Ventura County Freight Corridor Study

Existing Conditions

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INTRODUCTION

The Ventura County Transportation Commission (VCTC) and the Southern California Association of Governments (SCAG), in cooperation with the California Department of Transportation (Caltrans) and the Port of Hueneme, is studying freight corridors in Ventura County with the objective of identifying impacts associated with freight movement, and developing strategies to avoid or reduce to the maximum extent practicable, the impacts, while also promoting a safer, more efficient, and sustainable freight transportation network, especially between US 101 and the major regional highways (State Route 126 and State Route 118) and beyond. This study focuses on the southern part of Ventura County—generally south of the Los Padres National Forest—where the population centers are concentrated.

Understanding and evaluating truck travel patterns in the County entails differentiating the purpose of truck travel, whether it be interregional trips on the highway system, intraregional trips involving transport of agriculture and movement of manufactured bulk items, port-related trips (involving containers, bulk freight, and roll-on/roll-off cargo), or local deliveries. The Ventura County Comprehensive Economic Development Strategy listed "investments in infrastructure and the development of new resources in hazard mitigation" as the first regional economic development goal. This included "increase local investments and leveraging of state, federal and private funds for improved roadways and multi-modal connectivity throughout the County" to support a resilient regional economy.[1]

Freight goods produced, consumed and flowing through Ventura County are transported on the County's roadway and rail systems. Freight predominately shares its facilities with passenger transportation both on the roadways and railways with some exclusive freight facilities serving the Port of Hueneme. Shared facilities are cost-effective, as they do not duplicate infrastructure, however they do make goods movement susceptible to passenger congestion, rail timetables, and increased potential for conflict among modes of travel. There is no single type of freight flow in Ventura County. Multiple types of freight trips layer upon each other and interact with the passenger transportation system, and analyzing each element of the freight system will help identify mobility and safety improvements to improve efficiency and access in the delivery of goods to support consumption, manufacturing and agriculture associated with a healthy economy.

This Existing Conditions Report is intended to summarize the existing use of the transportation system (including the regulatory environment and facilities) by freight in Ventura County. This report is organized into the following sections:

1. **Regulatory Framework – The Rules of Freight Movement** provides the existing setting for freight, what regulates its movement and how these regulations affect the use of the transportation system.
2. **County Land Use Patterns – The Demand for Freight** describes major generators of trips, and the primary facilities they use.

[1] Ventura County Comprehensive Economic Development Strategy, April 2019 https://edcollaborative.com/wp-content/uploads/2019/10/Final-CEDS-Adopted-2019.pdf

3. **Freight System – The Transportation System Elements Available for Freight Movement** describes the transportation system for freight movement.
4. **Freight Activity – How the Economy Uses the Freight System** describes the typical daily volume of freight and an inventory of prior safety incidents. These may indicate areas where efficiency and safety improvements may improve the overall transportation system.
5. **Identified Freight Issues – Where are Improvements Needed** is a distillation of issues revealed through analysis which summarizes major mobility and safety concerns to be reviewed for potential improvement actions.
6. **Data Sources and Standards – How Existing Conditions Were Collected** describes how data was obtained and analyzed in the report.

1 REGULATORY FRAMEWORK – THE RULES OF FREIGHT MOVEMENT

This section provides an overview of federal, state and local legislation and plans that create the regulatory framework for Ventura County's freight system. A brief summary regarding each legislative act and planning document at the federal, state, regional, and county levels along with explanations of their primary intentions and implications is provided below.

1.1 Federal Regulations

Surface Transportation Assistance Act of 1982 (STAA) – established a comprehensive system for transportation funding and policy, specifically to address concerns regarding surface transportation infrastructure such as highways and bridges. The act contained the Highway Revenue Act of 1982 (Title V), adding the first increase to the federal gasoline tax since 1961 of five cents per gallon, of which four cents was dedicated specifically for interstate highway and bridge restoration. Most notably, the act authorized the establishment of the National Network of federal and state highways designated for use by commercial freight-hauling truck drivers.

The National Network includes nearly the entirety of the Interstate Highway System in addition to other specified non-Interstate highways within both the National Highway System and state highway networks that are considered primary corridors for goods movement and meet the same criteria for use by large trucks. The National Network Criteria designates such routes, known as STAA routes, on the basis of their general adherence to the following[2]:

- The route is a geometrically typical component of the Federal-Aid Primary System, serving to link principal cities and densely developed portions of the States.
- The route is a high volume route utilized extensively by large vehicles for interstate commerce.
- The route does not have any restrictions precluding use by conventional combination vehicles.
- The route has adequate geometrics to support safe operations, considering sight distance, severity, and length of grades, pavement width, horizontal curvature, shoulder width, bridge clearances and load limits, traffic volumes and vehicle mix, and intersection geometry.
- The route consists of lanes designed to be a width of 12 feet or more or is otherwise consistent with highway safety.
- The route does not have any unusual characteristics causing current or anticipated safety problems.

National Network corridors are generally recommended for accommodating pass-through truck traffic. However, the law allows for "reasonable access" to and from the network for truck terminals, truck stops,

[2] https://web.archive.org/web/20090419222735/http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.asp?chunkKey=090163348008ee29

deliveries, repairs, etc. Roadways that otherwise have truck restrictions are superseded by this law and allowed to accommodate trucks if there is no other reasonable means of access to the destination.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) – presented the first federal legislative intermodal approach to highway and transit funding, mandating collaborative planning requirements and giving significant additional powers to metropolitan planning organizations (MPOs). ISTEA defined a number of High Priority Corridors as part of the National Highway System, and offers the most recent amendments to the definition of the National Network concerning criteria for route designations and truck size and weight limitations. This act also laid out the first designations of high-speed rail corridors in the United States, which included the now-controversial California high-speed rail corridor linking San Diego and Los Angeles to the San Francisco Bay Area and Sacramento via the San Joaquin Valley. ISTEA was reauthorized as Transportation Equity Act for the 21st Century (TEA-21) in 1998, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012, and Fixing America's Surface Transportation (FAST) Act in 2015.

FAST Act – is the current federal transportation authorization which provides long-term funding certainty for surface transportation infrastructure planning and investment while encouraging a broader scope of performance-based planning first introduced by its preceding authorization law, Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act was set to expire on September 30, 2020. However, on September 22, 2020, within the "Continuing Appropriations Act of 2021 and Other Extensions Act of 2020," Congress extended the FAST Act for one additional year through September 30, 2021. FAST enabled the establishment of the National Highway Freight Network[3], consisting of the following subsystems of roadways:

- Primary Highway Freight System (PHFS) – a network of highways considered most critical to the US freight transportation system.
- Non-PHFS Interstate Highways – remaining portion of Interstate highways not included in the PHFS, providing continuity and access to freight transportation facilities.
- Critical Rural Freight Corridors (CRFCs) – public roads not in an urbanized area that provide access and connection to the PHFS and Interstate highway system along with important ports, public transportation facilities, and/or intermodal freight facilities.
- Critical Urban Freight Corridors (CUFCs) – public roads in urbanized areas that provide access and connection to the PHFS and Interstate highway system along with important ports, public transportation facilities, and/or intermodal freight facilities.

States and in certain cases, Metropolitan Planning Organizations (MPOs), are responsible for designating public roads for the CRFCs and CUFCs in accordance with section 1116 of the FAST Act. SCAG added Rice Avenue and the remaining freeway portions of State Route 118 and State Route 23 in the County to the PHFS since the initial defining of routes in 2015.

[3] https://www.fhwa.dot.gov/fastact/summary.cfm

In addition to the NHFN, the FAST Act continues the use of the Federal Transportation Improvement Program (FTIP), a key mechanism in the allocation of federal grant money for transportation projects including in Ventura County.

Federal Motor Carrier Safety Regulations are developed by the Federal Motor Carrier Safety Administration to address interstate motor carrier safety. One of the most impactful regulations on trucking operations is the hours-of-service regulations found in Part 395 of the Federal Motor Carrier Safety Regulations. In general, a truck weighing more than 10,000 pounds for commercial purposes is subject to hours-of-service regulations. This regulation places specific limits on the amount of time an operator can drive a truck before requiring a rest period and a limit on the total work week hours. There is a 14-hour "driving window" limit, 11-hour driving limit, and 60-hour/7-day and 70-hour/8-day duty limits. There are exceptions from the hours-of-service regulations for agricultural, emergency, short-haul, construction and other types of operations.

These regulations require trucking companies to ensure drivers rest when they have timed out of service. Often the drivers are unable to find a designated truck parking location and are required to rest on the side of roadways or in private parking areas, which may or may not be designated for truck parking.

1.2 State of California Regulations

California Vehicle Code sets the regulations for vehicles in the state. The California speed limit for any truck with three or more axles is 55 miles per hour (Section 22406 CVC). Because of this, trucks are included with vehicles that are required to use a designated lane or lanes on the curb side (outside) of a roadway. When overtaking and passing another vehicle proceeding in the same direction, the driver can use the lane to the immediate left of the right-hand lane, or the right-hand lane for traffic (Section 21655 CVC). Therefore, to large vehicles, every roadway has a maximum of two useable lanes.

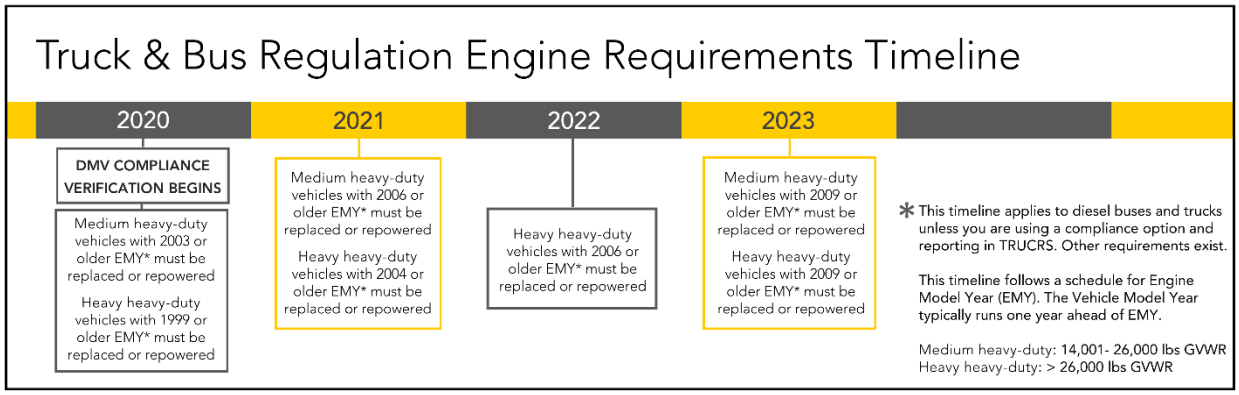
The maximum gross weight for a vehicle combination is 80,000 lbs. in the State of California. There are additional weight limits specifically for number of axles and vehicle length and some exceptions to exceed the weight limit. Any county or city may permit loads that exceed State weight limits on highways under their jurisdictions, but only on locally owned roads—not state facilities (Section 35700 CVC). Both the state and local roadway owners have processes to obtain overweight vehicle permits.

The California Highway Patrol (CHP) operates California's "Commercial Vehicle Enforcement Facilities," commonly called weigh stations or truck scales. Every driver of a commercial vehicle shall stop and submit the vehicle to an inspection of the size, weight, equipment, and smoke emissions at any location where members of the CHP are conducting tests and inspections of commercial vehicles and when signs are displayed requiring the stop (Section 2813 the CVC). There is a weigh station in the Conejo pass along US 101 and a mini-site weigh station along State Route 118 between Moorpark and Somis.

Truck and Bus Regulation Engine Requirements are promulgated by the California Air Resources Board. Diesel trucks and buses with a gross vehicle weight rating (GVWR) that are greater than 14,000 pounds (lbs), must reduce exhaust emissions by meeting particulate matter (PM) filter requirements and upgrading to a 2010 or newer engine model year (EMY) based on a schedule of implementation through

2023 for most heavy vehicles with the exceptions for port and rail drayage (port or rail) trucks until January 1, 2023.

Figure 1: Truck and Bus Regulation Engine Requirement Timeline



Source: California Air Resources Board https://ww3.arb.ca.gov/msprog/truckstop/tb/truckbus.htm

CARB also offers a Truck Loan Assistance Program to help small-business fleet owners affected by CARB's In-Use Truck and Bus regulation to secure financing for upgrading their fleets with newer trucks. The program is open to qualified trucking fleets with 10 or fewer heavy-duty vehicles. In addition to meeting CARB's program criteria, California Pollution Control Financing Authority's California Capital Access Program requires that an eligible trucking company meet basic requirements by qualifying as a small business (fewer than 100 employees), generate less than $10 million in annual revenue, and operate primarily in California.

In addition to regulating truck engine year, CARB has regulations for diesel-fueled Transport Refrigeration Units (TRUs), low-rolling resistance tires and aerodynamic devices on 53-foot or longer trailers.

CARB developed a medium and heavy-duty zero-emission fleet regulation with the goal of achieving a zero-emission truck and bus California fleet by 2045 everywhere feasible and significantly earlier for certain market segments such as last mile delivery and drayage applications. The regulations include a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets to help CARB achieve its emission reduction strategies as outlined in the State Implementation Plan, Sustainable Freight Action Plan, Senate Bill 350, and Assembly Bill 32.

California Global Warming Solutions Act (AB 32) was enacted in 2006, AB 32 established the first statewide mandate to reduce greenhouse gas (GHG) emissions in California, aiming for a reduction to 1990 levels by the year 2020. To achieve these goals, California's Sustainable Communities and Climate Protection Act (SB 375) was enacted, directing each MPO within the state to develop a Sustainable Communities Strategy (SCS) as part of its mandated Regional Transportation Plan (RTP) that shall demonstrate how each region will attain its targeted emissions reductions.

California Freight Mobility Plan (CFMP) was adopted in 2014 under requirements set forth 14 in Assembly Bill (AB) 14 (Lowenthal, 2013) codified under California State Government Code (GC) Section 13978.8, to create a statewide freight plan, to be updated every five years. The FAST Act (2015) requires states to

develop FAST Act compliant state freight plans and update them every five years to be able to obligate National Highway Freight program funding. The latest plan, published in 2020, recapped the federally required elements addressed in the 2014 plan with the addition of three new FAST Act elements – the designation of Critical Urban Freight Corridors (CUFC) and Critical Rural Freight Corridors (CRFC), the consideration of any significant congestion or delay caused by freight movements and strategies to mitigate said congestion or delay, and a freight investment plan.

The 2020 CFMP was guided by the California Freight Advisory Committee, composed of a cross-section of representative public and private sector freight stakeholders, and is structured to provide the following[4]:

- A consistent vision across the state by showcasing overarching goals and objectives that enhance California's economy, protect the environment, and support a transportation system that can meet current and future freight demands. A framework for sound policy decisions in relation to the overall economy by developing competitiveness in the twenty-first century.
  A review of the current performance and conditions of California freight infrastructure that are critical to making proper investments to enhance the movement of goods.
- A detailed look at current trends, issues, and challenges facing the freight network and supply chain, including E-commerce, omni-channel distribution, first-and-last mile delivery, 3-D printing, and autonomous vehicles all pose opportunities for the State's aging infrastructure as technology advancements speed forward, placing excess burden on highway capacity and travel demand. A detailed look at the current state of trends, issues, and challenges facing the State's freight network and supply chain are explored in-depth.
- A strategic public outreach effort to understand the challenges of maintaining and preserving its environmental assets including air and water while reducing negative environmental impacts on communities due to land development and transportation practices specifically related to goods movement.

Seven Regional Freight Investment Strategies that highlight the uniqueness of each region's freight needs. Using this structure, the CFMP 2020 focuses on the seven primary goals of multimodal mobility, economic prosperity, environmental stewardship, healthy communities, safety and resiliency, asset management, and connectivity and accessibility, as they relate to the state's freight and goods movement system.

California Sustainable Freight Action Plan (CSFAP) formed in response to an executive order by Governor Brown and published in 2016, the CSFAP provides a vision for California's transition to a freight system that maintains economic competitiveness while reducing harmful pollution and greenhouse gas emissions in pursuit of environmental sustainability[5]. This includes recommendations on a long-term 2050 vision for California's freight transport system, 2030 targets to guide the state toward said vision, and outlines specific opportunities and action items to leverage investment, highlighting pilot projects and additional concepts for further exploration.

[4] https://dot.ca.gov/programs/transportation-planning/freight-planning/ca-freight-advisory-committee/cfmp-2020
[5] https://ww2.arb.ca.gov/our-work/programs/california-sustainable-freight-action-plan

Road Repair and Accountability Act of 2017 (SB 1) is a legislative act passed in 2017 with the aim of repairing surface transportation networks, improving traffic safety, and expanding public transportation systems across the state, using a fuel tax increase as its primary funding mechanism. The legislation allocates $300 million annually in state funding and approximately $515 annually in National Highway Program funds for freight projects seeking to enhance trade corridors throughout the state, guided by the adoption of Trade Corridor Enhancement Program (TCEP) disbursed mostly to local governments. The TCEP guidelines are used by the California Transportation Commission to evaluate project applicants via the following criteria[6]:

- Freight System Factors – throughput, velocity, and reliability;
- Transportation System Factors – safety, congestion reduction/mitigation, key transportation bottleneck relief, multi-modal strategies, interregional benefits, and advanced technology;
- Community Impact Factors – air quality, impact mitigation, economic/jobs growth;
- The overall need, benefits, and cost of the project;
- Project readiness to be completed in a timely manner;
- Demonstration of the required matching funds;
- Leveraging and coordination of funds from multiple sources;
- Joint nomination and/or funding.

The TCEP uses the above to fund projects specifically designed to move freight more efficiently on high-volume freight corridors. Examples of such projects include the use of on-dock rail at seaports, elimination of at-grade railroad crossings, mitigated/reduced impacts to surrounding communities, and increased rail capacity. The latest TCEP, adopted in March 2020, provides three years of programming through fiscal year 2022-2023.

1.3 Regional Plans

Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) are produced every four years by regional MPOs under federal mandate since the creation of MPOs under the 1962 Federal-Aid Highway Act. Aims and objectives for RTPs include improving accessibility, efficient management and operation, integration and connectivity, economic vitality, and environmental preservation by prioritizing and directing investment toward transportation projects within the region. In California, the passage of AB 35 in 2005 led to the additional mandate of including a Sustainable Communities Strategy (SCS) to achieve the state's GHG emission reduction targets via planning and investment in the regional transportation system.

SCAG is the regional MPO for Ventura County, as well as five other counties in Southern California, and is the nation's largest, directing planning for a population estimated at 18.5 million as of 2016. The 2016 RTP/SCS outlines in its "Goods Movement" chapter identified over $70 billion in investment needed to enhance and improve upon Southern California's freight system in pursuit of the aforementioned goals[7],

[6] https://catc.ca.gov/programs/sb1/trade-corridor-enhancement-program
[7] Ventura County General Plan Update – Transportation and Mobility Element Chapter 6.5

with plans that ultimately guide investment for seaports, air cargo facilities, Class I railroads, warehouse and distribution center linkages, the PHFS, and the broader road network.

Multi-County Goods Movement Action Plan (MCGMAP) was completed in 2008 under the leadership of the Los Angeles Metropolitan Transportation Authority (LA Metro) upon request from SCAG. The MCGMAP built upon the East/West Corridor Improvement Study and looked to address multi-county goods movement challenges and identify tailored solutions for them. LA Metro partnered with the county transportation authorities in the five other counties in the SCAG region, including VCTC. Specifically, the MCGMAP sought to assess growth in freight demand and trends in the logistics industry and evaluate key economic, environmental, and community impacts from freight movement generators and facilities in order to identify strategies for improved goods movement, mitigating effects on local communities and the environment, and develop an action plan report to identify institutional and funding mechanisms and arrangements to implement the plan successfully.

1.4 Ventura County

Ventura County adopted its 2040 General Plan on September 15, 2020. Chapter 4: Circulation, Transportation and Mobility Element identifies goals, policies, and programs that establish a framework for decisions in Ventura County concerning the countywide transportation system.

The **Ventura County Comprehensive Transportation Plan** (CTP) is a long-range policy document, built from community-based, local priorities and community-expressed need to enhance regional connections. The Ventura County Transportation Commission, communities, residents and other key stakeholders collaborated to create a transportation vision for Ventura County and identify ways of achieving this vision within constrained resources. It is aimed at ensuring mobility and enhancing the quality of life for all Ventura County residents. The CTP also fully examines various funding strategies and options from the federal, state, regional and local levels. It is intended to provide a framework for future community-based planning and collaboration and inform Ventura County's long-range transportation decisions.

Ventura County EV Ready Blueprint is intended to support electric vehicle and associated charging infrastructure development throughout Ventura County. The Blueprint highlights the existing market, funding, and policy context informing electric vehicle ecosystem development at regional and local levels for Ventura County. The Ventura County Electric Vehicle Ready Blueprint also provides a set of comprehensive recommendations to further accelerate the adoption of electric vehicles, expand access to electric vehicle charging through infrastructure improvements, and align Ventura County's transportation electrification initiatives with California's statewide electric vehicle programs, projects, and incentives.

The Blueprint's companion Electric Vehicle Accelerator Plans provide distinct community-specific Electric Vehicles Plans for the Cities of Ventura and Oxnard, and the Port of Hueneme. The Accelerator Plans provide program strategies for helping each jurisdiction transition its own fleet to electric vehicles, catalyze greater electric vehicle adoption amongst their own employees, and develop sufficient charging infrastructure for their communities. The Port's plan takes a special look at the health and environmental impact of electrifying drayage and heavy-duty trucks and powering these trucks and off-port warehouses with renewable energy.

Naval Base Ventura County (NBVC) Joint Land Use Study (JLUS) is a joint, collaborative effort between the cities of Camarillo, Oxnard, and Port Hueneme, County of Ventura, NBVC, and other stakeholders. The JLUS was undertaken in an effort to guide planning and land use decisions about development in local governments surrounding NBVC and its operational areas at NBVC Point Mugu, NBVC Port Hueneme, and NBVC San Nicolas Island.

NBVC uses local roadways for military mobilization of troops and equipment to and from the base to strategic locations throughout the US. The 2008 NBVC Encroachment Action Plan (EAP) identified three major corridors outside the fence that are strategic assets to the NBVC mobilization mission. Additionally, the corridors are used to transport ordnance from NBVC Port Hueneme to NBVC Point Mugu for storage. Due to the multiple users of these roadways and for planning purposes, the Navy has recommended coordination with local jurisdictions to ensure adequate level of service during mobilization activities. **Figure 10** includes the three mobilization corridors:

- Victoria Avenue to US Highway 101
- South Patterson Road to East Wooley Road to State Highway 1
- East Port Hueneme Road to Lincoln Court to South Rice Avenue to US 101

The study states that continued community growth can potentially increase traffic congestion on mission-critical and community roadways, delaying or interrupting mission activities and military readiness. These roadways including the following:

- Traffic flow on Hueneme Road where it necks down to two lanes;
- Growth may cause freight access issues from Victoria Gate to the US 101
- Traffic flow issues on Rice Avenue due to railroad crossings
- Traffic flow issues on Rose Avenue

Save Open-Space and Agricultural Resources (SOAR) was initially adopted by the Ventura County Board of Supervisors in 1998 and updated as part of Measure C in 2016 and includes a series of ordinances adopted by the County and most of the County's incorporated cities. Key features are:

- Requires a countywide vote on amendments to the Ventura County General Plan land use designations from Agricultural, Open Space or Rural to more intense land use designations or weaken the land use policies protecting agricultural resources.
- Establishes City Urban Restriction Boundaries (CURBs) and requires a citywide vote to alter these lines.
- LAFCO has endorsed the use of city SOAR initiatives/ordinances in consideration of proposed amendments to city Spheres of Influence and city annexations.
- Reinforces existing greenbelts, city spheres of influence (SOI), Guidelines for Orderly Development, and Ventura County General Plan.

SOAR has preserved strong boundaries between agricultural and land developed for residential, industrial and commercial uses and has supported the viability of the agriculture sector in the County.

2 COUNTY LAND USE PATTERNS – THE DEMAND FOR FREIGHT

As people demand goods for shelter, food, and other consumer purposes, the transportation of those goods is essential to maintain vitality in the region. Ventura County is home to a seaport, manufacturing and agricultural operations, and a population of approximately 850,000 people who consume goods on a daily basis.

2.1 Port of Hueneme

The County's major port of entry is the Port of Hueneme (Oxnard Harbor District). Two-way trade activities through the Port are valued at $10 billion and generated nearly $1.7 billion in economic activities in the immediate region providing over 15,000 direct and indirect jobs.[8] The majority of its business (60 percent) is the import and export of automobiles and other vehicles. The Oxnard Harbor District has contracts with three vehicle distribution companies for the handling of vehicles transiting the Port. These companies perform inspection, technical service, and coordination of delivery. Vehicles are either moved by truck or are individually driven to dealerships. Approximately 300,000 autos and 50,000 high-and-heavy units are processed through the port annually. Other goods processed through the Port are fruits, vegetables and seafood; liquid bulk fertilizer; and industrial fluids.

Port Hueneme is a shared use port with NBVC Port Hueneme, a strategic West Coast deep-water seaport, a National Defense Resource with a significant freight aspect. It serves inbound and outbound military cargo as the only military deep-water port between San Diego and Seattle. NBVC Port Hueneme serves all branches of the military and connecting to other installations across Southern California, such as Barstow Marine Corps Logistics Base and Camp Pendleton.

The Port Intermodal Corridor was established in 1998 to facilitate truck connections between the Port and US 101. The primary roadway corridor servicing the Port is Hueneme Road to Rice Avenue with an interchange of Rice Avenue at US 101. The contingency corridor serving the port is Ventura Road to Channel Islands Boulevard to Victoria Avenue with an interchange of Victoria Avenue at US 101.

A new interchange at US 101 and Rice Avenue was dedicated in 2014 after being improved and expanded from a two-lane overpass with narrow freeway ramps inadequate for truck movement. The interchange, other Rice Avenue Improvement, and the future grade-separated overpass of Rice Avenue over East 5th Street (State Route 34) and the rail tracks will also make Rice Avenue the main connection between US 101 and Pacific Coast Highway (State Route 1).

[8] ConnectSoCal Goods Movement Section

2.2 Agriculture and Manufacturing

The agricultural industry, manufacturing, wholesale trade, and transportation and warehousing industries generates approximately 1/3 of the County's economic output. In 2019, agriculture employed 26,125, manufacturing employed 28,330 and transportation and warehousing employed 6,116 in the County. [9]

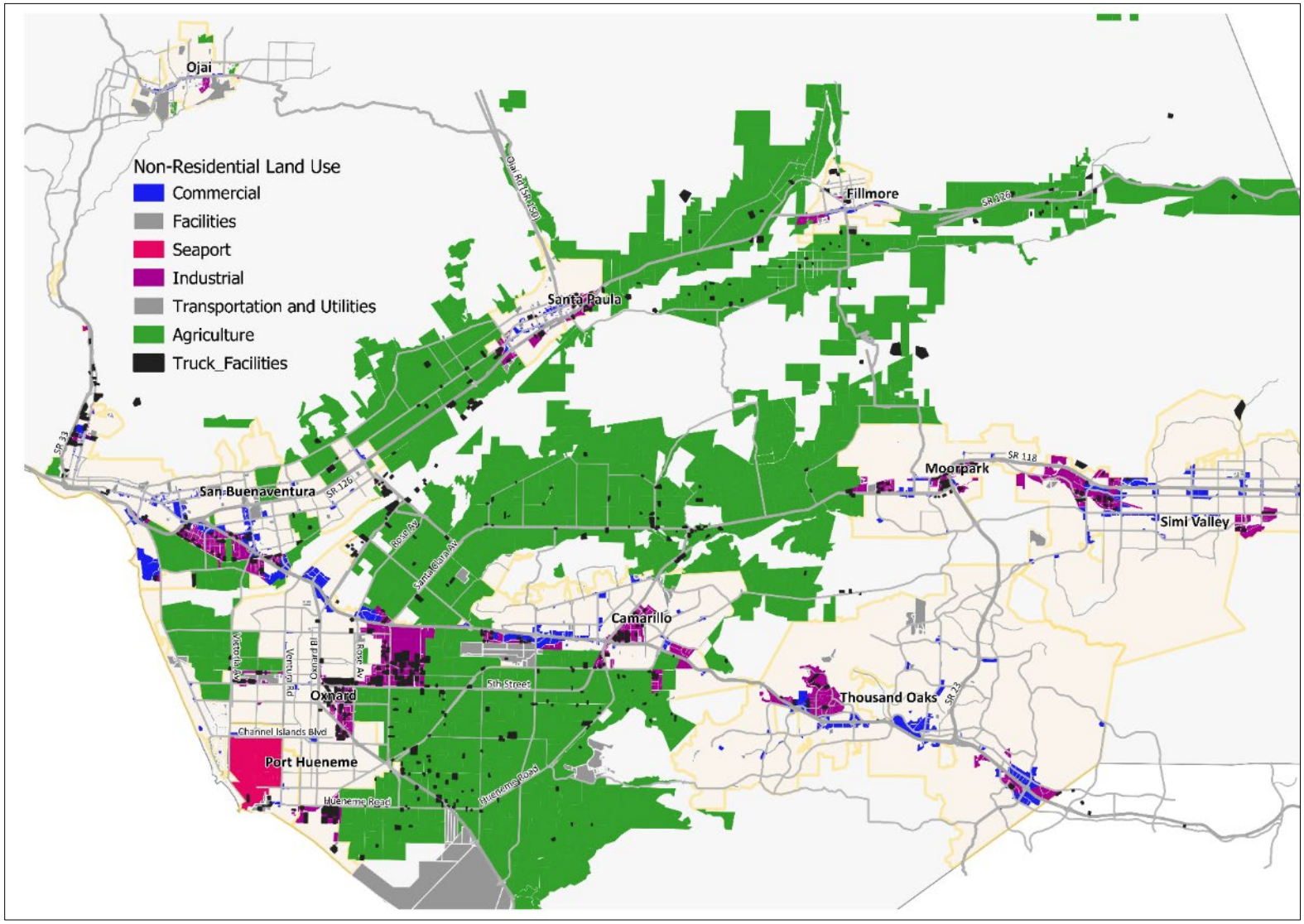
Ventura County has a long history of oil, machine tool and pharmaceutical manufacturing. The manufacturing sector is the largest single contributor to economic output in the county and the development of small firms in the region along with advanced skills training will contribute to job growth over time. The manufacturing cluster contributors $8.7 billion in exports and just under $6 billion in gross regional product per year. The agricultural sector is the next highest exporter of goods at $3.1 billion, though the sector's contribution to gross regional product is much lower than manufacturing due to marginal differences in profitability. [10]

The County's rail and roadway system supports the deliveries of materials to supply production as well as the resulting products to market. Major arterial roadways utilized for agricultural freight south of US 101 are Pacific Coast Highway (State Route 1), Hueneme Road, Pleasant Valley Road, Wood Road, Las Posas Road, and Lewis Road; major arterial roadways used north of US 101 are Santa Rosa Road, N. Lewis Road (State Route 34), Central Avenue, Santa Clara Avenue, Rose Avenue, E. Vineyard Avenue (State Route 232), Victoria Avenue, and State Route 126.

Land uses in the County of Ventura were collected and mapped. As shown in **Figure 2**, most commercial and industrial land uses are clustered along US 101, State Route 118 and State Route 126.

[9] Economic Development Collaborative: Ventura County Comprehensive Economic Development Strategy, April 2019 https://edcollaborative.com/wp-content/uploads/2019/10/Final-CEDS-Adopted-2019.pdf
[10] Ibid.

Figure 2: Ventura County Non-Residential Land Use



Source: Southern California Association of Governments [2016 Land Use Dataset]

The unique natural capital of Ventura County places agriculture as a major economic contributor to the regional economy. The estimated gross value of Ventura County's agriculture for calendar year 2018 was $2,103,232,000. [11] Top crops by value and acreage are shown in **Table 1**. Top valued crops are strawberries, lemons, and celery. The most acreage is used to produce by avocados, lemons and celery. The distribution of

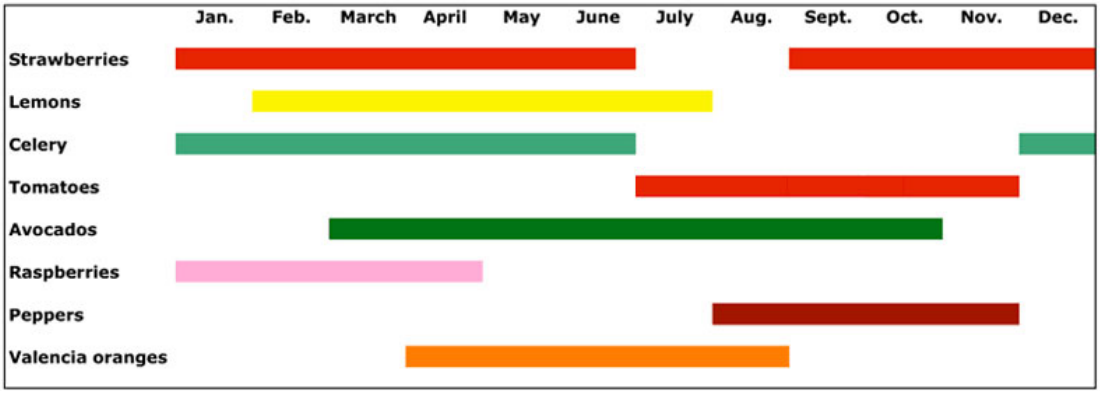
Table 1: Ventura County Crop Value and Field Acreage in 2018

Rank	Crop	Value	Acreage
1	Strawberries	$670,716,000	9,109
2	Lemons	$244,173,000	14,201
3	Celery	$198,680,000	12,151
4	Nursery Stock	$194,495,000	3,118
5	Raspberries	$181,730,000	4,008
6	Avocados	$103,252,000	17,116
7	Tomatoes	$48,932,000	381
8	Cut Flowers	$48,442,000	605
9	Peppers	$43,519,000	3,065
10	Cabbage	$36,972,000	3,795
-	Other Fruit and Nut Crops	$72,844,000	5,970
-	Other Vegetable Crops	$240,438,000	17,816
-	Field Crops (e.g. hay and seed)	$3,566,000	221,145
-	Livestock and Poultry	$5,564,000	-
-	Apiary Products	$3,972,000	-

Source: Farm Bureau of Ventura County Crop Data, 2018

Each of these agricultural crops have different production and harvest seasons as shown in **Figure 3**. The distribution of the different types of farmland in the County is shown in **Figure 4**.

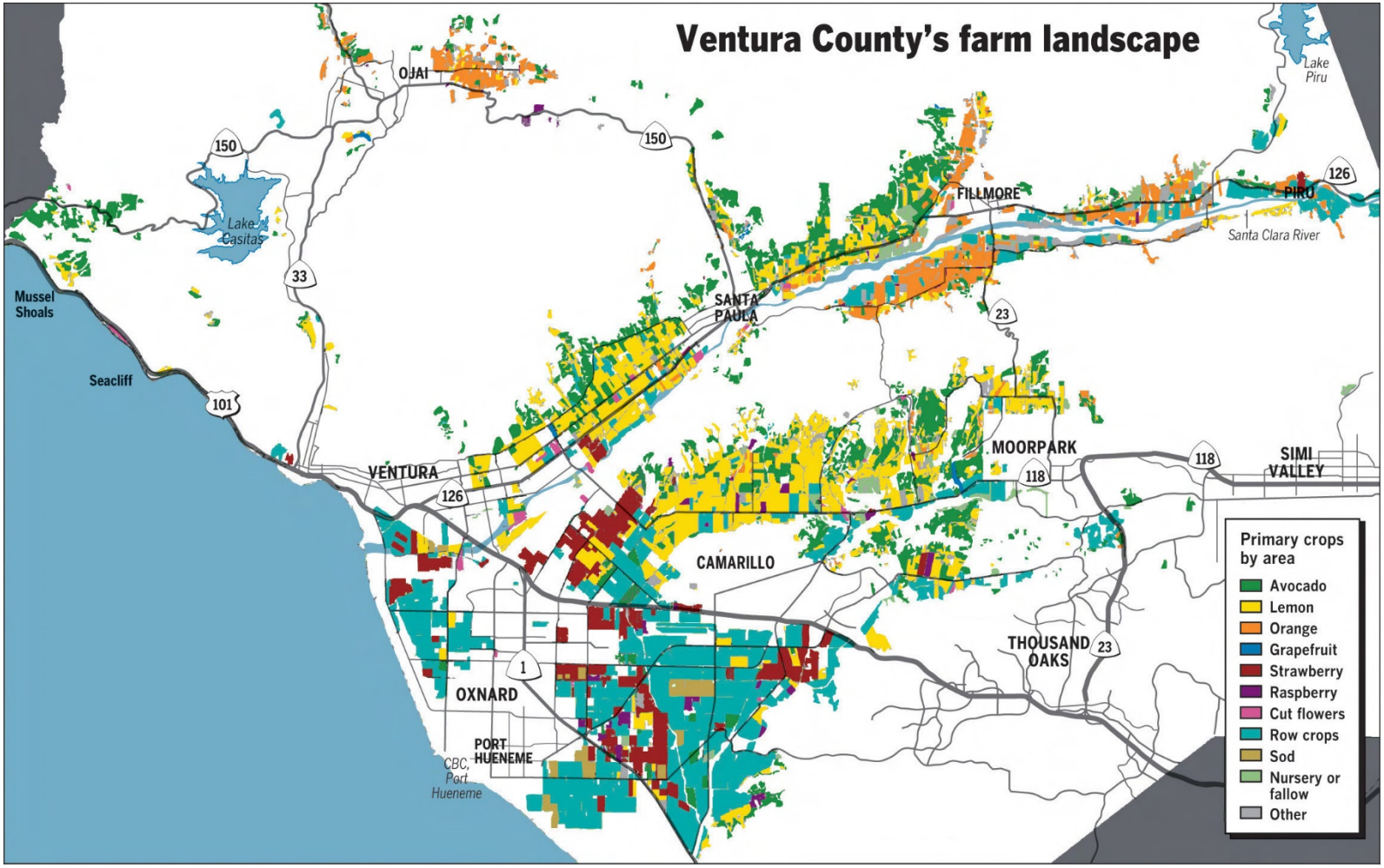
Figure 3: Typical Peak Harvest Seasons for Ventura County's Top Food Crops



Source: Ventura County Farm Bureau

[11] Ventura County Agricultural Commissioner - https://vcportal.ventura.org/AgComm/docs/crop-reports/Ag%20Comm%202018%20Crop%20Report%2008-02-19%20web.pdf

Figure 4: Ventura County Farmland



Source: Ventura County Farm Bureau

Truck Facilities

An aerial survey[12] was used to identify locations of loading docks and truck parking. Most large buildings have loading docks and generate truck trips to provide supplies. However, office buildings and institutional buildings such as schools and hospitals receive supplies but heavy-duty trucks are not generated in the frequency of manufacturing, industrial or large ("big box") retailers. Storage such as personal storage or parking lots for RV retailers were not included in the identified buildings and parking areas expected to generate heavy-duty truck trips.

The aerial survey identified the following types of buildings and parking areas:

- Distribution/Warehousing
- Manufacturing
- Retailer – large retailers such as big box retailers
- Agricultural
- Other uses such as construction yards or unknown concentrations of heavy-duty truck parking

As shown in **Figure 2**, there are truck generating land uses throughout the non-residential areas of Ventura County—generally clustered along highways and with a concentration in and around the City of Oxnard.

2.3 Last Mile Delivery

Last-mile delivery is the final leg of the supply chain as goods are delivered from production to consumption. It is a primary driver of cities' economies with building loading docks, alleys, driveways and curb areas serving as points of delivery. Last-mile deliveries happen in complex environments: they involve the interaction among several elements, including producers, deliverers, consumers, buildings, delivery space, streets, and vehicles. Because of this, last-mile deliveries compete for limited space in transit, as their vehicles park and are received. Improving the capacity and efficiency of access to and use of end facilities enables more efficient use of arterial corridors shared with passenger vehicles, active transportation and transit.

2.4 Interregional Goods Movement

The goods imported to, exported from, produced in, consumed in Ventura County often originate or are destined for outside of the County. Trucks traveling to or from outside of Ventura County are primarily accessing the Los Angeles area and western points beyond from US 101 or State Route 118, the Central Valley, Northern California and northern points beyond from State Route 126 and Santa Barbara County and the Central Coast from US 101.

As the major regional freeway bisecting Ventura County, US 101 carries most of the interregional truck traffic traveling to, from and through the county. According to the Caltrans Traffic Census, US 101 carries approximately 4,000 trucks per day cross the eastern county border to Los Angeles County in Thousand

[12] Google Earth Imagery Date 5/17/2019

Oaks and approximately 2,000 trucks per day cross the western County border into Santa Barbara County. Approximately 3,000 trucks cross the County border along SR 118 in Simi Valley and approximately 2,000 trucks cross the border along SR 126 to the north.

2.5 Freight Concentrations in Cities and Unincorporated Areas

Each of the communities in Ventura County have unique character and issues related to freight production, delivery and movement. The following section provides brief descriptions of communities as they relate to freight corridors in the County:

2.5.1 Cities

Oxnard is bisected north to southeast by Oxnard Boulevard, previously designated State Route 1. Upon the City's request, State Route 1 and portions of State Routes 34 and 232 within the City limits were relinquished by Caltrans in 2013. The City's older industrial areas are in the Five Points neighborhood, which abuts Downtown Oxnard and residential areas. Other industrial areas in the northeast of the City off Rose Avenue, Rice Avenue and Del Norte Boulevard are more isolated from the rest of the City. Approximately 400 undeveloped acres between Rice Avenue, Del Norte Avenue and US 101 is planned for eight million square feet of light industrial space as the Sakioka Farms development. The roadways carrying the most trucks are the north/south roadways of Rice Avenue, Rose Avenue, and Victoria Avenue that connect to US 101, and the east/west roadways of Gonzales Road, 5th Street, Wooley Road, Channel Island Boulevard and Hueneme Road to access industrial areas and the port area.

Thousand Oaks is centered in the Conejo Valley and its development and transportation infrastructure is defined by topography. It is served by the regional highways of US 101 and SR 23. The major industrial areas of the City are off of Rancho Conejo Boulevard north of US 101. The City does not define truck routes, however Thousand Oaks Boulevard and Rancho Conejo Boulevard carry trucks that access local businesses.

Simi Valley is bisected by State Route 118, which is the City's highway connection to Moorpark and Los Angeles. Industrial areas include to the west of the Simi Valley Metrolink Station and in the western part of the City between Los Angeles Avenue and State Route 118. North of the City, sand and gravel operations are located off Tapo Canyon Road. Other roadways serving trucks include 1st Street and Madera Road serving local businesses and Viewline Drive to access the Simi Valley Landfill.

Ventura is at the confluence of State Route 126 and US 101. Industrial areas along Market Street south of US 101, and along Ventura Avenue adjacent to SR 33 in the north of the City. The City has a well-defined network of truck routes with most major roadways designated for truck usage as well as the local roads south of US 101 off of Telephone Road. The lack of a westbound State Route 126 to southbound US 101 connector sends vehicles through central Ventura along Victoria Avenue.

Camarillo is located at the western foot of the Conejo Grade and the majority of the developed parts of the City are north of US 101. Lewis Road (State Route 34) runs southwest to northeast and connects US 101 and State Route 118. Major industrial areas are along Lewis Road north of US 101 and near the airport

along Las Posas Road/Ventura Boulevard. South of the City an unincorporated industrial area is accessed from Pleasant Valley via Pancho Road.

Moorpark is bisected by State Route 118 and the rail line carrying UP freight rail, Amtrak and Metrolink. There are industrial areas in the eastern and western parts of the City along State Route 118. North of the City, sand and gravel operations are located off State Route 23. State Route 118 carries significant volumes of east/west traveling trucks between the confluence of State Routes 23 and 118 and points west such as Somis, Oxnard, and Saticoy.

Santa Paula is located along State Route 126 between Ventura and Fillmore. There are industrial areas in the eastern part of the City around the railroad tracks between Santa Paula Street and Main Street. The City also has nearby industrial land use in the unincorporated areas to the west of the City served by Mission Rock Road and east of the City along Lemonwood Drive.

Port Hueneme contains the Port area of the Oxnard Harbor District and Navy Base Ventura County along with the surrounding residential neighborhoods. The City approved truck routes are Victoria Avenue, Channel Island Boulevard, Ventura Road and Port Hueneme Road. Patterson Road, Bard Road, and Pleasant Valley Road are not designated truck routes.

Ojai is located in the Ojai Valley north of Ventura and northwest of Santa Paula and is primarily a residential and tourist-oriented community. Access to Ojai is from State Route 33 and State Route 150.

2.5.2 Unincorporated Areas

El Rio/Del Norte is an unincorporated area adjacent to the City of Oxnard north of US 101. The character of the El Rio/Del Norte area is defined by its small town, semi-rural qualities, consisting of several separate and distinct neighborhoods situated within the Oxnard agricultural plain. El Rio is the only SCAG-defined Community of Concern in Ventura County due to its high percentages of residents living in poverty (18 percent) and of minority residents (87 percent).

Vineyard Industrial Area is a 167-acre industrial area is located just west of Vineyard Avenue north of US 101.

Somis is a community located in the center of the Las Posas Valley, north of the City of Camarillo, and consists of three separate areas containing residential, industrial and commercial land uses. State Route 34 terminates at State Route 118 in Somis.

Saticoy is located to the east of the City of Ventura and has a mix of industrial and residential land uses. It is centered around State Route 118 south of its interchange with State Route 126.

Piru is an unincorporated community of 2,000 inhabitants seven miles east of Fillmore along the Santa Clara River. State Route 126 provides the primary connection both east and west. The previous version of the Piru Area Plan (2011) included a planned improvement of a northbound left-turn lane into the Fillmore-Piru Citrus Association packinghouse that was not implemented.

Mission Rock Road is a 91-acre industrial community is located between the cities of Ventura and Santa Paula, north of the Santa Clara River. The most predominant land use is automobile recycling and storage businesses.

3 FREIGHT SYSTEM – THE TRANSPORTATION SYSTEM ELEMENTS AVAILABLE FOR FREIGHT MOVEMENT

3.1 Freeway System

United States Highway 101 (US 101) is the primary freeway facility serving Ventura County. While signed as north/south, US 101 generally runs east/west through Ventura County. It is known as El Camino Real in southern and central California and was built upon the colonial trail connecting Spanish missions and pueblos. While the construction of I-5 in the 1950s supplanted US 101 as the primary north/south roadway through California, US 101 remains an important connection for the central coast. It is the primary freeway connecting Ventura County to Santa Barbara County to the west and north and Los Angeles County to the east and south, and it connects many of the primary urbanized areas of the county. US 101 is a six-lane thoroughfare through the majority of Ventura County, widening to four lanes in each direction east of Moorpark Road in Thousand Oaks as it enters Los Angeles County.

State Route 23, alternatively known as the Moorpark Freeway, is the primary north/south thoroughfare in eastern Ventura County. It exists as a freeway from its interchange with US 101 in Thousand Oaks to its transition to State Route 118 at Los Angeles Avenue in Moorpark. State Route 23 is an eight-lane thoroughfare from US 101 north to Janss Road, narrowing to a six-lane thoroughfare along the remainder of its length.

State Route 126, alternatively known as the Santa Paula Freeway, serves as the primary east/west connection in northern Ventura County, providing connections between cities along the Santa Clara River Valley. It provides the primary connection from Ventura County to/from points north along Interstate 5. State Route 126 exists as a freeway from its interchange with US 101 in central Ventura to its intersection with Hallock Drive in Santa Paula, where it continues east as a surface roadway. State Route 126 was adopted as a freeway by the California Freeway Commission in 1958, but lost this designation in 1974. However, it remains included in the State's freeway and expressway system. State Route 126 is a four-lane thoroughfare, with two lanes in each direction, along the entirety of its length as a freeway.

State Route 33, alternatively known as the Ojai Freeway, is the primary north/south connection in western Ventura County, providing connections between Ventura northward toward Ojai along the Ventura River Valley. As a freeway, it exists from its interchange with US 101 on the western edge of the City of Ventura north to its intersection with Ventura Avenue and Casitas Vista Road. State Route 33 is a four-lane thoroughfare, with two lanes in each direction, along the entirety of its length as a freeway. North of Casitas Vista Road, State Route 33 transitions to the two-lane arterial of Ventura Avenue to the City of Ojai, where it meets State Route 150. The shared route of Ojai Valley Trail diverges at Maricopa Highway where the roadway proceeds north through the mountains to Ventucopa in Santa Barbara County where it ends at State Route 166.

The Ventura County Traffic Impact Mitigation Fee Program has a programmed project to construct a four-lane Casitas Springs bypass.

State Route 1 traverses Ventura County at a northwest-southeast orientation from Santa Barbara County to Los Angeles County. It exists as a freeway between Las Posas Road near Calleguas Creek in southeast Ventura County to the interchange with Pleasant Valley Road and Oxnard Boulevard, where it continues northward as a surface roadway coterminous with Rice Avenue to the Oxnard City Limit at State Route 34 (5th Street). Between State Route 34 and US 101, State Route 1 is discontinuous however, there is an agreement to designate the segment as State Route 1 once the condition of the roadway is improved for transfer. State Route 1 and Rice Road from Hueneme Road to US 101 are part of the Port of Hueneme Primary Intermodal Corridor for trucks to access the Port.

State Route 118 is the primary connection linking communities in Northeast Ventura County to the San Fernando Valley in Los Angeles County. It exists as a freeway from the Los Angeles County line west to Moorpark where it turns south and transitions into the freeway portion of State Route 23 southward to Thousand Oaks. The freeway portion of State Route 118 is a six-lane thoroughfare from the Los Angeles County line westward to Madera Road, and then continues as a four-lane thoroughfare to its transition to State Route 23.

3.2 Arterial Highway System

The corridor arterial highway system, including state highway arterials, are the connection from the regional freeway system to terminal and customer access. The arterial highways of Ventura County are owned and maintained by a mix of the County of Ventura, Cities and Caltrans. Many arterials run for long distances, and change character as they pass through urban and rural areas.

State Route 118 Arterial Portion of Los Angeles Avenue / Wells Road from its transition point with State Route 23, State Route 118 continues as an arterial west through Moorpark and Somis to Ventura along the valley of the Arroyo Simi. Within the city of Moorpark, Los Angeles Avenue is a high-speed urban arterial that serves as the primary east/west thoroughfare in the city. From its eastern terminus as a surface roadway westward to its intersection with Gabbert Road and Tierra Rejada Road, it varies between a four-lane and six-lane thoroughfare divided by a center median with left-turn pockets.

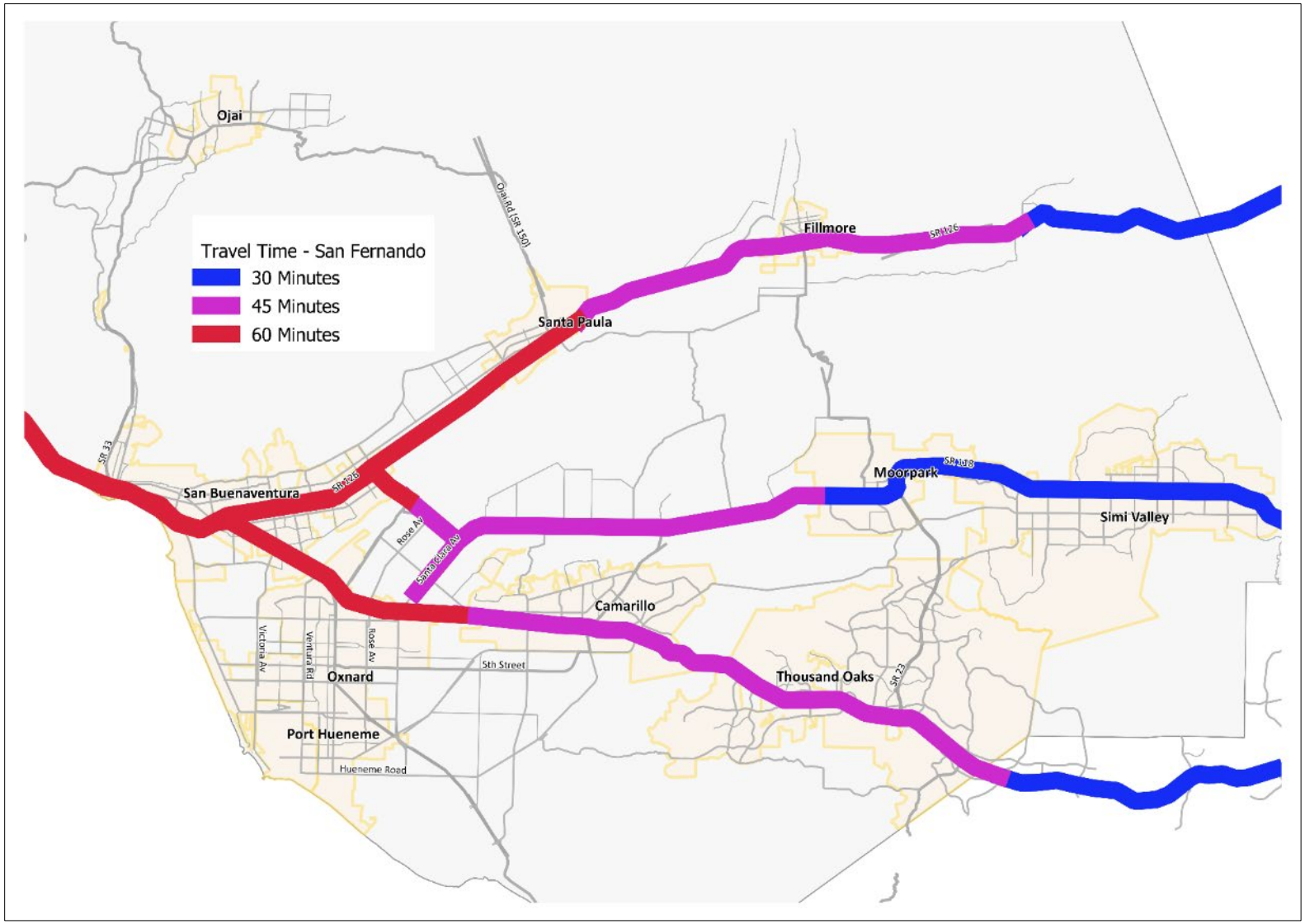
To the west of Moorpark, Los Angeles Avenue continues westward as a two-lane undivided rural highway through the unincorporated community of Somis, where it intersects with State Route 34. It continues westward, still as a two-lane undivided rural highway, until its intersection with Santa Clara Avenue northwest of Camarillo. Here, it continues northwestward as Los Angeles Avenue, crossing the Santa Clara River and entering the City of Ventura, where it becomes Wells Road. The western terminus of State Route 118 is its interchange with State Route 126 in eastern Ventura. It is defined as an Expressway/Convention Highway in the Ventura County General Plan. State Route 118 carries a large amount of trucks in its rural section, which may be partially explained by its travel time advantage as compared to other County routes.

Figure 5 shows the average uncongested (off-peak) travel time in both directions between the City of San Fernando in the San Fernando Valley and points in Ventura County using State Route 126, State Route 118 and US 101. As shown, State Route 118's arterial portion of Los Angeles Street is a faster route to many of the truck generating areas of Ventura County when compared to State Route 126 and US 101.

While US 101 is the route with the shortest travel time for south Los Angeles County, State Route 118 is the fastest route from the San Fernando Valley, and SR 126 is the fastest route to/from I-5 and connections to Northern California.

The Ventura County Traffic Impact Mitigation Fee Program has programmed projects to widen State Route 118 to four lanes from Vineyard Avenue (State Route 232) to Santa Clara Avenue and from Santa Clara Avenue to Somis Road (State Route 34) and from Somis Road to the Moorpark city line.

Figure 5: Major East/West Travel Times from the City of San Fernando



State Route 34 connects the industrial areas of Oxnard and Camarillo with US 101 and State Route 118. The roadway starts at Rice Avenue in Oxnard and proceeds as 5th Street east/west two-lane roadway until it meets Pleasant Valley Road for one block before continuing as Lewis Road. As State Route 34 turns north at Lewis road, it continues as a four-lane roadway to the US 101 ramps in Camarillo. North of the US 101 ramps the road proceeds adjacent to the rail tracks as a two-lane road with brief four-lane sections at Adolfo Road and Las Posas Road. The Roadway diverges from the rail tracks as Somis Road to where it terminates at State Route 118. State Route 34 is defined as an Expressway/Convention Highway in the Ventura County General Plan.

The Ventura County Traffic Impact Mitigation Fee Program has programmed projects to widen East Fifth Street from the Oxnard city line to Pleasant Valley Road and Lewis Road/Somis Road from State Route 118 to the Camarillo city limit.

State Route 150 starts at US 101/State Route 1 near the Ventura County Line with Santa Barbara County. It proceeds as a two-lane roadway to where it meets State Route 33 in Ojai. The roadway continues as Ventura Avenue through Ojai and then becomes Ojai Road to its Terminus at State Route 126 in Santa Paula. State Route 150 is defined as an Expressway/Convention Highway in the Ventura County General Plan.

Oxnard Boulevard is the commercial corridor of the City of Oxnard as it parallels the UPRR tracks running north/south through Downtown Oxnard. Formerly State Route 1, Rice Avenue is intended to replace Oxnard Boulevard as State Route 1 from the Pleasant Valley intersection to US 101, bypassing most of Oxnard. Oxnard grew up around Oxnard Boulevard which, along with portions of Vineyard Avenue and Fifth Street, is referred to as the Corridor. The City is planning Oxnard Boulevard as a transit-oriented, bicycle and pedestrian friendly main street for Downtown Oxnard.

Vineyard Avenue (**State Route 232)** provides an important connection between US 101 and Oxnard to the south and to State Route 118 to the north. Between the US 101 interchange and Oxnard Boulevard, Vineyard Avenue is a six-lane divided facility, narrowing to four-lanes to Diamond Head Way, and then two-lanes as it become Patterson Road. The State Route 232 portion Vineyard Avenue extends from US 101 to State Route 118 for four miles. It starts as a six-lane roadway, before narrowing at Olive Street to four-lanes to its terminus at State Route 118. State Route 232 is defined as an Expressway/Convention Highway in the Ventura County General Plan.

Fifth Street is designated State Route 34 east of Oxnard City limits to Pleasant Valley Road. It is adjacent and south of the Union Pacific Railroad tracks from Pleasant Valley Road in Camarillo to Oxnard Boulevard. The at-grade crossing of the tracks approximately 700 feet east of Oxnard Boulevard can cause delays for vehicles both on Fifth Street and Oxnard Boulevard. Fifth Street passes through Oxnard crossing Ventura Road, Victoria Avenue and Harbor Boulevard and provides access to a range of land uses, including retail, services, industrial, transportation center, restaurant, agricultural, the Oxnard Airport, and beaches.

Fifth Street is a two-lane undivided roadway from Pleasant Valley Road in Camarillo to Diaz Avenue west of Rose Avenue where it widens to four lanes to Oxnard Boulevard where it reduced back to two lanes to

Hobson Way before widening again to four-lanes west of Hobson Way, and finally reducing to two lanes west of Victoria Avenue.

Pleasant Valley Road runs from the Port of Hueneme, crosses Rice Avenue and turns northeast through unincorporated agricultural land before turning east/west past its crossing of 5th Street (State Route 34) before it turns into Santa Rosa Road past the US 101 interchange. Pleasant Valley Road is defined as a Secondary arterial in the Ventura County General Plan. The roadway's physical layout changes as it passes through different types of land uses:

- A brief two-lane section from Pacific Road to Ventura Road from Naval Base Ventura County Port Hueneme through residential land uses.
- A four-lane section with intermittent raised medians and two-way left-turn medians from Ventura Road to Dodge Road as it passes primarily residential areas and enters agricultural land.
- A two-lane undivided section as it passes through agricultural lands east of Dodge Road to where it meets 5th Street for the second time moving east and briefly is designated State Route 34.
- Four-lane undivided section where between 5th Street and Lewis Road where it is briefly designated as State Route 34 with light industrial land uses on the north side of the roadway and rural land to the south.
- Four-lane section with raised medians from US 101 to Lewis Road (State Route 34) where it passes residential areas to the west and north side of the roadway and agricultural land uses to the south of the roadway.
- A brief six-lane section near US 101.

The Ventura County Transportation Department has planned capital improvement projects to add a two-way left turn lane from Dodge Road and Hailes Road and to study the feasibility of widening to four lanes from Rice Avenue to the Camarillo city line. The Ventura County Traffic Impact Mitigation Fee Program has a programmed project to widen Pleasant Valley Road to four lanes from Dodge Road to Las Posas Road.

Lewis Road in its non-State Highway section south of Camarillo is a four-lane roadway between Pleasant Valley Parkway and University Drive and narrows to two lanes as it becomes Hueneme Road south of Potrero Road. Lewis Road is defined as a Secondary arterial in the Ventura County General Plan.

Hueneme Road connects the Port of Hueneme to Lewis Road. Hueneme Road also serves as an important link between Naval Base Ventura County's Port Hueneme and Point Mugu facilities and serves Channel Islands Air National Guard Station. It is a four-lane road east of Ventura Road as it passes through residential areas in the City of Port Hueneme and as it transitions to industrial areas in the unincorporated area to the west of Saviers Road. Hueneme Road is a two-lane roadway as it passes Edison Street and transitions to an agricultural area, passes beneath the Pacific Coast Highway, and becomes Lewis Road near California State University Channel Islands. The intersection with Wood Road is currently stop-controlled and is the only stop-controlled intersection on Hueneme Road. The western portion of Hueneme Road is on the Port of Hueneme Primary Intermodal Corridor to Rice Avenue. Hueneme Road is defined as a Secondary arterial from the Port to Wood Road and from east of Laguna Road to Camarillo and as a Collector from Wood Road to east of Laguna Road in the Ventura County General Plan.

The Ventura County Transportation Department has planned capital improvement projects to study the feasibility of the Traffic Impact Mitigation Fee Program project to widen Hueneme Road to four lanes from the Oxnard city line to Rice Road.

Victoria Avenue runs from Foothill Road in Ventura, serving the Ventura County Government Center and commercial areas in the City of Ventura, and continues south of US 101 through the City of Oxnard to Naval Base Ventura County Port Hueneme and the Silver Strand residential and beach neighborhood in unincorporated Ventura County. Victoria Avenue is the signed connection between State Route 126 westbound to US 101 southbound, and is an eight-lane roadway between the two freeways. South of Valentine Road, the road transitions to a four-lane roadway before widening to six lanes south of 5th Street and narrows again to four lanes south of Hemlock Street and finally narrows to two lanes as it passes the Naval Base. Past the Naval Base, Victoria Avenue becomes Island View Avenue in the Silver Strand neighborhood.

The Ventura County Transportation Department has planned capital improvement project to study the feasibility of the Ventura County Traffic Impact Mitigation Fee Program project to widen Victoria Avenue to six lanes from the Gonzales Road to Park Drive.

Saviers Road is a four-lane to six-lane primary arterial in Oxnard connecting Hueneme Road and Wooley Road at the five-way intersection with Oxnard Boulevard and Wooley Road.

Camino Del Sol is a secondary arterial roadway serving industrial uses between Rice Avenue and Del Norte Boulevard in Oxnard.

Del Norte Boulevard is a four-lane secondary arterial connecting US 101 and 5th Street (State Route 34) in Oxnard. It passes through agricultural and industrial land uses, including the future Sakioka Farms development.

Wooley Road is an east/west primary arterial in the City of Oxnard. It is bordered by residential land uses between Harbor Boulevard and “E” Street, and central business commercial and industrial uses between “E” Street and Rose Avenue.

Ventura Road is a predominately four-lane north/south arterial in the Cities of Port Hueneme and Oxnard between Surfside Drive and north of US 101.

Ventura Avenue is a two-lane roadway from US 101 to the north of Ventura along State Route 33. It serves a mix of industrial and residential uses. South of Stanley Avenue the roadway has a number of pedestrian-oriented elements such as enhanced crosswalks and sidewalk bulb-outs.

Channel Islands Boulevard is an east/west primary arterial in the Cities of Port Hueneme and Oxnard. Within the City of Port Hueneme, Channel Islands Boulevard is bordered by commercial land uses to the north, and Naval Base Ventura County Port Hueneme to the south. Between Ventura Road and Rice Avenue in the City of Oxnard, Channel Islands Boulevard is bordered by residential and commercial uses.

The Ventura County Transportation Department has planned capital improvement project to widen Channel Island Boulevard to four lanes from the Oxnard city limits to Rice Avenue.

Las Posas Road travels east/west from Lewis Road (State Route 34) in the City of Camarillo, before turning south in the west of the City, and proceeds through the unincorporated agricultural area to its termination at Pacific Coast Highway. Las Posas Road crosses the rail tracks to the north of the 5th Street intersection. Las Posas Road is defined as a Secondary arterial north of Hueneme Road and a Collector south of Hueneme Road in the Ventura County General Plan.

The Ventura County Transportation Department has planned capital improvement project to widen Las Posas Road to four lanes from Hueneme Road to Pleasant Valley Road.

Rice Avenue
State Route 1 becomes Rice Avenue north of the Pacific Coast Highway / Pleasant Valley Road Interchange. It proceeds as a four-lane arterial until Sturgis Road, where it transitions to a six-lane roadway. The roadway remains six lanes until the US 101 interchange where it reduces to four-lanes before Ventura Boulevard where it changes names to Santa Clara Avenue and transitions to a two-lane roadway. Santa Clara Avenue ends at its intersection with SR 118. Rice Avenue is not officially designated State Route 1 between Pleasant Valley Road and US 101.

Santa Clara Avenue is the two-lane extension of Rice Avenue between US 101 to State Route 118 in unincorporated Ventura County west of Camarillo. The roadway passes the Nyeland Acres residential area near US 101 and agricultural areas. Santa Clara Avenue is defined as a Secondary arterial in the Ventura County General Plan.

The Ventura County Transportation Department has planned capital improvement project to study the feasibility of the Ventura County Traffic Impact Mitigation Fee Program to widen Santa Clara Avenue to four lanes from the Oxnard city line to State Route 118.

Rose Avenue runs from Pleasant Valley Road to State Route 118. The roadway is predominately four-lanes, however it widens to six-lanes in the vicinity of US 101 and narrows to two-lanes north of Central Avenue to its terminus at State Route 118. The roadway provides access to industrial land uses in the central part of Oxnard.

Central Avenue is an east/west two-lane roadway that connects agricultural land in unincorporated Ventura County between Camarillo and Oxnard with US 101. It intersects the roadways of Vineyard Avenue (State Route 232), Rose Avenue and Santa Clara Avenue. Central Avenue is classified as a Secondary Arterial south of Santa Clara Avenue and a Collector north of Santa Clara Avenue in the Ventura County General Plan.

The Ventura County Traffic Impact Mitigation Fee Program has a programmed project to widen Central Avenue to four lanes from Santa Clara Avenue to the Camarillo city limits.

Grimes Canyon Road/Walnut Canyon Road and Happy Camp Road/Roseland Road provide access to agricultural land and the gravel and sand pits north of Moorpark. Parts of the roadways are designated as State Route 23. The roadways are classified as Collectors in the Ventura County General Plan.

The Ventura County Traffic Impact Mitigation Fee Program has a programmed project to improve Grimes Canyon Road from Broadway to Bellevue Avenue to two-lane Class I standards where feasible.

Tapo Canyon Road provides access between State Route 118 and gravel and sand pits north of Simi Valley. Tapo Canyon Road is defined as a Minor in the Ventura County General Plan.

3.3 Defined Truck Routes and Restrictions

The Federal, State and local designations of truck routes are used to define the types of vehicles allowed to use certain roadways. The designations can be intended to define important roadways for commerce, indicate the best routing to avoid sensitive places such as residential areas and to limit the use of oversized, overweight or high vehicles to roadways designed and maintained to accommodate those vehicles. While truck routes and prohibitions generally provide statutory authority to cite and fine vehicles that deviate from defined routes, large vehicles can use any roadway to access a terminal location or make a delivery.

Roadways designated as truck routes and those restricting truck usage were inventoried from each jurisdictional level based on information made available from the state (Caltrans), County (VCTC), and local municipalities. As the following discussion demonstrates, these designations are often layered upon one another. One key finding is that the sheer number of designations and changing roadway ownership itself is a major issue from the user perspective.

The backbone of the County's network of truck routes are its freeways. This freeway network is complemented by a network of truck routes along surface roadways that are also designated within the State Highway System. This network includes continuations of each of the aforementioned state highways as surface roadways beyond their termination as freeways. Together, these highways close essential gaps in the freeway network for goods movement while also providing direct connections between freight generators and destinations within the broader region. Each of these surface highways is defined differently as a truck route by the various jurisdictions they traverse, with a high degree of overlap.

Municipal and County arterials and collectors facilitate the remaining connections and terminal access between the freeway network and truck generators and destinations within the county. Municipal and County roadways may also levy varying degrees of truck restrictions, prohibiting certain roadways from truck travel or limiting travel to certain types of trucks based on weight or size.

3.3.1 National Highway Freight Network

Created by the FAST Act, the National Highway Freight Network (NHFN) is used to strategically direct federal resources and policies toward improved performance of portions of the freight transportation

system. The NHFN contains the Primary Highway Freight System (PHFS), the remainder of the Interstate highway system not on the PHFS, Critical Rural Freight Corridors (CRFCs) and Critical Urban Freight Corridors (CUFCs). The designation does not allow or prohibit any type of truck but is rather a means to identify priority corridors.

Within Ventura County, freeways that constitute the PHFS include US 101 from Vineyard Avenue east to the Los Angeles County line and State Route 23 from its interchange with US 101 north to Tierra Rejada Road in Moorpark. Additionally, Ventura County has a number of surface highways and arterials that are designated PHFS truck routes. These are primarily corridors that service the Port of Hueneme and the Naval Base and direct trucks to and from the Port and the freeway network, and include following roadways[13]:

- **Hueneme Road** from Port Hueneme to Las Posas Road;
- **Las Posas Road** from Hueneme Road to US 101;
- **Ventura Road** from Hueneme Road to Channel Islands Boulevard;
- **Channel Islands Boulevard** from Ventura Road to Victoria Avenue;
- **Victoria Avenue** from Port Hueneme to US 101.

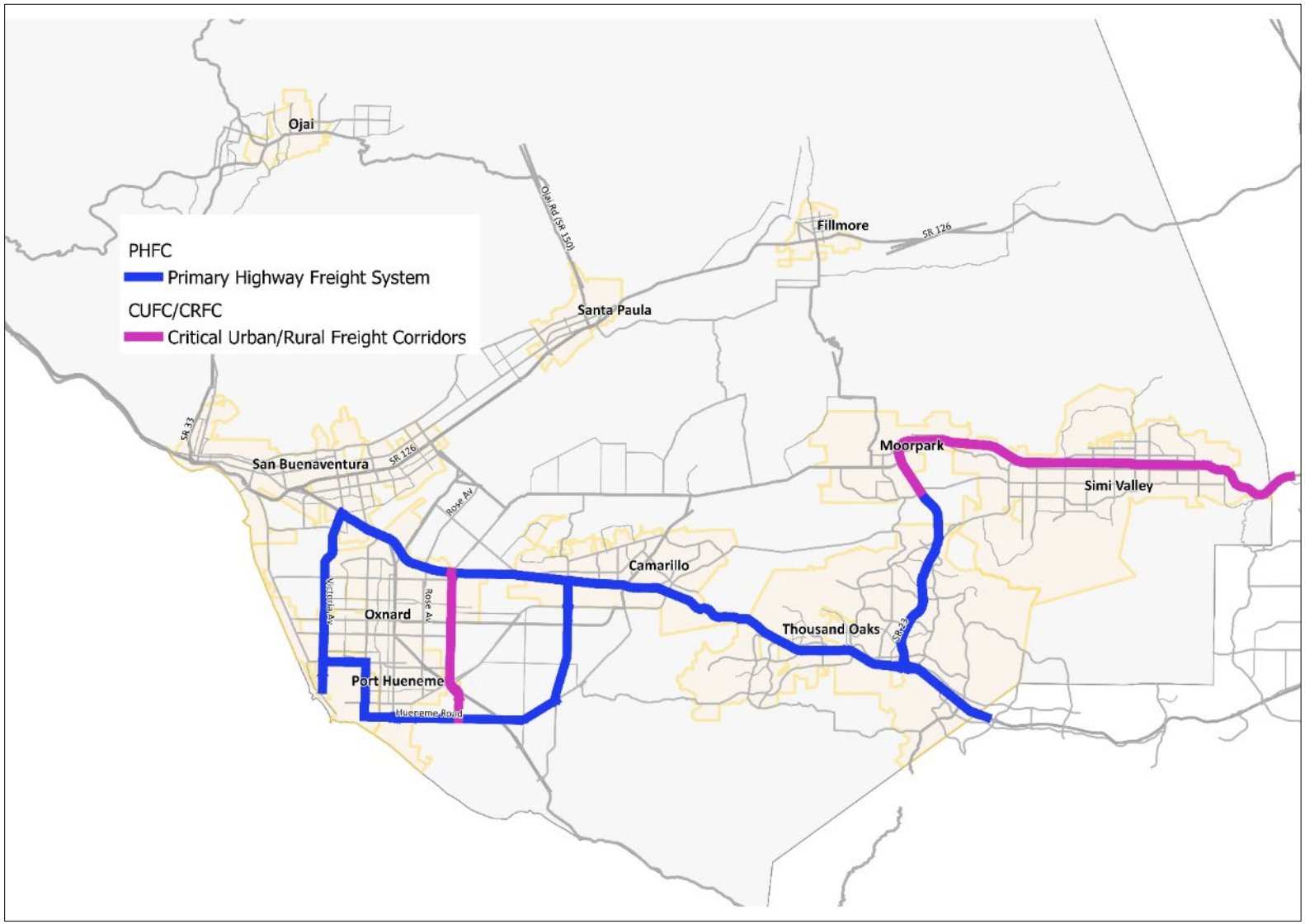
According to the latest available information from Caltrans' CUFC/CRFC Technical Working Group[14], several CUFCs and CFFCs have been identified in Ventura County as crucial links within the PHFS and to key transportation facilities. These include:

- CUFCs
    - **State Route 118** from West Hills Court/Simi Valley city boundary east to Los Angeles County line.
    - **State Route 118** from State Route 118/ State Route 23 transition east to Collins Drive.
    - **State Route 23** from State Route 118/ State Route 23 transition south to Tierra Rejada Road.
    - **State Route 1 and Rice Avenue** from Hueneme Road north to US 101.
- CRFCs
    - **State Route 118** from Collins Drive in Moorpark east to West Hills Court/Simi Valley city boundary.

The NHFN built upon NHS intermodal connectors that were previously defined by the US Department of Transportation. The two Port of Hueneme routes defined as freight corridors were Hueneme Road and Victoria Avenue, and together represented one-third of the roadway mileage of intermodal connectors in California. The Port of Hueneme is the farthest seaport, airport or intermodal rail facility in California from a freeway. The Port is 8.7 miles from US 101 via the primary corridor of Hueneme Road to Rice Avenue and 8.8 miles from US 101 along the contingency corridor of Victoria Avenue.

[13] Ventura County General Plan Update Chapter 6.5
[14] https://www.arcgis.com/apps/webappviewer/index.html?id=f3458a90339b4becb471262eee8d8412

Figure 6 National Highway Freight Network in Ventura County



3.3.2 Caltrans Truck Routes and Restrictions

The backbone of the County's network of designated truck routes utilizes the National Network of approved state, national, and interstate highways for commercial truck drivers as authorized by STAA, or "STAA truck routes." In addition to the National Network of STAA truck routes, California utilizes an additional set of highways that meet the criteria for STAA trucks, referred to as "Terminal Access" STAA truck routes. **Figure 7** displays the criteria concerning STAA and California Legal truck classifications for truck tractor semitrailers, while **Figure 8** displays the same for doubles.

Figure 7 – Truck Tractor Semitrailer Classification Criteria

Lengths	**"Green" STAA Trucks**		**"Black" California Legal Trucks**
			
Route Colors:			
Overall Length:	unlimited	unlimited	65 feet Max
Semitrailer:	53 feet Max	48 feet Max	unlimited
KPRA (kingpin-to-rearmost-axle distance):	40 feet Max (two-axle semitrailer); 38 feet Max (single-axle semitrailer)	unlimited	40 feet Max (two-axle semitrailer); 38 feet Max (single-axle semitrailer)

Figure 8 – Truck Doubles Classification Criteria

Lengths	**"Green" STAA Trucks**	**"Black" California Legal Trucks**	
			
Route Colors:			
		Option A	**Option B**
Overall Length:	unlimited	75 feet Max	65 feet Max
Trailers:	28 ft - 6 inch Max (each trailer)	28 ft - 6 inch Max (each trailer)	28 ft - 6 inch Max (one trailer) unlimited (other trailer)

The sole National Network STAA truck route in Ventura County is US 101, constituting its entire length between Los Angeles County and Santa Barbara County.

Terminal Access STAA truck routes in Ventura County include the following:

- **State Route 23** from US 101 to State Route 118;
- **State Route 126** from US 101 to the Los Angeles County border;
- **State Route 118** from State Route 126 to the Los Angeles County border;
- **State Route 33** from US 101 to intersection of El Roblar Road & Cuyama Road in Ojai;
- **State Route 1 and Rice Avenue** from Las Posas Road to US 101;
- **State Route 232** from US 101 to State Route 118;
- **State Route 34** from Oxnard Boulevard to State Route 118;
- **State Route 150** from State Route 126 to Railroad Avenue in Santa Paula.

Additional classes of truck routes within the State Highway Network fall outside the designation of the STAA network and thus prohibit STAA trucks but allow California legal trucks. These roadways are considered part of the PHFS and include two additional truck route classifications. These are designated on the map as California Legal truck routes, which carry no further restrictions beyond barring STAA trucks, and KPRA Advisory truck routes that recommend against travel for trucks with a KPRA (kingpin-to-rearmost-axle distance) length of greater than 30 feet.

The Caltrans District 7 truck network map designates the following California Legal and KPRA Advisory Routes within Ventura County:

- California Legal Routes
    - **State Route 1** from US 101 to Mobil Pier Road;
    - **State Route 23** from State Route 118 to Shekell Road.
- KPRA Advisory Routes:
    - **State Route 23** south of US 101 to Los Angeles County border and from Shekell Road to State Route 126;
    - **State Route 150** from Santa Barbara County border to State Route 33 and from State Route 33 to Railroad Avenue in Santa Paula;
    - **State Route 33** from the intersection of El Roblar Road & Cuyama Road in Ojai north to Santa Barbara County border.

Figure 9: STAA and California Legal Truck Routes in Ventura County

3.3.3 Ventura County

According to the Ventura County General Plan Update Transportation and Mobility element, many non-freeway PHFS truck route designations within Ventura County involve County roads, and therefore, the County of Ventura must periodically coordinate with Caltrans to designate additional routes to the PHFS. In addition to the STAA and PHFS network mapped by Caltrans, Ventura County has a number of surface highways and arterials designated as PHFS truck routes. These are primarily corridors that service Port Hueneme and the Naval Base and direct trucks to and from the Port and the freeway network, and include following roadways[15]:

- **Hueneme Road** from Port Hueneme to Las Posas Road;
- **Ventura Road** from Hueneme Road to Channel Islands Boulevard;
- **Channel Islands Boulevard** from Ventura Road to Victoria Avenue;
- **Victoria Avenue** from Channel Islands Boulevard to US 101.

Ventura County also maintains a list of 30 roadway segments on which commercial trucks are explicitly restricted, typically using the number of axles or truck weight as the restricting factor. Many of these restrict trucks from using local streets in unincorporated residential areas of the county, notably the communities of La Conchita, Channel Islands Beach, El Rio, and Nyeland Acres. The remaining truck restrictions set forth by the County generally constitute collector roads that connect major arterials and/or municipalities but do not provide adequate dimensions for the safe maneuvering of large commercial trucks. Such roadways include all or portions of the following:

- **Rice Road**, **La Luna Avenue**, and **Tico Road** between State Route 33 and State Route 150 in the unincorporated communities of Meiners Oaks and Mira Monte;
- **Creek Road** between Ojai and the unincorporated community of Oak View;
- **Central Avenue** between Rose Avenue and Vineyard Avenue;
- **Center School Road**, **Fairway Drive**, and **Valley Vista Drive** between State Route 118 and Crestview Avenue in Camarillo;
- **Bradley Road** and **North Street** between Balcom Canyon Road and State Route 118 to State Route 34 in the unincorporated community of Somis;
- **Moorpark Road** and **Santa Rosa Road** between Tierra Rejada Road in Moorpark and Camarillo;
- **Portrero Road** between Lewis Road and Rancho Dos Vientos in Thousand Oaks;
- **Santa Susana Pass Road** and **Box Canyon Road** from State Route 118 south to the Los Angeles County border.

3.3.4 Port Corridors

The Port of Hueneme established an Intermodal Corridor in 1998 to facilitate truck connections between the Port and US 101. The primary roadway corridor servicing the Port is Hueneme Road to Rice Avenue with an interchange of Rice Avenue at US 101. The contingency corridor serving the port is Ventura Road to Channel Islands Boulevard to Victoria Avenue with an interchange of Victoria Avenue at US 101. An overweight section is defined to include Hueneme Road to Rice Avenue with an extension to Camino Del

[15] Ventura County General Plan Update Chapter 6.5

Sol and Sturgis Road between Rice Avenue and Kinetic Drive and the section of Arcturus Avenue south of Hueneme Road to access port customer sites.

Naval Base Ventura County (NBVC) uses local roadways for military mobilization of troops and equipment to and from the base to strategic locations throughout the US. The 2008 NBVC Encroachment Action Plan identified three major corridors outside the fence that are strategic assets to the NBVC mobilization mission. Various segments of these corridors are publicly-owned by the cities and county. The three corridors are:

- Victoria Avenue to US 101
- South Patterson Road to East Wooley Road to State Route 1
- Port Hueneme Road to Lincoln Court to South Rice Avenue to US 101

3.3.5 Municipalities

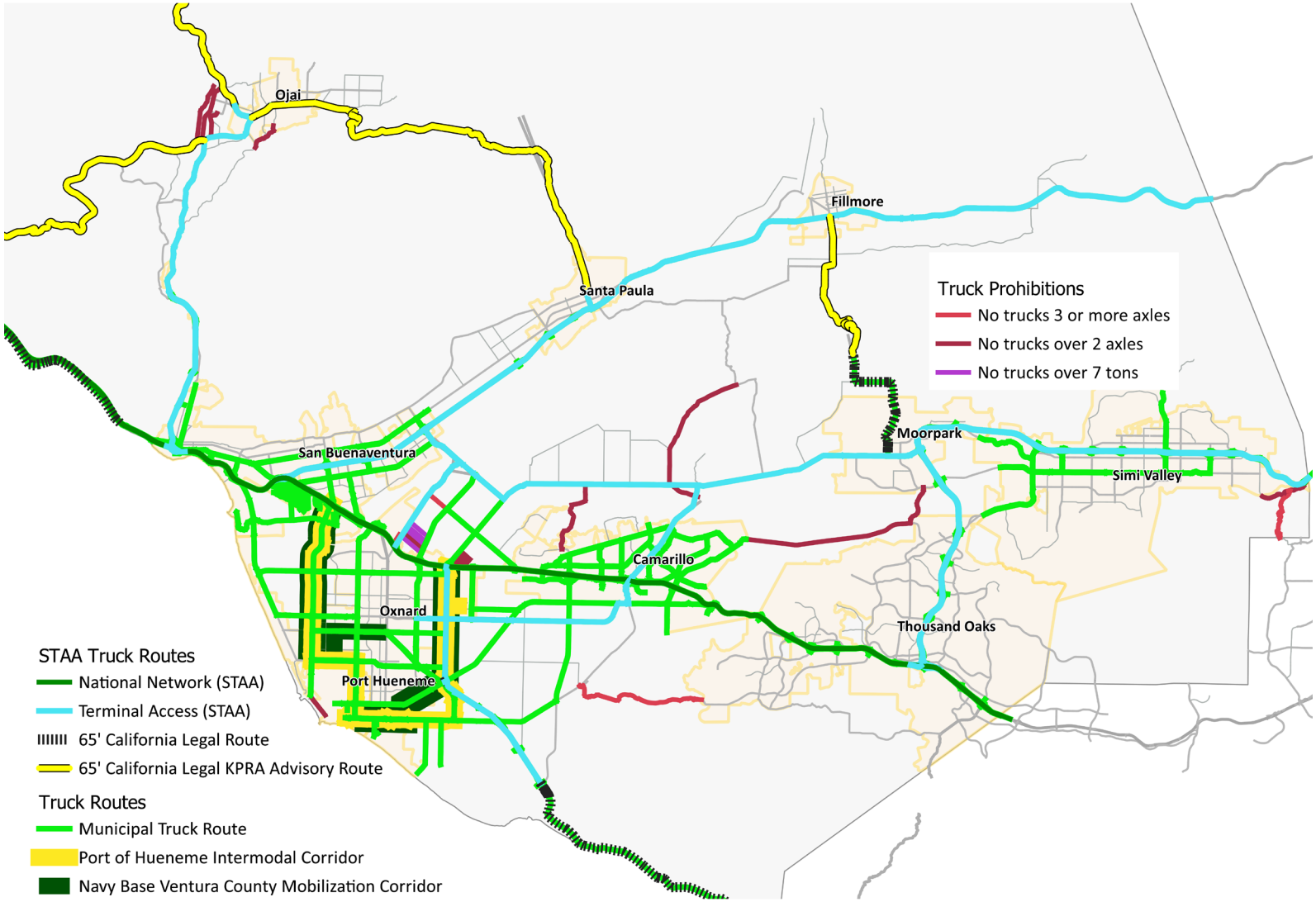
Each of the 11 incorporated municipalities in Ventura County approaches goods movement differently within their municipal codes. The level of detail outlined in municipal codes varies widely from city to city. Whereas some municipalities explicitly define individual roadways as specifically designated truck routes, other municipalities use broader language that indicates whether trucks are allowed or restricted on certain roadways based on the roadway classifications within their general plans. Other municipalities use broader guidelines that leave room for interpretation, perhaps outlining in the municipal code a process for when and how a truck route or restrictions should be designated. Furthermore, four municipalities, do not contain a section within their municipal code concerning roadways that allow or restrict commercial trucks. Cities and the County provide oversized (height, length or width) and overweight vehicle parking permitting. A list of each Ventura County municipality and how truck routes and restrictions are defined in their municipal code is as follows:

- **City of Camarillo** – No roadways specifically defined as truck routes or as restricted to trucks. Clause states that freight trucks are to be directed to arterials and industrial collectors.
- **City of Fillmore** – No roadways specifically defined as truck routes or as restricted to trucks. No clause to otherwise use as definition.
- **City of Moorpark** – No roadways specifically defined as truck routes or as restricted to trucks. Clause establishes process for defining routes that permit vehicles exceeding gross weight limit of three tons, authorizing city engineer to use appropriate signage to designate such routes.
- **City of Ojai** – No roadways specifically defined as truck routes or as restricted to trucks. The City is preparing a truck management plan for delivery access to commercial sites along Ojai Avenue.
- **City of Oxnard** – Roadways specifically defined as truck routes in "Oxnard Truck Routes" map for use by commercial vehicles exceeding gross weight limit of five tons, including load, marked with appropriate signage as authorized by city traffic engineer. No roadways specifically defined as restricted to trucks.
- **City of Port Hueneme** – All trucks are required to use designate truck routes if they exceed a gross weight limit of three tons. No roadways specifically defined as restricted to trucks.

- **City of San Buenaventura** – Roadways specifically defined as truck routes for vehicles exceeding gross weight limit of 3.5 tons, plus load. Roadways specifically defined as restricted to such trucks if not included in specified list of truck routes.
- **City of Santa Paula** - No roadways specifically defined as truck routes or as restricted to trucks. No clause to otherwise use as definition.
- **City of Simi Valley** - The City defines both truck routes and hazardous waste material routes.
- **City of Thousand Oaks** – No roadways specifically defined as truck routes. Clause enables truck restrictions by authorizing Public Works Director to use signage to prohibit trucks exceeding gross weight limit of six tons at City road entrances, with exceptions made for local deliveries.

Local truck routes and prohibitions along with the STAA truck routes are shown in **Figure 10**.

Figure 10: STAA Truck Routes and County and Local Truck Routes and Prohibitions



3.4 Rail Corridors

Ventura County's rail system bisects the county transferring bulk goods to and from port facilities, industrial customers, and intermodal transfer facilities, while also accommodating passenger service. Each of the corridor's Cities have active rail lines within their borders except Thousand Oaks. There are two hundred highway/rail crossings in the County, only 27 of which are grade separated—the Rice Avenue grade separation project would bring that number to 28.

The primary rail corridor in the County is Los Angeles – San Diego – San Luis Obispo (LOSSAN) corridor which enters the County in Simi Valley and turns south to meet the US 101 corridor in Camarillo, then continues along the corridor to the border with Santa Barbara County. The Union Pacific Railroad (UPRR) owns the portion from the Santa Barbara County line to Moorpark with Southern California Regional Rail Authority (SCRRA) owning the portion from Moorpark to Simi Valley. The corridor is served by commuter rail (Metrolink from East Ventura to Los Angeles), interregional rail (Amtrak) and freight rail operated by UPRR.

The corridor is a segment of UPRR's "Coast Line" system and is primarily utilized by the freight operator as an "overflow" for their more heavily utilized lines through Fresno and Bakersfield and over the Tehachapi Mountains.

The Ventura County Railroad (VCRR) serves industrial areas in Oxnard including the Port of Hueneme and Naval Facilities Expeditionary Logistics Center at Naval Base Ventura County. The 12-mile Class III short line VCRR is owned by the Port of Hueneme and operated by Genesee & Wyoming. VCRR is an integral corridor for the movement of autos and freight through the port and its processing facilities. It interchanges with Union Pacific tracks at 5th Street, providing an important intermodal link throughout North America. On average there are two trains per day on the VCRR. According to the 2013 California State Rail Plan, VCRR hauls approximately 2,000 carloads annually, carrying automobiles, paper, petroleum and wood pulp. This line also serves Naval Base Ventura County (NBVC) Port Hueneme, and is a designated military mobility corridor, as further discussed in the NBVC Joint Land Use Study (2015).

The Fillmore and Western Railway operates the Santa Paula Branch track owned by VCTC. The railroad operates a tourist train and trains for movies. The track currently terminates east of Piru however, there is right-of-way to connect to Santa Clarita. There is no scheduled freight use on the Fillmore and Western Railway. However, the line has one continued freight customer located in Santa Paula, and is used intermittently for movement and storage of rail cars in the area between Fillmore and Piru.

3.5 Truck Supporting Infrastructure

Infrastructure that supports truck freight operations include weight stations and scales, truck parking and fueling locations.

3.5.1 Weigh Stations & Scales

There are three Weigh-in-Motion (WIM) sites in Ventura County[16]. WIM scales are designed to capture and record both axle and gross vehicle weights as vehicles pass over the measurement site. Thus, they do not require trucks to come to a complete stop for their weight to be measured and can be installed directly into the pavement on a truck thoroughfare. Other information, including axle spacing, vehicle classification, vehicle speed, and overall length, are provided by WIM stations as well. Two of these WIM sites are located along the Conejo Grade of US 101 between the cities of Camarillo and Thousand Oaks, one on the northbound and one on the southbound side of the freeway. The other WIM site is located on State Route 126 east of Piru near the Los Angeles County line.

The public weigh station in Ventura County is the Conejo Scales, located along the Conejo Grade on US 101 between the cities of Camarillo and Thousand Oaks. Also at this location, on the northbound side of the freeway, is the Conejo Inspection/Enforcement Facility that is owned and operated by the California Highway Patrol. All commercial trucks traveling US 101 in either direction must exit the freeway and be weighed here before continuing onward, unless they are authorized for weigh station bypass via a PrePass transponder or Drivewyze PreClear mobile application[17].

The CHP operates a mini-site weight station along State Route 118 near Moorpark. The westbound facility is located at postmile 15.1 west of Grimes Canyon Road and the eastbound facility is located at postmile 13.8 west of Balcom Canyon Road. Mini-sites are designed as safe locations for portable scale operations and are strategically located on highways with an above-average volume of commercial vehicle traffic to screen vehicles that may use alternative routes to avoid public weight stations. The site should include an area designed for truck inspections and may be randomly used by mobile road CHP enforcement officers. Operational equipment for mini-sites is normally transported from offsite. Truck traffic is directed into the site by traffic control signs and devices.

Additionally, there are five (5) privately-owned facilities that offer truck-weighing services to the public in Ventura County according to the California Department of Food and Agriculture's Division of Measurement Standards Public Scales Listing[18]. These facilities are listed below:

- Oaks Self Storage – 2501 W Hillcrest Drive, Thousand Oaks
- Mac Valley Oil Company – 100 Del Norte Boulevard, Oxnard
- Silvas Oil Co., Inc. – 1757 E Wooley Road, Oxnard
- AG RX – 751 South Rose Avenue, Oxnard
- OST Trucks and Cranes, Inc. – 2951 N Ventura Avenue, Ventura

3.5.2 Truck Parking

[16] https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/trucks/wim/wim07-a11y.pdf
[17] https://dot.ca.gov/programs/traffic-operations/wim/bypass
[18] https://apps1.cdfa.ca.gov/publicscales/view.aspx?c=56

According to the Federal Highway Administration's report "Jason's Law Truck Parking Survey Results and Comparative Analysis[19]," California faces a severe shortage of truck parking and is one of three states with the lowest rates of commercial vehicle truck parking spaces per 100,000 miles of daily combination truck VMT. Typically, commercial truck parking is made available at public rest areas, truck stops, at highway weight stations or in designated areas along highway roadsides. The only publicly available truck parking in Ventura County is at the Mac Valley Oil Company at the intersection of Del Norte Boulevard and Sturgis Road in Oxnard, with nine available spaces.

The next closest commercial truck parking facilities are located in Los Angeles County at Castaic Truck Stop and Valley Gas Station, both along Interstate 5—approximately 45 miles from the State Route 126 / US 101 interchange in Ventura. Apart from these locations, truck parking can only be found at trip origin and destination sites or occurs with varying legality along streets.

Given strict work rules for truck operators, which may often be exceeded during pick-up or drop off at the Port or a worksite, and the lack of a nearby designated truck parking area causes truck parking along roadways not designated or designed for shoulder parking.

3.5.3 Alternative Fueling Locations

Medium and heavy-duty trucks with diesel engines are a significant source of particulate matter, a criteria air pollutant that has disproportionate health impacts on disadvantaged, low-income, and rural communities living along or near major goods movement corridors in Ventura County, such as US 101, arterial roads in the City of Oxnard, and State Route 126 in the Santa Clara Valley.

The Federal Highway Administration (FHWA) designated a national network of alternative fueling corridors along the National Highway System, nominating 58 corridors that include portions or segments of 84 Interstate highways and 43 US and State highways, covering 100,000 miles of roadway.[20] Through the efforts of the FHWA and the State of California's own initiatives to reduce greenhouse gas emissions and promote renewable energy, alternative fueling locations are particularly prolific in California, with many located along California's Highway Freight Network and available for use by commercial trucks.

The California Sustainable Freight Plan, developed by CARB and multiple state agencies, called for 100,000 E-Trucks to be deployed across the state by 2020.[21] While the ambitious goal was not met, it reflects the importance of the truck segment to driving GHG reduction, criteria air pollutant reduction, and improved

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[19] https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/cfmp-2020-final/final-cfmp-2020-chapters-1-to-6-remediated-a11y.pdf

[20] https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/cfmp-2020-final/final-cfmp-2020-chapters-1-to-6-remediated-a11y.pdf

[21] ARB. 2016. California Sustainable Freight Action Plan. Retrieved from: http://dot.ca.gov/hq/tpp/offices/ogm/cs_freight_action_plan/Documents/CSFAP_Main%20Document_FINAL_07272016.pdf

health and living conditions across California's most impacted communities. In addition to emissions reduction, the benefits of E-Truck adoption include:

- Noise reduction when compared to internal combustion engines
- Competitive acceleration times, hauling capacity, and gradeability to internal combustion engines
- Improved fuel efficiency
- Potential grid benefit when paired with managed charging practices
- Workforce and local economic development resulting from local fueling, and EVSE installation and maintenance

Alternative fueling stations catalogued by the US Department of Energy's Alternative Fuels Data Center include biodiesel, compressed natural gas (CNG), electric, ethanol, hydrogen, liquefied natural gas (LNG), and liquefied propane gas (LPG) fueling stations. According to their database, there are 167 alternative fueling stations in Ventura County, with the vast majority being electric fueling stations. These are distributed throughout the county, but are most heavily concentrated along the US 101 corridor and in the cities of Ventura, Oxnard, Port Hueneme, Camarillo, and Thousand Oaks. The breakdown of alternative fueling sites by type in Ventura County is:

- 150 Electric sites – 40 in Ventura, 31 in Thousand Oaks, 30 in Oxnard, 15 in Simi Valley, 15 in Camarillo, six in Port Hueneme, five in Ojai, four in Moorpark, two in Oak View, one in Santa Paula, one in Fillmore.
- Seven LPG sites – three in Oxnard, two in Ventura, one in Santa Paula, and one in Simi Valley;
- Six CNG sites – three in Simi Valley, two in Oxnard, one in Thousand Oaks;
- Two Biodiesel sites – one in Simi Valley, one 1 in Ventura;
- One Hydrogen site in Thousand Oaks;
- One LNG site in Simi Valley.

If left unmanaged, E-Bus and E-Truck charging can cause major grid reliability and stability concerns. However, if managed appropriately, both the charging equipment and vehicles batteries can become grid resources that offer valuable frequency regulation, voltage control, and demand response value for local utilities and grid managers. Further opportunities for grid integration become viable when E-Bus and E-Truck charging is integrated with onsite renewable energy generation and energy storage. When used in concert, these resources can enable fleet managers to prevent nearly all demand charges, enable resilient charging from an onsite renewable source, and unlock potential new revenue streams from demand response programs, or energy dispatch to the grid.

3.6 Pipelines

There are currently 43 companies that operate oil and gas facilities in the 34 active oil and gas fields located in Ventura County. These oil and gas facilities operate under the authority of 145 conditional use permits (CUPs) granted by the County of Ventura from the late 1940s to as recently as 2016. In addition, there are two major consolidated oil and gas processing facilities located onshore in the coastal zone that receive oil and gas from offshore oil leases.

All oil and gas facilities include pipelines that convey produced fluids from wells to storage and processing facilities located on lease areas within the oil and gas fields and to connections with the major transmission pipelines that transport oil and gas to regional refineries in the Los Angeles area. These are shown in **Figure 11**. The major pipelines that convey crude oil and natural gas are generally located along highways and railroad lines and are owned by companies such as Crimson LP and Southern California Gas Company.[22]

Figure 11: Pipelines in Ventura County

Source: Southern California Gas[23]

3.7 Freight Facility Relationship to Disadvantaged Communities

The primary negative externalities of freight movement are air pollution emissions, traffic and safety issues, noise pollution and aesthetic impacts. Few areas within southern Ventura County are not located adjacent to an agricultural area, industrial area or major freight-carrying transportation facility. Thus all

[22] https://vcrma.org/oil-and-gas-program
[23] https://socalgas.maps.arcgis.com/apps/webappviewer/index.html?id=12cb8fddd6184f1bafc565ed09e4f631

communities in the county are impacted by freight transportation to some degree. However, the nationwide common siting of multi-family housing adjacent to, industrial and transportation facilities and the associated and lower cost of the housing leads to disproportionate burdens of the freight system being placed on disadvantaged residents.

Based on land use data from the Southern California Association of Governments, approximately 16 percent of the County's population—nearly 135,000 people—live within 1,000 feet of a roadway that carries more than 1,000 trucks per day. Despite 40 percent of the County's residents living in multi-family residences, 50 percent of those living within 1,000 feet of a roadway carrying more than 1,000 trucks per day—67,500 people—live in multi-family residences.

Traffic and Safety Impacts

The freight transportation network is a shared system with other users. Truck travel on local streets to access ports, warehouses and railyards affects pedestrians and bicyclists that share these same roads. Generally, there is a correlation between the truck traffic volume and frequency of truck-involved incidents due to the greater number of opportunities for conflict. Truck-involved incidents tend to have more severe outcomes to people, vehicles and infrastructure than incidents between passenger modes due to the heavier weight of trucks. Conflicts with active transportation users are increasing as communities invest in complete street designs and intensified land uses.

Noise Impacts

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, and libraries are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance.

Noise coming from on-road trucks, trains and parking, loading and unloading of vehicles, construction sites, and industrial uses can impact local residents. Even when industrial land uses, including rail yards and ports, are located as far as possible from neighbors, often their connections to the regional transportation system require passing adjacent to residential neighborhoods. While municipal noise ordinances generally prohibit loud noise from property during sleeping hours, they generally do not regulate noise generated by traffic.

Under the federal Train Horn Rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings. The maximum volume level for the train horn is 110 decibels, the minimum sound level is 96 decibels. Localities can mitigate the effects of train horn noise by establishing "quiet zones." In a quiet zone, railroads are directed to cease the routine sounding their horns when approaching public highway-rail grade crossings. Train horns may still be used in emergency situations.

Aesthetic Impacts

Freight facilities can have aesthetic impacts on communities, either through use of large, opaque structures or through poor maintenance overall as compared to other types of land uses, as they are generally built and maintained to be economically efficient, not aesthetically appealing to neighbors.

Landscaping and architectural upgrades are typically prescribed through local zoning or preferences of owners. As residential development growth increases in the county, pressure from residential neighbors of industrial land uses and facilities may lead to improved building aesthetics or landscape buffers.

3.7.1 CalEnviroScreen

In January 2017, the Office of Environmental Health Hazard Assessment (OEHHA), on behalf of the California Environmental Protection Agency (CalEPA), released Version 3.0 of the California Communities Environmental Health Screening Tool (CalEnviroScreen). CalEnviroScreen identifies California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. Exposure to tailpipe emission leads to increased risk of premature death, lung cancer, heart and lung diseases and asthma. This public health issue is particularly acute for disadvantaged communities located adjacent to highway and rail corridors.

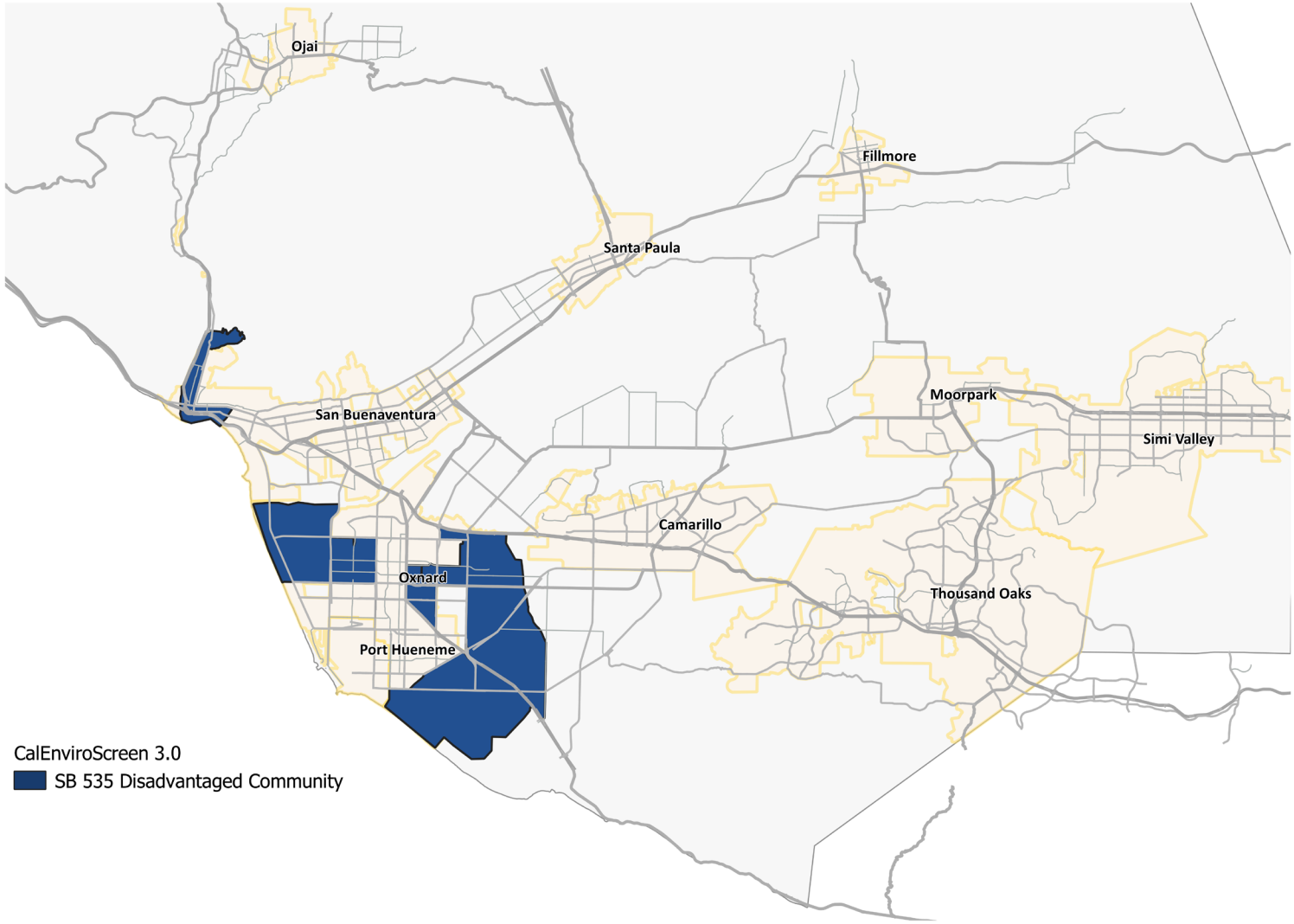
Disadvantaged Communities

The CalEnviroScreen data set helps to define SB 535 Disadvantaged Communities (as those in the 75th or higher percentile of Census tracts in their CalEnviroScreen score), which are specifically targeted for investment of proceeds from the State's cap-and-trade program.

Eight SB 535 disadvantaged community Census Tracts are located in Ventura County, as shown in **Figure 12**. The following is a description of each with their primary environmental indicators:

- The most environmentally disadvantaged communities are the 15,000 residents that share three Census tracts with the industrial areas of northeast Oxnard. High levels of pesticide, traffic, hazardous waste, and solid waste burdens result is some of the highest asthma and cardiovascular disease rates in the State, as well as concentrations of poverty, lack of educational attainment, and linguistic isolation.
- The Census tract containing the 5,000 residents of the Cabrillo community in Oxnard, bounded by the Santa Clara River to the north, Ventura Road to the East and 5th Street to the South has high levels of pesticide pollution and groundwater threats with high levels of asthma, low birth weight, and cardiovascular disease.
- The Census tract south of Pleasant Valley Road and Pacific Coast Highway containing the 5,000 residents of the Tierra Vista neighborhood has high levels of pesticides, ground water threats, and solid waste pollution. It also has relatively limited educational attainment, linguistic isolation and poverty.
- The two census tracts containing 10,000 residents of Ventura in the neighborhood to the north of US 101 and west of Ventura Avenue has high amounts of pesticides, traffic burden, groundwater threats and hazardous waste sites accompanied by low birth weights in the downtown, low educational attainment, linguistic isolation, and poverty north of downtown.
- The 1,500 residents of the predominately agricultural area bounded by 5th Street, Rice Avenue, Pacific Coast highway and Revolon Slough have high levels of pesticides and groundwater threats along with low educational attainment and linguistic isolation.

Figure 12: SB535 Disadvantaged Communities



Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

While the disadvantaged communities designation provides a guide to overall burdened disadvantaged communities, for the purposes of how freight movement activity and investment effects communities, this study looked specifically at the pollution burden of diesel particulate matter, the health outcomes of asthma, and the socioeconomic concentrations of poverty, linguistic isolation, and lack of educational attainment. This analysis identified additional communities where careful consideration of infrastructure and investment should account for improving health and social outcomes in vulnerable populations.

Pollution Burden: Diesel Particulate Matter and Asthma

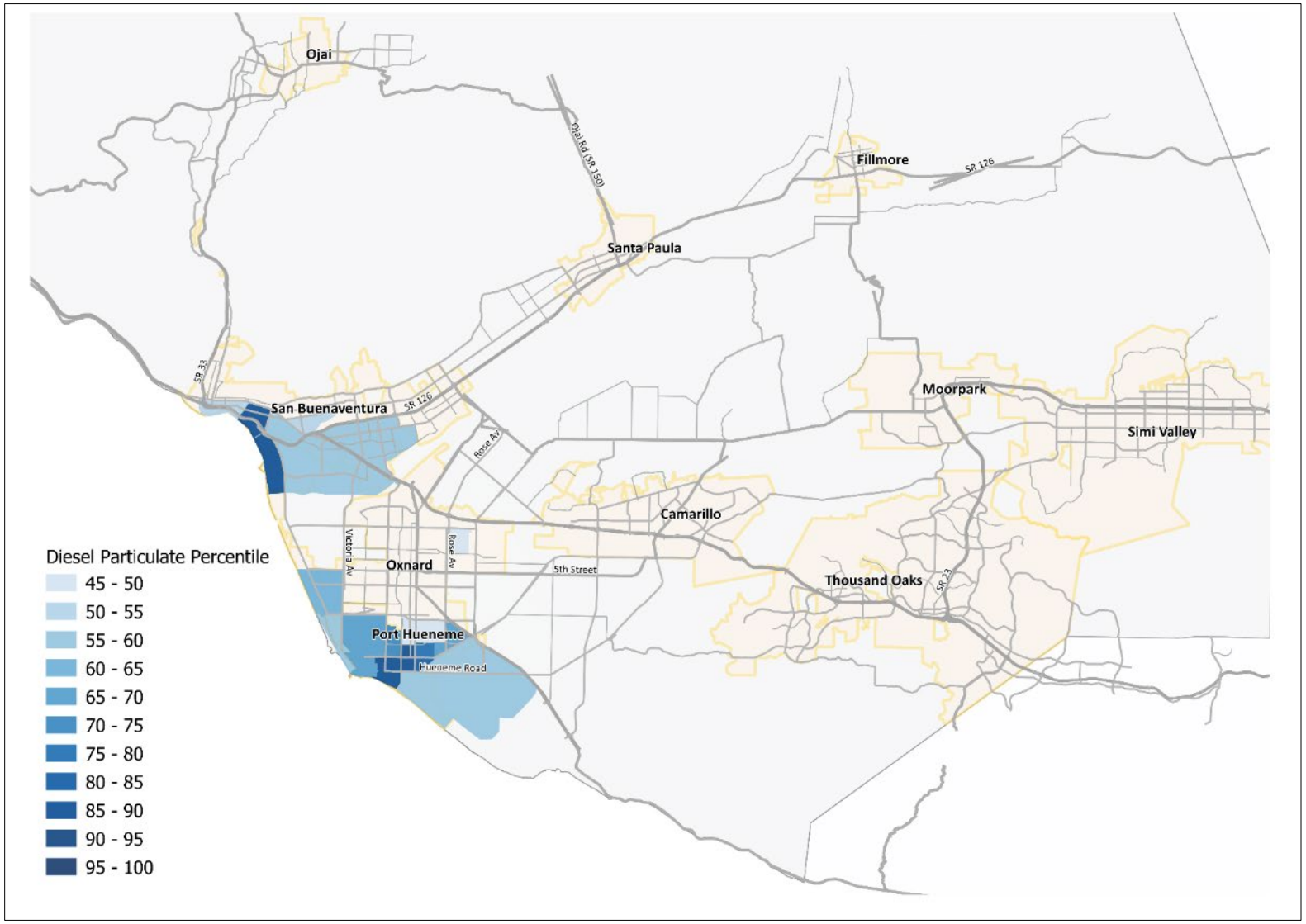
The Pollution Burden tracked by CalEnviroScreen most directly related to freight movement is diesel particulate matter (diesel PM). Exhaust from trucks, buses, trains, ships and other equipment with diesel engines contains a mixture of gases and solid particles. Diesel PM contains hundreds of different chemicals. Many of these are harmful to health. The highest levels of diesel PM are typically found near ports, rail yards and freeways.

The particles in diesel PM can reach deep into the lung, where they can contribute to health problems including eye, throat, and nose irritation, heart and lung disease, and lung cancer. Children and the elderly are most sensitive to the effects of diesel PM. In Ventura County, diesel particulate matter and asthma are highly correlated.

The percentile rank (as compared to other California census tracts) of exposure to diesel PM emission exposure from on-road and non-road sources and age-adjusted rate of emergency department visits for asthma over 45 percent are shown in **Figures 13** and **14** respectively.

As shown, the highest areas of diesel PM exposure are in the southern part of Oxnard/eastern part of Port Hueneme and in Ventura north of US 101, west of Ventura Avenue. The same areas have high rates of age-adjusted rate of emergency department visits for asthma.

Figure 13: Diesel Particulate Matter Emission Exposure from On-Road and Non-Road Sources Percentile



Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

Figure 14: Age-Adjusted Rate of Emergency Department Visits for Asthma

Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

Socioeconomic Characteristics: Concentrations of Poverty, Linguistic Isolation, and Educational Attainment

Socioeconomic factor indicators are conditions that may increase people's stress or make healthy living difficult and cause them to be more sensitive to pollution's effects.

Poverty level is based on the size of the household and the ages of family members. If a person or family's total income before taxes is less than the poverty level, the person or family are considered in poverty. Members of lower-income communities are more likely to be exposed to pollution and suffer from health effects as a result of that exposure than residents of high-income communities. Income can affect health when people cannot afford healthy living and working conditions, nutritious food and necessary medical care. Lower-income communities are often located in areas with high levels of pollution. Poverty can cause stress that weakens the immune system and causes people to become ill from pollution.

As shown in **Figure 15**, areas with high rates of poverty in the County are located in eastern Oxnard, northern Ventura, Santa Paula, Fillmore and the unincorporated communities of El Rio, Del Norte, Saticoy, and Piru.

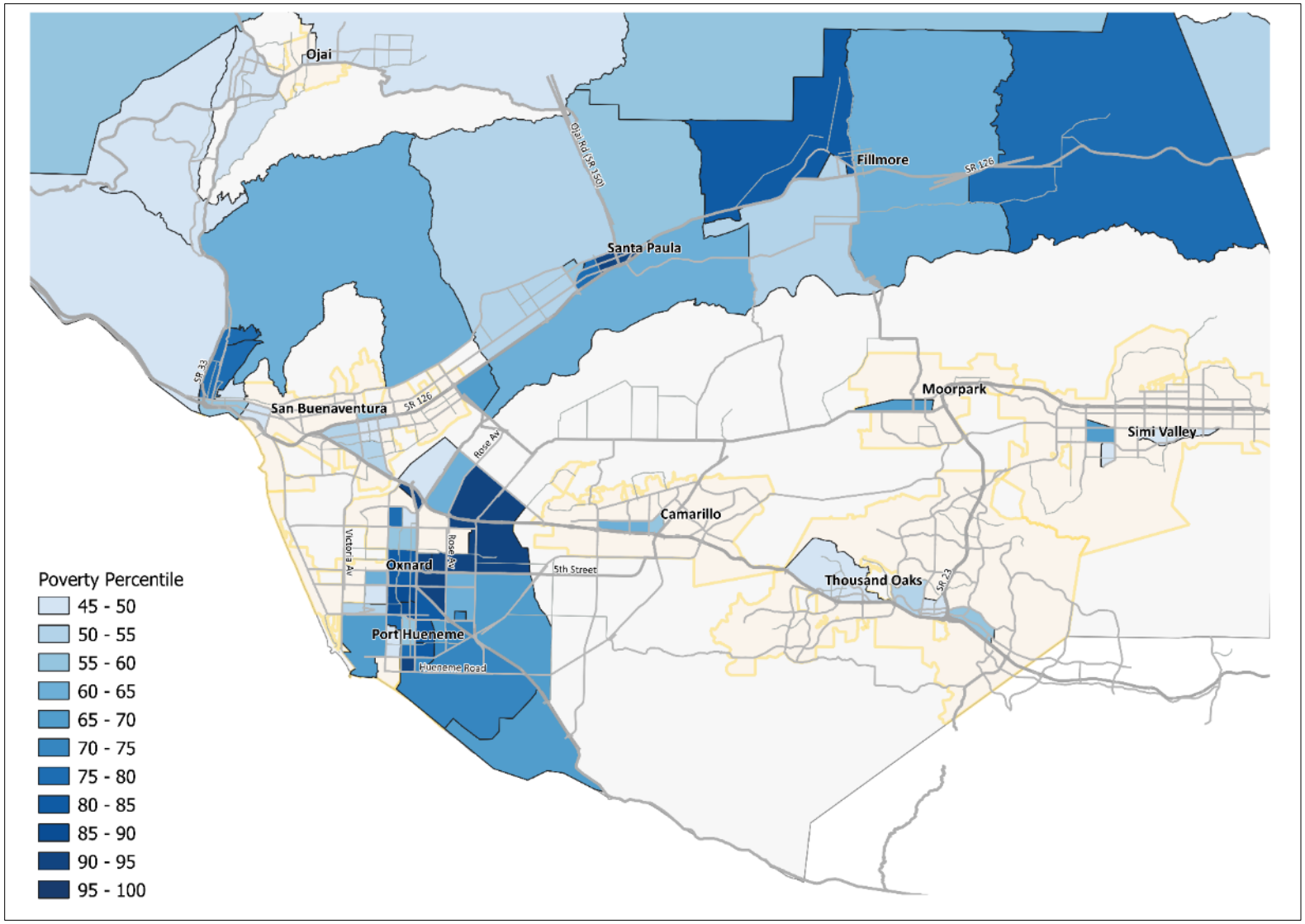
Linguistic isolation is a term used by the US Census Bureau for limited English-speaking households. More than 40 percent of Californians speak a language other than English at home. About half of those do not have English language proficiency. Adults who do not have English proficiency often have trouble talking to the people who provide social services and medical care. As a result, they might not get the health care and information they need. Linguistically isolated households may not hear or understand important information when there is an emergency like an accidental chemical release or spill. Linguistic isolation limits the ability of individuals to express their needs and desires in community planning processes, further exacerbating the burdens of societal externalities in linguistically isolated communities.

As shown in **Figure 16**, areas of linguistic isolation in the County are located In eastern Oxnard, northern Ventura, Santa Paula, in the industrial areas of western Thousand Oaks, western Moorpark and the unincorporated communities of El Rio and Del Norte, Piru, neighborhoods east of Oxnard.

Educational attainment is the highest level of education a person has completed. People with more education usually earn more than people with less education. In California, 19 percent of adults over 25 do not have a high school degree, compared to 14 percent for the United States. People with more education are more likely to have better health and live longer. Studies have found that communities of more educated people are less polluted. Adults with less education have more pollution-related health problems and may be more likely to die from the effects of air pollution.

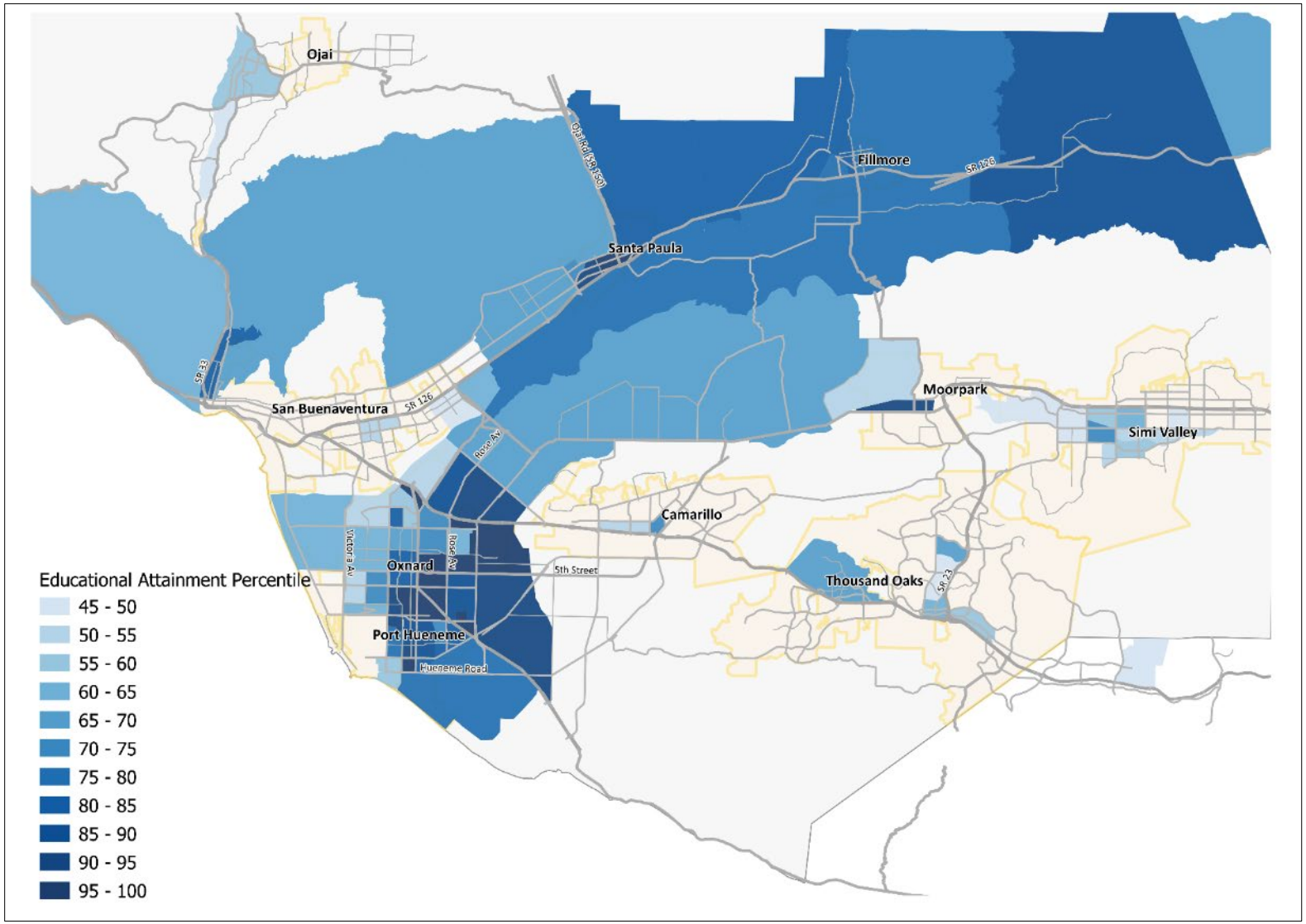
As shown in **Figure 17**, the percent of the population over 25 with less than a high school education in the County are concentrated in central Oxnard, western Moorpark, Santa Paula, Fillmore and the unincorporated areas east and north of Oxnard and Piru.

Figure 15: Percent of Population Living Below Two Times the Federal Poverty Level Percentile



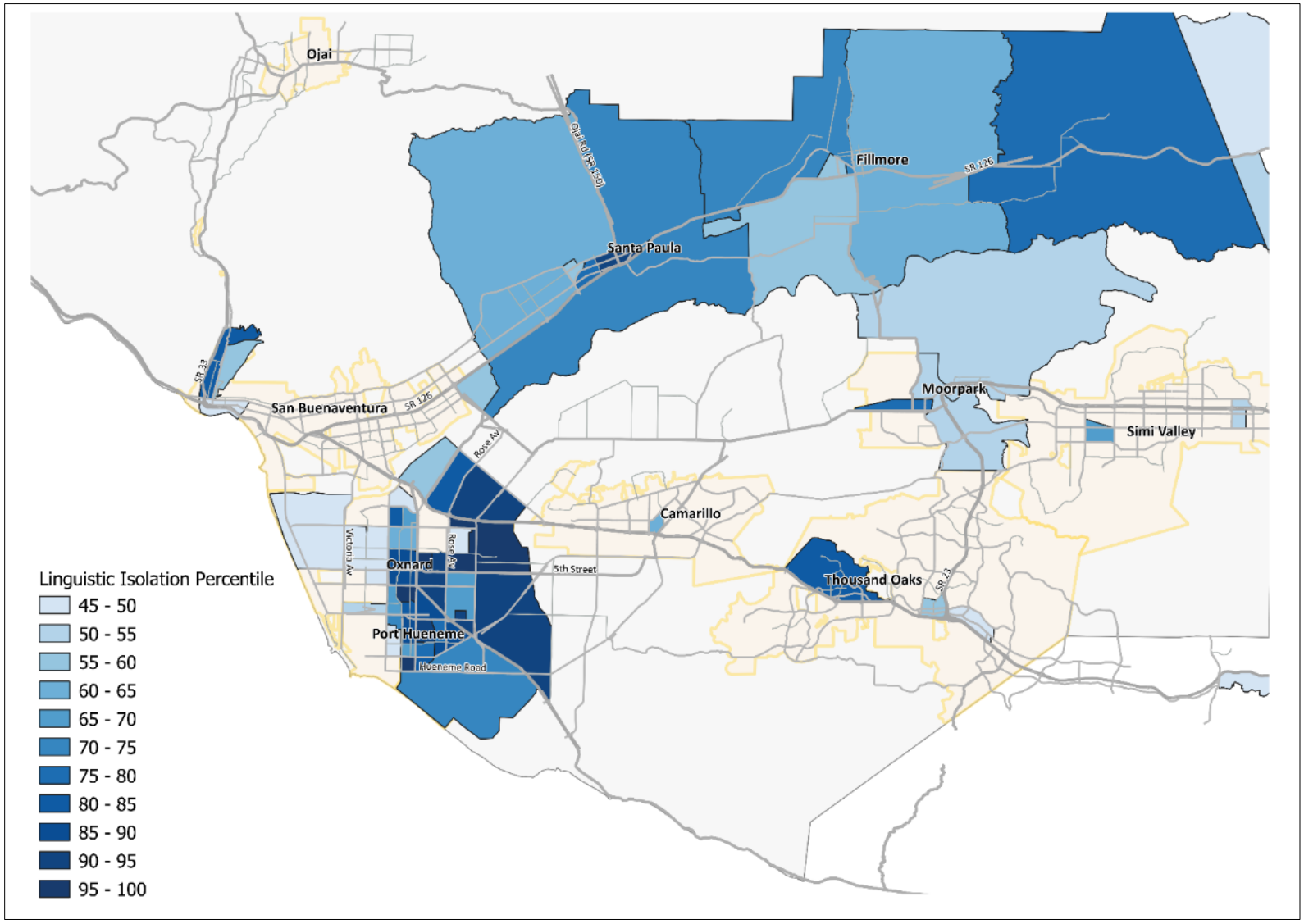
Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

Figure 16: Percent of Population Over 25 with Less Than a High School Education Percentile



Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

Figure 17: Limited English Speaking Households Percentile



Source: CalEnviroScreen 3.0, California Office of Environmental Health Hazard Assessment

3.8 Sensitive Land Uses

3.8.1 Schools

Vehicle pollutant concentrations are higher closer to roadway, with the highest levels generally within the first 500 feet of a roadway and reaching background levels within approximately 2,000 feet of a roadway, depending on the pollutant, time of day, and surrounding terrain. Many studies have found people who live, work, or attend school near major roads are more at risk for a variety of short- and long-term health effects, including asthma, reduced lung function, impaired lung development in children, and cardiovascular effects in adults.

"Best Practices for Reducing Near-Road Pollution Exposure at Schools", US Environmental Protection Agency, November 2015, https://www.epa.gov/schools/best-practices-reducing-near-road-pollution-exposure-schools

Applying the 2,000 feet distance of Kindergarten to 12th Grade schools in the County from defined truck routes and any roadway carrying more than 1,000 average daily truck traffic (ADTT), the following data regarding the 2019-2020 school population were derived.

- 119 of the 209 (57%) schools in Ventura County are within 2,000 feet of a defined truck route
- 50 of the 209 (24%) schools are within 2,000 feet of a roadway that carries 1,000 or more trucks per day.
- 29 of the 209 (13%) of the schools are within 2,000 feet of a freeway
- 75,500 of the 134,900 (56%) students went to school within 2,000 feet of a defined truck route
- 33,700 of the 134,900 (25%) students went to school within 2,000 feet of a roadway that carries 1,000 or more trucks per day.
- 17,000 of the 134,900 (13%) students went to school within 2,000 feet of a freeway.

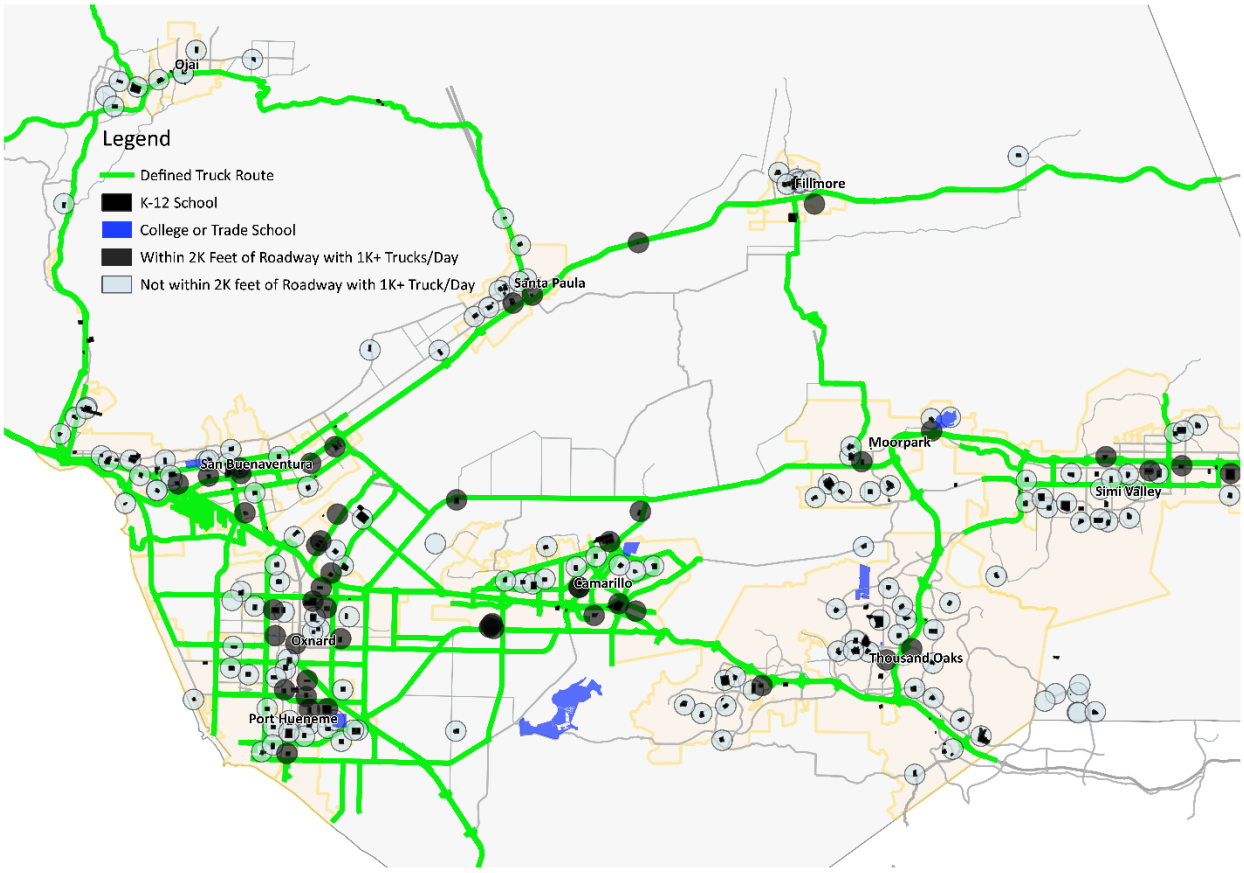
The amount of schools located near roadways with 1,000 or more trucks per day varied greatly throughout the County due to differences in topography, street layout and city layout. Cities and areas with the highest proportion of students near roadway with 1,000 or more trucks per day are Somis, Camarillo, Oxnard, Santa Paula, Simi Valley, and Ventura. These are shown in **Figure 18**.

Table 2: Schools within 2,000 feet of a Truck Route or Roadway with 1,000 or More Trucks Per Day (ADTT)

Location	Schools			Students			% Non-White		
	Total	Near Truck Route	Near 1K+ ADTT	Total	Near Truck Route	Near 1K+ ADTT	Total	Near Truck Route	Near 1K+ ADTT
Camarillo	22	19	10	11,697	10,673	5,270	60%	61%	63%
Fillmore	7	1	1	3,447	472	472	94%	91%	91%
Moorpark	11	4	2	6,184	1,586	525	61%	68%	71%
Newbury Park	8	1	1	6,414	542	542	44%	52%	52%
Oak Park	7	0	0	4,526	0	0	44%	-	-
Oak View	1	1	0	341	341	0	52%	52%	-
Ojai	9	5	0	2,429	1,688	0	45%	45%	-
Oxnard	49	32	17	44,273	29,748	15,984	95%	95%	94%
Piru	1	0	0	287	0	0	98%	-	-
Port Hueneme	4	4	0	2,187	2,187	0	94%	94%	-
Santa Paula	13	7	3	5,888	2,759	1,646	96%	94%	96%
Simi Valley	26	14	5	16,506	7,885	4,410	55%	59%	52%
Somis	2	2	2	878	878	878	80%	80%	80%
Thousand Oaks	17	2	2	9,259	386	386	48%	85%	85%
Ventura	28	26	7	16,809	16,003	3,622	62%	63%	66%
Westlake Village	4	1	0	3,749	305	0	43%	46%	-
Total	209	119	50	134,874	75,453	33,735			
Percent	100%	57%	24%	100%	56%	25%	71%	77%	79%

Source: California Department of Education Public Schools

Figure 18: School Located Near Truck Routes



The California Department of Education Public Schools data does not include information about socioeconomic status, however in does include the racial and ethnic makeup of the students attending schools. Of the 96,300 (71% of total) of non-white (including Hispanic) students were enrolled in schools in the County, 55,550 (58%) were at schools within 2,000 feet of a truck route and 26,500 (28%) were at schools within 2,000 feet of a roadway with 1,000 or more trucks per day. These ratios are slightly higher than those of the total student body. On a City level, the disparity was slightly higher in the Cities of Moorpark and Thousand Oaks.

Twenty-four of the schools in the County are located with one of its frontages directly on a truck route. Three schools are located adjacent to a freeway facility with no significant barrier (masonry wall, vegetation or earthen) all in the City of Ventura: Sheridan Way School along State Route 33, Citrus Glen Elementary School along State Route 126, and Douglas Penfield School along State Route 126.

3.8.2 Parks

Access to parks from residential areas are often across or along truck routes in the County. Ensuring safe and deliberate support of walking and biking access to parks from adjacent residential areas across routes supporting large amounts of truck traffic is an important strategy to balance community interest with freight movement.

4 FREIGHT ACTIVITY –USE OF THE FREIGHT SYSTEM

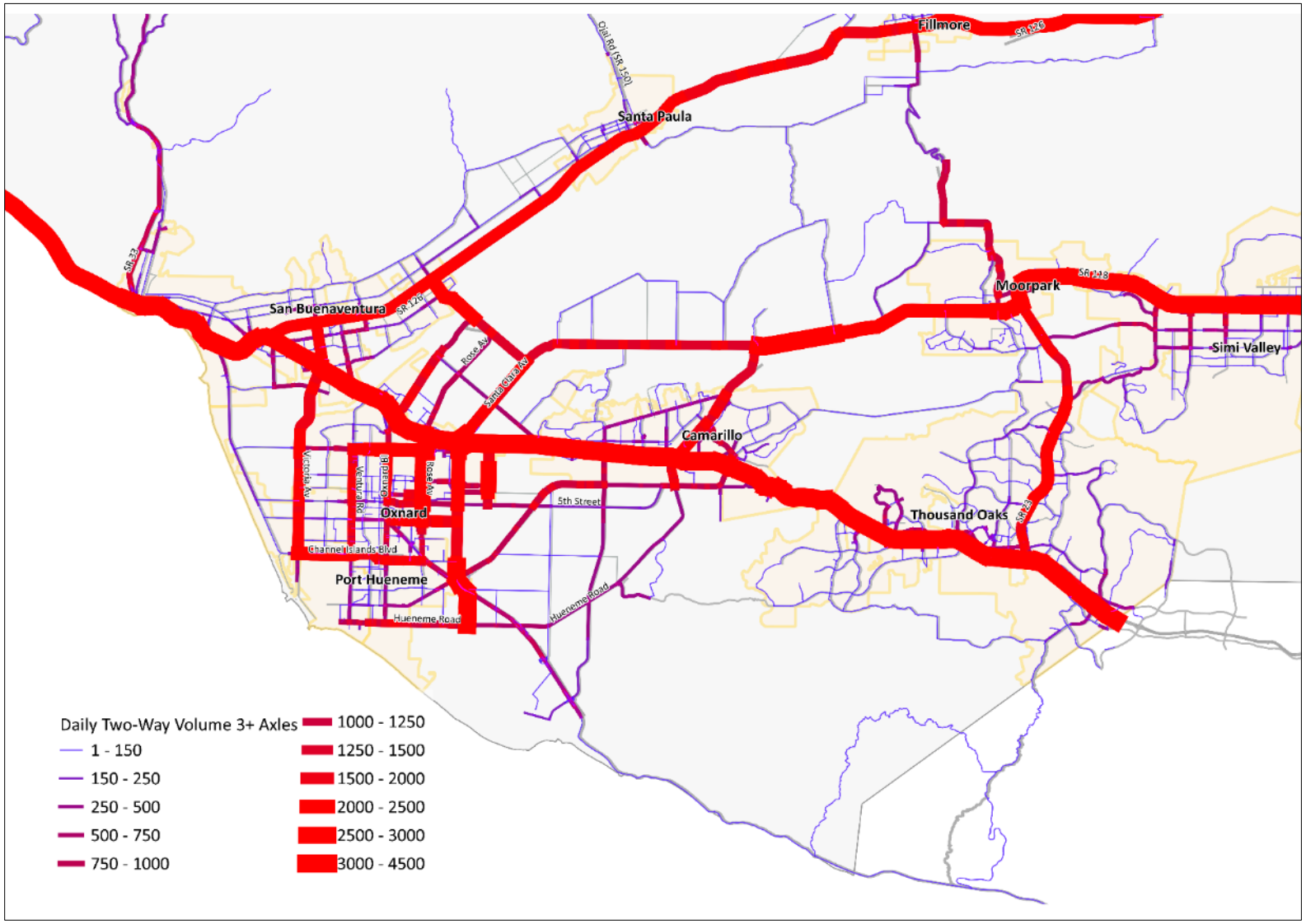
4.1 Freight Volume

The daily freight volume estimate for all roadways in Ventura County was developed by utilizing traffic counts and backfilling missing gaps with the Ventura County Traffic Model (VCTM) data. In areas with differences between the traffic counts and VCTM volumes, the traffic counts were used and were interpolated to the next adjacent count location.

As shown in **Figure 19**, the predominate truck flows in the county are east/west along State Route 126, State Route 118 and US 101, with large volumes of local access to major truck generating land uses in Oxnard, and to a lesser degree in Camarillo, Ventura, and agricultural areas adjacent to Camarillo, Oxnard, and Ventura.

Very few sections of the developed areas of the County do not have major through or adjacent freight flows. The dispersed nature of the truck flows has to do with the dispersal of industrial areas, distance of the Seaport area from a freeway facility, mountain and valley topography concentrating travel within the valleys and widespread agricultural areas.

Figure 19: Daily Truck Volume (Vehicles with 3 or more Axles)



4.1.1 East/West County Truck Traffic Flow

A snapshot of the major east/west highways of State Route 126, State Route 118 and US 101 was analyzed to show regional truck patterns. From north to south, following an imaginary line (screenline) of State Route 126 between Orcutt Road and Sycamore Road, State Route 118 between Somis Road and Balcom Canyon Road and US 101 at Camarillo (postmile 50.36) was compiled from the SCAG screenline counts for State Route 126 and State Route 118 and US 101 PAED counts for US 101. US 101 southbound is considered eastbound and northbound is considered westbound for the purposes of this analysis

Table 3 shows the total volume of all traffic in the screenline for each hour. Overall, approximately 95,000 vehicles cross the screenline in each direction over the course of a day. The morning peak is 7am to 8am and the evening peak is between 4pm and 6pm for both directions. The peaks of US 101 travel are in the eastbound in the morning commute and in the westbound in the evening commute. The opposite occurs along State Route 126 and State Route 118 that sees higher volume eastbound in the evening commute times and westbound in the morning commute.

Table 3: Total Volume by Hour in the State Route 126, State Route 118 and US 101 Screenline

	Eastbound				Westbound			
Hour	SR-126	SR-118	US 101*	Total	SR-126	SR-118	US 101*	Total
0	93	57	373	523	81	68	652	801
1	62	27	293	382	56	41	398	495
2	78	31	305	414	48	25	329	402
3	103	87	501	691	92	38	340	470
4	203	144	1,105	1,452	289	123	683	1,095
5	682	492	2,627	3,801	744	372	1,767	2,883
6	828	846	4,018	5,692	1,169	710	3,006	4,885
7	802	905	5,555	7,262	1,493	871	4,202	6,566
8	848	884	4,431	6,163	1,167	692	3,686	5,545
9	753	658	3,775	5,186	1,095	660	3,375	5,130
10	704	559	3,590	4,853	847	612	3,453	4,912
11	768	519	3,768	5,055	833	605	3,722	5,160
12	839	546	3,860	5,245	809	620	3,801	5,230
13	911	582	3,869	5,362	816	639	3,835	5,290
14	1,049	687	3,988	5,724	871	698	4,162	5,731
15	1,312	876	4,012	6,200	1,013	874	4,618	6,505
16	1,558	1,023	3,998	6,579	1,102	921	4,838	6,861
17	1,591	1,129	4,054	6,774	1,032	920	4,728	6,680
18	1,047	779	3,540	5,366	726	679	3,908	5,313
19	747	434	2,705	3,886	528	495	2,778	3,801
20	525	324	2,076	2,925	394	353	2,423	3,170
21	412	246	1,702	2,360	299	249	2,225	2,773
22	253	151	1,067	1,471	238	211	1,570	2,019
23	148	89	643	880	118	111	1,105	1,334
Total	16,316	12,075	65,855	94,246	15,860	11,587	65,604	93,051

Source: Southern California Association of Governments

Table 4 shows only the FHWA Class 6 and above vehicles in the east/west screenline. Note that classified truck counts on US 101 were only taken for a two-hour period in the morning (7am to 9am) and in the afternoon (4pm to 6pm). Therefore, the totals only represent the State Route 126 and State Route 118 values.

In contrast to the values for total volume, truck volumes are concentrated in the middle of the day with the peak hours occurring after the morning commute and in the early afternoon. This is consistent with trucks being used as vehicles during the work-day making deliveries, traveling to work sites, hauling materials and performing utility work.

Table 4: Truck Volume by Hour in the State Route 126, State Route 118 and US 101 Screenline

	Eastbound			Westbound		
Hour	SR-126	SR-118	US 101	SR-126	SR-118	US 101
0	10	4		7	8	
1	16	1		9	4	
2	24	2		10	9	
3	32	5		9	13	
4	23	9		23	20	
5	32	26		47	49	
6	54	61		69	94	
7	44	49	67	85	75	68
8	58	86	105	94	86	60
9	80	82		84	87	
10	81	74		72	104	
11	70	68		77	106	
12	63	57		68	128	
13	67	73		97	99	
14	52	64		65	84	
15	90	56		74	56	
16	69	48	48	49	53	57
17	51	38	36	53	54	39
18	41	43		30	52	
19	30	26		28	29	
20	25	22		22	21	
21	21	24		16	25	
22	20	11		16	16	
23	12	6		9	11	
Total	1,065	935	2,000	1,113	1,283	2,000

Overall, approximately 8,000 trucks per day cross the east/west screenline.

Table 5 shows the percentage of traffic on State Route 126 and State Route 118 that is FHWA Class 6 and above by hour. Trucks make up a very large percentage of early morning of traffic in both directions along

State Route 126. Trucks peak at approximately 10 to 20 percent of vehicles on State Route 118 from 8am to 2pm.

Table 5: Truck Percentage by Hour in the State Route 126 and State Route 118 Screenline

	Eastbound		Westbound	
Hour	SR-126	SR-118	SR-126	SR-118
0	11%	7%	9%	12%
1	26%	4%	16%	10%
2	31%	6%	21%	36%
3	31%	6%	10%	34%
4	11%	6%	8%	16%
5	5%	5%	6%	13%
6	7%	7%	6%	13%
7	5%	5%	6%	9%
8	7%	10%	8%	12%
9	11%	12%	8%	13%
10	12%	13%	9%	17%
11	9%	13%	9%	18%
12	8%	10%	8%	21%
13	7%	13%	12%	15%
14	5%	9%	7%	12%
15	7%	6%	7%	6%
16	4%	5%	4%	6%
17	3%	3%	5%	6%
18	4%	6%	4%	8%
19	4%	6%	5%	6%
20	5%	7%	6%	6%
21	5%	10%	5%	10%
22	8%	7%	7%	8%
23	8%	7%	8%	10%
Average	7%	8%	7%	11%

4.1.2 North/South County Truck Traffic Flow

Data for the North/South County truck traffic flow was only available at the daily truck traffic level (not at the hourly level). Total truck flow on the north/south screenlines of north and south of US 101 are shown in **Tables 6 and 7**.

Table 6: North/South Two-Way Truck Volumes North of US 101

Road	Location	Est. Daily Trucks	Source
Victoria Ave	N/O US 101	1,590	VCTM
Vineyard (SR 232)	S/O SR 118	1,069	Caltrans Census
Rose Ave	S/O SR 118	700	VCTM
Santa Clara Ave	S/O SR 118	1,660	VCTM
State Route 34	S/O SR 118 in Somis	1,268	Caltrans Census
SR 23	N/O US 101	1,500	VCTM
Total		7,787	

Table 7: North/South Two-Way Truck Volumes South of US 101

Road	Location	Est. Daily Trucks	Source
Victoria Ave	North of 5th St	1,771	Port Hueneme/ Oxnard Study
Vineyard Ave	S/O US 101	1,137	Caltrans Census
Oxnard Blvd	At Oxnard Blvd	637	Caltrans Census
Rose Ave	North of 5th St	2,608	Port Hueneme/ Oxnard Study
Rice Ave	North of 5th St	2,187	Port Hueneme/ Oxnard Study
Las Posas Rd	S/O US 101	820	VCTM
Del Norte Blvd		1,240	VCTM
Lewis Road	S/O US 101	2,773	Caltrans Census
Total		13,173	

While the volume data on the north/south roadways was not as detailed as the east/west values, and required modeled volumes from VCTM, the results do show extensive truck traffic south of US 101 of approximately 13,000 trucks per day. North of US 101 the volume of trucks is approximately 8,000 per day.

4.1.3 State Highway Truck Volumes

The following tables list the daily truck volumes and their percentage of total average daily traffic (ADT) for state highways in Ventura County. Daily truck volumes are bolded in the tables. ***NOTE: the disruption of travel during the COVID-19 pandemic, postponed the traffic counts planned as part of this study have not been conducted to date.***

State Route 1

The only portion of State Route 1 with a large amount of trucks is the Rice Avenue section between Hueneme Road and US 101—a contrast to the Pacific Coast Highway portions of State Route 1 in Ventura County. This is the primary truck corridor as defined by the Port of Hueneme and is used by the majority of Port customers. The traffic count presented in the table is likely below current traffic volume since the

counts were taken before Rice Avenue was designated State Route 1 from Oxnard Boulevard. Nevertheless, the Rice Avenue portion of State Route 1 is clearly the major access route for trucks from the Port of Hueneme Area, the industrial land uses of northeast Oxnard and US 101.

Table 8: Daily Truck Volume on State Route 1

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Unincorporated	S/O Las Cruces, US 101; Mobil Oil Pier	28.48	**43**	610	7.0%	Caltrans	2013
Ventura	N/O Seacliff Colony, US 101	27.675	**27**	610	4.4%	Caltrans	2007
Oxnard	Rice Ave N/O SR 34, Fifth Rd	-	**2,187**	28,610	7.6%	Port Hueneme/ Oxnard Study	2008
Unincorporated	Bet Hueneme Rd and 5th St	-	**1,930**	29,190	6.6%	Port Hueneme/ Oxnard Study	2008
Oxnard	S/O Pleasant Valley Rd/Rice Ave	15.053	**327**	12,100	2.7%	Caltrans	2005
Unincorporated	At Calleguas Creek	9.866	**239**	9,600	2.5%	Caltrans	2005

State Route 23

The character of State Route 23 changes as it passes through rural, mountainous, urban, and freeway portions. State Route 23 provides access from agricultural land south of Fillmore before proceeding as Grimes Canyon Road to access gravel and sand pits north of Moorpark. Entering Moorpark as Walnut Canyon Road, it turns east to share Los Angeles Avenue with State Route 118. At the Los Angeles Avenue State Route 118 interchange, State Route 23 proceeds southbound

Table 9: Daily Truck Volume on State Route 23

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Fillmore	S/O SR 126	24.165	**903**	9,100	9.9%	Caltrans	2006
Unincorporated	S/O Broadway Road	16.8	**982**	6,300	15.6%	Caltrans	2006
Unincorporated	N/O Walnut Canyon Road	14.607	**409**	10,300	4.0%	Caltrans	2009
Unincorporated	S/O Spring Road	14.607	**336**	4,000	8.4%	Caltrans	2009
Moorpark	Moorpark Avenue N/O Los Angeles Avenue	12.9	**1,339**	11,300	11.8%	Caltrans	2006
Moorpark	Los Angeles Avenue (SR 118) W/O interchange	12.26	**3,223**	30,500	10.6%	Caltrans	2006
Moorpark	at Los Angeles Avenue interchange	11.432	**770**	66,000	1.2%	Caltrans	2012
Thousand Oaks	S/O US 101	3.32	**260**	36,000	0.7%	Caltrans	2006
Thousand Oaks	N/O Triunfo Canyon Rd	2.258	**204**	23,100	0.9%	Caltrans	2006
Thousand Oaks	S/O Triunfo Canyon Rd	2.258	**141**	14,700	1.0%	Caltrans	2006

State Route 33

The southern section of State Route 33 serves industrial and truck-generating land uses near the Stanley Avenue and Shell Road interchanges in Ventura north of US 101 and has truck trips that travel throughout

the County. The Ojai sections of State Route 33 have local delivery truck trips. State Route 33 continues 45 miles north of Ojai to connect to State Route 166 which continues to Interstate 5, however due to the mountainous nature of the roadway few trucks utilize State Route 33 north of Ojai.

Table 10: Daily Truck Volume on State Route 33

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Unincorporated	at Ventura/Santa Barbara County Line	57.508	**19**	340	5.6%	Caltrans	2013
Unincorporated	at Sespe Gorge Maint. Station	30.219	**30**	410	7.3%	Caltrans	2012
Unincorporated	at Los Padres National Forest Boundary	13.35	**49**	1,500	3.3%	Caltrans	2012
Unincorporated	at El Roblar Drive	11.961	**64**	3,700	1.7%	Caltrans	2012
Ojai	N/O SR 150 Baldwin Rd	11.21	**158**	11,000	1.4%	Caltrans	2012
Ojai	S/O SR 150 Baldwin Rd	11.2	**490**	20,800	2.4%	Caltrans	2012
Ventura	at Ventura Ave	R4.046	**210**	27,000	0.8%	Caltrans	2014
Ventura	N/O US 101	0	**211**	41,000	0.5%	Caltrans	2012

State Route 34

State Route 34 carries large numbers and a high percentage of trucks between US 101 and State Route 118 as the roadway serves truck-generating land uses in Camarillo and the agricultural area around Somis as well as interregional truck trips traveling between US 101 and State Route 118.

Table 11: Daily Truck Volume on State Route 34

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Oxnard	W/O Oxnard Blvd	4.295	**287**	14,800	1.9%	Caltrans	2006
Oxnard	E/O Rice Ave	6.27	**498**	11,700	4.3%	Caltrans	2006
Camarillo	S/O US 101	13.603	**2,773**	18,200	15.2%	Caltrans	2006
Camarillo	N/O US 101	13.603	**2,223**	18,200	12.2%	Caltrans	2006
Unincorporated	S/O SR 118 in Somis	17.663	**1,268**	13,600	9.3%	Caltrans	2006

US 101

The truck travel volumes along US 101 are fairly consistent throughout the County with about 3,000 to 4,000 trucks per day accounting for two to three percent of total volume on nearly all sections of the freeway. However, there is a high degree of local truck access from US 101 within the County at major interchanges such as State Routes 1, 23, 34, 232 and 126 in Camarillo, Oxnard and Ventura. Approximately 4,000 trucks per day pass between Ventura and Los Angeles Counties and 3,000 trucks per day pass between Ventura and Santa Barbara Counties.

Table 12: Daily Truck Volume on US 101

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Thousand Oaks	S/O Westlake Boulevard	0.701	**4,124**	170,000	2.4%	Caltrans	2012
Thousand Oaks	N/O Westlake Blvd	0.701	**4,038**	171,000	2.4%	Caltrans	2012
Thousand Oaks	S/O SR 23	3.107	**3,939**	183,000	2.2%	Caltrans	2012
Thousand Oaks	N/O SR 23	3.107	**3,510**	169,000	2.1%	Caltrans	2012
Thousand Oaks	S/O Wendy Drive	7.885	**3,713**	118,000	3.1%	Caltrans	2014
Thousand Oaks	N/O Wendy Drive	7.885	**3,504**	123,000	2.8%	Caltrans	2012
Camarillo	S/O Pleasant Valley	12.298	**3,333**	123,000	2.7%	Caltrans	2014
Camarillo	S/O SR 34, Lewis Rd	13.848	**3,646**	128,000	2.8%	Caltrans	2012
Camarillo	N/O SR 34, Lewis Rd	13.848	**3,810**	138,000	2.8%	Caltrans	2012
Camarillo	at SR 34, Lewis Rd interchange	13.848	**3,006**	125,000	2.4%	Caltrans	2014
Oxnard	S/O SR 232, Vineyard Ave	22.006	**3,420**	132,000	2.6%	Caltrans	2012
Oxnard	S/O Oxnard Boulevard	22.729	**3,146**	143,000	2.2%	Caltrans	2012
Ventura	S/O Victoria Ave	R24.645	**2,445**	117,000	2.1%	Caltrans	2014
Ventura	S/O SR 126	26.39	**2,757**	88,000	3.1%	Caltrans	2012
Ventura	N/O SR 126	26.39	**3,872**	117,000	3.3%	Caltrans	2012
Ventura	S/O SR 33	30.906	**3,330**	66,000	5.0%	Caltrans	2012
Ventura	N/O SR 33	30.906	**3,620**	91,000	4.0%	Caltrans	2012
Unincorporated	Ventura/Santa Barbara County Line	R43.622	**2,685**	65,000	4.1%	Caltrans	2014

State Route 118

State Route 118 is a hybrid freeway and arterial route that drastically changes character from Freeway in Simi Valley to local arterial in Moorpark to rural highway through Somis and Saticoy. However, the volume of trucks the route carries is very consistent within the County. State Route 118 carries a large number of interregional trucks that utilize the rural section as an alternative to State Route 126 and US 101 as a time-competitive route through the County.

Table 13: Daily Truck Volume on State Route 118

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Ventura	S/O SR 126	0.516	**2,420**	36,000	6.7%	Caltrans	2007
Unincorporated	W/O SR 232, Vineyard Ave	2.2	**2,821**	35,500	7.9%	Caltrans	2007
Unincorporated	E/O SR 232, Vineyard Ave	2.2	**1,998**	24,700	8.1%	Caltrans	2007
Unincorporated	W/O SR 34, Somis Road	10.92	**1,682**	18,600	9.0%	Caltrans	2008
Unincorporated	E/O SR 34, Somis Road	10.92	**2,275**	11,900	19.1%	Caltrans	2008
Unincorporated	betw Somis Rd and Balcom Canyon Rd	12	**2,218**	23,662	9.4%	SCAG Counts	2016
Unincorporated	W/O Grimes Canyon Rd	14.686	**1,826**	20,200	9.0%	Caltrans	2008

Moorpark	E/O Montair Dr	15	**2,068**	22,963	9.0%	NDS Historic	2017
Moorpark	W/O Moorpark Ave	17.494	**2,575**	29,000	8.9%	Caltrans	2007
Moorpark	at Spring Street	R17.905	**3,107**	35,000	8.9%	Caltrans	2012
Moorpark	W/O Spring Rd	17.9	**3090**	36,497	8.5%		2017
Moorpark	W/O 23 SB Ramps	18.1	**3276**	44,256	7.4%		2017
Moorpark	at SR 23 interchange	T18.21	**2,178**	77,000	2.8%	Caltrans	2012
Simi Valley	at Tapo Road	R27.811	**2,835**	134,000	2.1%	Caltrans	2012

State Route 126

Like State Route 118, State Route 126 has rural highway and freeway sections that shows consistent truck volume along its length. However, those sections are reversed within the geography of the county with the freeway sections on the western end and rural highway sections on the eastern end. It is the primary regional connection through the disadvantaged communities of Piru, Fillmore, Santa Paula and Saticoy.

Figure 14: Daily Truck Volume on State Route 126

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Ventura	EB On-Ramp from Main Street/US 101	0	**1,917**	47,000	4.1%	Caltrans	2012
Ventura	W/O SR 118	5.031	**1,965**	37,000	5.3%	Caltrans	2012
Ventura	W/O SR 118	R5.031	**1,967**	50,000	3.9%	Caltrans	2012
Santa Paula	E/O Peck Road	R10.629	**1,979**	40,000	4.9%	Caltrans	2017
Santa Paula	W/O SR 150	R12.042	**1,987**	36,500	5.4%	Caltrans	2012
Santa Paula	E/O SR 150	R12.042	**1,885**	29,500	6.4%	Caltrans	2012
Unincorporated	betw Orcutt Rd and Sycamore Rd	15.08	**2,178**	32,176	6.8%	SCAG NDS Tube Counts	2014
Fillmore	W/O SR 23	21.137	**1,733**	26,500	6.5%	Caltrans	2012
Fillmore	E/O SR 23	21.137	**1,841**	28,000	6.6%	Caltrans	2002
Piru	at Piru	R30.8	**1,938**	22,000	8.8%	Caltrans	2002
Unincorporated	Ventura/Los Angeles County Line	R0	**1,708**	22,600	7.6%	Caltrans	2002

State Route 150

State Route 150 is primarily a rural roadway connecting Ojai to State Route 126 and provides primarily local delivery truck trips. It does connect to State Route 1 past the Santa Barbara County border, but due to the mountainous nature of the roadway, few trucks travel on the western portion of the roadway.

Figure 15: Daily Truck Volume on State Route 150

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Unincorporated	at Santa Barbara/Ventura County Line	0	**24**	2,750	0.9%	Caltrans	2002
Unincorporated	at Santa Barbara/Ventura County Line	2.197	**24**	2,750	0.9%	Caltrans	2003
Unincorporated	W/O Ventura Ave (SR 33)	R14.406	**224**	19,400	1.2%	Caltrans	2003
Unincorporated	E/O Ventura Ave (SR 33)	R14.406	**95**	10,200	0.9%	Caltrans	2003
Ojai	W/O Maricopa Hwy (SR 33)	16.577	**384**	22,500	1.7%	Caltrans	2003
Ojai	E/O Maricopa Hwy (SR 33)	16.577	**254**	18,800	1.4%	Caltrans	2003
Ojai	Ojai East City Limits	18.86	**45**	6,500	0.7%	Caltrans	2003
Santa Paula	Santa Paula North City Limits	31.95	**86**	3,650	2.4%	Caltrans	2003
Santa Paula	N/O SR 126	34.398	**263**	15,300	1.7%	Caltrans	2003

State Route 232 connects US 101 and State Route 118 as Vineyard Avenue and provides local access to industrial and agricultural land north of Oxnard.

Figure 16: Daily Truck Volume on State Route 232

City	Location	Post Mile	Daily Trucks	Total ADT	% of Volume	Source	Date
Oxnard	at Oxnard Blvd	0	**637**	37,500	1.7%	Caltrans	2007
Oxnard	S/O US 101	0.441	**1,137**	22,700	5.0%	Caltrans	2007
Unincorporated	S/O SR 118	R4.11	**1,069**	15,100	7.1%	Caltrans	2007

4.1.4 Port of Hueneme Gate Counts

The Port of Hueneme provided 24-hour gate counts for the week of January 1, 2020 to January 8, 2020. It included both trucks and other vehicles (autos) which represents a typical day of operation at the Port. The data did not include directionality—whether a vehicle was entering or exiting the gate. The patterns for truck gate counts are similar to the 24-hour truck patterns along state highways in the County that indicates truck volumes throughout the County peak during typical work hours of 8am to 4pm.

Table 17: Port of Hueneme Gate Counts – January 1, 2020 to January 8, 2020

Hour	Truck	Vehicle
0	31	10
1	36	11
2	22	36
3	5	22
4	11	63
5	19	134
6	56	711
7	110	758
8	231	206
9	200	145
10	174	166
11	157	156
12	166	481
13	195	164
14	135	151
15	116	125
16	98	381
17	41	284
18	55	62
19	87	16
20	98	11
21	78	31
22	52	144
23	43	40

4.2 Rail Volume

Rail traffic along the Metrolink portion of the rail tracks are 26 to 32 trains per weekday, and 18 trains per day on the UPRR portion of the tracks.

From East Ventura to Santa Barbara there are four daily UPRR freight trains and 12 passenger trains (ten Pacific Surfliner, two Amtrak Coast Starlight and two Metrolink Ventura to Santa Barbara Commuter trains which were piloted in early 2020). The entire segment is operated using centralized traffic control, and is dispatched by the UPRR.

The East Ventura to Moorpark segment is the northern most section of the Metrolink system along the LOSSAN corridor, with 18 passenger trains currently operating along this portion of the Corridor. As with the San Luis Obispo to Santa Barbara and Santa Barbara to East Ventura segments, this one is also owned and operated by the UPRR. The segment dispatched by the UPRR. The UPRR operates up to six trains each day during the week. One of these trains is the local that services the Santa Paula industries and originates and terminates its work days from the yard in Oxnard.

4.3 Vehicle Collisions

Vehicle collision data was collected for the four-year period between January 1, 2016 to December 31, 2019. The collision data was obtained from the UC Berkeley Transportation Injury Mapping System (TIMS) website and modified to standardize primary and secondary street names and add geographic coordinates where missing. TIMS data comes from the California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS). City of Oxnard data was not available for the years 2014 and 2015—therefore those years were excluded from the analysis of overall study area characteristics.

Overall there were 456 truck-involved collisions (2.85 percent of the total) in Ventura County in the four-year study period. Approximately 70 percent of which (319) occurred on arterial roads and 30 percent (137) occurred on freeways. Approximately 2/3 of the arterial truck-related collisions were in or near (within 500 feet) of an intersection.

The majority of truck-involved collisions were rear-end collisions (56 percent of freeway and 33 percent of arterial). These generally occur due to excessive speed or low visibility causing one vehicle not to break in time to avoid a collision. The next highest type of collision on freeways was sideswipe from changing lanes (20 percent) and hit objects (15 percent). Following rear-end collisions on arterials were broadside, usually from intersection conflicts, at 30 percent and sideswipe at 16 percent.

The most common primary factor in truck-involved collisions was unsafe speed that occurred in 52 percent of freeway collisions and 29 percent of arterial collisions. The next highest factors in freeway truck-involved collisions were improper turning (20 percent) and unsafe lane change (13 percent). The next highest non-speeding factors on arterials were improper turning and impeding another vehicle's right-of-way (17 percent each) and failure to abide by signals and signs (10 percent).

There were 38 serious injuries and 20 fatalities resulting from the truck-involved collisions. Therefore, truck-involved collisions resulted in a fatality in 4.4 percent of incidents and severe injury in 8.3 percent

of incidents. When compared to the 15,544 collisions that did not involve a truck in which 1.2 percent resulted in fatalities and 7.0 percent resulted in serious injury, truck-involved collisions are shown to have more severe injury outcomes as compared to other types of collisions.

This means that while truck-involved collisions made up 2.85 percent of all collisions, they did result in 9 percent of fatalities and 5 percent of severe injuries. This included 12 pedestrians and 12 bicyclists injured in truck-involved collisions—there were no pedestrian fatalities but one bicyclist fatality from truck-involved collisions. The bicycle fatality occurred along US 101 north of the City of Ventura near the county line.

The party at fault in truck-involved collisions was approximately 46 percent trucks, 45 percent auto, two percent pedestrians, one percent bicycle, one percent motorcycle, and five percent unknown.

249 of the 456 (55 percent) truck-involved collisions occurred on state highways. **Table 17** shows the total and truck-involved collisions on state highways.

Table 18: State Highway Total and Truck-Involved Collisions 2016-2019

State Route	All Collisions	Truck Collisions	Truck-Involved % of total Collisions	Truck ADT*	Truck Collisions/1M Trucks**	Fatal	Severe Injury
RT 1	331	17	5.1%	506	22	0	2
US 101	2,107	91	4.3%	3,438	18	2	9
RT 118	886	54	6.1%	2,371	16	4	1
RT 126	529	46	8.7%	1,892	17	7	4
RT 150	225	3	1.3%	155	13	0	0
RT 23	502	22	4.4%	893	17	0	2
RT 232	105	1	1.0%	947	1	0	0
RT 33	301	4	1.3%	145	19	0	1
RT 34	185	12	6.5%	1,206	7	0	0

**Average daily truck volumes from state highway locations in the Caltrans Traffic Census*
***Number of truck-involved collisions divided by Average daily truck traffic x 365 days x four years x 1 million*

4.4 Highest Collisions at Individual Locations

Traffic collisions are rare and often random events. However, locations that show a concentration of collisions over a years-long period should be reviewed as "hot spots" for possible safety countermeasures to reduce conflict, reduce speed, improve visibility and other improvements to safety conditions. A review of collisions data from 2016-2019 shows 37 locations with more than three truck-involved collisions over the four-year period. The locations with the truck-related collisions are shown in **Figure 20** and those with three or more truck-related collisions in the 2016-2019 period are listed in **Table 19**.

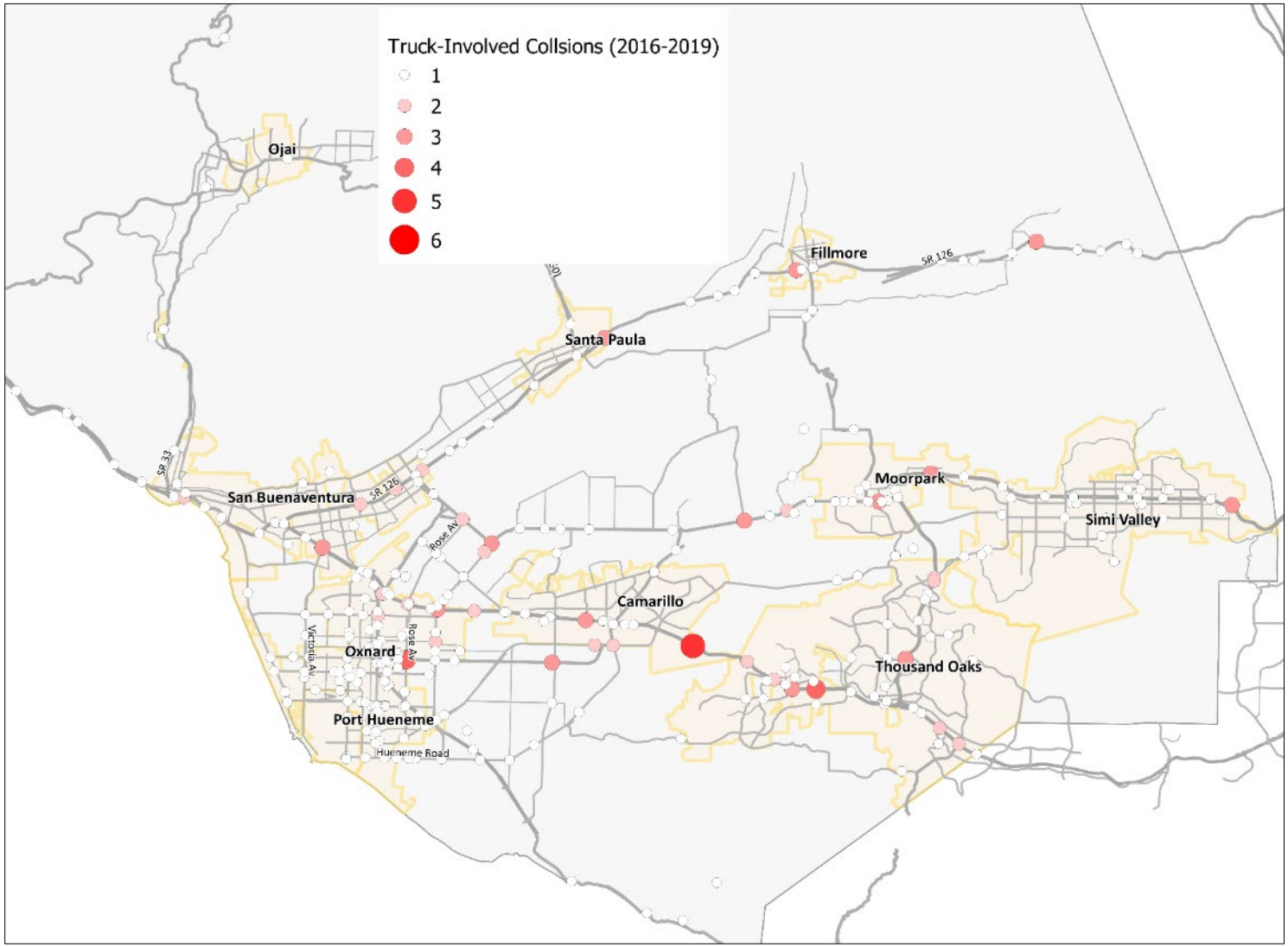
Due to their higher relative truck volume, state highways were the location of most of the individual highest collision locations with US 101 having 13 truck collision hot spots, State Route 118 having six, State Route 23 having three, State Route 34 having two, and State Route 1 (Rice Avenue) having one.

However, 17 of the top 37 locations were on arterial roadways, with SR 118 at Balcom Canyon Road and Rose Avenue at 5th Street averaging more than one truck-involved collision per year. Of the locations with multiple fatal or severe collisions, two of the top three locations were arterial highways in rural areas: State Route 126 at Center Street near Piru and SR 118 at Balcom Canyon Road east of Somis.

Table 19: Highest Truck-Involved Collision Locations 2016-2019

Roadway	At	Type	Total	Near Int.	Fatal or Severe	Most Common Factor*
US 101	Camarillo Springs Rd	Freeway	6	-	-	Unsafe Speed
US 101	Ventu Park Rd	Freeway	5	-	1	Unsafe Speed
Rose Av	5th St	Arterial	5	5	-	Signals and Signs
SR 118	Balcom Canyon Rd	Arterial	5	2	2	Auto ROW
US 101	Borchard Rd	Freeway	4	-	-	Unsafe Speed
US 101	Carmen Dr	Freeway	4	-	-	Unsafe Speed
US 101	Rice Av	Freeway	4	-	-	Unsafe Speed
US 101	Victoria Av	Freeway	4	-	2	Unsafe Speed
SR 118	Collins Dr	Freeway	4	-	-	Unsafe Speed
SR 118	Kuehner Dr	Freeway	4	-	-	Improper Turning
SR 23	Janss Rd	Freeway	4	-	-	Unsafe Speed
SR 118	Santa Clara Av	Arterial	4	3	-	Unsafe Speed
SR 126	C St	Arterial	4	3	1	Unsafe Lane Change
SR 126	Center St	Arterial	4	2	3	Improper Turning
SR 126	Hallock Dr	Arterial	4	1	-	Improper Turning
SR 23	Spring Rd	Arterial	4	4	-	Unsafe Speed
SR 34	Las Posas Rd	Arterial	4	0	-	Unsafe Speed
SR 23	Olsen Rd	Freeway	3	-	-	Unsafe Speed
US 101	Hampshire Rd	Freeway	3	-	-	Unsafe Speed
US 101	Rose Av	Freeway	3	-	-	Unsafe Speed
US 101	California St	Freeway	3	-	-	Unsafe Lane Change
US 101	Conejo Inspection Facility	Freeway	3	-	1	Unsafe Speed
US 101	Del Norte Bl	Freeway	3	-	1	Improper Turning
US 101	Wendy Dr	Freeway	3	-	1	Unsafe Speed
US 101	Westlake Bl	Freeway	3	-	1	Unsafe Speed
SR 126	Kimball Rd	Freeway	3	-	-	Unsafe Speed
SR 126	SR 118	Freeway	3	-	-	Unsafe Speed
SR 126	Saticoy Av	Freeway	3	-	1	Improper Turning
Olsen Rd	SR 23	Arterial	3	3	-	Unsafe Speed
Esplanade Dr	Vineyard Av	Arterial	3	3	-	Unsafe Speed
Gonzales Rd	Oxnard Bl	Arterial	3	3	-	Unsafe Lane Change
SR 34	Pleasant Valley Rd	Arterial	3	3	-	Improper Passing
Pleasant Valley Rd	Southfield Rd	Arterial	3	1	1	Auto ROW
Rice Av	Camino Del Sol	Arterial	3	3	-	Auto ROW
SR 118	Grimes Canyon Rd	Arterial	3	2	-	Unsafe Speed
SR 118	Rose Av	Arterial	3	1	-	Unsafe Speed
Santa Clara Av	Wright Rd	Arterial	3	3	1	Unsafe Speed

Figure 20: Truck-Involved Collision Locations (2016-2019)



4.5 Caltrans Incidents

Caltrans compiles incidents that occur on state highways. Collisions are included in the incidents, but other roadway impedances such as animal hazards, traffic hazards, and weather events of fire, flooding and wind are also included. As shown in **Table 20**, US 101 has the most Caltrans incidents followed by the State Route freeways of 118, 23, and 126.

Table 20: Number of Caltrans Incidents 2016-2018

	US101		SR1		SR23		SR33		SR118		SR126		SR150	
Type of Incident	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB
Animal Hazard	117	117	4	5	33	37	22	22	27	39	36	41	3	1
Traffic Hazard	3,362	3,022	29	25	584	484	130	292	1,173	1,177	395	407	8	3
Defective Traffic Signals	31	28	1	4	6	3	0	2	9	5	3	2	0	0
Traffic Collision	1,990	1537	43	46	230	225	58	100	453	437	292	252	7	7
Hit and Run	254	214	3	5	28	16	3	3	48	81	31	31	1	0
Fire	162	218	4	5	15	27	33	15	118	70	25	20	2	1
Flooding	9	7	0	0	0	0	0	3	0	1	1	1	0	0
Hazardous Material/Spill	2	3	1	0	0	0	0	0	0	0	0	0	0	0
Wrong Way Driver	44	64	7	6	9	7	5	9	8	14	24	10	0	0
Spinout	14	7	0	1	2	1	0	0	1	3	1	0	0	0
Wind/ Weather	5	0	0	0	1	0	0	0	9	1	0	1	0	0
Construction	95	62	0	5	13	15	4	3	11	6	21	6	0	0
Other	8	3	0	0	1	0	0	0	7	12	2	3	0	0
Slide	1	0	2	0	0	0	1	0	0	0	0	0	6	2

4.6 Rail Accidents and Incidents

Rail safety is a major concern in Ventura County—as the southern part of the County is bisected by both US 101 and the UP/Metrolink rail tracks. The rail tracks are shared by freight and passenger service along the mainline as it crosses through urban, suburban and rural areas. Whether it is prevention of trespass onto tracks, enhancing crossing notification and barriers or separating at-grade crossings to eliminate conflicts, improving safety improves reliability, speed, and service offerings in an important mode to

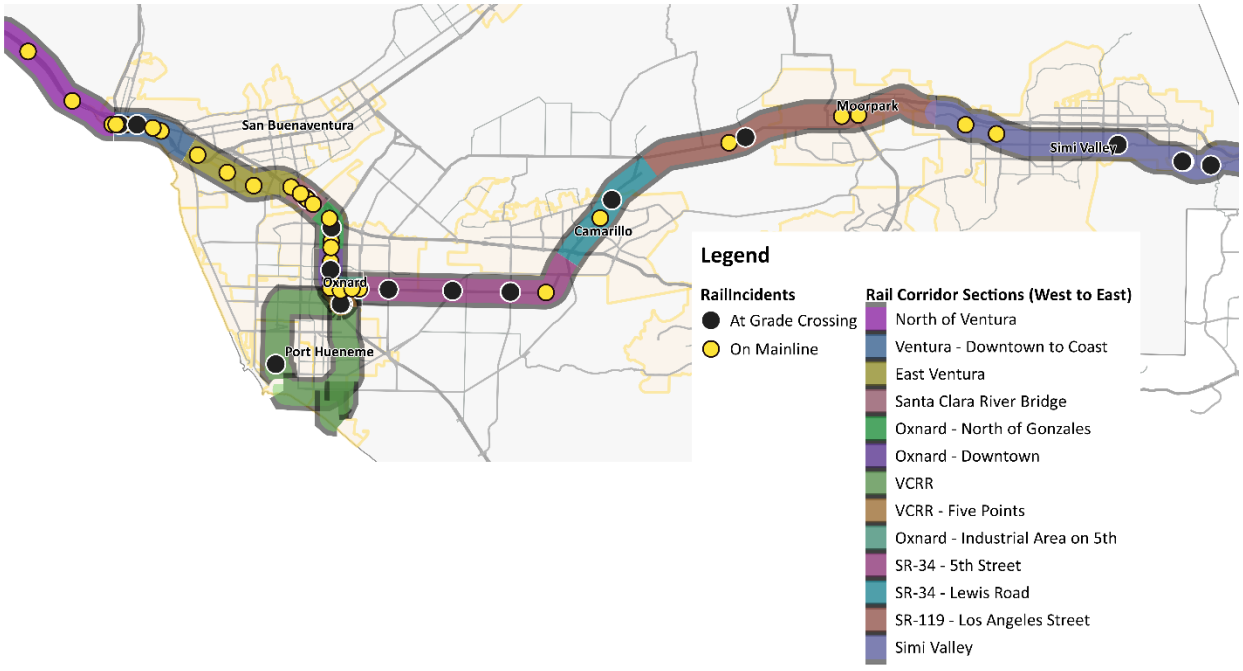
contribute to achieving performance goals and greenhouse gas reductions outlined in SCAG's Sustainable Communities Strategy.

The primary groups of accidents and incidents to be reported monthly by railroads are:

- Casualties to persons death and non-fatal injuries to all types of persons,
  - Trespassers on rail tracks
  - Non-trespassers – accidents/incidents and occupational illnesses involving railroad employees or passengers
- Highway-rail grade crossing accidents/incidents.
- Rail equipment accidents/incidents.

This analysis looks at accidents and incidents involving trains and a non-train user – casualties with trespassers and incidents at highway-rail crossings from 2014 to 2019. Given the high variability in the settings through which rail corridors pass through Ventura County, areas with trespasser and highway/rail incidents in the Union Pacific / Metrolink rail corridor and VCRR was divided into 12 segments as shown in **Table 21** and **Figure 21**. The segmentation was developed based on areas of relative uniformity in character and surrounding land use conditions. The table shows the total number of trespasser and highway/rail crossing incidents as well as the number of total incidents per mile of segment along with the number of injuries and fatalities.

Figure 21: Rail Accidents and Incidents by Rail Corridor Section



As shown, incidents of trespasser and highway users with rail occur throughout the corridor from the Santa Barbara County Line to the Los Angeles County Line. Concentration of incidents are:

- In the City of Ventura with both trespasser and highway/rail incidents between downtown Ventura and the beach area
- Trespassers on the Santa Clara River Bridge
- Throughout the Union Pacific corridor in the City of Oxnard. The VCRR has fewer incidents in Oxnard due to its lower speed.
- At the highway-rail crossings along 5th Street

Table 21: Trespasser and Highway/Rail Incidents by Rail Corridor Section from 2014-2019

Location		Incidents					
Rail Corridor Section	Description	Tres	Hwy / Rail	Tot	Per Mile	Inj	Fat
N/O Ventura	Coastal Access	3	0	3	0.3	2	1
Ventura - Downtown	Access to Fairgrounds, Parks and beaches	7	3	10	4.5	6	6
East Ventura	Few crossings: Telephone Road (1.3 miles) to Victoria Ave, (1.2 miles) to Johnson Dr	4	0	4	1.3	3	1
Santa Clara River Bridge	Pedestrian access across Santa Clara River	5	1	6	6.0	1	6
Oxnard North of Gonzales	Crosses Oxnard Blvd. and Vineyard Ave. to south of US 101	4	1	5	4.2	2	2
Oxnard - Downtown	Runs along the east side of Oxnard Boulevard with no barriers	5	1	6	6.1	3	3
VCRR	Branches serving the Port Area	0	1	1	0.9	1	0
VCRR - Five Points	Two VCRR lines come together to connect to UP line	0	2	2	0.2	1	0
Oxnard - Industrial Area on 5th	From Oxnard Boulevard to Rose Ave	5	1	6	7.0	5	1
State Route 34 - 5th Street	Rural section with the tracks crossing the north leg of intersections	1	9	10	1.6	32	7
State Route 34 - Lewis Road	Parallels SR 34 with no fencing between road and rail	1	1	2	0.6	1	1
State Route 118 - Los Angeles Street	Passes through rural section before bisecting urbanized Moorpark.	6	0	6	0.7	4	3
Simi Valley	Crosses southern Simi Valley	3	4	7	0.8	2	3
Total	From Santa Barbara County Line to Los Angeles County Line	44	24	68	1.2	63	34

4.6.1 Highway/Rail Grade Crossing Incidents

Highway/rail at-grade crossings are the locations where rail crosses with highway users. Since rail is the heaviest, and hardest to stop of ground transportation types the risk of severe injury or death during a collision is greatly heightened at these crossings. Delays to wait for passing trains prevents normal use of the highway and cause traffic delays and impede emergency access. While grade separation projects remove these conflicts, they are expensive and require significant multi-agency coordination.

According the California Public Utilities Commission rail-crossing list, there are 199 open highway/rail crossings in Ventura County, 172 of which are at-grade and 27 grade separated. There are no controls at 14 of the at-grade locations, 47 locations have passive controls, nine have flashers and 102 of the locations have gates. **Table 22** shows the number of crossings by type and control for each of the rail lines in the County.

Table 22: Open Highway-Rail Crossings in Ventura County

Crossing Type	Control	SCRRA	UPRR	VCRR	F&W	Total
Grade Separated	Roadway Below Track	0	9	0	1	10
	Roadway Above Track	3	11	0	3	17
At-Grade	Gates	14	30	19	39	102
	Flashers	0	2	4	3	9
	Passive	1	2	12	32	47
	None/Other/Unknown	1	10	0	3	14
	Total	19	64	35	81	199

SCRRA - Metrolink (east of Moorpark)
UPRR – Union Pacific Railroad (west of Moorpark)
VCRR – Ventura County Railroad
F&W – Fillmore and Western Santa Paula Subdivision

The Federal Railroad Administration (FRA) Office of Safety Accident models predicted annual collision rates at highway/rail at-grade crossings based on site specific information including physical and operating characteristics and five-year safety history. It provides an indication that conditions at crossings may possibly be more hazardous than others. The twenty-two crossings in Ventura County with the highest predicted collision values along with their actual incidents are shown in the table.

Table 23: Predicted Highway/Rail Crossing Annual Collision Rate Compared to Number of Actual Incidents

Predicted Collision Value	Railroad	Roadway	City	2014-2019 Incidents	Control Device	Total Daily Trains	Average Daily Traffic

0.209	UP	Las Posas Rd	Camarillo	5	Gates	16	8,244
0.151	UP	Rice Avenue	Oxnard	3	Gates	16	33,000
0.109	SCAX	Sycamore Drive	Simi Valley	1	Gates	32	21,400
0.104	UP	South California Street	Ventura	3	Gates	16	5,411
0.104	UP	South Rose Avenue	Oxnard	1	Gates	16	35,409
0.104	UP	Harbor Blvd	Ventura	1	Gates	16	5,411
0.091	SCAX	Los Angeles Avenue	Simi Valley	1	Gates	26	27,000
0.087	UP	Upland Road	Camarillo	1	Gates	16	14,459
0.068	UP	East Pleasant Valley Road	Camarillo	1	Gates	16	12,314
0.056	SCAX	Katherine Road	Simi Valley	2	Gates	26	2,800
0.054	UP	East Gonzales Road	Oxnard	1	Gates	16	36,193
0.053	SCAX	First Street	Simi Valley	0	Gates	32	32,270
0.050	SCAX	Erringer Road	Simi Valley	0	Gates	32	22,700
0.050	SCAX	Spring Road	Moorpark	0	Quad Gates	54	25,000
0.045	UP	East Vineyard Avenue	Oxnard	1	Gates	16	42,856
0.042	SCAX	Tapo Canyon Road	Simi Valley	0	Gates	26	14,000
0.041	SCAX	Tapo Street	Simi Valley	1	Gates	26	20,700
0.039	UP	Olive Street	Ventura	1	Gates	16	468
0.039	SCAX	Sequoia Avenue	Simi Valley	0	Gates	26	15,500
0.037	VCRR	Commercial Avenue	Oxnard	1	Crossbucks	2	500
0.037	VCRR	Mercantile Street	Oxnard	1	Crossbucks	2	500
-	VCRR	Lehmer Road	Port Hueneme	1	Watchman	2	-

The individual incidents from 2014 to 2019, the type of train operator and highway user involved and the involved fatalities and injuries are shown in the table. Overall there were 24 incidents in the six-year period. These resulted in 11 deaths and 40 injuries. The two locations with the most incidents of Las Posas Road (five incidents) and Rice Avenue (three incidents) accounted for more than half of the fatalities and ¾ of the injuries at highway/rail at-grade in Ventura County in the six-year period. The majority of the incidents involved Amtrak trains (17 total), followed by freight trains (5 total) and Metrolink (two total).

Table 24 Highway/Rail Grade Crossing Incidents 2014-2019

Year	Railroad	Highway	City	Highway User	Action	Crossing Protection	Fatal	Inj.
2017	Amtrak	California St	Ventura	Car	Stopped on crossing	Gates	1	-
2014	Amtrak	California St	Ventura	Pedestrian	Went around the gate	Gates	1	-
2017	VCRR	Commercial Ave	Oxnard	Car	Stopped on crossing	Cross bucks	.	1
2019	Amtrak	Gonzales Rd	Oxnard	Pedestrian	Went around the gate	Gates	1	-
2019	UP	Harbor Blvd.	Ventura	Car	Stopped on crossing	Gates	-	4
2019	Amtrak	Katherine Rd	Simi Valley	Other Vehicle	Went around the gate	Gates	-	1
2018	Metrolink	Katherine Rd.	Simi Valley	Pedestrian	Moving over crossing	Gates	1	.
2018	Amtrak	Las Posas Rd	Unincorp.	Other Vehicle	Went thru the gate	Gates	-	2
2016	Amtrak	Las Posas Rd	Unincorp.	Car	Went around the gate	Gates	-	1
2015	Amtrak	Las Posas Rd	Unincorp	Other Vehicle	Went around the gate	Gates	1	1
2016	Metrolink	Las Posas Rd	Unincorp	Motorcycle	Went thru the gate	Gates	1	1
2015	UP	Las Posas Rd	Unincorp	Pickup Trk	Went thru the gate	Gates	1	.
2019	VCRR	Lehmer Rd	Port Hueneme	Car	Stopped on crossing	Watchman	-	1
2017	VCRR	Mercantile St	Oxnard	Car	Stopped on crossing	Cross bucks	-	-
2016	Amtrak	Olive St	Ventura	Other Vehicle	Other	Gates	-	-
2015	Amtrak	Pleasant Valley Rd	Camarillo	Car	Stopped on crossing	Gates	-	1
2015	Amtrak	Private Rd	Simi Valley	Car	Stopped on crossing	Stop signs	-	-
2017	Amtrak	Rice Ave	Oxnard	Car	Went thru the gate	Gates	-	.-
2015	Amtrak	Rice Ave	Oxnard	Pickup Trk	on tracks	Gates	1	26
2014	Amtrak	Rice Ave		Car	Went thru the gate	Gates	2	0
2014	Amtrak	Rose Ave	Oxnard	Pedestrian	Went around the gate	Gates	0	1
2019	Amtrak	Tapo St	Simi Valley	Car	Went around the gate	Gates	-	-
2016	Amtrak	Upland Rd		Pedestrian	Went around the gate	Gates	1	-
2019	Amtrak	Vineyard Ave (SR 232)	Oxnard	Car	Went around the gate	Gates	-	-

The Rice Avenue Grade Separation Project will construct a grade separation structure at the existing Rice Avenue (SR 1) and Fifth Street (SR 34) intersection in order to eliminate an existing at-grade railroad crossing. The northern portion of the project is in the City of Oxnard and the southern portion is in Ventura County. The Rice Avenue would be constructed over Fifth St., and the Union Pacific Railroad tracks. The location was the scene of several train-vehicle collisions, including a 2015 incident that injured 33 and killed one and one in 2014 that resulted in two fatalities.

The nearly $120 million project is funded through a variety of sources. The California Transportation Commission allocated $68 funding from the Trade Corridors Enhancement Program of SB 1. Those funds along with $ City of Oxnard funds, federal Surface Transportation Program Local-Regional funds programmed by SCAG, Railroad Safety Grants for Safe Transportation of Energy Products funds from a Federal Railroad Administration grants and Public Utilities Commission Section 190 Grade Separation Program funds will combine to fund the project.

The final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact was certified in May 2018. Construction is scheduled to begin December 2022 and end August 2026.[24] This project will further reinforce Rice Avenue as the primary access roadway to the industrial areas of Oxnard and the Port of Hueneme.

[24] Trade Corridor Enhancement Program (TCEP) Project List April 1 - June 30, 2019 https://dot.ca.gov/-/media/dot-media/programs/sb1/documents/tcep-q4-attachment-1-a11y.pdf

5 IDENTIFIED FREIGHT ISSUES – WHERE ARE IMPROVEMENTS NEEDED

Ventura County is home to a vibrant community reliant on a transportation system to move goods produced, consumed or passing through the County. Leading generators of freight movement in Ventura County are production through the manufacturing and agricultural sectors, imports and exports passing through the Port of Hueneme, local household and business consumption, and interregional commerce between Los Angeles and Santa Barbara County. The continued economic development and quality of life in Ventura County is acknowledged to need an "increase in local investments and leveraging of state, federal and private funds for improved roadways and multi-modal connectivity throughout the County."

The following issues identified by this Existing Conditions Report will be combined with a literature review of current plans and policies and outreach to stakeholders to develop and assess solutions prioritized through objective performance measures for a strategic roadmap to support sustainable freight corridor investment.

5.1 Demand for Freight Movement

Demand for freight movement is driven by both producers and consumers of goods. The agricultural industry, manufacturing, wholesale trade, and transportation and warehousing industries generates approximately 1/3 of the County's economic output and relies on the road and rail system for deliveries of materials to supply production as well as to bring products to market.

Last-mile delivery is the final leg of the supply chain as goods are delivered from production to consumption. Deliveries happen in complex environments: they involve the interaction among several elements, including producers, deliverers, consumers, buildings, delivery space, streets, and vehicles. Improving the capacity and efficiency of access to and use of end facilities enables more efficient use of arterial corridors shared with passenger vehicles, active transportation and transit.

The goods imported to, exported from, produced in, and consumed in Ventura County often originate or are destined for outside of the County. Trucks traveling to or from outside of Ventura County are primarily accessing the Los Angeles area and western points beyond from US 101 or State Route 118, the Central Valley, Northern California and northern points beyond from State Route 126 and Santa Barbara County and the Central Coast from US 101.

The Port of Hueneme is the farthest port form a limited access highway in California. Therefore, there is no single access route to the Port of Hueneme and Naval Base Ventura County. Investments in the Port Intermodal Corridor from Hueneme Road to Rice Avenue and the interchange with US 101 is supported by a contingency corridor along Ventura Road to Channel Islands Boulevard to Victoria Avenue with an interchange of Victoria Avenue at US 101. Victoria Avenue is utilized by most freight access to Naval Base Ventura County.

Potential Improvement Actions

- Invest strategically to optimize system performance
- Develop, manage, and operate an efficient integrated freight system
- Identify freight rail network operational improvements and mode shift options
- Improve system reliability and velocity for freight movements to improve regional competitiveness
- Improve the Port of Hueneme Intermodal Corridor and NBVC mobilization corridors
- Improve access to industrial, manufacturing, and agricultural truck generators as well as last-mile delivery accommodation
- Promote freight projects that enhance economic activity, freight mobility, unique capabilities, reliability, system resiliency, and global competitiveness

5.2 Concentrations of Freight Activity

Freight activity is along the major east-west highways of State Route 126, State Route 118 and US 101, the Coast Line rail corridor, and arterials that crisscross the Oxnard Plain.
The Federal, State and local designations of truck routes are used to define the types of vehicles allowed to use certain roadways. The designations can be intended to define important roadways for commerce, indicate the best routing to avoid sensitive places such as residential areas, and to limit the use of oversized, overweight or high vehicles to roadways designed and maintained to accommodate those vehicles.

Ventura County's rail system bisects the county transferring bulk goods to and from port facilities, industrial customers, and intermodal transfer facilities, while also accommodating passenger service. Each of the corridor's Cities have active rail lines within their borders except Thousand Oaks. There are over one hundred highway/rail crossings in the County, only 20 of which are grade separated—the Rice Avenue grade separation project would bring that number to 21.

There are three Weigh-in-Motion (WIM) sites in Ventura County: US 101 in the Conejo Grade, State Route 126 east of Piru, and a mini-site weight station along State Route 118 west of Moorpark.

Ventura County, and California as a whole, faces a severe shortage of truck parking. Typically, commercial truck parking is made available at public rest areas, truck stops, at highway weight stations or in designated areas along highway roadsides. The only publicly available truck parking in Ventura County is at the Mac Valley Oil Company at the intersection of Del Norte Boulevard and Sturgis Road in Oxnard, with nine available spaces. The next closest commercial truck parking facilities are located in Castaic along I-5 in Los Angeles County. Given strict work rules for truck operators, and the lack of a truck parking area causes trucks to park along roadways in the County.

Medium and heavy-duty trucks with diesel engines are a significant source of particulate matter that has disproportionate health impacts on disadvantaged, low-income, and rural communities living along or near major goods movement corridors in Ventura County. The new California Sustainable Freight Plan, developed by CARB and multiple state agencies, calls for 100,000 E-Trucks to be deployed across the state by 2020. This ambitious goal reflects the importance of the truck segment to driving GHG reduction,

criteria air pollutant reduction, and improved health and living conditions across California's most impacted communities.

Potential Improvement Actions

- Identify causes and solutions to freight bottlenecks
- Promote economic development by investing in freight infrastructure projects and operational improvements
- Coordinate with local and regional partners on freight facilities, siting, design, and operations
- Improve truck trip planning, coordination, operational, and management by understanding and optimizing routes
- Improve truck parking conditions by providing more designated parking areas for large vehicles and limiting truck parking in residential or undesignated areas
- Promote Ventura County's existing industries and agricultural economy

5.3 Community Characteristics Near Freight Corridors

The primary negative externalities of freight movement are air pollution emissions, traffic and safety issues, noise pollution and aesthetic impacts. Few areas within southern Ventura County are not located adjacent to an agricultural area, industrial area or major freight-carrying transportation facility. Thus, all communities in the county are impacted by freight transportation to some degree. However, historic siting of multi-family housing development adjacent to non-residential land uses near, and the general lower cost of housing adjacent to, industrial and transportation facilities leads to disproportionate burdens of the freight system being placed on disadvantaged residents.

Based on land use data from the Southern California Association of Governments, approximately 16 percent of the County's population—nearly 135,000 people—live within 1,000 feet of a roadway that carries more than 1,000 trucks per day. Despite 40 percent of the County's residents living in multi-family residences, 50 percent of those living within 1,000 feet of a roadway carrying more than 1,000 trucks per day—67,500 people—live in multi-family residences.

SB 535 Disadvantaged communities are specifically targeted for investment of proceeds from the State's cap-and-trade program. There are eight SB 535 disadvantaged community Census Tracts located in Ventura County within the Cities of Oxnard and Ventura. While the disadvantaged communities designation provides a guide to overall burdened disadvantaged communities, for the purposes of how freight movement activity and investment effects communities, this study looked specifically at the pollution burden of diesel particulate matter, the health outcomes of asthma, and the socioeconomic concentrations of poverty, linguistic isolation, and lack of educational attainment. This analysis identified additional communities where careful consideration of infrastructure and investment should account for improving health and social outcomes.

Vehicle pollutant concentrations are higher closer to roadway, with the highest levels generally within the first 500 feet of a roadway and reaching background levels within approximately 2,000 feet of a roadway, depending on the pollutant, time of day, and surrounding terrain. Many studies have found people who

live, work, or attend school near major roads are more at risk for a variety of short- and long-term health effects, including asthma, reduced lung function, impaired lung development in children, and cardiovascular effects in adults. 75,500 of the 134,900 (56%) K-12 students went to school within 2,000 feet of a defined truck route in 2019—77 percent of those students were non-white (including Hispanic). Cities and areas with the highest proportion of students near roadway with 1,000 or more trucks per day are Somis, Camarillo, Oxnard, Santa Paula, Simi Valley, and Ventura.
Access to parks from residential areas are often across or along truck routes in the County. Ensuring safe and deliberate support of walking and biking access to parks from adjacent residential areas; especially across routes supporting large amounts of truck traffic is an important strategy to balance community interest with freight movement.

Potential Improvement Actions

- Identify opportunities to support cleaner freight and goods movement
- Integrate environmental health considerations into freight planning, development, implementation, and operations of projects as feasible
- Reduce GHG emissions and improve air quality in Ventura County
- Assist the Port of Hueneme and the Ventura County region to move towards achieving the State and regional emission goals
- Promote land use planning practices that prioritize mitigation of negative freight project impacts upon the environment.
- Prioritize social equity for freight-related projects by developing alternative methods that avoid or mitigate negative impacts on or near existing communities adjacent to high-volume freight routes and facilities
- Conduct meaningful outreach and coordination efforts with other agencies focused on environmental justice communities disproportionately burdened by the freight transportation system in urban areas and rural areas by identifying and documenting their needs
- Promote noise and other pollution abatement strategies associated with the movement of goods alongside residential areas and sensitive habitat near freight corridors
- Reduce conflicts in accessing schools and open space by providing safe crossings and intersections for active transportation

5.4 Key Freight Corridors

The predominate truck flows in the county are east/west along State Route 126, State Route 118 and US 101, with large volumes of local access to major truck generating land uses in Oxnard, and to a lesser degree in Camarillo, Ventura, and agricultural areas adjacent to Camarillo, Oxnard, and Ventura.
Very few sections of the developed areas of the County do not have major through or adjacent freight flows. The dispersed nature of the truck flows has to do with the dispersal of industrial areas, distance of the Seaport area from a freeway facility, mountain and valley topography concentrating travel within the valleys and widespread agricultural areas.

A screenline consisting of State Route 126 between Orcutt Road and Sycamore Road, State Route 118 between Somis Road and Balcom Canyon Road and US 101 at Camarillo shows approximately 8,000 trucks and 95,000 total vehicles cross the screenline in each direction over the course of a day. Trucks make up

a very large percentage of early morning of traffic in both directions along State Route 126. Trucks peak at approximately 10 to 20 percent of vehicles on State Route 118 from 8am to 2pm. Reviewing north/south truck movements across US 101 shows truck traffic south of US 101 of approximately 13,000 trucks per day while north of US 101 the volume of trucks is approximately 8,000 per day.

The East Ventura to Moorpark rail mainline is dispatched by the UPRR. The UPRR continues to operate up to six trains each day during the week. One of these trains is the local that services the Santa Paula industries and originates and terminates its work days from the yard in Oxnard.

Potential Improvement Actions

- Apply preventive maintenance and rehabilitation strategies using sustainable best practices
- Encourage preservation of the existing roadway network while focusing on investments that will yield the greatest benefit
- Establish a more thorough understanding of the highway freight corridors in Ventura County and use the knowledge to inform future highway planning and investment decisions
- Support research, demonstration, development, and deployment of innovative technologies
- Promote innovative technologies and practices utilizing real-time information
- Coordinate mobility improvements among responsible agencies

5.5 Safety Conditions

Overall, there were 456 truck-involved collisions (2.85 percent of the total) in Ventura County from January 1, 2016 to December 31, 2019. Approximately 70 percent of which (319) occurred on arterial roads and 30 percent (137) occurred on freeways. The most common primary factor in truck-involved collisions was unsafe speed which occurred in 52 percent of freeway collisions and 29 percent of arterial collisions. The next highest factors in freeway truck-involved collisions were improper turning (20 percent) and unsafe lane change (13 percent). The next highest non-speeding factors on arterials were improper turning and impeding another vehicle's right-of-way (17 percent each) and failure to abide by signals and signs (10 percent).

There were 38 serious injuries and 20 fatalities resulting from the truck-involved collisions. Therefore, truck-involved collisions resulted in a fatality in 4.4 percent of incidents and severe injury in 8.3 percent of incidents. When compared to the 15,544 collisions that did not involve a truck in which 1.2 percent resulted in fatalities and 7.0 percent resulted in serious injury, truck-involved collisions are shown to have more severe injury outcomes as compared to other types of collisions.

There were 37 locations with more than three truck-involved collisions over the four-year period. Due to their higher relative truck volume, state highways were the location of most of the individual highest collision locations with US 101 having 13 truck collision hot spots, State Route 118 having six, State Route 23 having three, State Route 34 having two, and State Route 1 (Rice Avenue) having one.
However, 17 of the top 37 locations were on arterial roadways, with SR 118 at Balcom Canyon Road and Rose Avenue at 5th Street averaging more than one truck-involved collision per year. Of the locations with multiple fatal or severe collisions, two of the top three locations were arterial highways in rural areas: State Route 126 at Center Street near Piru and SR 118 at Balcom Canyon Road east of Somis.

Rail safety is a major concern in Ventura County—as the southern part of the County is bisected by both US 101 and the UP/Metrolink rail tracks. The rail tracks are shared by freight and passenger service along the mainline as it crosses through urban, suburban and rural areas. Whether it is prevention of trespass onto tracks, enhancing crossing notification and barriers or separating at-grade crossings to eliminate conflicts, improving safety improves reliability, speed, and service offerings in an important mode to contribute to achieving performance goals and greenhouse gas reductions outlined in SCAG's Sustainable Communities Strategy.

Incidents of trespasser and highway users with rail occur throughout the corridor from the Santa Barbara County Line to the Los Angeles County Line. Concentration of incidents are:

- In the City of Ventura with both trespasser and highway/rail incidents between downtown Ventura and the beach area
- Trespassers on the Santa Clara River Bridge
- Throughout the Union Pacific corridor in the City of Oxnard. The VCRR has fewer incidents in Oxnard due to its lower speed.
- At the highway-rail crossings along 5th Street

According the California Public Utilities Commission rail-crossing list, there are 199 open highway/rail crossings in Ventura County, 172 of which are at-grade and 27 grade separated. There are no controls at 14 of the at-grade locations, 47 locations have passive controls, nine have flashers and 102 of the locations have gates.

Overall, there were 24 highway/rail grade crossing incidents from 2014 to 2019. These resulted in 11 deaths and 40 injuries. The two locations with the most incidents of Las Posas Road (five incidents) and Rice Avenue (three incidents) accounted for more than half of the fatalities and ¾ of the injuries at highway/rail at-grade in Ventura County in the six-year period. The majority of the incidents involved Amtrak trains (17 total), followed by freight trains (5 total) and Metrolink (two total).

Potential Improvement Actions

- Reduce rates of incidents, collisions, fatalities, and serious injuries associated with freight movements
- Utilize technology to provide for the resilience and security of the freight transportation system
- Develop freight resiliency strategic plan
- Improve the safety and efficiency of freight movement throughout Ventura County and the region for transporters, the community, and the environment

6 DATA SOURCES AND STANDARDS – HOW EXISTING CONDITIONS WERE COLLECTED

6.1 Traffic Counts

Traffic counts provide the level of truck and overall traffic volumes to help understand demand on roadway capacity, major trucking routes, and facilities whose design should accommodate large vehicles.

Traffic volume counts can be taken using different types of classification systems. The most commonly used system is the 13-class FHWA vehicle classification system. The classes include all types of motorized vehicles from motorcycles (Class 1) to seven-axle multi-unit trucks (Class 13). The FHWA classes are shown in **Table 25**.

To simplify truck counts, heavy trucks are usually defined as either class 5, 6, or 7 and above. The Caltrans Traffic Count Census only defines trucks based on the number of axles. The two-axle class includes 1 1/2-ton trucks with dual rear tires and excludes pickups and vans with only four tires. The SCAG travel demand modeling defines light-heavy trucks as FHWA class 3 vehicles, medium-heavy trucks as FHWA Class 4 to 7 trucks and heavy-heavy trucks as FHWA Class 8 to 13.

For the purposes of this draft Data Collection Plan, heavy trucks are defined as FHWA Class 6 to 13 to line up with the Caltrans Traffic Census truck counts. The raw classified data will not be altered.

Table 25: FHWA Vehicle Classifications

Class	Vehicle	Descriptio
Class 1	Motorcycles	All two or three-wheeled motorized vehicles. This vehicle type may be reported at the option of the State.
Class 2	Passenger Cars	All sedans, coupes, and station wagons manufactured primarily for the purpose of carrying passengers and including those passenger cars pulling recreational or other light trailers.
Class 3	Other Two-Axle, Four-Tire Single Unit Vehicles	All two-axle, four-tire, vehicles, other than passenger cars. Included in this classification are pickups, panels, vans, and other vehicles such as campers, motor homes, ambulances, hearses, carryalls, and minibuses. Other two-axle, four-tire single-unit vehicles pulling recreational or other light trailers are included in this classification.
Class 4	Buses	All vehicles manufactured as traditional passenger-carrying buses with two axles and six tires or three or more axles. This category includes only traditional buses (including school buses) functioning as passenger-carrying vehicles. Modified buses should be considered as a truck and should be appropriately classified.
Class 5	Two-Axle, Six-Tire, Single-Unit Trucks	All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., with two axles and dual rear wheels.
Class 6	Three-Axle Single-Unit Trucks	All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., with three axles.

Class 7	Four or More Axle Single-Unit Trucks	All trucks on a single frame with four or more axles.
Class 8	Four or Fewer Axle Single-Trailer Trucks	All vehicles with four or fewer axles consisting of two units, one of which is a tractor or straight truck power unit.
Class 9	Five-Axle Single-Trailer Trucks	All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.
Class 10	Six or More Axle Single Trailer Trucks	All vehicles with six or more axles consisting of two units, one of which is a tractor or straight truck power unit.
Class 11	Five or fewer Axle Multi-Trailer Trucks	All vehicles with six or more axles consisting of two units, one of which is a tractor or straight truck power unit.
Class 12	Six-Axle Multi-Trailer Trucks	All six-axle vehicles consisting of three or more units, one of which is a tractor or straight truck power unit.
Class 13	Seven or More Axle Multi-Trailer Trucks	All vehicles with seven or more axles consisting of three or more units, one of which is a tractor or straight truck power unit.

Overall, 111 locations with truck counts were collected.

Caltrans Traffic Census

Caltrans Traffic Census truck counts were obtained for 149 state highway locations. The data is two-way average daily traffic only, and is classified by axle. Approximate average daily traffic with three or more axles averages at state route junctions and near the boarders of the County area show in **Table 26**. Caltrans does not continually collect truck data and use estimates from prior years, in some cases 10 or more years ago, as present year truck volume. However, this is the most consistent source of data on daily truck volume in the County.

Table 26: State Highway Representative Daily Truck Volumes at State Route Junctions and County Boarders

Interchange	Post Mile	
State Route 1	250	Calleguas Creek
State Route 23	1,350	At State Route 118
State Route 33	150	At State Route 150
State Route 34	500	At Rice Avenue
State Route 34	1,250	At State Route 118
US 101	4,000	At State Route 23
US 101	3,400	At State Route 232
US 101	3,300	At State Route 33
State Route 118	3,100	At Spring Street
State Route 118	2,275	At State Route 34
State Route 118	2,800	At State Route 232
State Route 118	2,800	At Tapo Road
State Route 126	1,950	In Piru

State Route 126	1,950	At State Route 118
State Route 150	375	At State Route 33
State Route 232	1,150	At US 101

US 101 High Occupancy Vehicle Lanes Project Approval & Environmental Document Project
Peak hour volumes were collected in the US 101 corridor for the US 101 High Occupancy Vehicle Lanes Project Approval & Environmental Document Project (US 101 HOV PAED) also known as the Our Future 101 Project. Classified counts were taken from 7AM to 9AM and 4PM to 6PM at 69 freeway ramp intersections in October 2018. The counts were converted into two-way segment counts in order to assess daily truck traffic on arterials adjacent to US 101. The highest volume locations were Rice Avenue north and south of US 101, Del Norte Boulevard south of US 101, Rose Avenue on either side of US 101, and Victoria Avenue on either side of US 101.

Ramp volumes were also consolidated. During the peak periods counted, 865 heavy trucks originated from or were destined to points north, and 1,007 heavy trucks were original from or destined to the south—a 45/55 percent split.

Table 27 shows the consolidated directional ramp volumes at major interchanges in the AM and PM peak hours. The largest volume interchanges are Daily Drive, Del Norte Boulevard, Rice Avenue, Vineyard Avenue and Victoria Avenue.

Table 27: US 101 Interchange AM and PM Peak Hour Truck Volumes

Interchange	Location	NB On-Ramp / SB Off-Ramp	SB On-Ramp / NB Off Ramp	Total
Daily Drive	Camarillo	105	50	155
Las Posas Road	Camarillo	28	46	74
Central Avenue	Camarillo	19	68	87
Del Norte Boulevard	Oxnard	75	101	176
Rice Avenue	Oxnard	174	91	265
Rose Avenue	Oxnard	74	53	127
Vineyard Avenue	Oxnard	53	90	143
Oxnard Boulevard	Oxnard	52	21	73
Victoria Avenue	Ventura	70	130	200
Main Street	Ventura	24	52	76
Total US 101 Corridor	-	865	1,007	1,872

The peak hour volumes were converted to average daily volumes by multiplying the PM 2-hour peak period by 10. This factor was developed from the SCAG Screenline Counts since it included both peak period and daily truck counts.

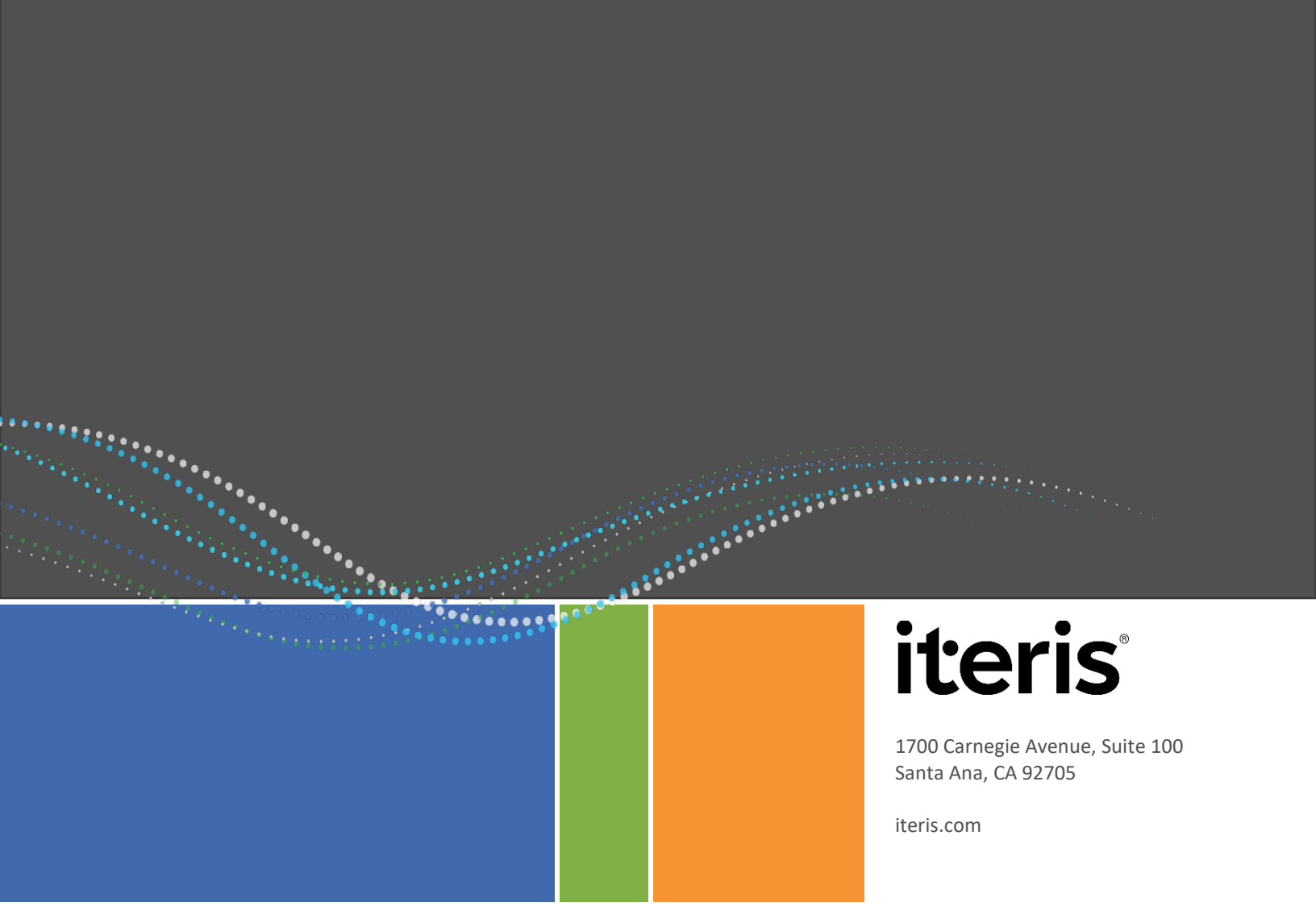
SCAG Screenline Counts

SCAG conducted fully classified counts of a screenline in eastern Ventura County. The twelve locations were counted in each direction in 15-minute increments for 24-hours and fully classified with FHWA classifications. The highest volumes were found on State Route 126 and State Route 118 with about 2,200 heavy trucks per day on each segment. Other locations had far fewer truck trips—fewer than 200 at each of the other ten count locations.

Given the detail in the screenline traffic counts, they were used to develop a peak factor for converting the US 101 HOV PAED AM and PM peak hour counts to daily values. The peak period to daily factor for heavy trucks was 12.8 percent in the AM (7AM to 9AM) peak hours and 9.5 percent in the PM (4PM to 6PM) peak hours. Since a general rule of thumb for converting peak hour trips to daily trips is 10 x the PM peak hour, the factor of the PM peak hours representing 10 percent of the daily value was used to convert the US 101 PAED counts to daily values.

Cities of Port Hueneme/Oxnard Truck Traffic Study

The Final Report for the Cities of Port Hueneme/Oxnard Truck Traffic Study (June 5, 2008) collected daily traffic counts on January 15, 2008. It defined heavy trucks as FHWA Class 7 to Class 13. While the traffic volumes were collected more than ten years ago, before the completion of the Rice Avenue Interchange, they set a baseline of truck activity in the area and can help identify how the use of arterials in the Cities of Port Hueneme and Oxnard have changed. The study showed Rose Avenue, Rice Avenue and Victoria Avenue carried between 2,500 and 1,500 trucks per day total for both directions. The east/west roads of Channel Islands Boulevard and Port Hueneme Road averaged about 1,000 trucks per day. Network improvements to Rice Avenue and the designation of Port truck routes have altered local truck volumes in recent years by reorienting many truck trips from the former State Route 1 (Oxnard Boulevard) to the Rice Road corridor.



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