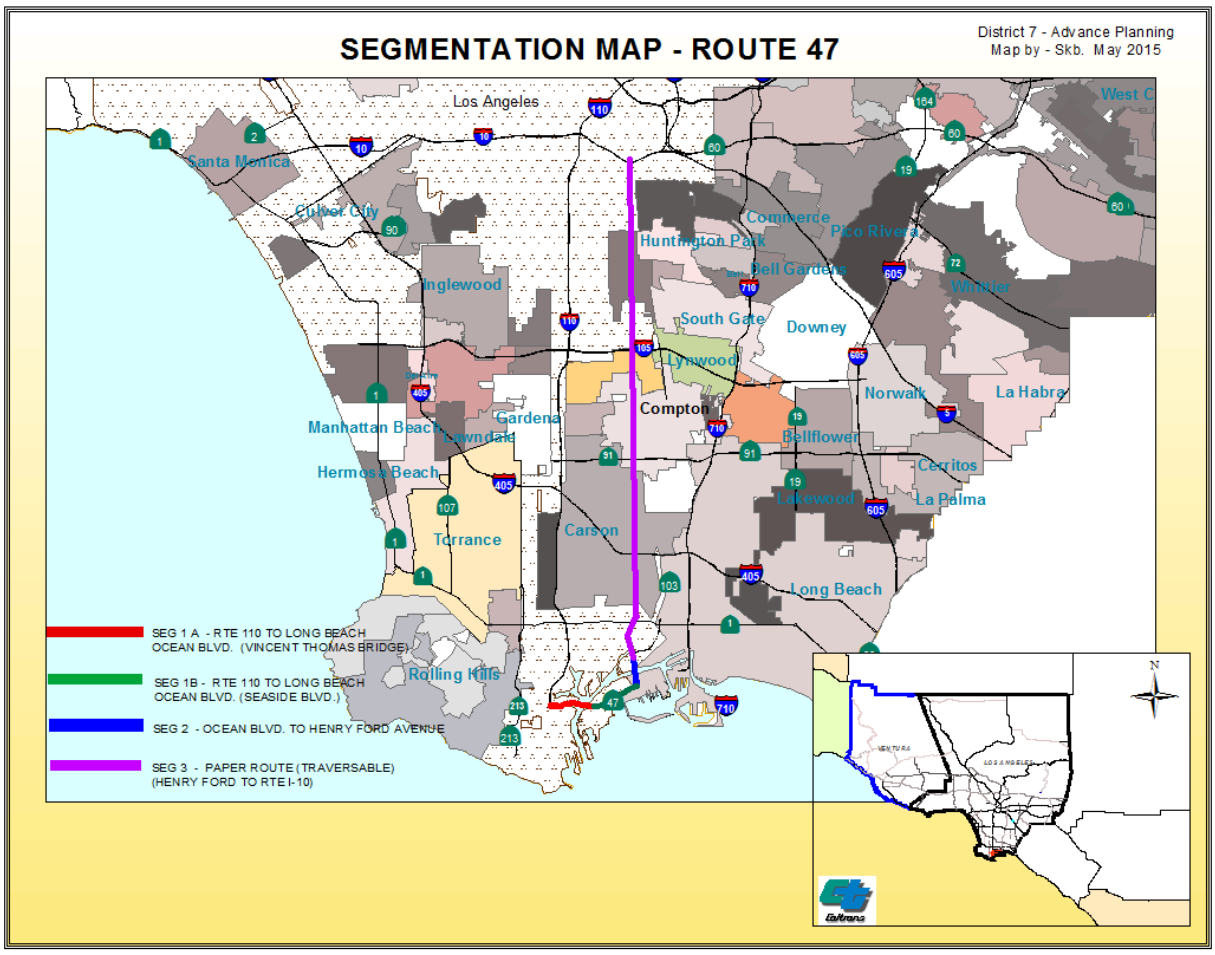
This Transportation Concept Report (TCR) analyzes SR-47 conditions using the "segment" as the study unit. Segments are generally defined as "freeway interchange to the end of freeway." The map on the next page illustrates these segments.

County	SEGMENTS	DESCRIPTION	BEGIN PM	END PM	NO. OF LANES (each dir.)
Los Angeles	1A	Rte 110 to Long Beach, Ocean Blvd (Vincent Thomas Bridge)	R 0.00	2.30	2
Los Angeles	1B	Rte 110 to Long Beach, Ocean Blvd (Seaside Blvd)	2.30	3.42	3
Los Angeles	2	Ocean Blvd to Henry Ford Ave	3.42	4.56	3
Los Angeles	3	Henry Ford Ave to I-10	* Paper Route (Traversable)		

* Traversable Highways are routes that have been approved by the Legislation as future State Highway Routes. These routes when constructed to the Department of Transportation (Caltrans) standards, the California Transportation Commission (CTC) shall adopt them as state highways and Caltrans must maintain them with funds from State Highway account. These routes are described in the Division 1, Chapter 2, Article 3 of the Streets and Highway Code Section 300 and also are known as "paper" routes.

Traversable Highways are divided into 4 categories: Segment 3 of SR-47 is classified as a Category 4 Traversable Highway.

Category 4. Table 4-With No Activity: The traversable highway is inadequate or nonexistent and no project studies are planned within five years so State assumption of maintenance is unlikely in the next ten years.


SEGMENTATION MAP - ROUTE 47
District 7 - Advance Planning
Map by - Skb. May 2015
Los Angeles
Santa Monica
Culver City
Inglewood
Huntington Park
Commerce
Pico Rivera
Bell Gardens
Whittier
South Gate
Downey
Lynwood
Norwalk
La Habra
Compton
Gardena
Manhattan Beach
Lawndale
Hermosa Beach
Bellflower
Cerritos
Lakewood
La Palma
Torrance
Carson
Long Beach
Rolling Hills
SEG 1 A - RTE 110 TO LONG BEACH OCEAN BLVD. (VINCENT THOMAS BRIDGE)
SEG 1B - RTE 110 TO LONG BEACH OCEAN BLVD. (SEASIDE BLVD.)
SEG 2 - OCEAN BLVD. TO HENRY FORD AVENUE
SEG 3 - PAPER ROUTE (TRAVERSABLE) (HENRY FORD TO RTE I-10)
N

ROUTE DESCRIPTION

Route 47 extends from Route 110 in San Pedro to Route 10 via the Vincent Thomas Bridge Route 47 shall also include that portion of Henry Ford Avenue from Route 47 to Alameda Street and that portion of Alameda street from Henry Ford Avenue to Route 91. Route 47 shall not include that portion of the adopted route from Route 1 to Willow Street and that portion of the adopted alignment from Willow Street to Interstate 405 (I-405).

The Terminal Island Freeway was built to connect the ports of Los Angeles and Long Beach with freeways further north. Because the Freeway was never finished, it exists today as two short freeway segments which feed traffic onto Terminal Island. One segment runs east – west between the southern end of the Harbor Freeway and the Port of Los Angeles (Route 47); the other segment runs north- south between willow street in Long Beach and Ocean Boulevard (Routes 47 and 103). Assembly Bill 2741, (effective date January 1, 1985) mandated the portion of Route 47 between Henry Ford Avenue and Route 1 (Pacific Coast Highway) to be renumbered as State Route 103.

Cities along the Route 47 corridor are Los Angeles, Long Beach, Lomita, Rancho Palos Verdes, Palos Verdes Estates, Rolling Hills and Rolling Hills Estates.

Route Designation and Characteristics

Route 47 is classified as an urban principal arterial. Route 47 is a Terminal Access Route from Route 110 to the Vincent Thomas Bridge at Seaside Ave. and from Ocean Blvd to Route 103.

Seg	Freeway and Expressway System	National Highway System	Strategic Highway Network	Scenic Highway	Interregional Road System Route	High Emphasis Route	Focus Route	Federal Functional Classification	Goods Movement Route	Truck Designation
1A	Yes	Yes	No	No	No	No	No	See Below	See Below	See Below
1B	Yes	Yes	No	No	No	No	No	See Below	See Below	See Below
2	Yes	Yes	No	No	No	No	No	See Below	See Below	See Below
3	Paper Route (Unconstructed)									

Seg	Rural/ Urban/ Urbanized	Primary/ Secondary System	Metropolitan Planning Organization	Regional Transporation Planning Agency	Congestion Management Agency	Local Agencies	Tribes	Air District	Terrain
1A	Urban	Primary	SCAG	Metro	Metro	Metro	N/A	SCAQMD	Flat
1B	Urban	Primary	SCAG	Metro	Metro	Metro	N/A	SCAQMD	Flat
2	Urban	Primary	SCAG	Metro	Metro	Metro	N/A	SCAQMD	Flat
3	Paper Route (Unconstructed)								

Functional Classification

From post mile 0.0 to pm 2.302 functional classification “Other Fwy or Expressway” From pm 2.302 to pm 3.497 "Principal Arterial"
From pm 3.497 to pm 4.565 “Other Freeway or Expressway” From pm 4.565 to Rte 10 - paper route

Rte 47 is a traversable highway fromVincent Thomas Bridge to Rte 10. Current and proposed construction from Vincent Thomas Bridge to Rte 103. From Route 103 to Route 91 (via Henry Ford Ave and Alameda St.) a new controlled access facility is planned

Rte 47 from Ocean Blvd to Rte 103 is a major goods movement route.

COMMUNITY CHARACTERISTICS

SR-47 is a state conventional type highway/freeway divided facility, and is a subset of the National Highway System. The route is divided into 4 segments based on traffic volume, connections to local streets or state highways, freeway interchanges, grade and terrain.

LAND-USE

The SR-47 corridor land use varies from residential, commercial, to industrial. The area within Los Angeles has been developed into various marine terminals and areas for commerce, recreation and fisheries. Terminal Island lies within both the Cities of Los Angeles and Long Beach. It is separated from the mainland by the Cerritos Channel. Several major trip generators along the corridor include:

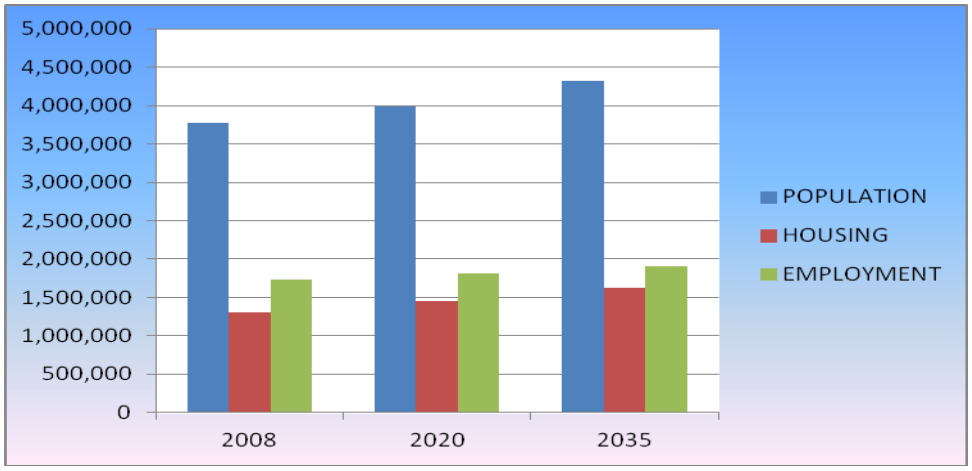
- Ports of Los Angeles and Long Beach
- Long Beach Naval Shipyard
- Southern California Edison Generating Plant
- United States Quarantine Station
- United States Navy Station
- Dow Chemical Company
- Matson, Indies, Evergreen, and additional new terminals
- Federal Correctional Institution.

Cities close to SR-47 are: Los Angeles, Long Beach, Lomita, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates.

The following tables and graphs show projected socio economic growths in the cities along the SR-47 Corridor per the SCAG's 2012 -2035 RTP/SCS GROWTH FORECAST.

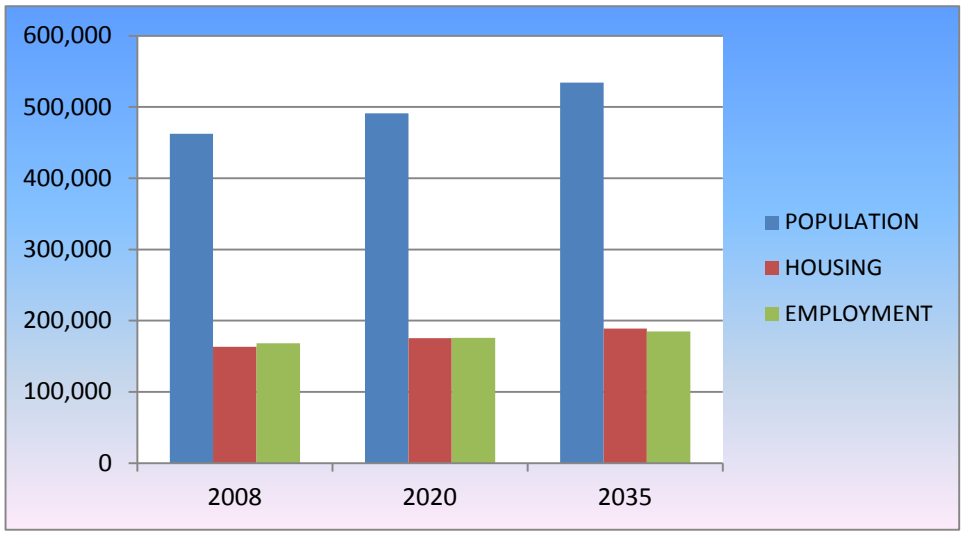
LOS ANGELES

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	3,770,500	3,991,700	4,320,600	5.87%	14.59%
HOUSING	1,309,900	1,455,700	1,626,600	11.13%	24.18%
EMPLOYMENT	1,735,200	1,817,700	1,906,800	4.75%	9.89%



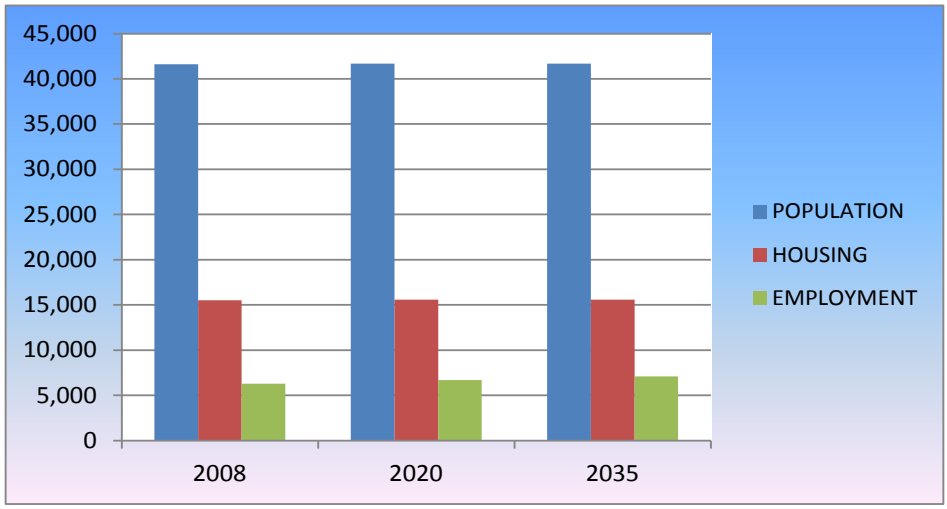
LONG BEACH

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	462,200	491,000	534,100	6.23%	15.56%
HOUSING	163,500	175,600	188,900	7.40%	15.54%
EMPLOYMENT	168,100	176,000	184,800	4.70%	9.93%



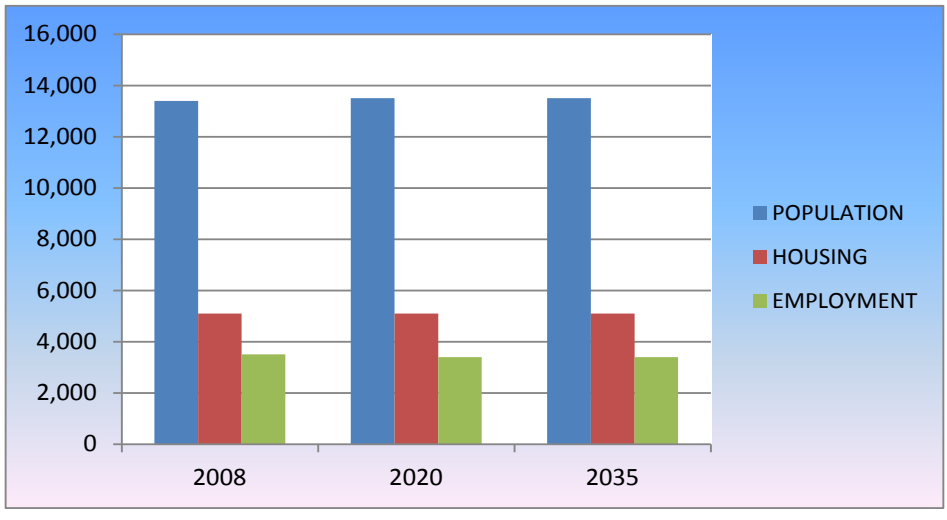
RANCHO PALOS VERDES

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	41,600	41,700	41,700	0.24%	0.24%
HOUSING	15,500	15,600	15,600	0.65%	0.65%
EMPLOYMENT	6,300	6,700	7,100	6.35%	12.70%



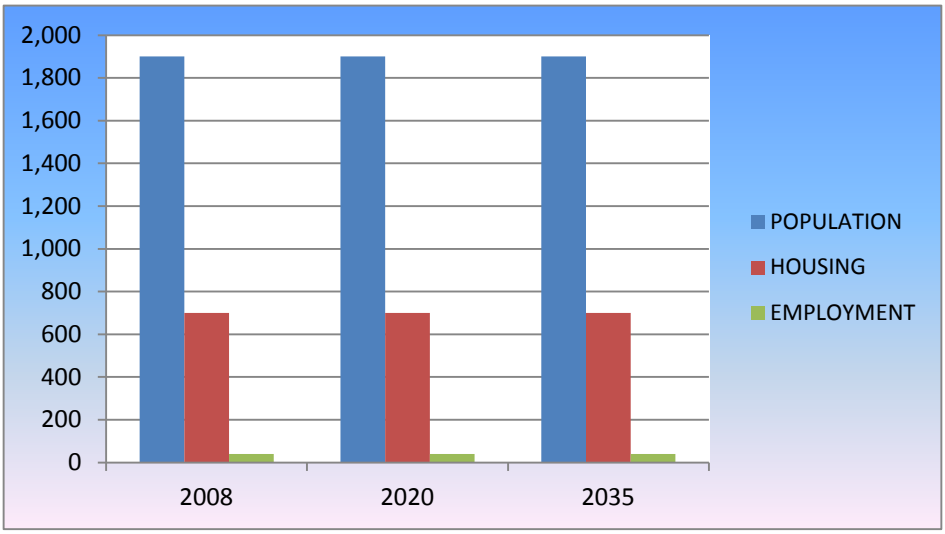
PALOS VERDES ESTATES

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	13,400	13,500	13,500	0.75%	0.75%
HOUSING	5,100	5,100	5,100	0.00%	0.00%
EMPLOYMENT	3,500	3,400	3,400	-2.86%	-2.86%



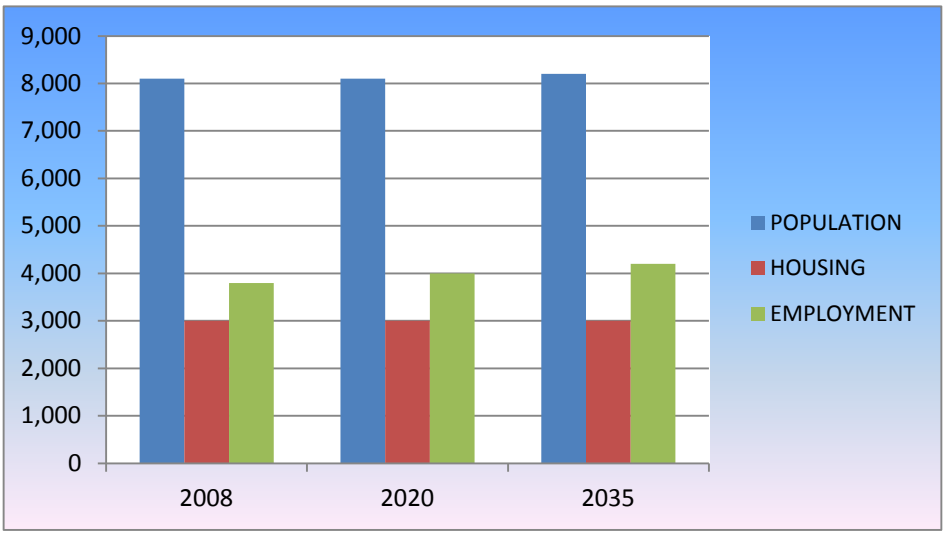
ROLLING HILLS

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	1,900	1,900	1,900	0.00%	0.00%
HOUSING	700	700	700	0.00%	0.00%
EMPLOYMENT	40	40	40	0.00%	0.00%



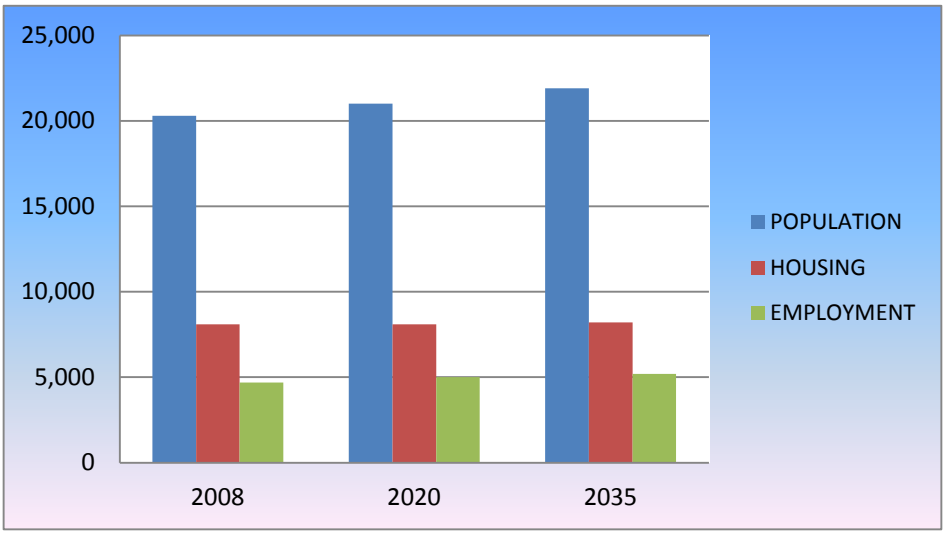
ROLLING HILLS ESTATES

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	8,100	8,100	8,200	0.00%	1.23%
HOUSING	3,000	3,000	3,000	0.00%	0.00%
EMPLOYMENT	3,800	4,000	4,200	5.26%	10.53%



LOMITA

	2008	2020	2035	2008 - 2020 CHANGE	2008 -2035 CHANGE
POPULATION	20,300	21,000	21,900	3.45%	7.88%
HOUSING	8,100	8,100	8,200	0.00%	1.23%
EMPLOYMENT	4,700	5,000	5,200	6.38%	10.64%



SYSTEM CHARACTERISTICS

For the purpose of analysis, the SR-47 is divided into 4 segments based on logical termini including intersections, jurisdiction and changes in land use.

Existing Facility					
Segment/PM	Facility Type	Mixed -Flow Lanes (each direction)	HOV Lanes (each direction)	Centerline Miles	Lane Miles (each direction)
1A (0.00 - 2.30)	Freeway	2		2.3	4.6
1B (2.30 - 3.42)	Highway	3		1.12	3.36
2 (3.42 - 4.56)	Freeway	3		1.14	3.42
3	Paper Route				

RAMP METERS ON SR-47			
Postmile	Direction	Location	Comments
Segment 1A (PM 0.00 - 2.30)			
None			
Segment 1B (PM 2.3 - 3.42)			
None			
Segment 2 (PM 3.42 -4.56)			
None			
Segment 3 (Paper Route)			
None			

Source: 2013 Ramp Meter Development Plan (RMDP)

Operational - Ramp meter is currently actively metering

Non Operational (Non Op) - Ramp meter is fully installed and accepted by operations, but currently not actively metering.

Partially Constructed (Part Const) - Ramp meter in construction, or just the underground equipment constructed, with no poles/signs/heads in place.

Planned - Meter non-existent, only planned/proposed

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSM&O)

As congestion spreads and intensifies and the level of incidents, delays, and disruptions increase, the level of service and reliability of the roadway systems in many areas continues to deteriorate. It is very important to operate the existing network to its fullest service potential.

The era of new roadway construction has largely ended in most of the country. In addition, the practice of widening existing freeways is also falling out of favor due to high costs, the built out nature of many urbanized areas and community desires for more multi-modal streets. There's growing momentum for making more efficient use of the existing transportation system.

MAP-21 defines transportation system management and operations (TSM&O) as integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services and projects designed to preserve capacity and improve security, safety and reliability of the transportation system. TSM&O activities focus on a set of well known strategies such as incident management, traffic signal timing, ramp metering, road weather management and others.

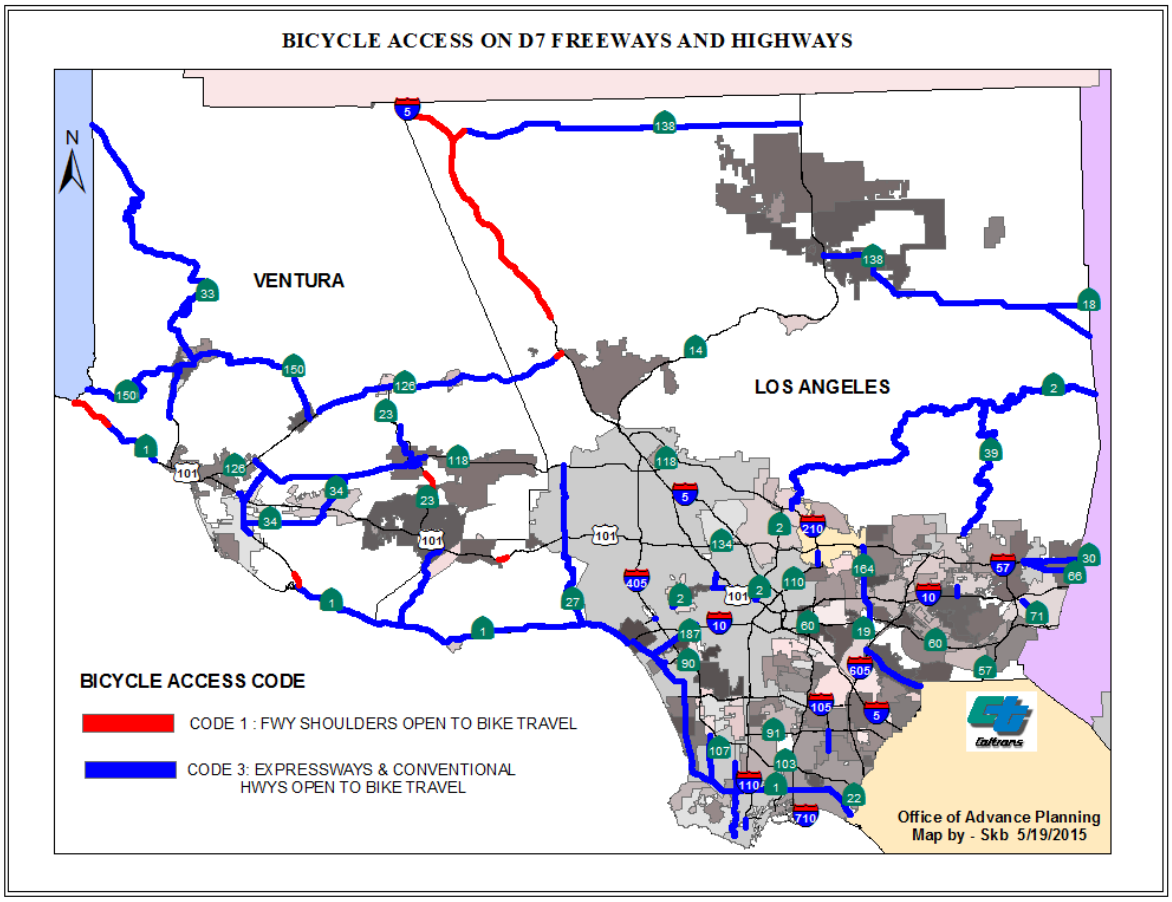
Incorporating TSM&O into the Planning and Programming process will provide a more robust understanding of the statewide /regional transportation system and a toolbox of strategies that go beyond capacity expansion to include operations and demand management solutions.

Caltrans has incorporated System Performance as one of the Caltrans Strategic Plan Goals which is a five year implementation – and seeks to implement TSM&O on our most congested corridors through Integrated Corridor Management or ICM which optimizes the use of existing infrastructure assets and leverages unused capacity. TSM&O will be integral to Caltrans' new mission to 'PROVIDE A SAFE, SUSTAINABLE, INTEGRATED AND EFFICIENT TRANSPORATION SYSTEM TO ENHANCE CALIFORNIA'S ECONOMY AND LIVABILITY.'

ACTIVE TRANSPORTATION FACILITY

The following map shows the Bicycle Access on D7 freeways. Access Code 1 represents Freeway shoulders open to bike travel and Access Code 3 shows Expressways & Conventional highways open to Bicycle travel in D7.

Currently Route 47 is not open to bicycle travel. Future improvements to SR-47 corridor crossings or interchanges must not sever existing bicycle and pedestrian access facilities crossing the corridor and any new and planned projects at crossings or interchanges must provide for the safe accommodation of bicycles and pedestrians.



In addition to Senate Bill No. 99 (SB-99) of September 26, 2013 pertaining to Active Transportation funding, California Department of Transportation Deputy Directive (DD)-64-R2 (Complete Streets-Integrating the Transportation System), effective of October 2, 2008 views all transportation improvements as opportunities to improve safety, access and mobility for all travelers in California and recognizes bicycle, pedestrian and transit modes as integral elements of the transportation system. Bicycle, pedestrian and transit travel is facilitated by creating

“complete streets” beginning early in System Planning and continuing through project delivery, maintenance and operations.

The Complete Streets Act of 2008 (AB. No. 1358 of September 30, 2008) requires cities and counties to incorporate the concept of Complete Streets into their General Plan Updates to ensure that transportation plans meet the needs of all users of our roadway system.

Also, Streets and Highway Code Section 888 (Revised 10/4/2013) states that the department shall not construct a state highway as a freeway that will result in the severance or destruction of an existing major route for non-motorized transportation traffic and light motorcycles, unless it provides a reasonable, safe, and convenient alternate route or such a route exists.

SCAG’s 2012-2035 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) invests $6.7 billion towards increasing bikeways, bringing sidewalks into compliance with Americans with Disabilities Act, safety improvements and other Active Transportation Strategies.

The United States Department of Transportation (US DOT) Policy Statement on bicycle and pedestrian accommodation (March 11, 2010) also states that US DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate.

Based on Caltrans’ context sensitive, smart mobility and complete streets policies and the Governor’s Office’s Climate Action and Sustainability Plan; “where the existing freeway or highway corridor has severed routes and has decreased connectivity between communities, employment hubs, schools, wild life corridors, every effort will be made to re-establish those lost connections on any project along the corridor.”

SB-99, the listed Caltrans Deputy Directive, California Vehicle and Highway Code, SCAG’s 2012 RTP/SCS and U.S. DOT policy statements all support Complete Street including bicycle and pedestrian facilities for SR-47.

PARK AND RIDE FACILITIES

SR-47 has several Park and Ride Facilities located in close proximity. The table below lists these facilities.

Address	Lot Name	Spaces	Cost
610 Channel St, San Pedro, Ca	San Pedro	106	Free
515 N. Beacon, San Pedro, Ca	San Pedro II	280	Free

Source : 2014 METRO

TRANSIT FACILITY

The transit component for State Route 134 embodies a multi-modal system including carpooling, local and express transit service, and Commuter Rail (Metrolink). These agencies operate along this route, providing the following services (see below):

SR47 - TCR TRANSIT INFORMATION - DISTRICT 7

Source: Office of Mass Transportation and Transit Operators

EXISTING SERVICE ON SR 47

Route	From/To	Operator	Rt #	Name/Description	Service Type	Service Span	Notes
47	Gaffey St-Ferry St	LADOT	142	Long Beach-Ports O' Call	Express	7 Days	30-60 min Frequency
47	I-110-Harbor	Metro	450	Downtown Los Angeles - San Pedro via Harbor Transitway	Express	7 Days	15-60 min Frequency

NOTE

Metro Express 450 operates Downtown Los Angeles-San Pedro weekday peak-periods only. Service terminates at Harbor Gateway Transit Center at all other times.
Waterfront Red Car operates on Harbor Blvd. from Cruise Ship Terminal to Ports O' Call Village. Service may be discontinued .

INTERMODAL TRANSIT CENTERS AND STATIONS LOCATED ON OR NEAR SR 47 CORRIDOR

Route	Location	City	Operator	Transit Service	Service Type	Service Span	Notes
47	Harbor/Beacon Park & Ride	Los Angeles	Metro	Metro 450	Express	Weekdays Peak	Free Parking
47	Long Beach Transit Gallery	Long Beach	City of Long Beach	Metro Blue Line	Light Rail	7 Days	Paid Parking
				Metro 60,232	Local	7 Days	
				Long Beach 1,21,22,46,51,61,	Local	7 Days	
				71,72,81,91,92,93,94,96,111,112,			
				121,151,172,173,174,181,182,			
				191,192			
				Long Beach Passport	Local	7 Days	
				LADOT 142	Express	7 Days	
				Torrance 3,3R	Local,Rapid	7 Days	
				Amtrak Thruway Bus	Inetercity	7 Days	
47	Harbor Gateway Transit Center	Los Angeles	Metro	Metro Silver Line	Transitway	7 Days	Free Parking
				Metro 51,130,205,246,344,352	Local	7 Days	
				450,550	Express	7 Days	
				Carson Circuit	Local	Monday-Saturday	
				Gardena 2,4	Local	7 Days	
				Torrance 1,4,6	Local, Express	7 Days	

FREIGHT

TRUCK:

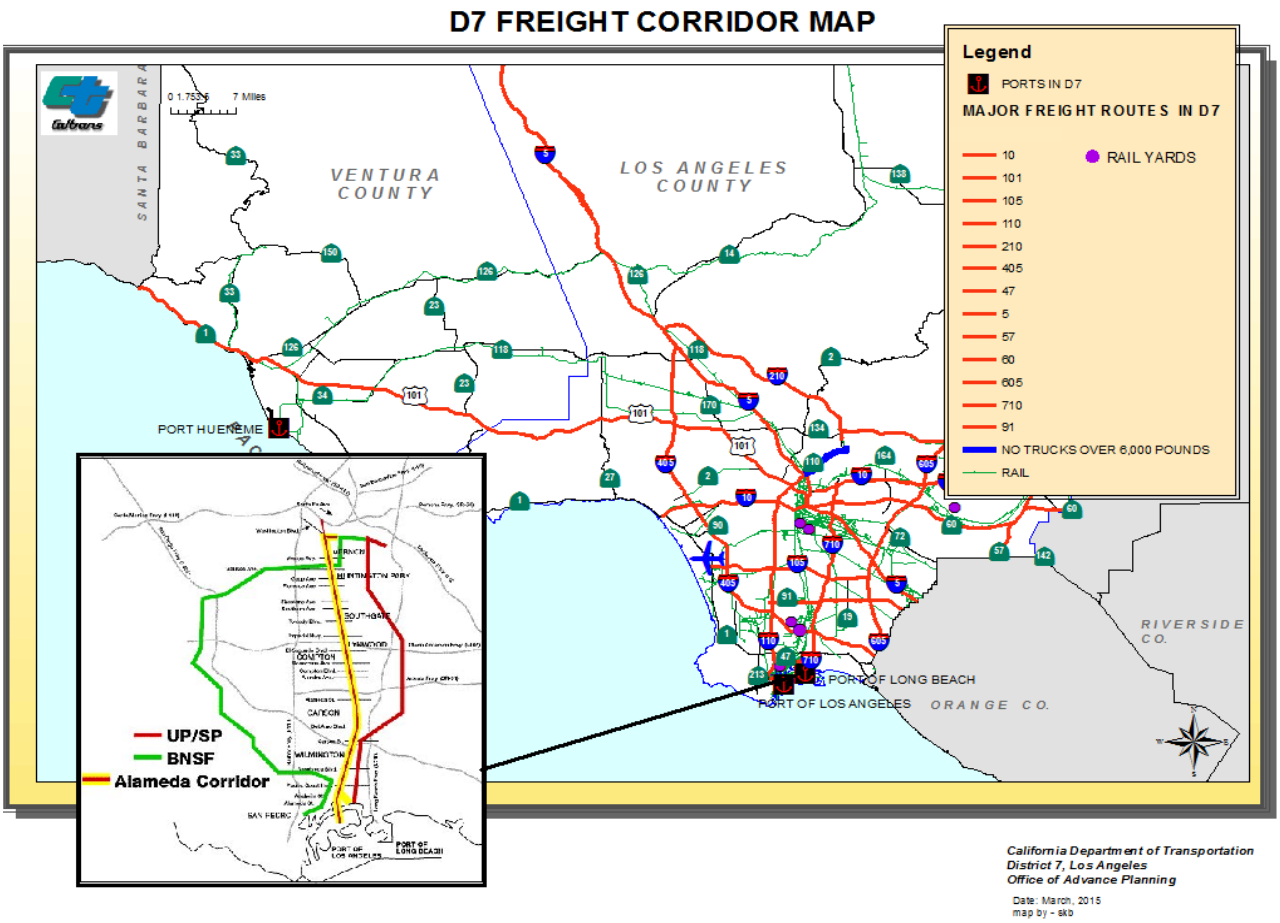
SR-47 is a Terminal Access route. A Terminal Access route allows STAA truck access between National Network Routes or a freight terminal facility. Truck volumes in 2008 range from 9.7%. to 58.03 % of AADT. Regionally, truck traffic in Southern California is expected to grow significantly through 2035, using an increasing share of the regions' highway capacity. Truck vehicle-miles-traveled (VMT) on regional highways is projected to grow by 80 percent between 2008 and 2035, an increase from 6.8 percent to over 10 percent of total VMT. (Source: SCAG's On the Move: A Comprehensive Regional Goods Movement Plan and Implementation Strategy; December 2012)

RAIL:

In conjunction with trucks, seaports and airports, rail is one of the major components for freight. Union Pacific (UP) railroad and Burlington Northern Santa Fe (BNSF) railroad in conjunction with the Alameda Corridor serves the area near SR-47. Available freight facilities include the Intermodal Container Transfer Facility (ICTF) and the Alameda Corridor together with several truck routes in the area. SCIG is another proposed Intermodal Transfer Facility that may soon be available.

SEAPORTS:

The location of SR-47 makes it accessible to trucks using the San Pedro Bay Ports of Los Angeles (POLA) and Long Beach (POLB) as well as several Interstates and a State Route. With the replacement of the Schuyler Heim Bridge, better access will be available for freight movement thus reducing queuing time for trucks.



ENVIRONMENTAL CONSIDERATION - California is known for traffic congestion and its impacts. Pollution of various types is typical in this region. Air quality, noise and water pollution are common. Below is the latest attainment/nonattainment status of SR-134 Corridor which falls in the South Coast Air Quality Management District.

POLLUTANTS	STATE DESIGNATION
Ozone	Nonattainment
Carbon Monoxide	Attainment
PM2.5	Nonattainment
PM10	Nonattainment
Nitrogen Dioxide	Attainment
Sulfur Dioxide	Attainment
Sulfates	Attainment
Lead	Attainment
Hydrogen Sulfide	Unclassified
Visibility Reducing Particles	Unclassified

** Source: Air Resource Board 2013 State Designation Map*

CORRIDOR PERFORMANCE:

Segment 1A has 56,200 AADT in 2035 according to the modeling data. The segment currently operates at LOS A during the period of peak congestion.

Segment 1B has 56,300 AADT in 2035 according to the modeling data. The segment currently operates at LOS F0 during the period of peak congestion.

Segment 2 has 19,900 AADT in 2035 according to the modeling data. The segment currently operates at LOS A during the period of peak congestion.

Segment 3 (Paper Route)

Basic System Operations						
Segment	**AADT 2008**	**AADT 2035**	**LOS 2008**	**LOS 2035**	**VMT 2008**	**VMT 2035**
1A	48,500	56,200	A	A	42,600	49,400
1B	39,200	56,300	F3	F0	26,600	38,200
2	16,600	19,900	A	A	14,300	17,200
3	Paper Route					

* Source: 2012-2035 RTP/SCS model data

Truck Traffic				
Segment	**Total Average Annual Daily Truck Traffic (AADTT) 2008**	**Total Trucks (% of AADTT) 2008**	**5 + Axle Average Annual Daily Truck Traffic (AADTT) 2008**	**5 + Axle Trucks (% of AADTT) 2008)**
1A	47,300	9.7%	1,950	42.4%
1B	47,300	9.7%	1,950	42.4%
2	16,600	58.3%	5,400	56.2%
3	Paper Route			

* Source: Caltrans Truck Volume Book

CORRIDOR CONCEPT

CONCEPT RATIONALE

The transportation concept describes the operating conditions and physical facilities required to provide those conditions that could exist on SR-47 after considering the conclusions, priorities and strategies discussed in the District System Management Plan (DSMP), the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), 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 improvements to maximize the efficiency on SR-134 will be implemented.

The transportation concept is composed of a Level of Service (LOS) and facility component. The concept facility is the facility that could be developed to maintain or attain the concept LOS.

PLANNED/PROGRAMMED PROJECTS AND STRATEGIES

SEGMENT	COUNTY	POST MILES	PROJECT DESCRIPTION	SOURCE	RTP ID
1	LA	R0.0-3.88	Vincent Thomas Bridge, develop and analyze alternatives including modification of existing bridge, construct parallel bridge, construction of a second bridge at new location. Replacement of the existing bridge or construct a tunnel crossing.	METRO 09LRTP	
1	LA	R0.0-3.88	At Ocean Blvd -- interchange improvement.	METRO 09LRTP	
1	LA	R0.0-3.88	NB Navy Way flyover connector to WB Seaside (SR-47).	METRO 09LRTP	
1	LA	R0.0-3.88	Vincent Thomas Bridge Study-Develop and analyze alternatives to increase needed capacity. SAFETEA-LU HPP #297 non capacity.	2012 RTP	LA0D391
1	LA	R0.0-3.88	Construction of interchange at SR-47/Navy Way.	2012 RTP	1M0430
1	LA	R0.0-3.88	New westbound SR-47 on and off ramps at Front street just west of the Vincent Thomas Bridge and eliminate the existing non-standard ramp connection to the Harbor Blvd off-ramp connection. Front street north of the new intersection will be modified to provide two northbound lanes, two southbound lanes and an exclusive right-turn lane. Front Street south of the new intersection will be modified to provide one northbound lane, two northbound left-turn lanes and two southbound lanes.	2012 RTP	1120007
2	LA	3.497-4.565	Route 47: Replacement of Schuyler Heim Bridge to include 2 thru lanes and 1 aux lane NB; and 3 thru lanes and 1 aux lanes SB (EA 13820, PPNO 0444E).	2012 RTP	LA0G600
2	LA	3.497-4.565	SR-47 Expressway: Replacement of Schuyler Heim Bridge to include 2 thru lanes and 1 aux lane NB: and 3 thru lanes and 1 aux lane SB; construct expressway and 2-lane flyover. SAFETEA-LU #712 & #3797.	2012 RTP	LA0D45

COMPASS BLUEPRINT

Demonstration Projects from Compass Blueprint (Compass Blueprint is a new way to look at how Southern California grows. It is driven by Mobility, Livability, Prosperity and Sustainability)

Rancho Palos Verdes Western Avenue Corridor Strategy.

As Rancho Palos Verdes continues to grow, traffic along Western Avenue is expected to increase significantly. This project revitalizes the corridor in order to reduce congestion while also improving access for bicyclists and pedestrians, reducing greenhouse gas emissions, and creating an attractive corridor to travel along.

Goals

- Improve traffic predictability along the corridor
- Increase access for bicyclists and pedestrians
- Revitalize the corridor and beautify the street

Rancho Palos Verdes and nearby communities partnered on an effort to reimagine Western Avenue for the future, creating recommendations that will improve livability and access to residents and visitors. In order to turn the corridor from a functional road to some place special, the project provides methods to revitalize the avenue via aesthetic improvements, multi-modal transit improvements, and business incentives.

Results

- Strategy for the 2 mile Western Avenue Corridor
- Guidelines for new developments as they become available
- Recommendations to update nature of development along corridor

Recommendations for Southern Segment

- New developments should be built along property lines
- Establish parking on property rears
- Sidewalks with 15 foot minimum
- Prioritize opportunities to create open space

Recommendations for Middle Segment

- East side of street to expect similar improvements as southern segment due to its commercial nature
- Cosmetic improvements along residential west side of the street
- Combine bio-swale infrastructure and sidewalk expansion to bolster space between pedestrians and vehicles while managing storm water

Northern Segment

- With both sides of the street dominated by facilities that will not be changing, this section provides an opportunity for monumental art to be visible to auto users to create a gateway element as drivers enter the commercial heart of the corridor

Demonstration Projects from Compass Blueprint (Compass Blueprint is a new way to look at how Southern California grows. It is driven by Mobility, Livability, Prosperity and Sustainability)

Long Beach Blvd Corridor Study

Through the Compass Blueprint program, the City of Long Beach has conducted an analysis of how best to achieve the City's vision for mixed use, transit oriented development around the Metro Blue Line stations along the Long Beach Boulevard corridor.

Goals

- Leverage and maximize the investments made into the Metro Rail Blue Line
- Design and create vibrant, mixed use, and walkable communities
- Provide a mix of housing and jobs to commuters and local neighborhoods
- Increase the amount of affordable housing
- Revise land use regulations to encourage and allow more accommodating streetscapes

Long Beach Boulevard is an ideal location for the type of mixed use development that helps create the type of environment that is critical for sustaining a vibrant, walkable community that supports healthy activity around the clock. Promoting mixed use developments would use land more efficiently, and provide new opportunities for the construction of various housing types. Additionally, concentrating dense development around high capacity transit systems, such as the Blue Line in Long Beach, allows residents to easily access the entire Southern California region without relying on a car. By reducing dependence upon individual transportation and clustering services within close proximity to neighborhoods, carbon emissions can be reduced. Focusing development along corridors such as Long Beach Boulevard presents an important local solution in the quest to address regional air pollution.

Results

- Potential infill analysis of 340 acres or 1300 parcels
- 82 acres or 310 parcels with redevelopment potential
- Development scenario comparisons comparing 50 ft. and 150 ft. height allowances
- Increasing residential density through redevelopment would provide an additional 63
- 81 dwelling units per acre within a quarter-mile of a transit station
- Revised development standards along corridor to increase the allowable building height and reduce the minimum parking requirements to encourage market-feasible development
- Establish tax-increment financing district along the corridor
- Shift from an auto-oriented urban design to a pedestrian-oriented design
- Engage the public realm by offering accessible entryways for bicyclists and Pedestrians.

CONCLUSION

Traffic volume is forecasted to increase on SR-47 due to the growth in population, housing and employment along this route and throughout the region. Growth in the region will continue to create mobility challenges and put additional stresses on our transportation system. Southern California is not only an important component of California's economy but it is also vital to the United States and world's economies as a whole. It is critical that mobility be maintained and improved in order to sustain the economic growth that is expected. In addition to sustaining the economic vitality of the region, mobility is also an important component in enhancing the quality of life for the residents in this region. SR-47 is only one component of the transportation infrastructure, but it plays a critical role in providing mobility for the region. In order to improve mobility, additional capacity will be required beyond those planned and programmed in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to maintain an acceptable level of service through 2035.

District 7 employs a variety of strategies to address current congestion challenges including:

- High Occupancy Vehicle Lane (HOV)
- Ramp Metering
- Congestion Pricing (Toll Lanes)
- Changeable Message Signs (CMS)
- TSM&O (Transportation System Management and Operations)

Several regional freeway capacity expansion projects are in the planning process, under development or under construction which will assist in decreasing congestion.

Constructing an HOV or Managed Lane system continues to be a priority. Incorporating TSM&O strategies into the planning process will help to support Caltrans new mission of providing safe, sustainable, integrated and efficient transportation system in the region.

The highway system is only one component of the transportation infrastructure; but it plays a very important role in providing mobility for the region. To achieve the desired minimum acceptable level of service, additional lanes will be needed beyond those planned and programmed in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

In addition to the projects on our system, Caltrans supports programs such as Transit Oriented Development (TOD). TOD is a moderate to higher density development, located within easy walk of a major a transit stop. Generally with a mix of residential, employment and shopping opportunities designed for pedestrians. Research has shown that these types of development increase the number of trips made by transit, walking and cycling thus reducing the number of car trips and reducing tailpipe emissions.

SCAG's 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies High Quality Transit Areas (HQTAs) meeting definitions established in SB 375. These areas are intended to direct and prioritize future growth, and further, establish eligibility for certain types of projects to access CEQA streamlining. Note, however, that residential and other types of development along freeways can be associated with increased health risk due to emissions exposure. Future projects should refer to available information resources, including but not limited to SCAG's 2012-2035 RTP/SCS Environmental Justice Appendix and Program Environmental Impact Report.

Appendix A

GLOSSARY OF TERMS AND ACRONYMS

Acronyms

AADT	Annual Average Daily Traffic
AADTT	Annual Average Daily Truck Traffic
ADT	Average Daily Traffic
AQMD	Air Quality Management District
CALTRANS	California Department of Transportation
CEQA	California Environmental Quality Act
CHSRA	California High Speed Rail Authority
CMP	Congestion Management Plan
FHWA	Federal Highway Administration
HOV	High Occupancy Vehicle Lane
HOT	High Occupancy Toll Lane
IC	Interchange
IRRS	Interregional Road System
ITIP	Interregional Transportation Improvement Program
ITS	Intelligent Transportation System
LACBD	Los Angeles Central Business District
LOS	Level of Service
MF	Mixed Flow Lane
MFE	Mixed Flow Equivalent
ML	Managed Lane

MPO	Metropolitan Planning Organizations
RTP	Regional Transportation Plan
RTIP	Regional Transportation Improvement Program
RTPA	Regional Transportation Planning Agency
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Community Strategy
SHOPP	State Highway Operation Protection Program
SHS	State Highway System
SR	State Route
STIP	State Transportation Improvement Program
STAA	Surface Transportation Assistance Act
TDM	Transportation Demand Management
TMS	Transportation Management System
V/C	Volume to Capacity Ratio
VMT	Vehicle Miles Traveled

DEFINITIONS

Annual Average Daily Traffic (AADT) - AADT is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th.

Facility Concept – Describes the facility and strategies that may be needed within 20-25 years. This can include capacity increasing, state highway, bicycle facility, pedestrian facility, transit facility, non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, transportation demand management, and incident management.

Focus Route – Focus Routes are a subset of the 34 High Emphasis Routes. The routes represent 10 IRRS corridors that should be of the highest priority for completion to minimum facility standards in the 20-year period. Completion of the Focus Routes to minimum facility standards (for most routes freeway or expressway) will assure a statewide trunk system is in place and complete for higher volume interregional trip movements. Focus Routes will serve as a system of high volume primary arteries to which lower volume and facility standard state highway routes can connect for purposes of longer interregional trips and access into statewide Gateways. The routes, taken as a whole, constitute a "backbone" for additional capacity and complete facilities for the state. They balance north-south and east-west access and connectivity statewide. The Focus Routes assure rural connectivity for the north state and otherwise connect the fastest growing urbanized areas and urban centers to a trunk system. All Focus Routes are on the National Highway System (an exception is the S.R. 49 portion of the S.R. 20 corridor), Freeway and Expressway System, and are STAA Truck or Truck Terminal Routes.

High Emphasis Route – The High Emphasis category represents routes that have high interregional importance from a statewide perspective. This makes them a priority to be programmed and constructed to at least the minimum facility concept standard (for most routes, this is freeway or expressway). The interstates are included in the High Emphasis category to highlight their critical importance to interregional travel and the State as a whole.

Interregional Road System -- IRRS was first identified by statute in 1989 as part of the Blueprint Legislation (a 10-year transportation funding package including AB 471, SB 300, and AB 973). It is a subset of the entire 265 SHS routes that provides connectivity among all of California's regions. There are currently 93 statutory IRRS routes (page 3 and Appendix E, page 101 Interregional Transportation Strategic Plan – October 2013). The IRRS was conceived as part of the larger effort to address the critical transportation system funding and development needs of the State. The implementation of IRRS improvements is dependent on prioritization of State transportation revenues. Most interstates are included in the IRRS. SB 45 requires that the ITIP include a specific allocation of funds to be programmed on IRRS routes in non-urbanized areas.

Level of Service (LOS) – It is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of density, speed, travel time, freedom to maneuver, traffic interruption, comfort and convenience. LOS can be categorized as follows:

LOS A describes free flowing conditions.

LOS B also indicative of free flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.

LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the present of other vehicles.

LOS D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.

LOS E reflects operations at or near capacity and an extremely unstable flow. Maneuverability and psychological comfort are poor.

LOS F is a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. To reflect the duration of congestion, the LOS F has been expanded into F0, F1, F2 and F3. Each LOS F indicates the time a segment is congested. F0 (0-1 Hour), F1 (1-2 Hours), F2 (2-3 Hours), F3 (> 3 Hours)

Mainline – includes travel way for through traffic but not freeway to freeway interchanges, local road interchanges, ramps, or auxiliary lanes.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between six percent and 10 percent of the Annual Daily Traffic (ADT). The lower values are generally found on roadways with low volumes.

Post Mile (PM) – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a county to the next county line. The milepost values start over again at each county line. Mile post values usually increase from south to north or west to east depending upon the general direction the route follows within the State. The milepost at a given location will remain the same year after year. When a section of road is

relocated, new milepost (usually noted by an alphabetical prefix such as “R” or “M”) are established for it.

Vehicle Miles Traveled (VMT) – Is the total number of miles traveled by motor vehicles on a road or highway segments.