



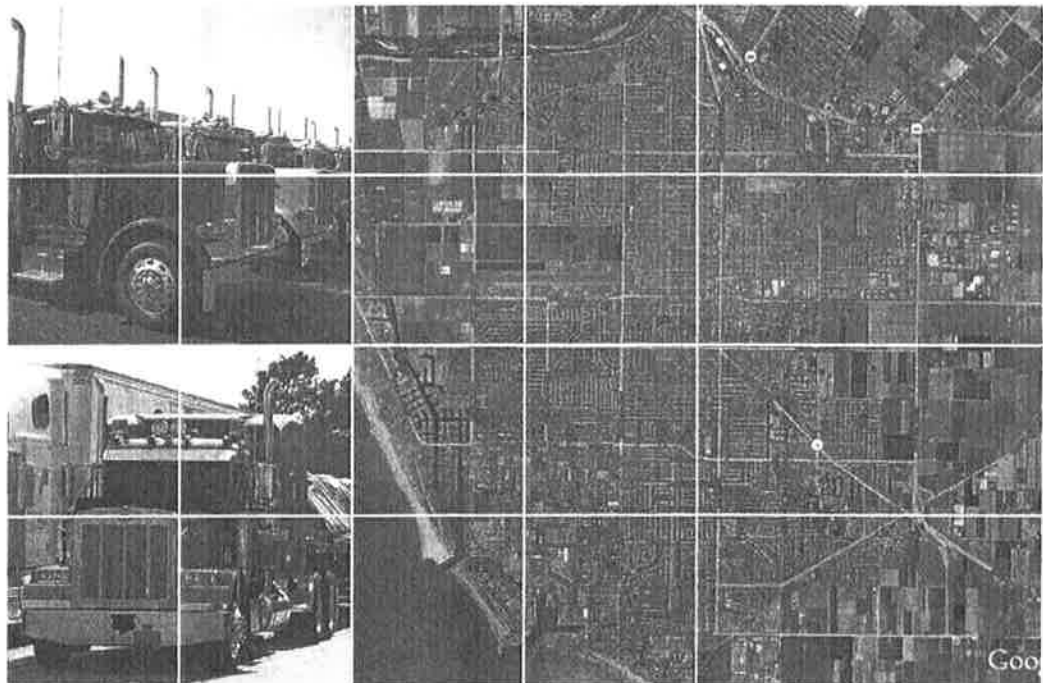
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# Cities of Port Hueneme/Oxnard Truck Traffic Study

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## Final Report

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June 5, 2008

**IBI Group**

County of Ventura  
Board of Supervisors  
PL14-0103  
**Exhibit 13 – Cities of  
Port Hueneme/Oxnard  
Truck Traffic Study, June 2008**

# **Cities of Port Hueneme/Oxnard Truck Traffic Study**

## **Final Report**

June 5, 2008

Prepared for Southern California Association of Governments  
by



*Funding: The preparation of this report was financed in part through grants from the  
United States Department of Transportation (DOT).*

The contents of this report reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of SCAG or DOT. This report does not constitute a standard, specification or regulation.

## TABLE OF CONTENTS

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|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY .....</b>   | <b>1</b>  |
| <b>1 INTRODUCTION .....</b>  | <b>5</b>  |
| 1.1 BACKGROUND .....   | 5         |
| <b>2 TRAFFIC ANALYSIS METHODOLOGY .....</b>  | <b>7</b>  |
| 2.1 SIGNALIZED INTERSECTION ANALYSIS .....   | 7         |
| <b>3 EXISTING TRAFFIC CONDITIONS .....</b>   | <b>9</b>  |
| 3.1 PROJECT SETTING .....  | 9         |
| 3.2 ARTERIAL ANALYSIS .....  | 13        |
| 3.3 INTERSECTION ANALYSIS .....  | 18        |
| 3.4 FREEWAY INTERCHANGE ASSESSMENT .....   | 28        |
| <b>4 STUDY AREA TRUCK TRIPS (ORIGINS AND DESTINATIONS) .....</b>   | <b>35</b> |
| 4.1 PORT OF HUENEME TRUCK TRIPS .....  | 35        |
| 4.2 NAVAL BASE VENTURA COUNTY TRUCK TRIPS .....  | 43        |
| 4.3 TELEPHONE SURVEY RESULTS .....   | 52        |
| <b>5 IMPACTS OF TRUCK TRAFFIC THROUGH RESIDENTIAL NEIGHBORHOODS .....</b>  | <b>73</b> |
| 5.1 CITY OF OXNARD RESIDENTIAL DEVELOPMENT PROJECTS ALONG TRUCK ROUTES .....                                     | 73        |
| 5.2 TECHNOLOGICAL AND DESIGN PRACTICES TO REDUCE THE IMPACTS OF TRUCK TRAFFIC THROUGH<br>RESIDENTIAL AREAS ..... | 77        |
| <b>6 RECOMMENDATIONS .....</b>   | <b>78</b> |

## TABLE OF FIGURES

|  |    |
|--|----|
| Figure 3-1: Project Study Area .....   | 10 |
| Figure 3-2: Study Area Truck Routes .....  | 12 |
| Figure 3-3: Arterial General Vehicle and Heavy Truck Count Volumes .....                     | 15 |
| Figure 3-4: Study Intersections .....  | 19 |
| Figure 3-5: Intersection and Roadway Lane Geometry .....                                     | 20 |
| Figure 3-6: Intersection Turning Movement Count Volumes – AM Peak .....                      | 22 |
| Figure 3-7: Intersection Turning Movement Count Volumes – PM Peak .....                      | 23 |
| Figure 3-8: Intersection Count Volumes With PCE Conversion – AM Peak .....                   | 24 |
| Figure 3-9: Intersection Count Volumes With PCE Conversion – PM Peak .....                   | 25 |
| Figure 3-10: Freeway Interchange Locations and Diagrams .....                                | 29 |
| Figure 3-11: US-101 Freeway Existing Vehicle and Truck Traffic Volumes .....                 | 30 |
| Figure 4-1: Port of Hueneme Truck Driver Questionnaire .....                                 | 37 |
| Figure 4-2: Estimated Percentage of Daily Truck Trips Generated by the Port of Hueneme ..... | 42 |
| Figure 4-3: Naval Base Ventura County Truck Driver Questionnaire .....                       | 44 |
| Figure 4-4: Estimated Percentage of Daily Truck Trips Generated by NBVC .....                | 51 |
| Figure 4-5: Locations of Private Companies that Participated in Telephone Survey .....       | 57 |
| Figure 4-6: Sample Telephone Survey .....  | 58 |
| Figure 4-7: Truck Routes – AG RX .....   | 59 |
| Figure 4-8: Truck Routes – BMW North America .....   | 60 |
| Figure 4-9: Truck Routes – Channel Islands Logistics .....                                   | 61 |
| Figure 4-10: Truck Routes – Chiquita Fresh .....   | 62 |
| Figure 4-11: Truck Routes – Del Monte Fresh Produce .....                                    | 63 |
| Figure 4-12: Truck Routes – General Petroleum .....  | 64 |
| Figure 4-13: Truck Routes – Hoskins Brothers Trucking .....                                  | 65 |
| Figure 4-14: Truck Routes – OST Trucks & Cranes .....  | 66 |
| Figure 4-15: Truck Routes – Pacific Fruits Bonita .....                                      | 67 |
| Figure 4-16: Truck Routes – Southland Sod Farms .....  | 68 |
| Figure 4-17: Truck Routes – T&T Trucks and Cranes .....                                      | 69 |
| Figure 4-18: Truck Routes – Terminal Freezers .....  | 70 |
| Figure 4-19: Truck Routes – Waggoners Trucking .....   | 71 |
| Figure 4-20: Truck Routes – Yara North America .....   | 72 |
| Figure 5-1: Excerpt From the City of Oxnard General Plan Land Use Map .....                  | 74 |

## EXECUTIVE SUMMARY

The Cities of Port Hueneme and Oxnard Truck Traffic Study analyzes existing traffic conditions and identifies traffic impacts and areas of congestion caused by trucks traveling on local arterial roadways in the two cities. The study was commissioned by the Southern California Association of Governments (SCAG). A Technical Advisory Committee (TAC) was formed to steer the project, and includes representatives of the Cities of Port Hueneme and Oxnard, the Port of Hueneme, Naval Base Ventura County (NBVC), Caltrans District 7, the Ventura County Transportation Commission (VCTC), and the local trucking industry. The members of the Study TAC are:

- Akiko Yamagami, Southern California Association of Governments (SCAG)
- Michael Jones, SCAG
- Andres Santamaria, City of Port Hueneme
- Jason Samonte, City of Oxnard
- Anthony Taormina, Port of Hueneme
- Chris Birkelo, Port of Hueneme
- Michaela Brown, Naval Base Ventura County (NBVC)
- Vinod Kumar, California State Department of Transportation (Caltrans) District 7
- Robert Wong, California State Department of Transportation (Caltrans) District 7
- Kerry Forsythe, Ventura County Transportation Commission (VCTC)
- Greg Dineen, Greg Dineen & Associates Industry Transportation Consultant
- Seth Hammond, Specialty Crane and Rigging

The study included the collection of existing traffic data for general vehicle traffic and truck traffic traveling through the Cities of Port Hueneme and Oxnard. Written surveys were conducted at the Port of Hueneme and NBVC to obtain information on truck trip generation rates and distribution patterns for these land uses. Telephone surveys were also conducted with a small sample of private business located in the study area to obtain additional information regarding truck trip generation and travel patterns.

The data collection and analysis effort revealed that there are numerous sources of truck trips within the study area. The sources surveyed as part of this study (Port of Hueneme, NBVC, selected private business) comprise a small portion of the total number of truck trips traveling on roadways in Port Hueneme and Oxnard. However, the information obtained through the traffic analysis and the survey efforts is valuable for the two cities in identifying the most heavily used truck routes, areas and intersections in need of improvement to provide for better traffic flow, and additional steps that could be taken in the future to address potential increases in truck traffic volumes from new developments or expansions of existing operations.

### Traffic Analysis Methodology

The traffic analysis presented in this report was conducted consistent with the adopted methodologies for the Ventura County Congestion Management Plan, the City of Port Hueneme, and the City of Oxnard. Traffic operations at signalized intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology, which evaluates capacity in terms of the volume-to-capacity (V/C) ratio.

### Existing Traffic Conditions

Existing traffic conditions were evaluated at 25 study intersections, using traffic counts collected in January 2008. Roadway average daily traffic (ADT) volumes were also collected at 13 locations along designated truck routes in the study area.

The five highest daily truck volumes are observed on the following roadway segments:

1. Rose Avenue – north of 5<sup>th</sup> Street
2. Rice Avenue – north of 5<sup>th</sup> Street
3. Rice Avenue – north of Hueneme Road
4. Victoria Avenue – north of 5<sup>th</sup> Street
5. Victoria Avenue – between Channel Islands Blvd and 5<sup>th</sup> Street

This pattern of truck traffic volumes shows that the highest volumes of truck traffic are typically observed on roadway segments located closer to US-101 interchanges and along the designated preferred truck routes.

The five roadway segments identified below have the highest percentage of truck traffic relative to total traffic volume of the 13 locations included in the traffic counts:

1. Rose Avenue – north of 5<sup>th</sup> Street
2. Rice Avenue – north of 5<sup>th</sup> Street
3. Hueneme Road – east of Saviers Road
4. Rice Avenue – between Hueneme Road and 5<sup>th</sup> Street
5. Ventura Road – north of Channel Islands Boulevard

The peak hour study intersection analysis identified the following intersections that do not operate at a satisfactory level of service, along with the identified peak hour:

1. Victoria Avenue and Channel Islands Boulevard – PM peak hour
2. Oxnard Boulevard/Saviers Road and Wooley Road – PM peak hour
3. Rose Avenue and Gonzales Road – PM peak hour
4. Rice Avenue and Gonzales Road – AM peak hour
5. Rice Avenue and US-101 Southbound Ramps – AM and PM peak hour

Many of these intersections are located along roadway segments that have the highest observed total traffic volumes and truck traffic volumes. Several intersections are located near the US-101 freeway, where traffic volumes are typically higher as automobiles and trucks attempt to access the freeway.

### **Study Area Truck Trips**

Written questionnaires were developed to survey truck drivers at the Port of Hueneme and NBVC with the objective of collecting information directly from truck drivers regarding origins and destinations, the routes used to access the Port of Hueneme and NBVC, and the types of cargo carried by the trucks. The written survey was conducted over a period of multiple days at each location and both surveys had a response rate of about 90%.

The data collected through the questionnaire and historic gate counts provided by the Oxnard Harbor District show that the Port of Hueneme generates about 140 entering and 140 exiting truck trips on a daily basis during the spring season. These truck trips represent a small percentage of the overall number of trucks traveling on roadways within the study area. On Port Hueneme Road just east of Ventura Road, Port-related truck trips comprise about 25% of the total trucks traveling on this segment of roadway. The Port's share of total truck trips diminishes rapidly further away from the Port's main gate as truck trips are dispersed within the study area. The Hueneme Road and Rice Avenue corridors were observed to have the greatest use by trucks traveling to and from the Port of Hueneme

NBVC generates even fewer truck trips on a daily basis, with approximately 90 to 100 trucks entering and exiting the base's Victoria Gate during the surveyed time period. Victoria Avenue was the most commonly cited route for trucks traveling between the US-101 freeway and NBVC. These truck trips comprise about 5% of the total number of trucks that travel on Victoria Avenue on a daily basis.

A small sample of private businesses was also surveyed by telephone to supplement the data collected from the Port of Hueneme, NBVC, and traffic counts. The information collected from these private businesses shows utilization of existing truck routes, such as Hueneme Road and Rice Avenue is strong in the existing condition.

### **Impacts of Truck Traffic on Residential Neighborhoods**

Existing truck routes can cause impacts on adjacent residential neighborhoods resulting from traffic congestion, noise, and vibration. The Cities of Port Hueneme and Oxnard have a well-defined network of truck routes that appears to adequately serve the Port of Hueneme, NBVC, and other private businesses in the area. There are a number of new residential developments in the planning or construction stages along study area truck routes within the Cities of Port Hueneme and Oxnard. These developments will expose more people to the existing traffic on the truck routes, and increase the magnitude of the impacts created when incompatible land uses are combined. Measures to reduce the impact of truck traffic on residential neighborhoods include encouraging truck drivers to utilize existing truck routes and requiring residential developers to provide acoustical design features such as pavement surfaces, sound barriers, setbacks, and sound-dampening materials.

### **Recommendations**

A series of recommendations are identified for the Study Technical Advisory Committee (TAC) to consider to address existing traffic deficiencies present in the study area, improve the identification and use of existing truck routes, and to develop strategies for future improvements or studies that would be intended to maintain or enhance traffic operations for both trucks and general traffic in the study area.

Intersection and roadway improvements include increasing the capacity of the Victoria Avenue/Channel Islands Boulevard intersection, widening Hueneme Road to a full four lanes (two in each direction) for the full length between Ventura Road and Rice Avenue, and monitoring the traffic impacts that would be anticipated with the now-funded improvements to the US-101/Rice Avenue interchange.

Strategies to address residential neighborhood impacts include encouraging trucks traveling to and from major generators in the study area (Port of Hueneme, NBVC, private businesses) to utilize the established preferred truck routes on Hueneme Road/Rice Avenue and Victoria Avenue as much as possible to limit the potential impacts of high truck volumes on other streets near residential areas such as Ventura Road and Channel Islands Boulevard and designing residential neighborhoods to consider the potential impacts caused by trucks traveling on the adjacent truck route.

Truck driver's awareness and the use of designated truck routes may be improved by:

- Continuing to emphasize the use of Port Hueneme Road/Hueneme Road and Rice Avenue as the primary truck access corridors to the Port of Hueneme.
- Installing directional signage along Port Hueneme Road/Hueneme Road and Rice Avenue directing trucks exiting the Port of Hueneme main gate to access the US-101 freeway via this route.
- Exploring the feasibility of implementing traffic signal coordination along Port Hueneme Road/Hueneme Road between Ventura Road and Rice Avenue to improve traffic flow and truck travel times in the corridor.



- Continuing to pursue funding for the grade separation of Rice Avenue at the Union Pacific rail corridor immediately north of Fifth Street.
- Working with Caltrans District 7 to install signage along US-101 identifying Rice Avenue as a designated access truck route to the Port of Hueneme and identifying Victoria Avenue as a designated access truck route to NBVC Port Hueneme.

Recommended next steps include the following:

- Identify potential funding sources and the responsible agencies for implementing the recommendations identified in this report.
- Explore performing an analysis of future traffic conditions, truck trip generation rates, and the operation of the future study area roadway network.

## 1 INTRODUCTION

The Southern California Association of Governments (SCAG) and the Cities of Port Hueneme and Oxnard have commissioned this Truck Traffic Study to analyze existing traffic conditions and identify traffic impacts and congestion generated by truck trips traveling on local arterial roadways. Truck trips in the study area are generated by a variety of land uses located in the Cities of Port Hueneme and Oxnard. Some of these uses include the Port of Hueneme, the Naval Base Ventura County (NBVC), and numerous other private businesses such as agricultural uses, automobile distributors, sod farms, offshore oil operations, and community commercial uses. The study is focused on assessing the impacts caused by existing truck traffic in the study area and identifying strategies for addressing the identified impacts.

This report consists of the following sections:

- 1 Introduction
- 2 Traffic Analysis Methodology
- 3 Existing Traffic Conditions
- 4 Study Area Truck Trips (Origins and Destinations)
- 5 Impacts of Truck Traffic through Residential Neighborhoods
- 6 Recommendations

Section 1 provides an introduction to the report and background information. Section 2 describes the methodology used for various types of analysis presented in this study. Section 3 includes descriptions of the study area roadway network and existing operations. Section 4 is a compilation of the results of questionnaires, surveys, and observations of truck trip origins, destinations, and travel routes within the study area. Section 5 examines the potential to improve truck route corridors through signal timing coordination. In Section 6, the impacts of truck traffic through local residential neighborhoods are discussed. Section 7 presents an overall summary of the impacts of truck traffic on the roadway network, recommendations to mitigate these impacts, and a list of areas that merit further study.

### 1.1 BACKGROUND

Freight goods movement is a significant regional issue in Southern California that is growing in importance each year. Issues including traffic congestion, air quality, and noise must be addressed when considering the impacts of increased goods movement and truck traffic. While a large portion of the freight traffic in Southern California is generated by the Ports of Los Angeles and Long Beach, there are numerous other smaller sources of truck trips in Southern California. The Oxnard/Port Hueneme area is home to several of these smaller truck trip generators. These land uses include the Port of Hueneme, Naval Base Ventura County (NBVC) – Port Hueneme, as well as several private businesses comprised of automobile distributors, sod farms, agricultural uses, and off-shore oil operations.

The Port of Hueneme is the U.S. Port of Entry for California's central coast region. It serves niche markets that include the import and export of automobiles, fresh fruit and other produce. It is the only deep water harbor between Los Angeles and San Francisco, and serves as a primary support facility for the offshore oil industry.

### **Agency Coordination**

The information presented in this report has been reviewed by the Technical Advisory Committee (TAC), which was formed to support the study effort. The Study TAC is comprised of the following staff representatives from the identified agencies:

- Akiko Yamagami, Southern California Association of Governments (SCAG)
- Michael Jones, SCAG
- Andres Santamaria, City of Port Hueneme
- Jason Samonte, City of Oxnard
- Anthony Taormina, Port of Hueneme
- Chris Birkelo, Port of Hueneme
- Michaela Brown, Naval Base Ventura County (NBVC)
- Vinod Kumar, California State Department of Transportation (Caltrans) District 7
- Robert Wong, California State Department of Transportation (Caltrans) District 7
- Kerry Forsythe, Ventura County Transportation Commission (VCTC)
- Greg Dineen, Greg Dineen & Associates Industry Transportation Consultant
- Seth Hammond, Specialty Crane and Rigging

## 2 TRAFFIC ANALYSIS METHODOLOGY

The traffic analysis summarized in this report is performed in accordance with the City of Port Hueneme, City of Oxnard, and Ventura County Congestion Management Program (CMP) traffic impact analysis guidelines. The methodology used in the technical analysis presented in this report is briefly described in this section.

### 2.1 SIGNALIZED INTERSECTION ANALYSIS

Traffic operations at signalized intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology<sup>1</sup>, which evaluates capacity in terms of the volume-to-capacity (V/C) ratio. The Ventura County CMP, the City of Port Hueneme, and the City of Oxnard have adopted the ICU methodology as the preferred method for assessing intersection level of service.

The ICU methodology measures the efficiency of traffic operations with a grading system called Level of Service (LOS). Evaluation of roadways and intersections involves the assignment of grades from A to F, with "A" representing the highest level of operating conditions and "F" representing extremely congested and restricted operations. The LOS is determined by measuring the ratio of volume-to-capacity (V/C) for each roadway and intersection. Each letter grade corresponds to a range of V/C values, which are described in detail in Table 2-1.

#### Threshold of Significance

The Cities of Port Hueneme and Oxnard have established level of service (LOS) "C" as the minimum acceptable LOS for intersections located in each city. Selected study intersections are also monitored by the Ventura County CMP, which defines the minimum acceptable level of service as LOS "E". For the purposes of this report, the more conservative LOS standard established by the Cities of Port Hueneme and Oxnard will be used as the governing measure regarding the minimum acceptable intersection LOS.

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<sup>1</sup> All ICU analysis conducted for this study was completed using a traffic impact analysis software program known as TRAFFIX. TRAFFIX is a network-based interactive computer program that enables calculation of levels of service at signalized and unsignalized intersections for multiple locations and scenarios.

Table 2-1 Level of Service for Signalized Intersections

| Level of Service | Description of Traffic Conditions   | V/C Ratio   |
|------------------|---|-------------|
| A                | At level of service A there are no cycles that are fully loaded, and few are even close to loaded. No approach phase is utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.                             | 0.00 – 0.60 |
| B                | Level of service B represents stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles.   | 0.61 – 0.70 |
| C                | In level of service C stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasionally drivers may have to wait through more than one red signal indication, and back-ups may develop behind turning vehicles.  | 0.71 – 0.80 |
| D                | Level of service D encompasses a zone of increasing restriction, approaching instability. Delay to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups.  | 0.81 – 0.90 |
| E                | Level of service E represents the most vehicles that any particular intersection approach can accommodate. At capacity ( $V/C = 1.00$ ) there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles).  | 0.91 – 1.00 |
| F                | Level of service F represents jammed conditions. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable, because full utilization of the approach may be prevented by outside conditions. | >1.00       |

Source: Los Angeles County Congestion Management Program, 2000

### 3 EXISTING TRAFFIC CONDITIONS

Descriptions of the project study area arterial roadway network, truck routes, and major intersections are included in this section. Summaries of existing traffic volumes, the percentage of heavy vehicles, and arterial and intersection level of service are also presented.

#### 3.1 PROJECT SETTING

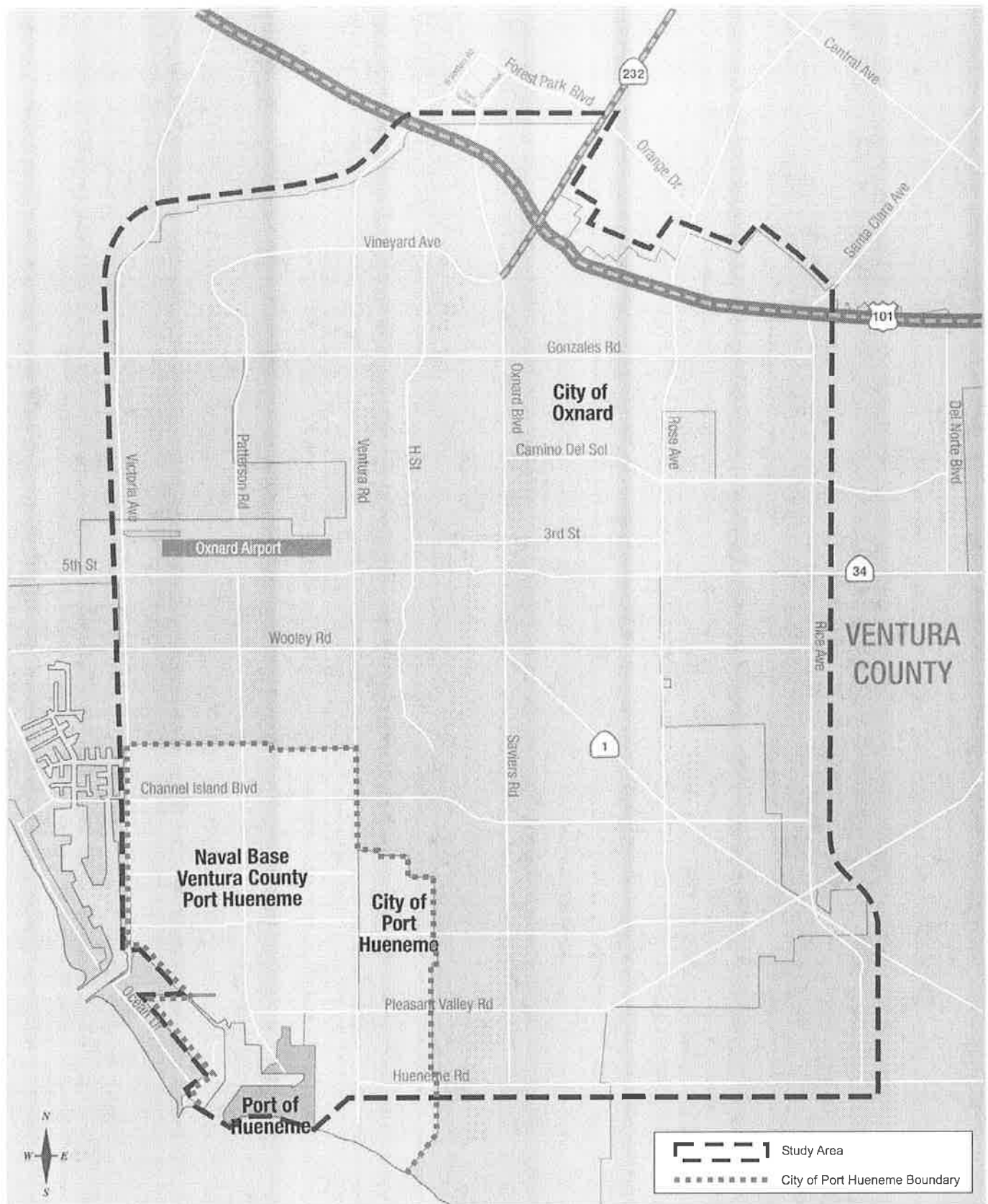
The project study area was determined in consultation with the Project TAC. The study area was chosen based on the presence of corridors and intersections that carry a high percentage of trucks on a daily basis and that serve as essential connections between the US-101 freeway and local land uses.

The project study area is shown in Figure 3-1. The study area is located within the Cities of Port Hueneme and Oxnard, and is bordered by the US-101 freeway on the north, Victoria Avenue on the west, Hueneme Road on the south, and Rice Avenue on the east.

#### Study Area Roadways

Major roadways analyzed in the study include:

- **Victoria Avenue** – Victoria Avenue runs in a north-south direction and serves as the western border of the study area. The roadway currently has four lanes (two lanes in each direction) for a majority of its length in the study area. Selected locations near 5th Street and Channel Islands Boulevard have been widened to provide an additional lane in one or both directions of travel.
- **Channel Islands Boulevard** – Channel Islands Boulevard provides four lanes of travel between Victoria Avenue and Rose Avenue. Between Rose Avenue and Rice Avenue the street narrows to a single lane in each direction.
- **Ventura Road** – Ventura Road is a four-lane arterial roadway that travels north and south through both the City of Port Hueneme and the City of Oxnard in the study area. The roadway is located along the eastern edge of NBVC and intersects Hueneme Road just east of the main gate to the Port of Hueneme.
- **Hueneme Road** – Hueneme Road is an east-west arterial roadway that travels between the Port of Hueneme on the west and Naval Station Point Mugu on the east. It varies in width from two lanes to four lanes within the study area. Hueneme Road is the southern boundary of the study area for this study and is designated as a preferred access route for trucks in the City of Oxnard General Plan. The City of Oxnard is currently planning to widen a portion of Hueneme Road from Saviers Road to Arctucus Avenue from two lanes to four lanes.
- **Oxnard Boulevard** – Oxnard Boulevard is a major north-south arterial roadway in the City of Oxnard. The street is currently designated as State Route 1 (SR-1) or Pacific Coast Highway between Pleasant Valley Road and Interstate 101 (US-101). Oxnard Boulevard serves as a primary access route to Downtown Oxnard.
- **Vineyard Avenue** – Vineyard Avenue is designated as State Route 232 (SR-232) north of Oxnard Boulevard. Vineyard Avenue has six lanes north of Oxnard Boulevard to US-101 and four lanes of travel south and west of Oxnard Boulevard. Vineyard Avenue also serves as a main access point to Downtown Oxnard from US-101.

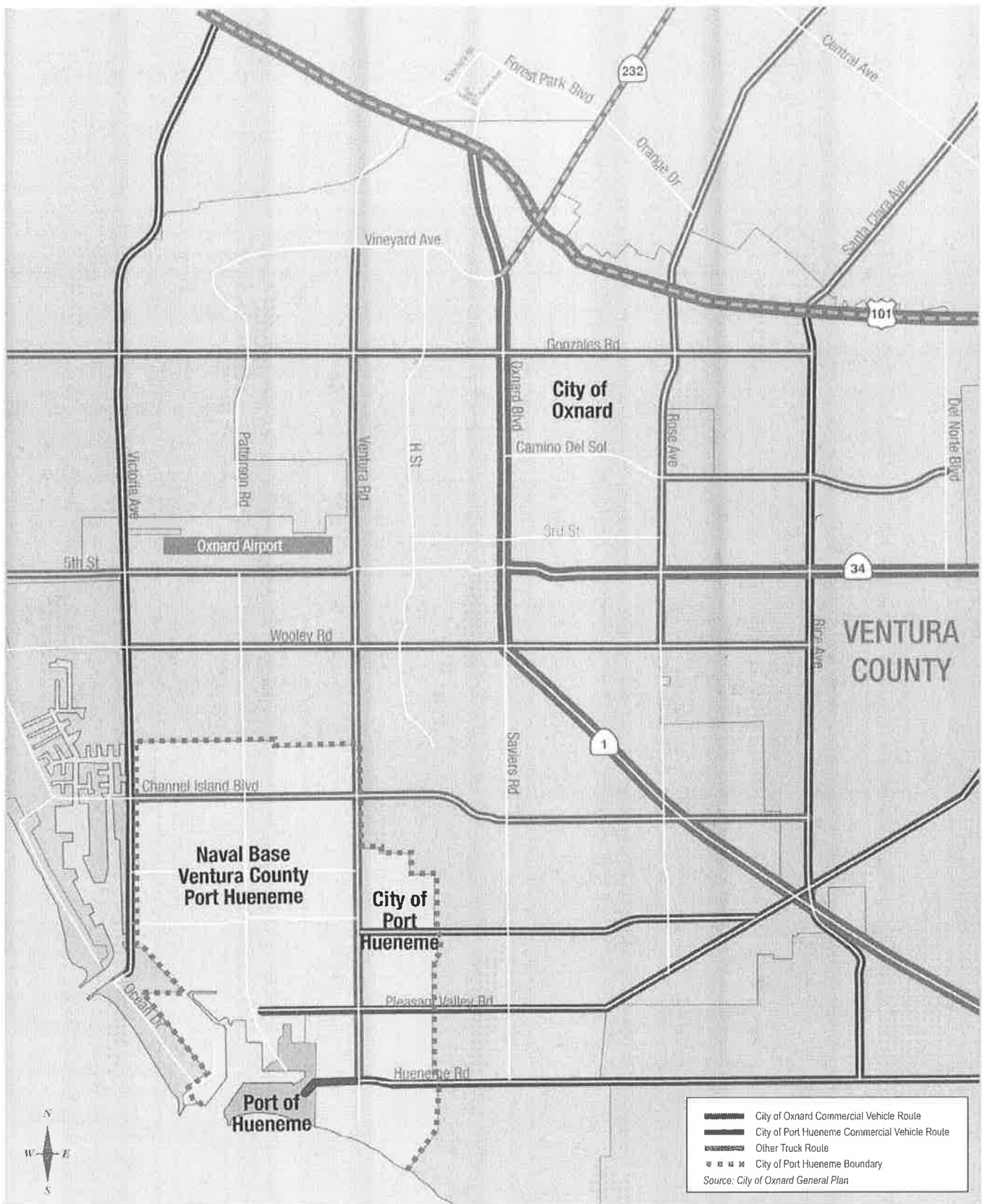


- **Rose Avenue** – Rose Avenue is a four-lane divided arterial that runs north and south. South of 5th Street, Rose Avenue functions as a local arterial, primarily serving local land uses. The roadway widens to six lanes near the US-101 freeway, and is bordered by retail and medical land uses.
- **Rice Avenue** – Rice Avenue forms the western boundary of the study area. The roadway is a four lane north-south roadway that is designated as a preferred access route to the Port of Hueneme. Rice Avenue currently provides a single lane of travel in each direction over the US-101 freeway, resulting in a traffic bottleneck in the northeast portion of the study area.

### Truck Routes

The City of Oxnard General Plan Circulation Element identifies arterial roadway truck routes that serve the City and provide connections to the US-101 freeway. The truck routes are typically arterial roadways that serve as important roadways within the City of Oxnard, providing access to the US-101 freeway, the Port of Hueneme, and NBVC. All truck routes are located along arterial roadways that are designated as Secondary or Primary Arterials by the City of Oxnard. This distinction assists in focusing truck traffic on arterial roadways that provide greater traffic capacity, wider lanes, larger intersections, and design characteristics that are better able to accommodate large trucks when compared to smaller arterial roadways or local streets. Generally, the truck routes are so designated in an attempt to avoid residential neighborhoods and minimize potential traffic, noise, and vibration impacts. Study area truck routes are illustrated in Figure 3-2.





### 3.2 ARTERIAL ANALYSIS

#### ADT Count Volumes

The analysis of existing traffic conditions in the project study area is based on new traffic counts for roadway average daily traffic (ADT) volumes and peak hour intersection turning movements. All traffic counts include the collection of vehicle classification data to identify truck traffic volumes in the general traffic stream. Existing traffic counts were also collected from the City of Port Hueneme, the City of Oxnard, and Caltrans District 7 to supplement the new traffic counts conducted for this study effort. All collected traffic count data is provided in the Appendix of this report.

ADT counts were conducted on a single day on January 15, 2008 at the following locations:

1. Victoria Avenue – between Channel Islands Boulevard and 5<sup>th</sup> Street
2. Victoria Avenue – north of 5<sup>th</sup> Street
3. Ventura Road – between Hueneme Road and Channel Islands Boulevard
4. Ventura Road – north of Channel Islands Boulevard
5. Saviers Road - north of Channel Islands Boulevard
6. Oxnard Boulevard – north of 5<sup>th</sup> Street
7. Rose Avenue – north of 5<sup>th</sup> Street
8. Rice Avenue – between Hueneme Road and 5<sup>th</sup> Street
9. Rice Avenue – north of 5<sup>th</sup> Street
10. Hueneme Road - between Ventura Road and Saviers Road
11. Hueneme Road - between Saviers Road and Rice Road
12. Channel Islands Boulevard – between Victoria Avenue and Ventura Road
13. Channel Islands Boulevard – between Ventura Road and Rose Avenue

The ADT counts were conducted with vehicle classifications based on the Federal Highway Administration (FHWA) vehicle classification scheme. Under this program, vehicles are classified into categories depending on whether the vehicle carries passengers or commodities. Non-passenger vehicles are further subdivided by the number of axles and number of units. FHWA vehicle classes are summarized in Table 3-1.

Table 3-1 FHWA Vehicle Classifications

| Class    | Vehicle Type                                   | Description   |
|----------|--|---|
| 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 to be 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.  |

Additional detail on the types of vehicle classifications established by FHWA is provided in the Appendix.

The traffic counts collected for this study assigned each vehicle that crossed the counting location into a specific classification. Roadway traffic volumes and count locations are shown graphically in Figure 3-3. For the purpose of this study, a "heavy truck" is a vehicle of Class 7 through Class 13. Table 3-2 summarizes the existing average daily traffic counts and identifies the total number of heavy trucks and percentage of the vehicles in relation to total traffic along each roadway segment.

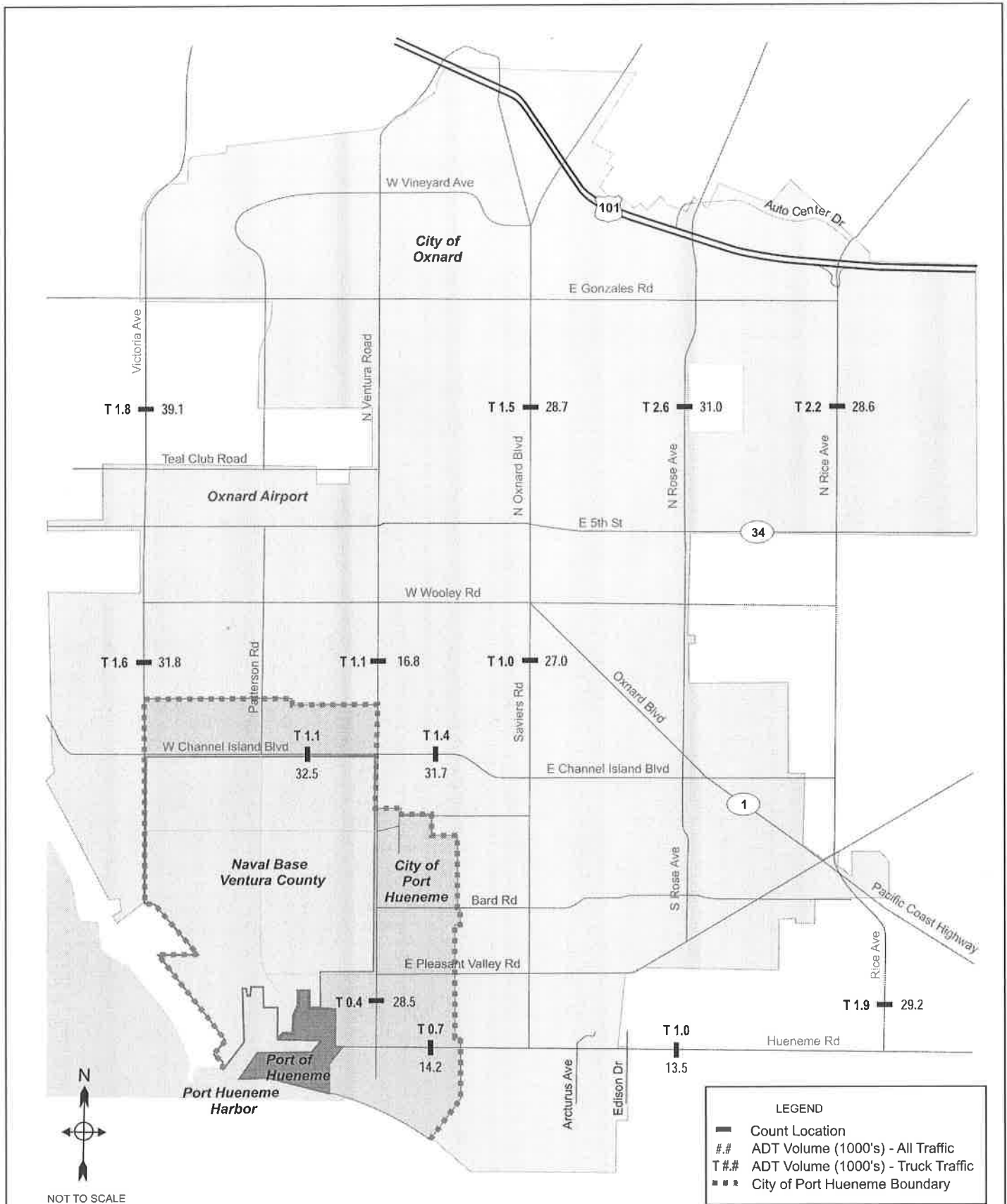


Table 3-2 Existing Roadway Daily Traffic Counts

| No. | Roadway              | Location                                    | ADT<br>(veh/day)<br>Total | Truck ADT<br>(veh/day)<br>Total | Percentage of<br>Heavy Trucks |
|-----|----------------------|---|---------------------------|---------------------------------|-------------------------------|
| 1   | Victoria Ave         | Between Channel Islands Blvd and 5th St     | 31,793                    | 1,585                           | 5.0%                          |
| 2   | Victoria Ave         | North of 5th St                             | 39,101                    | 1,771                           | 4.5%                          |
| 3   | Ventura Rd           | Between Hueneme Rd and Channel Islands Blvd | 28,538                    | 428                             | 1.5%                          |
| 4   | Ventura Rd           | North of Channel Islands Blvd               | 16,834                    | 1,101                           | 6.5%                          |
| 5   | Saviers Rd           | North of Channel Islands Blvd               | 27,001                    | 995                             | 3.7%                          |
| 6   | Oxnard Blvd          | North of 5th St                             | 28,696                    | 1,477                           | 5.1%                          |
| 7   | Rose Ave             | North of 5th St                             | 30,966                    | 2,608                           | 8.4%                          |
| 8   | Rice Ave             | Between Hueneme Rd and 5th St               | 29,190                    | 1,930                           | 6.6%                          |
| 9   | Rice Ave             | North of 5th St                             | 28,610                    | 2,187                           | 7.6%                          |
| 10  | Hueneme Rd           | Between Ventura Rd and Saviers Rd           | 14,190                    | 719                             | 5.1%                          |
| 11  | Hueneme Rd           | Between Saviers Rd and Rice Ave             | 13,512                    | 975                             | 7.2%                          |
| 12  | Channel Islands Blvd | Between Victoria and Ventura Rd             | 32,519                    | 1,065                           | 3.3%                          |
| 13  | Channel Islands Blvd | Between Ventura Rd and Rose Ave             | 31,679                    | 1,369                           | 4.3%                          |

Source: Daily traffic counts collected on January 15, 2008  
Heavy trucks are vehicles of Class 7 through Class 13.

The five highest daily truck volumes are observed on the following roadway segments:

1. Rose Avenue – north of 5<sup>th</sup> Street
2. Rice Avenue – north of 5<sup>th</sup> Street
3. Rice Avenue – between Hueneme Rd and 5<sup>th</sup> street
4. Victoria Avenue – north of 5<sup>th</sup> Street
5. Victoria Avenue – between Channel Islands Blvd and 5<sup>th</sup> Street

This pattern of truck traffic volumes shows that the highest volumes of truck traffic are typically observed on roadway segments located closer to US-101 interchanges and along the designated preferred truck routes.

The five roadway segments identified below have the highest percentage of truck traffic relative to total traffic volume of the 13 locations included in the traffic counts:

1. Rose Avenue – north of 5<sup>th</sup> Street
2. Rice Avenue – north of 5<sup>th</sup> Street
3. Hueneme Road – east of Saviers Road
4. Rice Avenue – between Hueneme Road and 5<sup>th</sup> Street
5. Ventura Road – north of Channel Islands Boulevard

The truck percentage data corresponds well with the total truck volumes. However, it is observed that the section of Ventura Road north of Channel Islands Boulevard does serve a high percentage of truck traffic compared to most of the other roadway segments studied in this report.

### **Traffic Signal Coordination**

Traffic signal coordination is the practice of using a common cycle length<sup>2</sup> for a group of adjacent signals, and then setting the beginning of green for a route through the signals so that vehicles starting at one intersection are likely to receive a green indication when they arrive at successive signals after the first. Under certain circumstances, traffic signal coordination can reduce delay, unnecessary stops at traffic signals, vehicle emissions, and potential for accidents.

Within the study area there are existing coordinated signals on Rice Avenue between Fifth Street and Auto Center Drive, on Rose Avenue between Fifth Street and Auto Center Drive, and on Victoria Avenue between Channel Islands Boulevard and Doris Avenue.

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<sup>2</sup> The cycle length for a signalized intersection is the time required to complete one full sequence of traffic movements.

### 3.3 INTERSECTION ANALYSIS

#### Study Intersections

Twenty-five intersections located within the boundaries of the study area were selected for inclusion in the traffic analysis. The intersection locations are shown in Figure 3-4, and the lane geometry at each intersection is illustrated in Figure 3-5. The study intersections were selected based on their location along major truck routes, their proximity to land uses that generate truck trips, the location of the intersection in relation to the US-101 freeway, and the potential to serve large numbers of heavy trucks.

#### Turning Movement Counts

The ADT count data was used to establish the peak period for vehicle traffic and to verify the appropriate time periods for conducting the intersection turning movement counts. The peak period intersection counts were then scheduled to take into account the peak hours for ambient traffic as well as the peak hours for truck trips in the project study area. The peak periods identified for this study were from 7:00 AM to 9:00 AM and from 3:00 PM to 6:00 PM. Intersection turning movement counts were completed on January 22, 2008 and January 29, 2008 at the following project study area intersections:

1. Victoria Avenue and Channel Islands Boulevard
2. Victoria Avenue and 5<sup>th</sup> Street
3. Victoria Avenue and Gonzales Road
4. Ventura Road and Port Hueneme Road
5. Ventura Road and Channel Islands Boulevard
6. Saviers Road and Hueneme Road
7. Arcturus Avenue and Hueneme Road
8. Edison Drive and Hueneme Road
9. Oxnard Boulevard/Saviers Road and Wooley Road
10. Oxnard Boulevard and Northbound US-101 Ramps
11. Oxnard Boulevard and Southbound US-101 Ramps
12. Vineyard Avenue and Northbound US-101 Ramps
13. Vineyard Avenue and Southbound US-101 Ramps
14. Rose Avenue and Channel Islands Boulevard
15. Rose Avenue and Oxnard Boulevard
16. Rose Avenue and 5<sup>th</sup> Street
17. Rose Avenue and Gonzales Road
18. Rose Avenue and Northbound US-101 Ramps
19. Rose Avenue and Southbound US-101 Ramps
20. Rice Avenue and Hueneme Road
21. Rice Avenue and Channel Islands Boulevard
22. Rice Avenue and 5<sup>th</sup> Street
23. Rice Avenue and Gonzales Road
24. Rice Avenue and US-101 Southbound Ramps
25. Rice Avenue/Santa Clara Avenue and Auto Center Drive

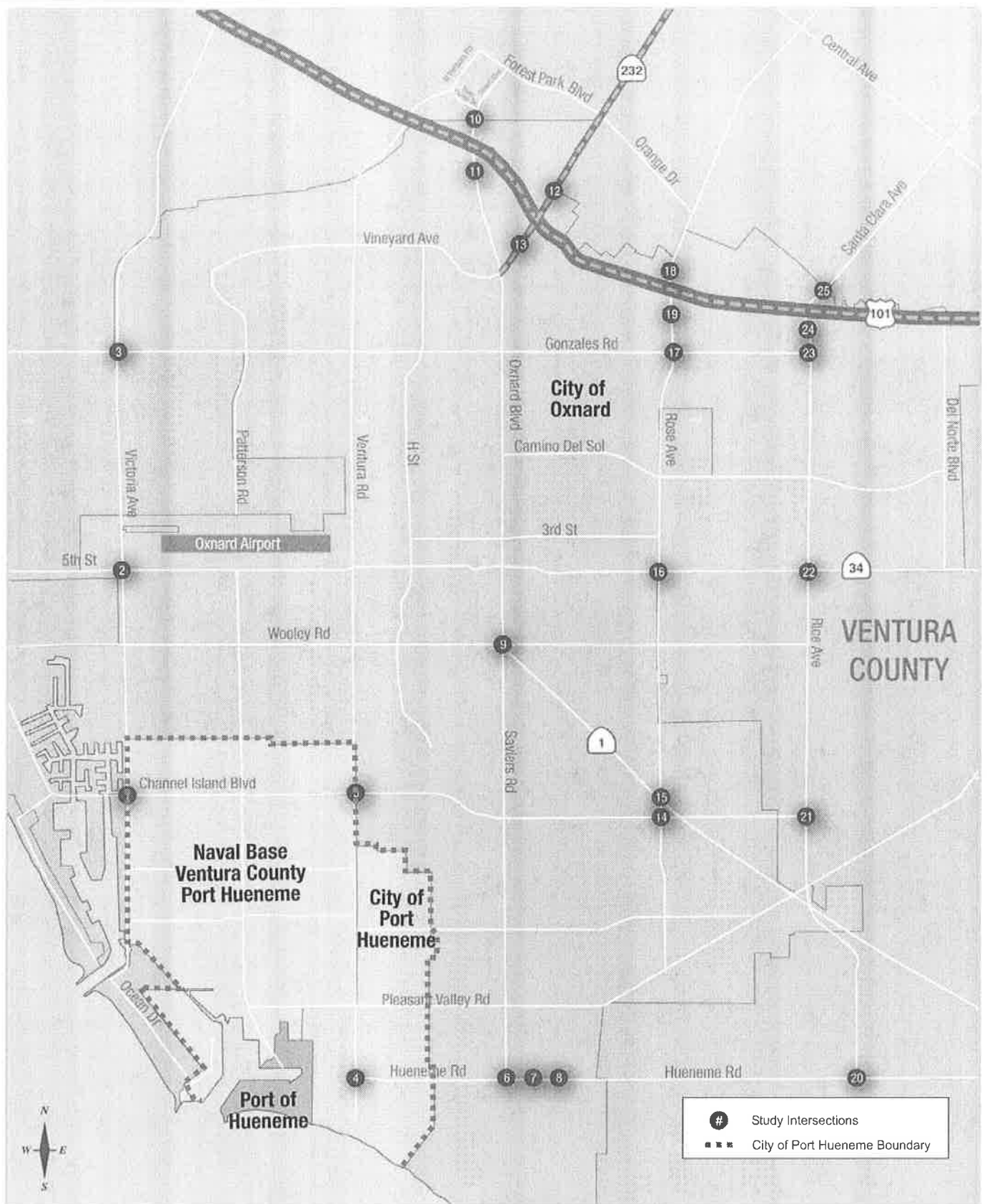
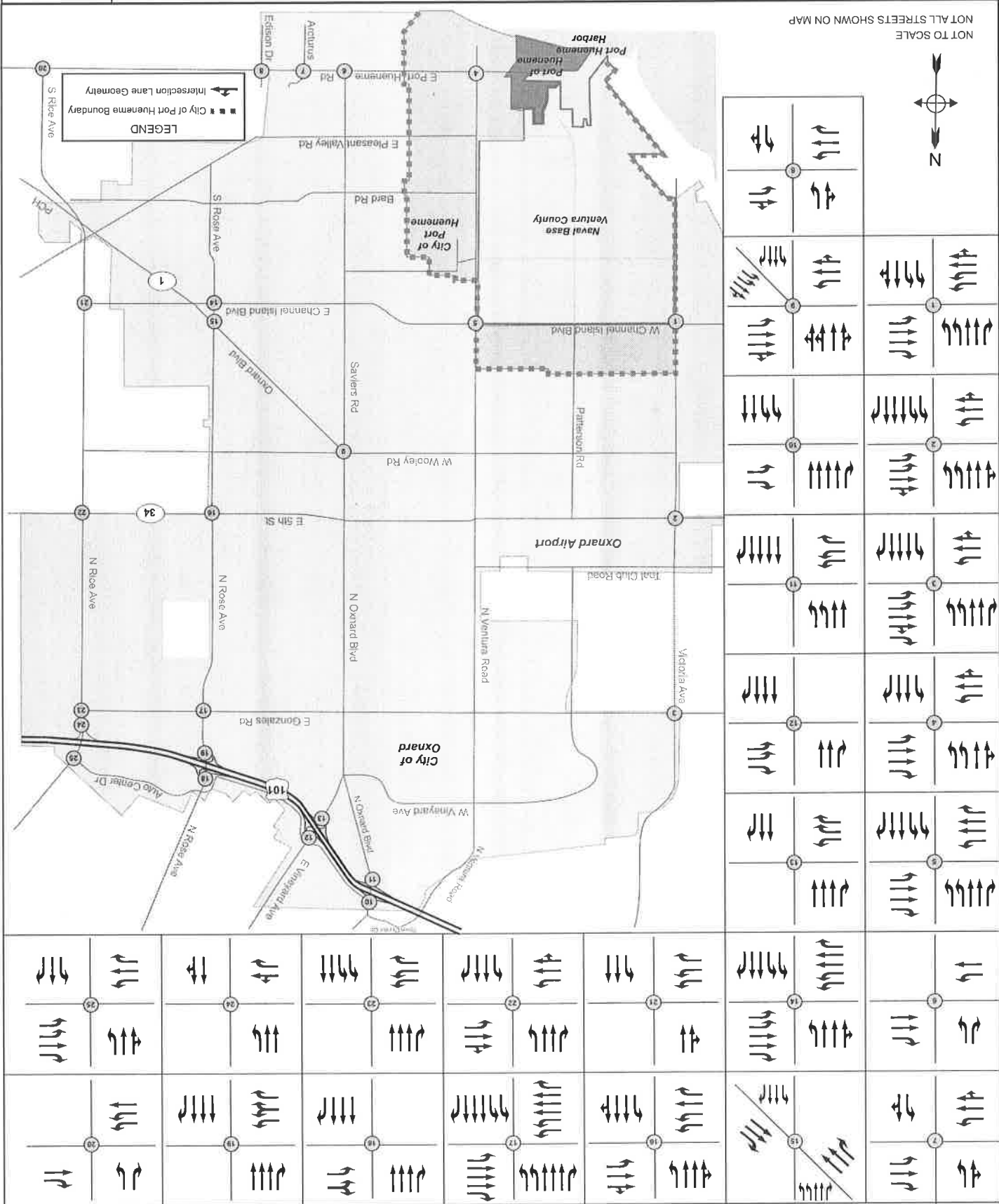


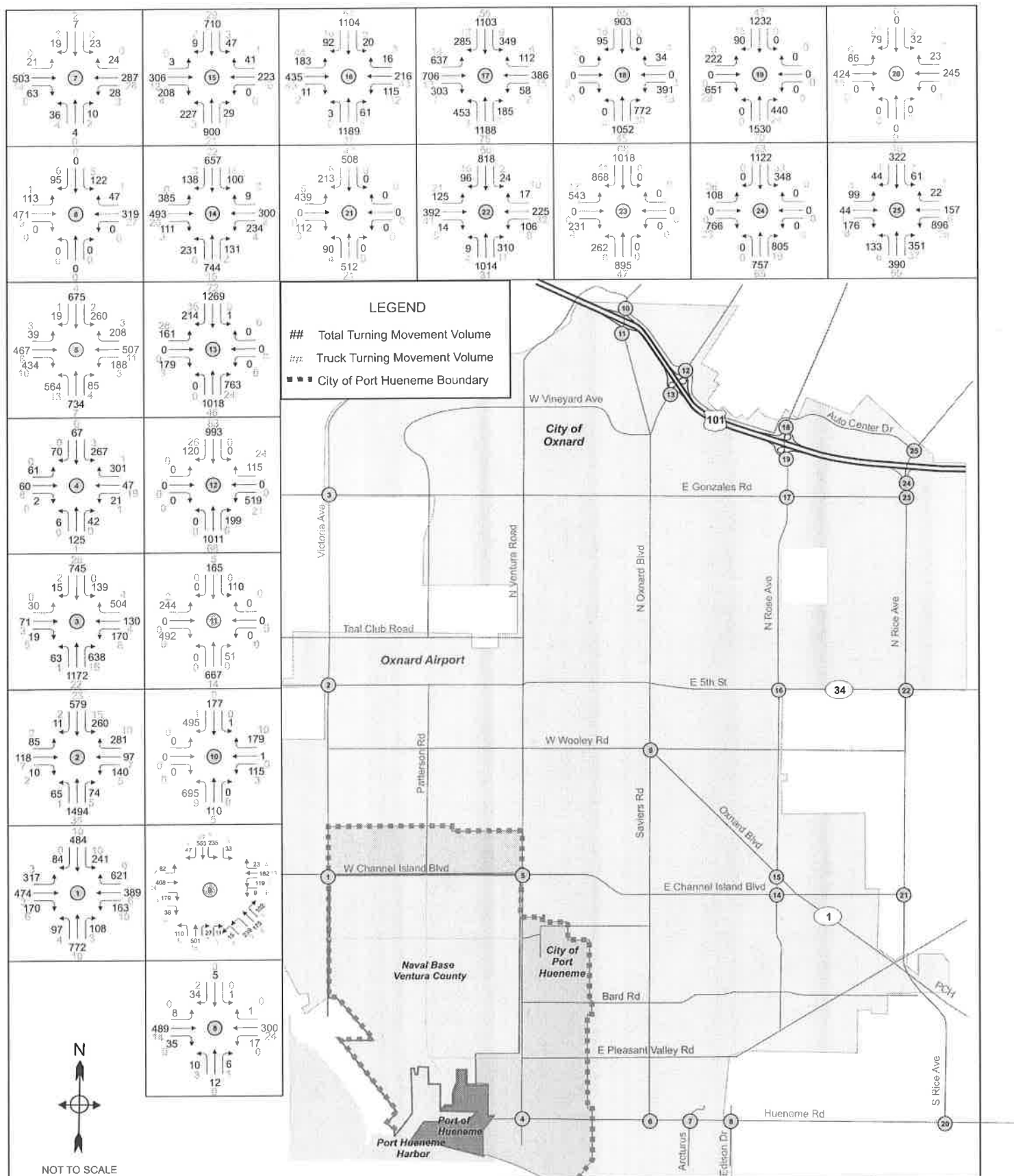


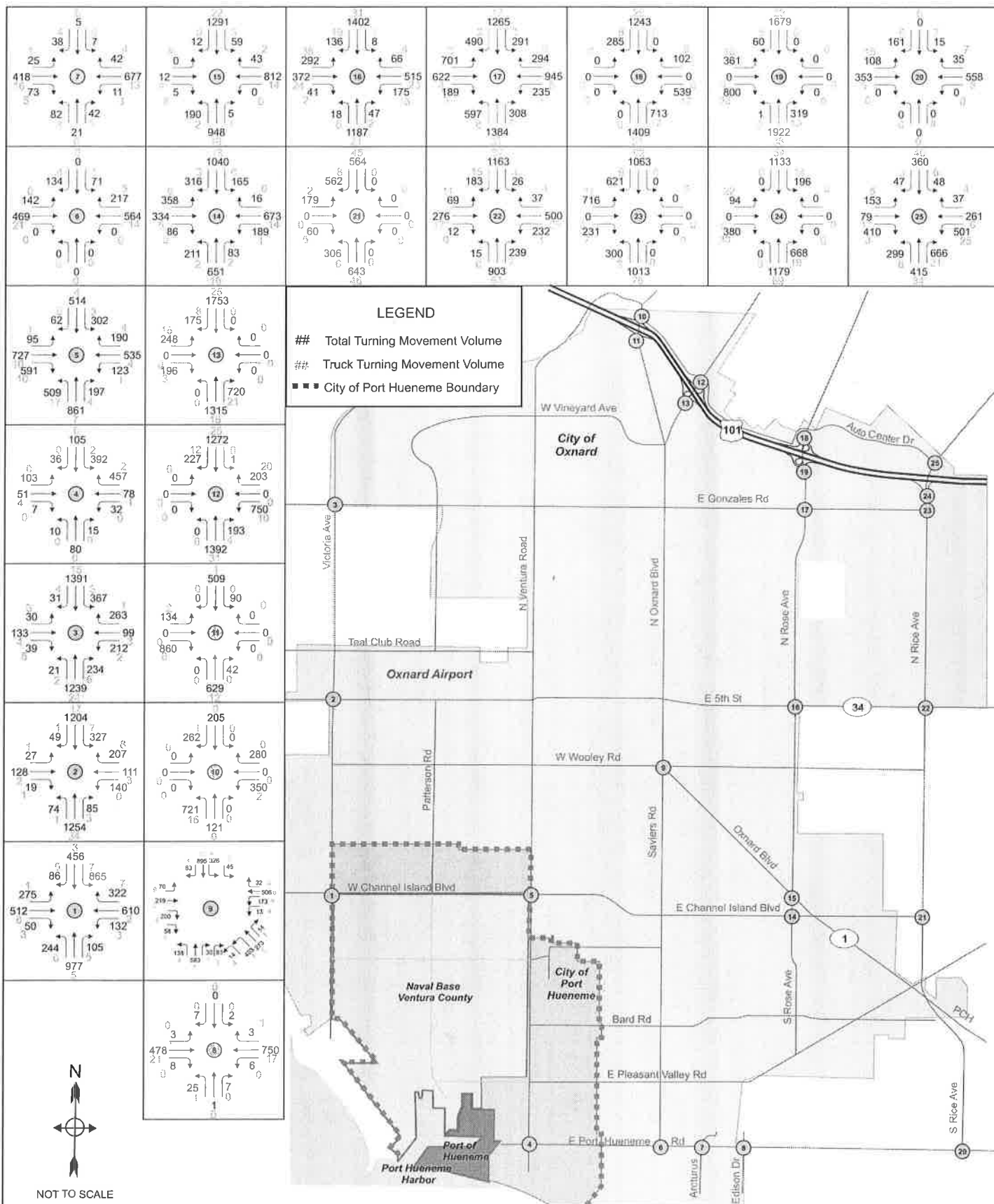
Figure 3-5

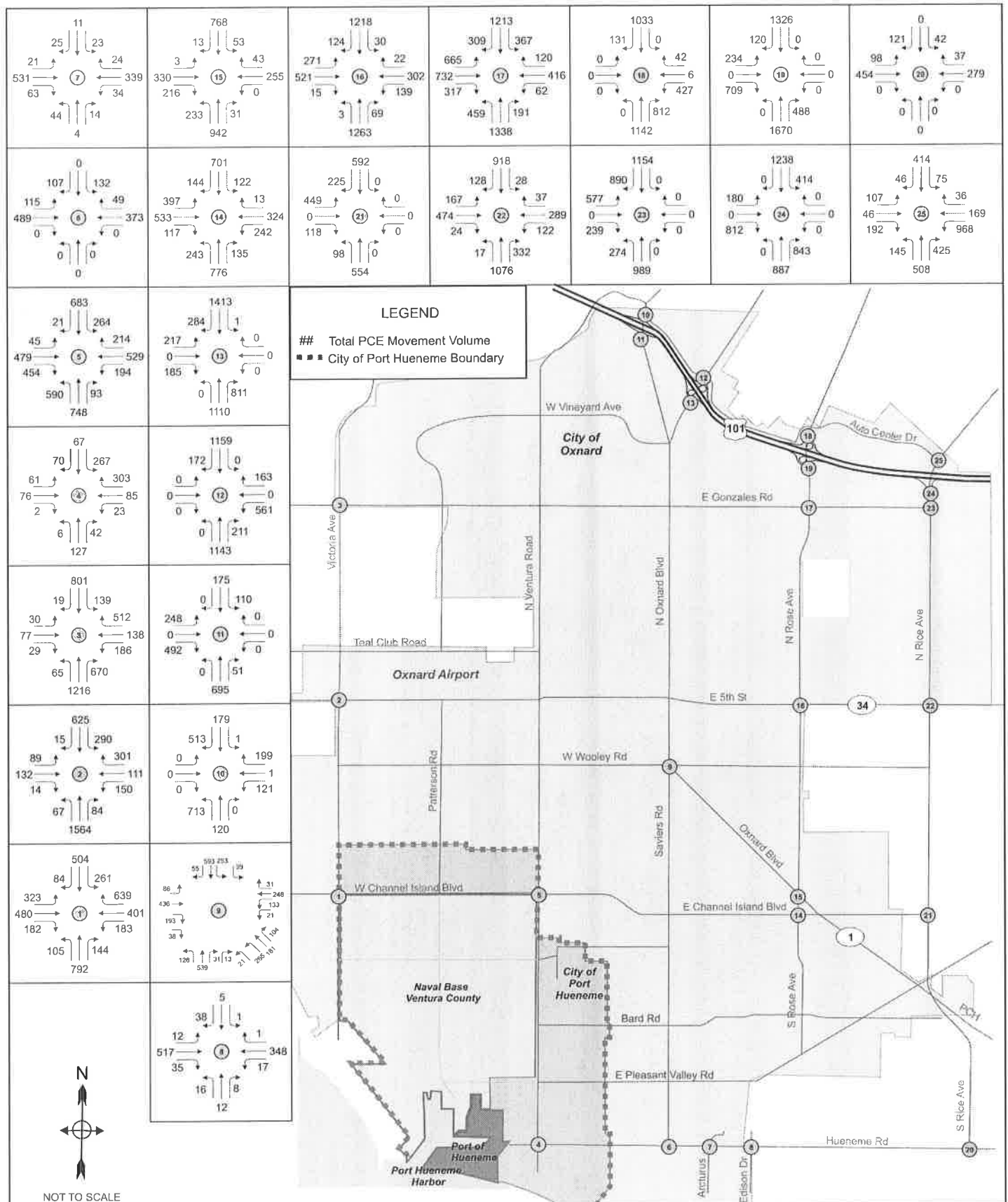


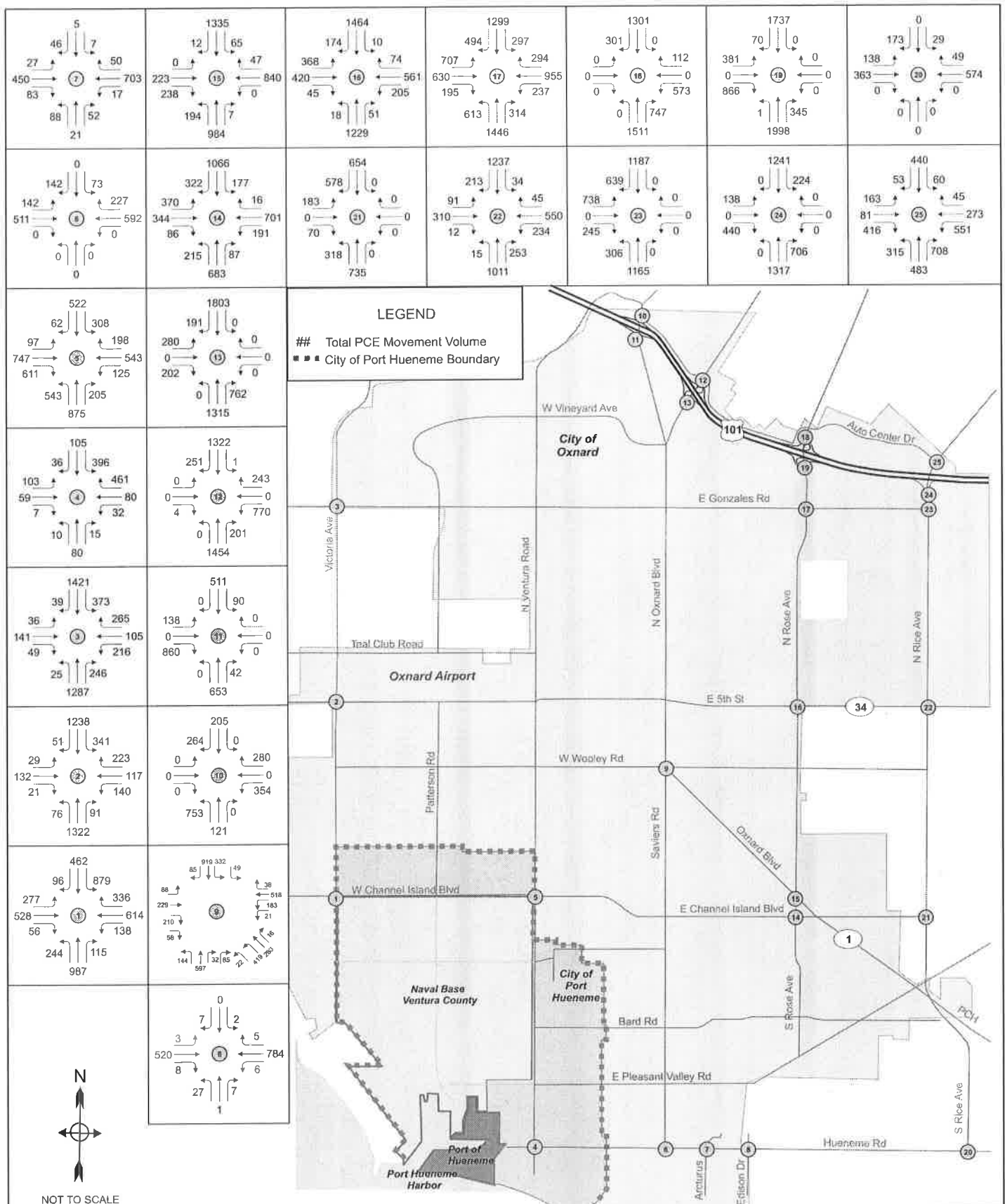
Intersection turning movement counts for trucks and cars were recorded separately. For the purposes of traffic analysis, truck counts have been converted to passenger car equivalent (PCE) volumes by applying a PCE factor of 2.0. This means that each heavy truck recorded by the traffic counts is incorporated into the analysis as two passenger cars. PCE values are used as a method to convert a mix of different vehicle types in a traffic stream to an equivalent traffic stream composed entirely of passenger cars. PCE conversion is important as larger and heavier trucks reduce the quality of traffic flow due to their size, weight and operational characteristics. A level of service analysis based on traffic volumes without applying the PCE factor for trucks could underestimate their impact.

Intersection turning movement counts for trucks and cars taken at all 25 study intersections are shown separately in Figure 3-6 and 3-7. Combined traffic counts by turning movement with PCE conversion factors applied for truck volumes are shown in Figure 3-8 and 3-9.









### Intersection Level of Service (LOS) Results

Peak hour intersection level of service for the existing condition is analyzed for each of the 25 study intersections. Table 3-3 summarizes the results of the AM and PM peak hour existing conditions analysis.

**Table 3-3 Existing (Year 2008) AM and PM Peak Hour LOS Summary**

| No. | Intersection                            | Weekday AM Peak |     | Weekday PM Peak |     |
|-----|---|-----------------|-----|-----------------|-----|
|     |   | V/C             | LOS | V/C             | LOS |
| 1   | Victoria Ave and Channel Islands Blvd   | 0.78            | C   | 0.90            | D   |
| 2   | Victoria Ave and 5th St                 | 0.66            | B   | 0.54            | A   |
| 3   | Victoria Ave and Gonzales Rd            | 0.64            | B   | 0.59            | A   |
| 4   | Ventura Rd and Hueneme Rd               | 0.35            | A   | 0.50            | A   |
| 5   | Ventura Rd and Channel Islands Blvd     | 0.67            | B   | 0.68            | B   |
| 6   | Saviers Rd and Hueneme Rd               | 0.27            | A   | 0.36            | A   |
| 7   | Arcturus Ave and Hueneme Rd             | 0.28            | A   | 0.54            | A   |
| 8   | Edison Dr and Hueneme Rd                | 0.37            | A   | 0.51            | A   |
| 9   | Oxnard Blvd/Saviers Rd and Wooley Rd    | 0.72            | C   | 0.91            | E   |
| 10  | Oxnard Blvd and NB US-101 Ramps         | 0.38            | A   | 0.49            | A   |
| 11  | Oxnard Blvd and SB US-101 Ramps         | 0.22            | A   | 0.20            | A   |
| 12  | Vineyard Ave and NB US-101 Ramps        | 0.54            | A   | 0.66            | B   |
| 13  | Vineyard Ave and SB US-101 Ramps        | 0.48            | A   | 0.60            | A   |
| 14  | Rose Ave and Channel Islands Blvd       | 0.56            | A   | 0.69            | B   |
| 15  | Rose Ave and Oxnard Blvd                | 0.49            | A   | 0.80            | C   |
| 16  | Rose Ave and 5th St                     | 0.71            | C   | 0.74            | C   |
| 17  | Rose Ave and Gonzales Rd                | 0.69            | B   | 0.88            | D   |
| 18  | Rose Ave and NB US-101 Ramps            | 0.39            | A   | 0.53            | A   |
| 19  | Rose Ave and SB US-101 Ramps            | 0.57            | A   | 0.69            | B   |
| 20  | Rice Ave and Hueneme Rd                 | 0.48            | A   | 0.42            | A   |
| 21  | Rice Ave and Channel Islands Blvd       | 0.57            | A   | 0.67            | B   |
| 22  | Rice Ave and 5th St                     | 0.59            | A   | 0.64            | B   |
| 23  | Rice Ave and Gonzales Rd                | 0.82            | D   | 0.60            | A   |
| 24  | Rice Ave and US-101 SB Ramps            | 0.91            | E   | 0.86            | D   |
| 25  | Rice/Santa Clara Ave and Auto Center Dr | 0.79            | C   | 0.78            | C   |

Source: ICU traffic analysis completed by IBI Group

**D/E/F**: Intersection LOS exceeds minimum acceptable LOS established by the Cities of Port Hueneme and Oxnard

The following intersections do not operate at a satisfactory level of service in the identified peak hour:

- Victoria Avenue and Channel Islands Boulevard (#1) – PM peak hour
- Oxnard Boulevard/Saviers Road and Wooley Road (#9) – PM peak hour
- Rose Avenue and Gonzales Road (#17) – PM peak hour
- Rice Avenue and Gonzales Road (#23) – AM peak hour
- Rice Avenue and US-101 Southbound Ramps (#24) – AM and PM peak hour

Many of these intersections are located along roadway segments that have the highest observed total traffic volumes and truck traffic volumes. Several intersections are located near the US-101 freeway, where traffic volumes are typically higher as automobiles and trucks attempt to access the freeway.

A separate analysis is provided based only on the auto traffic volumes observed at each intersection to assess the impacts of truck traffic on each intersection. The results are summarized in Table 3-4.

**Table 3-4 Existing (2008) AM and PM Peak Hour LOS Summary – Autos Only**

| No. | Intersection                            | Weekday AM Peak |     | Weekday PM Peak |     |
|-----|---|-----------------|-----|-----------------|-----|
|     |   | V/C (Delay)     | LOS | V/C (Delay)     | LOS |
| 1   | Victoria Ave and Channel Islands Blvd   | 0.76            | C   | 0.89            | D   |
| 2   | Victoria Ave and 5th St                 | 0.62            | B   | 0.51            | A   |
| 3   | Victoria Ave and Gonzales Rd            | 0.62            | B   | 0.57            | A   |
| 4   | Ventura Rd and Hueneme Rd               | 0.35            | A   | 0.50            | A   |
| 5   | Ventura Rd and Channel Islands Blvd     | 0.65            | B   | 0.67            | B   |
| 6   | Saviers Rd and Hueneme Rd               | 0.25            | A   | 0.35            | A   |
| 7   | Arcturus Ave and Hueneme Rd             | 0.23            | A   | 0.52            | A   |
| 8   | Edison Dr and Hueneme Rd                | 0.35            | A   | 0.49            | A   |
| 9   | Oxnard Blvd/Saviers Rd and Wooley Rd    | 0.66            | B   | 0.88            | D   |
| 10  | Oxnard Blvd and NB US-101 Ramps         | 0.36            | A   | 0.48            | A   |
| 11  | Oxnard Blvd and SB US-101 Ramps         | 0.22            | A   | 0.20            | A   |
| 12  | Vineyard Ave and NB US-101 Ramps        | 0.47            | A   | 0.63            | B   |
| 13  | Vineyard Ave and SB US-101 Ramps        | 0.68            | B   | 0.57            | A   |
| 14  | Rose Ave and Channel Islands Blvd       | 0.52            | A   | 0.67            | B   |
| 15  | Rose Ave and Oxnard Blvd                | 0.53            | A   | 0.78            | C   |
| 16  | Rose Ave and 5th St                     | 0.62            | B   | 0.67            | B   |
| 17  | Rose Ave and Gonzales Rd                | 0.65            | B   | 0.87            | D   |
| 18  | Rose Ave and NB US-101 Ramps            | 0.35            | A   | 0.49            | A   |
| 19  | Rose Ave and SB US-101 Ramps            | 0.52            | A   | 0.65            | B   |
| 20  | Rice Ave and Hueneme Rd                 | 0.44            | A   | 0.39            | A   |
| 21  | Rice Ave and Channel Islands Blvd       | 0.52            | A   | 0.61            | B   |
| 22  | Rice Ave and 5th St                     | 0.53            | A   | 0.61            | B   |
| 23  | Rice Ave and Gonzales Rd                | 0.79            | C   | 0.54            | A   |
| 24  | Rice Ave and US-101 SB Ramps            | 0.79            | C   | 0.76            | C   |
| 25  | Rice/Santa Clara Ave and Auto Center Dr | 0.67            | B   | 0.73            | C   |

Source: ICU traffic analysis completed by IBI Group

**D/E/F**: Intersection LOS exceeds minimum acceptable LOS established by the Cities of Port Hueneme and Oxnard



In this scenario, the following intersections do not operate at an acceptable level of service:

- Victoria Avenue and Channel Islands Boulevard (#5) – PM peak hour
- Oxnard Boulevard/Saviers Road and Wooley Road (#9) – PM peak hour
- Rose Avenue and Gonzales Road (#17) – PM peak hour

The comparison between the above mentioned analyses show that level of service at two intersections is impacted due to truck traffic. Increase in volume to capacity ratio and associated level of service at these intersections is as follows:

- Rice Avenue and Gonzales Road (#23) – During AM peak hour v/c increases by 2.8 percent and LOS changes from LOS C to LOS D due to truck traffic.
- Rice Avenue and US-101 Southbound Ramps (#24) – During AM peak hour v/c increases by 12.4 percent and LOS changes from LOS C to LOS E due to truck traffic. During PM peak hour v/c increases by 10 percent and LOS changes from LOS C to LOS D due to truck traffic.

### **3.4 FREEWAY INTERCHANGE ASSESSMENT**

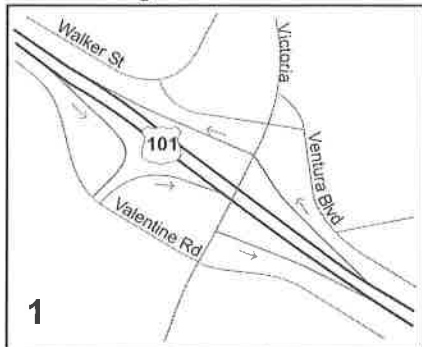
The US-101 freeway is the only freeway in the study area, linking the Oxnard/Port Hueneme area to the Los Angeles Basin to the south and Ventura and Santa Barbara to the north. Trucks traveling to and from locations in the Oxnard/Port Hueneme area use the US-101 freeway as the primary access route to destinations outside of the study area. State Route 1 and State Route 126 also fulfill secondary roles as regional corridors for trucks traveling to and from the study area.

Given the important role of the US-101 freeway in serving regional truck traffic, it is essential that there be efficient and convenient connections between arterial streets and the freeway. Major freeway/arterial street interchanges in the study area are:

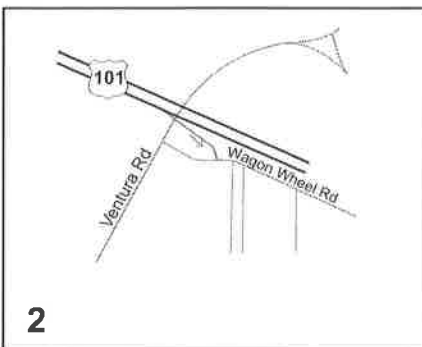
- US-101 at Victoria Avenue
- US-101 at Ventura Road (southbound exit only)
- US-101 at Oxnard Boulevard (State Route 1)
- US-101 at Vineyard Avenue (State Route 232)
- US-101 at Rose Avenue
- US-101 at Rice Avenue

Figure 3-10 identifies the existing interchanges and illustrates the location of on-ramps and off-ramps at each interchange. Truck and total vehicle traffic volumes on the US-101 freeway were collected from Caltrans for the year 2006, which is the most recent year available. Traffic volumes are shown in Figure 3-11.

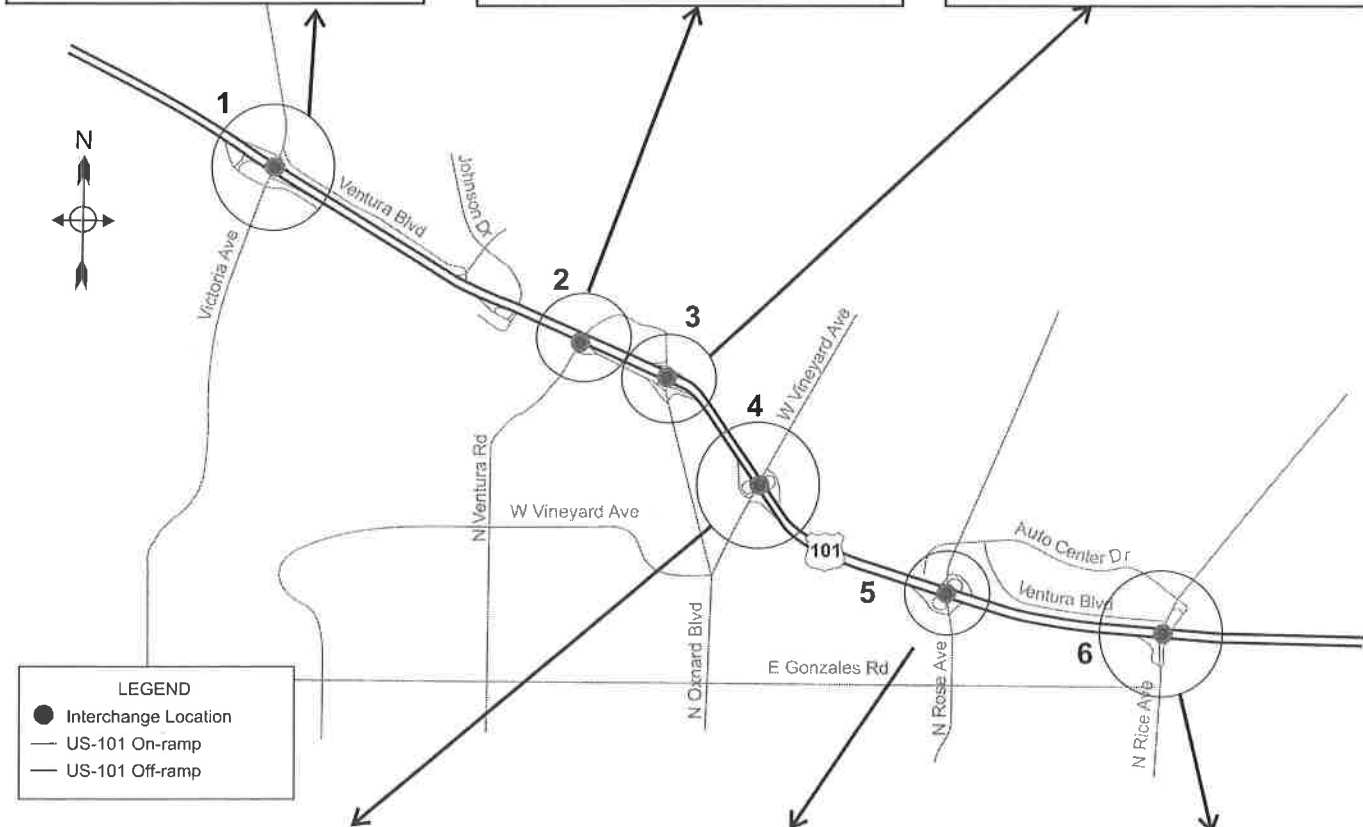
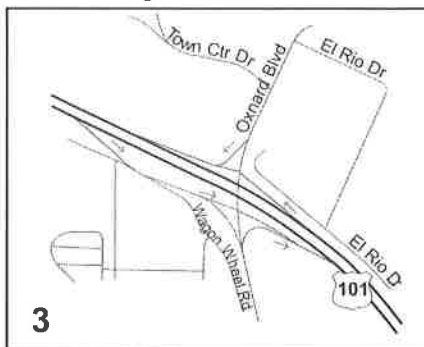
US 101 and Victoria Ave Interchange



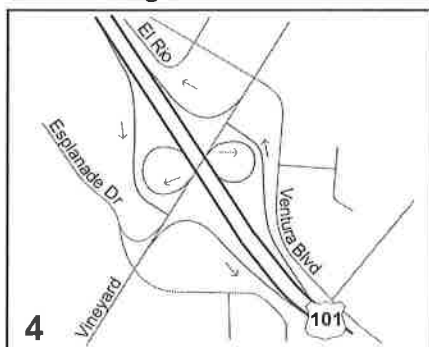
Southbound US 101 off-ramp to Ventura Rd



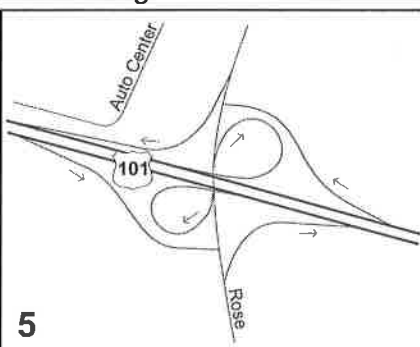
US 101 and Oxnard Blvd Interchange



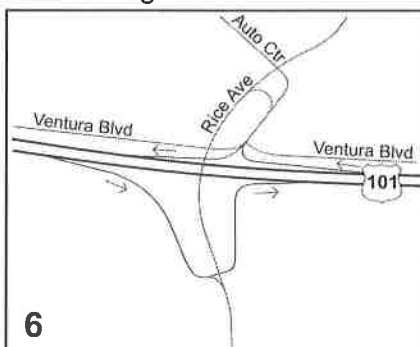
US 101 and Vineyard Ave Interchange

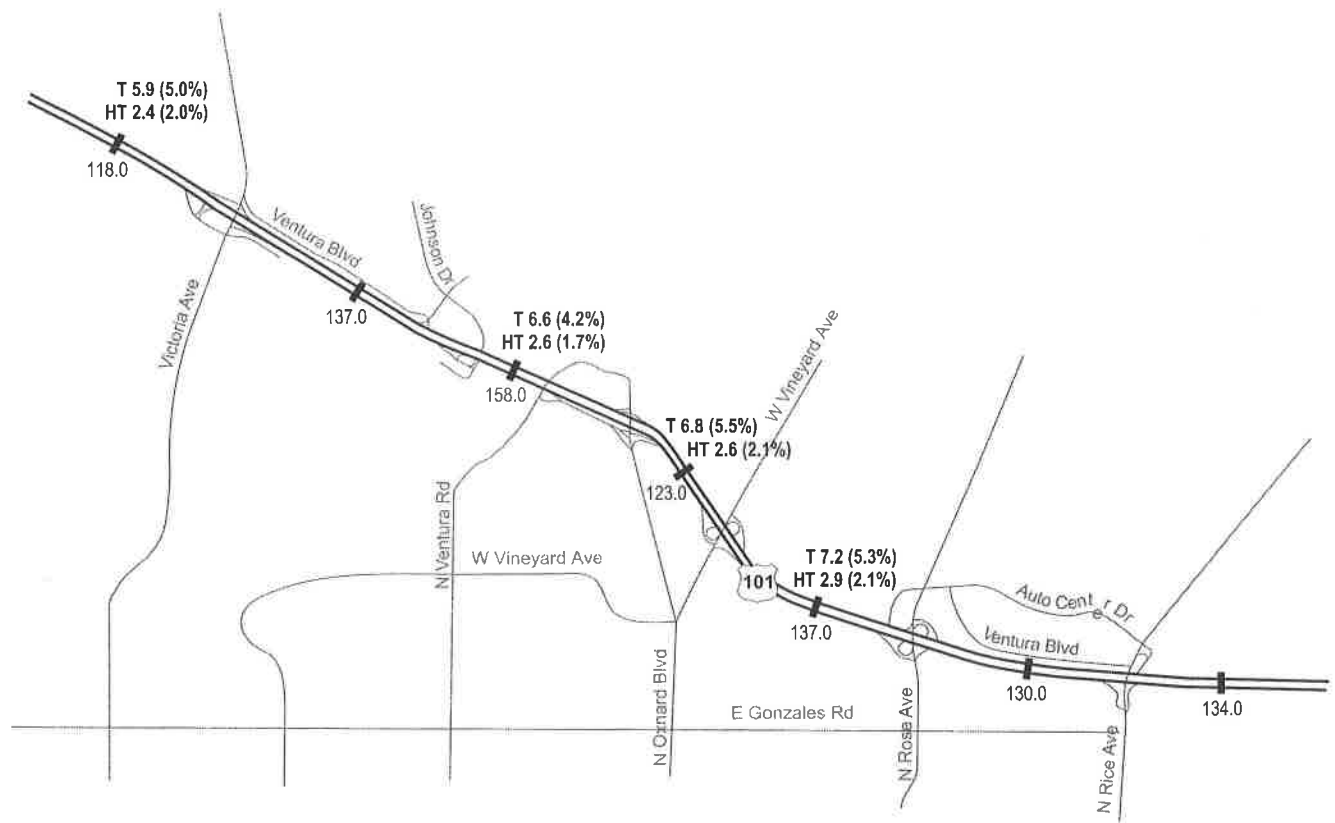


US 101 and Rose Ave Interchange



US 101 and Rice Ave Interchange





| LEGEND |  |
|--------|--|
|        | Count Location   |
| ##     | ADT Volume (1000's) - All Traffic                        |
| T ##   | ADT Volume (1000's) - All Truck Traffic                  |
| HT ##  | ADT Volume (1000's) - Truck Traffic with 3 or more Axles |
| (## %) | Percent of Total Daily Vehicle Volume                    |

A brief summary of the existing conditions at each interchange is provided below along with a discussion of the existing connectivity between the arterial street and the freeway. Several of the existing interchanges have been recently improved or expanded to better serve traffic. These improvements are also discussed below.

### **US-101 at Victoria Avenue**

The US-101/Victoria Avenue interchange is located in the City of Ventura. While the interchange is outside of the city limits of the City of Oxnard, the street is a major north-south truck corridor in western Oxnard and serves as a major route for trucks traveling to and from the Port of Hueneme and NBVC. This location is a full interchange, providing on and off-ramps serving both directions of the US-101. The northbound on/off-ramps are a compact diamond design, while the southbound ramps are designed as hook ramps. Vehicles exiting and entering the northbound US-101 access Victoria Avenue directly. Vehicles exiting the southbound US-101 must first turn onto Valentine Road to access Victoria Avenue. Two southbound on-ramps are provided, one from Valentine Road for vehicles traveling south on Victoria Avenue and a second ramp on Victoria Avenue for vehicles traveling northbound on Victoria Avenue.

Victoria Avenue has five through traffic lanes at the interchange, with two southbound lanes and three northbound lanes. In addition to the through lanes, two southbound right turn lanes are provided to Valentine Road and the southbound freeway on-ramp. Dual northbound left turn lanes are provided for access to the northbound freeway on ramp. The off-ramps also provide substantial traffic capacity with three turning lanes provided for the southbound off-ramp and four turning lanes for the northbound off-ramp.

Adjacent land uses include commercial retail and residential uses to the northwest and northeast of the interchange. Land uses on the south side of the interchange include a hotel to the southeast, as well as commercial uses and agricultural uses to the southwest.

### **US-101 at Ventura Road**

The US-101/Ventura Road interchange consists of a single southbound off-ramp, providing access to Wagon Wheel Road and Ventura Road. The design of southbound off-ramp is not conducive to serving large trucks given the steep grade of the off-ramp and tight right turn necessary to access Wagon Wheel Road from the off-ramp. Trucks traveling to the study area from the north would be better served accessing the street network from the Victoria Avenue and Oxnard Boulevard interchanges.

### **US-101 at Oxnard Boulevard**

The US-101/Oxnard Boulevard interchange was recently reconfigured and enhanced to provide additional traffic capacity. The enhancement and reconfiguration created a full interchange with on and off-ramps serving both directions of the US-101 freeway. The new interchange is designed as a compact diamond interchange per Caltrans design standards. The Oxnard Boulevard interchange serves as an important gateway from the US-101 to the new Esplanade Shopping Center and Downtown Oxnard. Oxnard Boulevard is also currently designated as State Route 1 in the City of Oxnard, serving as a major regional traffic corridor. Given the recent completion of traffic capacity and safety improvements, the existing interchange is capable of serving truck traffic.

Adjacent land uses include the RiverPark development to the northwest, industrial uses to the northeast, the Esplanade Shopping Center to the southeast and industrial uses to the southwest. The RiverPark development is a 700-acre mixed-use development that includes a town center retail development/lifestyle center, about 1,800 homes and 1,000 apartment units. Construction of several of residential communities is underway.

Table 3-5 summarizes the volume of trucks observed to enter and exit the US-101 freeway at Oxnard Boulevard during the counts made in January 2008, and identifies the percentage of trucks in comparison to the total volume of vehicles entering and exiting the freeway at this location. Trucks identified as entering the freeway are traveling from Oxnard Boulevard to the northbound or southbound US-101. Trucks identified as exiting the freeway are using the off-ramps to exit the northbound and southbound US-101 to access Oxnard Boulevard.

**Table 3-5 Truck Volumes Entering and Exiting US-101 at Oxnard Boulevard**

| Time Period  | NB Trucks Entering Freeway | Percent of Total Volume | NB Trucks Exiting Freeway | Percent of Total Volume | SB Trucks Entering Freeway | Percent of Total Volume | SB Trucks Exiting Freeway | Percent of Total Volume |
|--------------|----------------------------|-------------------------|---------------------------|-------------------------|----------------------------|-------------------------|---------------------------|-------------------------|
| AM Peak Hour | 10                         | 1%                      | 13                        | 4%                      | 0                          | n/a                     | 2                         | <1%                     |
| PM Peak Hour | 17                         | 2%                      | 2                         | <1%                     | 0                          | n/a                     | 2                         | <1%                     |

Source: Intersection turning movement counts made in January 2008.

NB Trucks Entering Freeway: the number of trucks from Oxnard Boulevard that enter the northbound US-101 onramp.

NB Trucks Exiting Freeway: the number of trucks from northbound US-101 that exit to Oxnard Boulevard.

Trucks comprise a small percentage of the existing traffic volumes entering and exiting the US-101 freeway at Oxnard Boulevard. In many cases, trucks are less than 1% of the total volume entering or exiting the freeway.

### US-101 at Vineyard Avenue

The US-101/Vineyard Avenue is also a full interchange that provides an important connection between the US-101 corridor and Downtown Oxnard. The interchange is a partial cloverleaf design. Vineyard Avenue is designated as State Route 232 north of Oxnard Boulevard. Vineyard Avenue is identified as a truck route by the City of Oxnard. The interchange is a recent design that is capable of serving truck traffic in the existing condition.

Adjacent land uses include residential and some undeveloped property to the northwest and commercial retail and office to the northeast of the interchange. Land uses on the south side of the interchange include commercial office uses to the southeast, and the Esplanade Shopping Center to the southwest. Vineyard Avenue serves as a major gateway to Downtown Oxnard along with Oxnard Boulevard.

Table 3-6 summarizes the volume of trucks observed to enter and exit the US-101 freeway at Vineyard Avenue, and identifies the percentage of trucks in comparison to the total volume of vehicles entering and exiting the freeway at this location. Trucks identified as entering the freeway are traveling from Vineyard Avenue to the northbound or southbound US-101. Trucks identified as exiting the freeway are using the off-ramps to exit the northbound and southbound US-101 to access Vineyard Avenue.

**Table 3-6 Truck Volumes Entering and Exiting US-101 at Vineyard Avenue**

| Time Period  | NB Trucks Entering Freeway | Percent of Total Volume | NB Trucks Exiting Freeway | Percent of Total Volume | SB Trucks Entering Freeway | Percent of Total Volume | SB Trucks Exiting Freeway | Percent of Total Volume |
|--------------|----------------------------|-------------------------|---------------------------|-------------------------|----------------------------|-------------------------|---------------------------|-------------------------|
| AM Peak Hour | 32                         | 10%                     | 30                        | x                       | 59                         | 6%                      | 31                        | 9%                      |
| PM Peak Hour | 16                         | 4%                      | 30                        | 3%                      | 29                         | 3%                      | 19                        | 4%                      |

Source: Intersection turning movement counts made in January 2008.

NB Trucks Entering Freeway: the number of trucks from Vineyard Avenue that enter the northbound US-101 onramp.

NB Trucks Exiting Freeway: the number of trucks from northbound US-101 that exit to Vineyard Avenue.

Trucks comprise a higher percentage of the existing traffic volumes entering and exiting the US-101 freeway at Vineyard Avenue when compared to Oxnard Boulevard. Truck volumes tend to be higher during the AM peak hour when compared to the PM peak hour, and a greater number of trucks are traveling southbound on the US-101 than northbound during this time period.

### US-101 at Rose Avenue

The US-101/Rose Avenue interchange was recently reconfigured and enhanced to provide additional traffic capacity. The enhancement included the expansion and reconfiguration of the old interchange to increase the traffic capacity of the on and off-ramps, improve safety, and improve traffic flow. This interchange provides an important connection to the nearby Rose Shopping Center and Saint John's Regional Medical Center. The interchange is a partial cloverleaf design, providing on and off-ramps for both directions of the US-101 freeway. Rose Avenue is identified as a truck route by the City of Oxnard. The interchange is a recent design that is capable of serving truck traffic in the existing condition.

Adjacent land uses include residential to the northwest. The Oxnard Auto Center is located to the northeast of the interchange. Land uses on the south side of the interchange include the Rose Shopping Center to the southeast, additional retail and auto sales uses to the southwest, and the Saint John's Regional Medical Center further south along Rose Avenue.

Table 3-7 summarizes the volume of trucks observed to enter and exit the US-101 freeway at Rose Avenue during intersection turning movement counts made in January 2008, and identifies the percentage of trucks in comparison to the total volume of vehicles entering and exiting the freeway at this location. Trucks identified as entering the freeway are traveling from Rose Avenue to the northbound or southbound US-101. Trucks identified as exiting the freeway are using the off-ramps to exit the northbound and southbound US-101 to access Rose Avenue.

**Table 3-7 Truck Volumes Entering and Exiting US-101 at Rose Avenue**

| Time Period  | NB Trucks Entering Freeway | Percent of Total Volume | NB Trucks Exiting Freeway | Percent of Total Volume | SB Trucks Entering Freeway | Percent of Total Volume | SB Trucks Exiting Freeway | Percent of Total Volume |
|--------------|----------------------------|-------------------------|---------------------------|-------------------------|----------------------------|-------------------------|---------------------------|-------------------------|
| AM Peak Hour | 38                         | 4%                      | 22                        | 5%                      | 39                         | 7%                      | 29                        | 3%                      |
| PM Peak Hour | 25                         | 2%                      | 22                        | 3%                      | 18                         | 5%                      | 43                        | 4%                      |

Source: Intersection turning movement counts made in January 2008.

NB Trucks Entering Freeway: the number of trucks from Rose Avenue that enter the northbound US-101 onramp.

NB Trucks Exiting Freeway: the number of trucks from northbound US-101 that exit to Rose Avenue.

Truck volumes entering and exiting the US-101 freeway at the Rose Avenue interchange are comparable to the numbers at the Vineyard Avenue interchange. However, overall traffic volumes at Rose Avenue are higher than those at Vineyard Avenue, so trucks make up a smaller percentage of the total traffic entering and exiting the freeway at this location.

### US-101 at Rice Avenue

Unlike many of the other interchanges in the project study area, the US-101/Rice Avenue interchange has not been recently enhanced. The existing interchange is an old design that does not meet current Caltrans standards for interchange design. The northbound on and off-ramp is constrained by the proximity of Ventura Boulevard, which runs directly parallel to the northbound US-101 in this location. Truck access from northbound Rice Avenue to the northbound US-101 freeway is difficult due to the tight radius of the turn from Rice Avenue to Auto Center Drive and the on-ramp to the freeway. The southbound on-ramp also has a tight radius turn immediately prior to the freeway merge, limiting the speed of trucks entering the freeway and potentially resulting in a safety hazard caused by slow-moving

trucks merging onto the freeway lanes. The capacity of the interchange is further constrained by the existing narrow Rice Avenue overpass, which provides for only one lane of travel in each direction. In the existing condition, the interchange is not configured to serve heavy volumes of truck traffic.

A Project Study Report (PSR) for improvements to the Rice Avenue interchange has been prepared by Caltrans. The interchange is set to receive funding under the Proposition 1B Trade Corridor Improvement Fund (TCIF), which includes about \$2 billion for improvements to transportation facilities that are important goods movement corridors. Construction on the interchange improvements is scheduled to begin in 2010. The planned improvements would significantly improve the capacity, safety, and operation of the interchange.

Adjacent land uses include the Auto Center and some light industrial uses to the northwest. The northeast portion of the interchange is occupied by residential and agricultural uses. Land uses on the south side of the interchange include commercial office to the southwest and agricultural uses to the southeast.

Table 3-8 summarizes the volume of trucks observed to enter and exit the US-101 freeway at Rice Avenue during intersection turning movement counts made in January 2008, and identifies the percentage of trucks in comparison to the total volume of vehicles entering and exiting the freeway at this location. Trucks identified as entering the freeway are traveling from Rice Avenue to the northbound or southbound US-101. Trucks identified as exiting the freeway are using the off-ramps to exit the northbound and southbound US-101 to access Rice Avenue.

**Table 3-8 Truck Volumes Entering and Exiting US-101 at Rice Avenue**

| Time Period  | NB Trucks Entering Freeway | Percent of Total Volume | NB Trucks Exiting Freeway | Percent of Total Volume | SB Trucks Entering Freeway | Percent of Total Volume | SB Trucks Exiting Freeway | Percent of Total Volume |
|--------------|----------------------------|-------------------------|---------------------------|-------------------------|----------------------------|-------------------------|---------------------------|-------------------------|
| AM Peak Hour | 45                         | 10%                     | 49                        | 5%                      | 52                         | 5%                      | 59                        | 7%                      |
| PM Peak Hour | 28                         | 4%                      | 35                        | 4%                      | 33                         | 4%                      | 52                        | 11%                     |

Source: Intersection turning movement counts made in January 2008.

NB Trucks Entering Freeway: the number of trucks from Rice Avenue that enter the northbound US-101 onramp.

NB Trucks Exiting Freeway: the number of trucks from northbound US-101 that exit to Rice Avenue.

Rice Avenue serves the highest number of trucks among the four interchanges profiled in this report. Trucks also comprise the highest percentage of the total volume of vehicles entering and exiting the US-101 freeway at the interchange. The data supports the observation that Rice Avenue is a major truck route in the study area. However, the truck volumes obtained for other interchanges at Vineyard Avenue and Rose Avenue show that these streets also play an important role in providing access for trucks to and from the US-101 freeway.

## **4 STUDY AREA TRUCK TRIPS (ORIGINS AND DESTINATIONS)**

There are a variety of sources that generate truck trips in the study area. Prominent uses include the Port of Hueneme, NBVC, agricultural growers, automobile distributors, and the offshore oil industry. The daily operations, truck trip volumes, and travel patterns of each use are presented in this section.

### **4.1 PORT OF HUENEME TRUCK TRIPS**

The Port of Hueneme is owned and operated by the Oxnard Harbor District. The Harbor District estimates that about \$7 billion in cargo value moves through the Port of Hueneme on an annual basis. A significant portion of the cargo moving through the Port of Hueneme is comprised of automobiles and perishable agricultural goods (e.g. fruits). The Port is not a major cargo port like the Los Angeles and Long Beach Ports located in Los Angeles County. Instead, the port is focused on targeted cargo and goods markets such as automobiles and fruits which benefit from the quick access and limited delays associated with using a smaller, less congested port facility. The Port serves both fruit imports and exports. Agricultural goods imported through the Port also include liquid fertilizer. Major users of the Port include Del Monte Banana Company, Chiquita Banana Company, and Yara Fertilizer.

Several automobile manufacturers also import automobiles to the United States through the Port of Hueneme, including BMW, Volvo, Jaguar, Kia, and Hyundai. While the automobiles are off-loaded at the Port of Hueneme wharf, several of the auto manufacturers or auto distributors lease space on nearby NBVC property or at off-site locations. In most cases, automobiles are driven off the cargo ships in the Port, stored on site for a short period of time, and then driven off Port or NBVC property to off-site auto storage and distribution facilities located along Hueneme Road.

### **Historic Truck Volume Data**

The Port of Hueneme provided data on total truck trips and vehicle trips entering the main Port gate for the period from 1998 through 2007. The information for the last five years is summarized in Table 4-1. The full information provided by the Port of Hueneme is included in the Appendix of the report.



Table 4-1 Port of Hueneme Main Gate Average Daily Entering Traffic Volumes

| Month  | 2003       |       | 2004       |       | 2005       |       | 2006       |       | 2007       |       |
|--|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|  | Trucks     | Autos | Trucks     | Autos | Trucks     | Autos | Trucks     | Autos | Trucks     | Autos |
| January  | 184        | 619   | 124        | 340   | 122        | 305   | 163        | 398   | 147        | 449   |
| February   | 201        | 615   | 121        | 412   | 137        | 281   | 148        | 424   | 148        | 424   |
| March  | 197        | 639   | 131        | 401   | 137        | 287   | 148        | 394   | 139        | 414   |
| April  | 206        | 556   | 106        | 381   | 161        | 363   | 157        | 442   | 146        | 463   |
| May  | 147        | 474   | 110        | 463   | 163        | 369   | 131        | 414   | 145        | 437   |
| June   | 163        | 526   | 127        | 398   | 137        | 391   | 118        | 430   | 130        | 367   |
| July   | 130        | 442   | 148        | 376   | 116        | 352   | 140        | 415   | 119        | 364   |
| August   | 88         | 331   | 83         | 287   | 137        | 391   | 143        | 431   | 114        | 360   |
| September  | 81         | 85    | 76         | 278   | 116        | 352   | 117        | 412   | 109        | 309   |
| October  | 102        | 331   | 110        | 432   | 128        | 447   | 127        | 420   | 118        | 334   |
| November   | 119        | 257   | 149        | 408   | 138        | 362   | 132        | 412   | 154        | 337   |
| December   | 113        | 471   | 136        | 345   | 122        | 305   | 145        | 391   | 130        | 290   |
| Average Annual Daily ENTERING Trips                      | 144        | 445   | 118        | 377   | 134        | 350   | 139        | 415   | 125        | 379   |
| <b>Average Annual Daily Truck Trips (ENTER and EXIT)</b> | <b>288</b> |       | <b>236</b> |       | <b>268</b> |       | <b>278</b> |       | <b>250</b> |       |

Source: Port of Hueneme  
Average weekday (Monday through Friday) volumes

The data provided by the Port of Hueneme indicates that the Port generated an annual average of 125 entering truck trips per day in the year 2007, or a total of about 250 entering and exiting trucks per day. The main gate traffic data also suggests that the average daily truck volumes at Port have remained relatively stable during the previous five years. This pattern appears to reaffirm observations about the role of the Port of Hueneme as a niche port that serves a defined market for goods, and has not experienced the increase in cargo volumes displayed at the Ports of Los Angeles and Long Beach.

### Port of Hueneme Questionnaire

A questionnaire was developed in consultation with the Study TAC to obtain additional information regarding the number and type of trucks traveling to and from the Port of Hueneme. The objective of the questionnaire was to collect information directly from truck drivers regarding their origins and destinations, the routes they follow to travel between the Port facilities and the US-101 freeway, and the types of cargo that are commonly carried by the trucks. The questionnaire also provides truck trip generation rates for the Port, allowing for a comparison with the traffic data collected at nearby intersections and the main gate entry volumes provided by the Port. A sample of the survey is shown in Figure 4-1. The actual responses collected are provided in the Appendix of this report.

# 2008 Truck Survey

**About this Survey:** Your help in completing this survey is very important. Results from this survey will be used for a truck traffic study conducted by the Southern California Association of Governments to improve traffic flow and minimize congestion in vicinity of the Port of Hueneme. The more accurate the information you provide, the better we can identify measures to reduce congestion. The responses you give are kept strictly confidential and are used for research purposes only.

The purpose of this survey is to gather data for routes you choose to access destinations in Oxnard and Port Hueneme or US 101 freeway. Please follow the instructions below to complete the survey.

## Truck and Route Information

Please provide the following information about the truck you are driving and routes you will take today.

1. **Trucking Company Name** (If Applicable): \_\_\_\_\_
2. **Truck Size / Gross Weight** (Please Select One)
  - ☐ Light - Heavy (8,500 - 14,000 lbs.)
  - ☐ Medium - Heavy (14,001 - 33,000 lbs.)
  - ☐ Heavy - Heavy (33,001 lbs. and above)
  - ☐ Oversize Load
3. **Number of Axles** (Please Select One)
  - ☐ Single Unit: Specify Number of Axle \_\_\_\_\_
  - ☐ Semi (All tractor-trailer combination): Specify Number of Axle \_\_\_\_\_
  - ☐ Other Specify the Type and Number of Axle: \_\_\_\_\_
4. **Type of Cargo you are carrying today:** \_\_\_\_\_

**Coming From:** \_\_\_\_\_

(Please provide Address /City/ Zip Code)

**Going To:** \_\_\_\_\_

(Please provide Address /City/ Zip Code)

**Route you followed to reach Port of Hueneme if applicable.** (Please Select All Routes Used)

- ☐ Rice Avenue
- ☐ Hueneme Road
- ☐ Rose Avenue
- ☐ Oxnard Boulevard
- ☐ Ventura Road
- ☐ Victoria Avenue
- ☐ Other Specify: \_\_\_\_\_

**Route you plan to follow to access 101 Freeway if applicable.** (Please Select All Routes Used)

- ☐ Hueneme Road to Rice Avenue
- ☐ Ventura Road to Channel Island Boulevard to Victoria Avenue
- ☐ Ventura Road to Gonzales Road to Oxnard Boulevard
- ☐ Other Specify: \_\_\_\_\_

Sponsored by: Southern California Association of Governments (SCAG) | City of Port Hueneme | City of Oxnard | Port Hueneme

February 2008

Note: Spanish version of the questionnaire is located in the appendix

The surveys included questions regarding the trucking company, size of truck, type of cargo, origins and destinations, and the route that the truck driver planned to follow to travel between the Port and the US-101 freeway. The survey was provided to truck drivers in both English and Spanish versions.

The Port of Hueneme truck survey was conducted on weekdays (Monday through Friday) over a two week period from February 25, 2008 to March 7, 2008. The survey was administered by Port of Hueneme staff with the surveys distributed to truck drivers entering and exiting the Port. Surveys were conducted from 6:00 AM to 6:00 PM each day for a total of 10 days.

Port of Hueneme staff collected 1,245 responses over the 10-day survey period, which corresponds to an average of about 125 surveys per day. Historical truck volume data provided by the Port and summarized in Table 4-1 shows that the average number of trucks entering the Port at this time of year is about 140. Based on this estimated entering truck volume, the daily average of 125 written truck driver surveys per day corresponds to a response rate of about 90%.

The written truck trip distribution surveys asked a series of questions designed to obtain information from each driver regarding the following items:

- The typical size of the trucks and types of cargo carried
- The origin point of their trip to the Port of Hueneme
- Their destination after leaving the Port of Hueneme
- The streets they used to travel to the Port of Hueneme
- The streets they planned to travel after leaving the Port of Hueneme
- The data collected for each of the above items is summarized below.

#### **Truck Size, Type, and Cargo**

Truck size data was collected for each truck entering the Port of Hueneme. This information is summarized in Table 4-2.

**Table 4-2 Truck Size Data and Gross Weight Data**

| Truck Size / Gross Weight            | Percentage of Total | Trucks |
|--------------------------------------|---------------------|--------|
| Light - Heavy (8,500 - 14,000 lbs)   | 3.9%                | 47     |
| Medium - Heavy (14,001 - 33,000 lbs) | 7.4%                | 89     |
| Heavy - Heavy (33,001 lbs and above) | 84.3%               | 1,011  |
| Oversize Load                        | 4.4%                | 53     |
| Responses Received                   |                     | 1,200  |
| Declined to State/Not Available      |                     | 45     |

Source: Port of Hueneme Truck Survey Data

The 1,245 responses were collected over a 10-day period.

About 84% of the trucks traveling through the Port of Hueneme gate were classified as heavy size or larger (greater than 33,001 pounds). Around 4% of the trucks reported carrying an oversize load. The remaining 12% of trucks surveyed were classified as medium or light weight.

Related to the truck size data, information was also collected regarding the number of axles for each truck. The axle data for the Port of Hueneme survey is summarized in Table 4-3. A significant majority of the trucks, 91%, were classified semi-trucks. These results are different from the data collected for the NBVC survey where the proportion of single unit and semi-trucks are similar.

**Table 4-3 Truck Axle Data**

| Number of Axles                 | Percentage of Total | Trucks |
|---------------------------------|---------------------|--------|
| Single                          | 6.2%                | 76     |
| Semi                            | 90.7%               | 1,116  |
| Other                           | 3.2%                | 39     |
| Responses Received              |                     | 1,231  |
| Declined to State/Not Available |                     | 14     |

Source: Port of Hueneme Truck Survey Data

The 1,245 responses were collected over a 10-day period.

The type of cargo carried by individual trucks leaving the Port of Hueneme gate was also collected. Types of cargo were grouped into six categories as summarized in Table 4-4.

**Table 4-4 Type of Cargo**

| Type of Cargo                   | Percentage of Total | Trucks |
|---------------------------------|---------------------|--------|
| Perishables                     | 66.5%               | 674    |
| Non Perishables                 | 7.8%                | 79     |
| Auto                            | 2.2%                | 22     |
| Equipment                       | 9.4%                | 95     |
| Fertilizer                      | 5.9%                | 60     |
| Oil                             | 2.9%                | 29     |
| Other                           | 5.4%                | 55     |
| Responses Received              |                     | 1,014  |
| Declined to State/Not Available |                     | 231    |

Source: Port of Hueneme Truck Survey Data

The 1,245 responses were collected over a 10-day period.

As expected, perishable goods form the major component of the cargo transported by truck from the Port of Hueneme. No other cargo category exceeds 10% of the total.

#### **Truck Origins and Destinations**

Truck trip origin and destination data for the Port of Hueneme has been grouped into five primary categories. Local trips are those starting or ending in Ventura County. Southern California trips include Los Angeles, San Diego and other points south of Ventura County. Northern and Central California origins and destinations include Santa Barbara, Santa Maria and points north. Locations outside of California were allocated into northern and southern categories based on a reasonable estimate of the route that the driver would follow to access the Interstate Highway System. For example, Las Vegas was categorized as a southern destination since most drivers with this destination reported accessing the US-101 freeway to travel south, reaching Las Vegas via Los Angeles. A substantial portion of the truck trips originate within the vicinity of the Port of Hueneme, whereas trip destinations are evenly spread across the local area, Southern California and Northern California. The greatest regional trip destinations are located north of Port of Hueneme inside and outside of California. Table 4-5 summarizes the truck trip origins. Reported truck trip destinations are summarized in Table 4-6.

**Table 4-5 Truck Trip Origins**

| <b>Trip Origin Location</b>     | <b>Percentage of Total</b> | <b>Trucks</b> |
|---------------------------------|----------------------------|---------------|
| Local                           | 48.0%                      | 562           |
| Southern CA                     | 5.9%                       | 69            |
| Northern/Central CA             | 12.5%                      | 146           |
| South beyond CA                 | 4.4%                       | 52            |
| North beyond CA                 | 27.6%                      | 324           |
| Unknown                         | 1.6%                       | 19            |
| Responses Received              |                            | 1,172         |
| Declined to State/Not Available |                            | 73            |

Source: Port of Hueneme Truck Survey Data  
The 1,245 responses were collected over a 10-day period.

**Table 4-6 Truck Trip Destinations**

| <b>Trip Destination Location</b> | <b>Percentage of Trucks</b> | <b>Trucks</b> |
|----------------------------------|-----------------------------|---------------|
| Local                            | 21.2%                       | 254           |
| Southern CA                      | 21.4%                       | 257           |
| Northern/Central CA              | 18.7%                       | 224           |
| South beyond CA                  | 7.1%                        | 85            |
| North beyond CA                  | 29.9%                       | 358           |
| Unknown                          | 1.8%                        | 21            |
| Answered Questions               |                             | 1,199         |
| Skipped Questions                |                             | 46            |

Source: Port of Hueneme Truck Survey Data  
The 1,245 responses were collected over a 10-day period.

### **Truck Routes to and from US-101 Freeway**

Truck drivers were asked to provide information on the streets that they use to travel between the Port of Hueneme and the US-101 freeway. The objective of this question is to identify the most commonly used routes by trucks traveling to and from Port of Hueneme. Truck trip distribution for inbound trips to the Port of Hueneme is summarized in Table 4-7. Truck trip distribution information for trips traveling outbound from Port of Hueneme is reported in Table 4-8.

The survey data collected from the Port of Hueneme truck drivers shows Hueneme Road and Rice Avenue as the prime routes used to reach the Port main gate and to access the US-101 freeway. The results also suggest that most trucks traveling to and from the Port utilize the truck routes designated by the Cities of Port Hueneme and Oxnard.

**Table 4-7 Route Traveled to Access Port of Hueneme**

| Route                           | Percentage of Total | Trucks |
|---------------------------------|---------------------|--------|
| Rice Avenue                     | 54.0%               | 627    |
| Hueneme Road                    | 69.1%               | 802    |
| Rose Avenue                     | 2.5%                | 29     |
| Oxnard Boulevard                | 2.3%                | 27     |
| Ventura Road                    | 8.5%                | 99     |
| Victoria Avenue                 | 7.1%                | 82     |
| Other                           | 6.9%                | 80     |
| Responses Received              |                     | 1,161  |
| Declined to State/Not Available |                     | 84     |

Source: Port of Hueneme Truck Survey Data  
The 1,245 responses were collected over a 10-day period.

**Table 4-8 Route Traveled to Access US-101 Freeway**

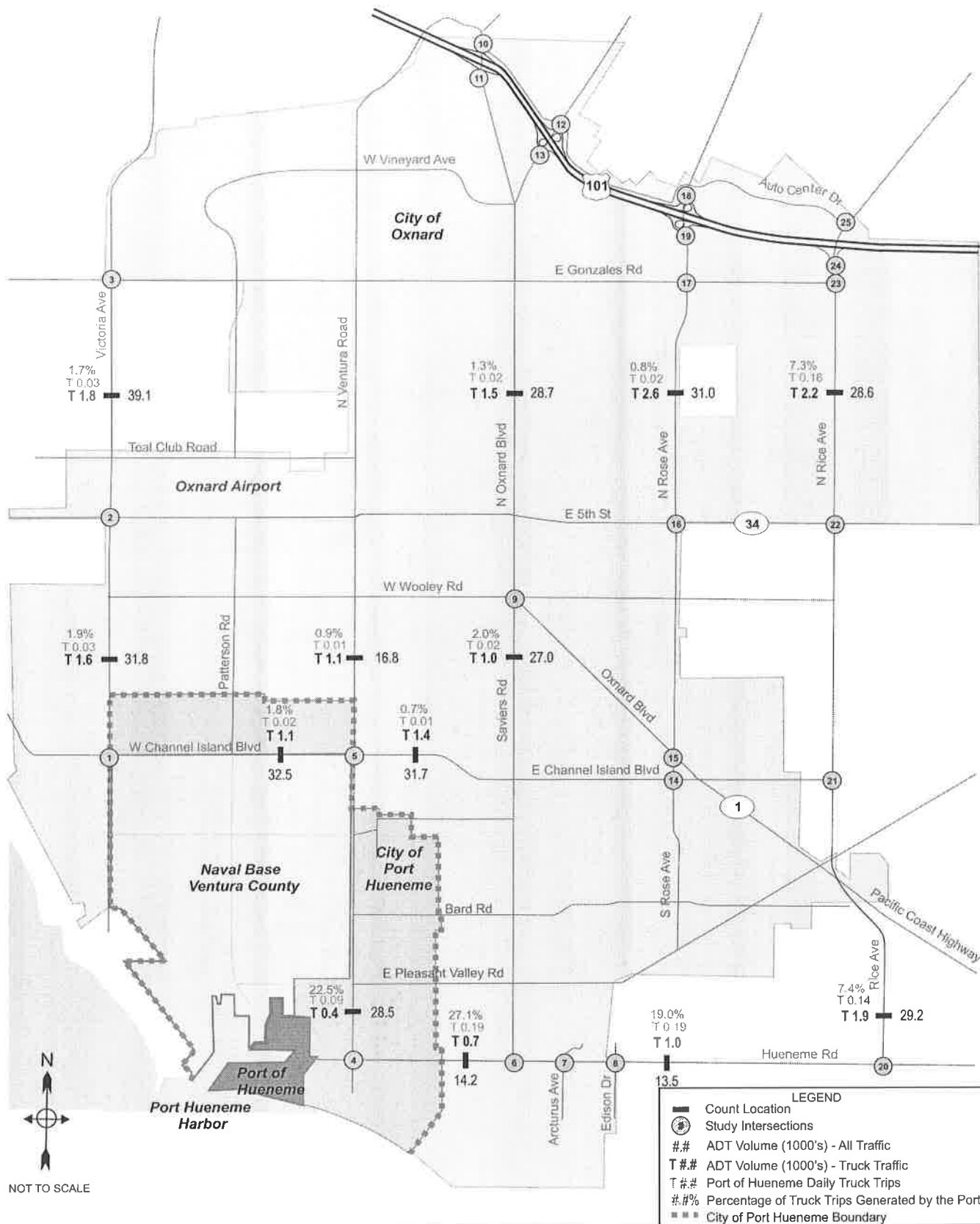
| Route   | Percentage of Total | Trucks |
|---|---------------------|--------|
| Hueneme Road to Rice Avenue                                 | 72.8%               | 786    |
| Ventura Road to Channel Island Boulevard to Victoria Avenue | 13.7%               | 148    |
| Ventura Road to Gonzales Road to Oxnard Boulevard           | 3.5%                | 38     |
| Other   | 17.8%               | 192    |
| Responses Received  |                     | 1,080  |
| Declined to State/Not Available                             |                     | 165    |

Source: Port of Hueneme Truck Survey Data  
The 1,245 responses were collected over a 10-day period.

### Port of Hueneme Truck Trip Distribution

Based on the data collected through the Port of Hueneme Truck Questionnaire, it is estimated that the Port generates an average of 140 entering and 140 exiting trips per day in the spring season. This is consistent with the historic data provided by the Port for this time of year. The questionnaire responses related to travel routes were used to estimate the typical daily distribution of the Port generated truck trips through the study area network. The daily Port truck volumes, the total daily truck traffic count volumes, and the percentage of the total truck trips attributable to the Port of Hueneme on selected arterials are shown in Figure 4-2.

The data collected for this study suggest that the Port generates approximately 25% of the truck traffic on Hueneme Road and Ventura Road in the immediate vicinity of the Port, and this percentage diminishes rapidly with increased distance from the Port. Most of the trucks traveling to and from the Port of Hueneme utilize Hueneme Road and Rice Avenue, with a small percentage traveling along other City of Oxnard designated truck routes throughout the study area.



## 4.2 NAVAL BASE VENTURA COUNTY TRUCK TRIPS

Naval Base Ventura County (NBVC) encompasses Navy operations at both the Port Hueneme site and the Point Mugu site, which is located southeast of the project study area. NBVC, Port Hueneme site, serves as a mobilization site for the Pacific Fleet as a result of good rail and truck access to the Port of Hueneme. The Port Hueneme site of NBVC is the focus of this study, as the Point Mugu site is located outside of the study area.

The Navy currently leases a portion of their Port Hueneme Base property to automobile distribution operators. In these cases, some automobiles are delivered to the Base via rail and then driven to off-site distribution facilities. Very few of the incoming vehicles are loaded onto auto carrier trucks and driven off-base on the trucks.

NBVC staff provided information regarding peak truck travel times into and out of the Base gates, peak days of the week for truck traffic and other relevant information. Based on the responses provided, it was determined that the Victoria Gate, located on the western side of NBVC along Victoria Avenue served a majority of the heavy trucks traveling to and from the base. Truck trips are typically generated both by military operations and commercial operators that are either delivering goods to military uses on NBVC or are leasing space on the base, such as Global Auto Processing Services (GAPS). Navy staff identified the peak truck trip generation time period as weekdays between 6:00 AM and 12:00 PM. Peak days for truck trips to and from NBVC are typically Monday through Thursday.

### Naval Base Ventura County Questionnaire

A questionnaire was developed for the NBVC to obtain information from truck drivers regarding the number and types of trucks traveling to and from Base, as well as their origins and destinations. The NBVC survey was performed over a three day period from March 4 to March 6, 2008. Surveys were conducted between 6:00 AM and 6:00 PM each day. The surveys were conducted by a data collection firm experienced in survey administration and collection. Staff members were stationed at the NBVC Victoria Gate, and performed oral interviews with the driver as each truck entered for security inspection. Given the multiple destinations possible for trucks on the base, it was determined in consultation with Navy staff that administering the survey at the NBVC entrance would be the most effective method for conducting the survey and ensuring a return of the survey materials.

A total of 276 responses were collected for NBVC trucks over the three-day survey period, which corresponds to an average of 92 responses per day. It is estimated that the NBVC survey had about a 90% response rate. Some truck drivers refused to participate due to time conflicts and others declined on the second and third day of the survey if they were making repeat trips to the base. Repeat trips were typically made by UPS or FedEx delivery trucks. The NBVC Truck Driver Questionnaire is included as Figure 4-3.



# 2008 NBVC Truck Survey

**About this Survey:** Your help in completing this survey is very important. Results from this survey will be used for a truck traffic study conducted by the Southern California Association of Governments to improve traffic flow and minimize congestion in vicinity of the Port of Hueneme. The more accurate the information you provide, the better we can identify measures to reduce congestion. The responses you give are kept strictly confidential and are used for research purposes only.

The purpose of this survey is to gather data for routes you choose to access destinations in Oxnard and Port Hueneme or US 101 freeway. Please follow the instructions below to complete the survey.

## Truck and Route Information

Please provide the following information about the truck you are driving and routes you will take today.

1. **Trucking Company Name** (if Applicable): \_\_\_\_\_
2. **Truck Size / Gross Weight** (Please Select One)
  - ☐ Light - Heavy (8,500 - 14,000 lbs.)
  - ☐ Medium - Heavy (14,001 - 33,000 lbs.)
  - ☐ Heavy - Heavy (33,001 lbs. and above)
  - ☐ Oversize Load
3. **Number of Axles** (Please Select One)
  - ☐ Single Unit: Specify Number of Axle \_\_\_\_\_
  - ☐ Semi (All tractor-trailer combination): Specify Number of Axle \_\_\_\_\_
  - ☐ Other Specify the Type and Number of Axle: \_\_\_\_\_
4. **Type of Cargo you are carrying today:**
  - ☐ Perishables
  - ☐ Non-Perishable goods
  - ☐ Construction
  - ☐ Auto
  - ☐ Other

**Coming From** (What City): \_\_\_\_\_

**Going To** (What City, when leaving the Base): \_\_\_\_\_

**Route you followed to reach Port of Hueneme if applicable.** (Please Select All Routes Used)

- ☐ Rice Avenue
- ☐ Hueneme Road
- ☐ Rose Avenue
- ☐ Oxnard Boulevard
- ☐ Ventura Road
- ☐ Victoria Avenue
- ☐ Other Specify: \_\_\_\_\_

**Route you plan to follow to access 101 Freeway if applicable.** (Please Select All Routes Used)

- ☐ Hueneme Road to Rice Avenue
- ☐ Ventura Road to Channel Island Boulevard to Victoria Avenue
- ☐ Ventura Road to Gonzales Road to Oxnard Boulevard
- ☐ Other Specify: \_\_\_\_\_

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February 2008

Note: Spanish version of the questionnaire is located in the appendix

### **NBVC Truck Trip Generation**

An average of 92 surveys responses were collected per day over the three-day survey period. Assuming that each truck that enters the NBVC Victoria Gate also exits the base on the same day, an average of 184 truck trips are generated by NBVC out at the Victoria Gate on a daily basis. This is slightly less than the average daily trip generation rate observed for the Port of Hueneme. The time of day was noted for each NBVC survey response. Table 4-9 summarizes the time period data collected for truck entry movements to NBVC.

**Table 4-9 NBVC Truck Driver Questionnaire Response Times**

| Hours               | Number of Trucks | Percent of Total Trucks |
|---------------------|------------------|-------------------------|
| 6:00 AM - 8:00 AM   | 84               | 32%                     |
| 8:01 AM - 10:00 AM  | 52               | 20%                     |
| 10:01 AM - 12:00 PM | 30               | 11%                     |
| 12:01 PM - 2:00 PM  | 51               | 19%                     |
| 2:01 PM - 4:00 PM   | 31               | 12%                     |
| 4:01 PM - 6:00 PM   | 17               | 6%                      |
| Total Responses     |                  | 265                     |
| Unknown Time        |                  | 11                      |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

Of the trucks surveyed, about half entered NBVC between the hours of 6:00 AM and 10:00 AM, with 32% traveling during the AM peak period of 6:00 AM to 8:00 AM. Only 6% of the trucks surveyed entered NBVC during the PM peak period between 4:00 PM and 6:00 PM.

### **NBVC Truck Trip Distribution**

Most of the trucks traveling to and from the Port of Hueneme are related to goods shipped in and out of the Port. The trucks traveling to and from NBVC have a greater variety of trip purposes ranging from local package and food deliveries, construction activities, military applications, and goods movement. In the case of the NBVC survey, the information collected regarding the trucking company name and the origins and destinations of each truck become more important in order to draw conclusions about the types of trucks traveling through the NBVC Victoria Gate. The series of questions designed to obtain information from each driver included the following items:

- Trucking company name
- The typical size of the trucks and types of cargo carried
- The origin point of their trip to the Base
- Their destination after leaving the Base
- The streets they used to travel to the Base
- The streets they planned to travel after leaving the Base

The data collected for each of these items is summarized in the following section.

**Truck Company, Size, Type, and Cargo**

The analysis of the types of trucks traveling to and from NBVC included two components. The first element is a review of the trucking company name recorded as part of the survey. This information was then combined with responses received regarding the origin and destination of the truck to determine if the truck was a local delivery-related vehicle or truck that was engaged in more of freight-related activity such as auto transport. The trucks participating in the survey were allocated into two primary groups based on the company and origins and destinations. Local trucks are considered to be trucks making local deliveries (ex: FedEx, food and beverage companies, etc). These trips were observed to typically involve smaller trucks with origins and destinations in the Port Hueneme, Oxnard, Ventura, and Camarillo area. Regional trucks were typically larger trucks that were engaged in some form of goods movement (auto shipping, etc) or were making a larger delivery to NBVC facilities. Table 4-10 summarizes the trucking company data by local and regional sources.

**Table 4-10 Trucking Company Data**

| Type of Trip                   | Percentage of Total | Responses Received |
|--------------------------------|---------------------|--------------------|
| Local Delivery                 | 35%                 | 94                 |
| Regional/Goods-Freight Related | 62%                 | 168                |
| Unknown                        | 3%                  | 8                  |
| Responses Received             |                     | 270                |
| Declined to State              |                     | 6                  |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

The majority of trucks surveyed made regional trips, meaning that the driver reported an origin or destination outside of the Port Hueneme, Oxnard, and Ventura area.

Truck size data was also collected for each truck entering the NBVC Victoria Gate. This information is summarized in Table 4-11.

**Table 4-11 Truck Size Data**

| Truck Size / Gross Weight    | Percentage of Total | Trucks |
|------------------------------|---------------------|--------|
| Light (8,500 - 14,000 lbs)   | 20%                 | 53     |
| Medium (14,001 - 33,000 lbs) | 39%                 | 103    |
| Heavy (33,001 lbs and above) | 41%                 | 107    |
| Oversize Load                | 0%                  | 0      |
| Responses Received           |                     | 263    |
| Declined to State            |                     | 13     |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

The majority of trucks traveling through the NBVC Victoria Gate were classified as medium size or larger (greater than 14,001 pounds). The remaining 20% of trucks surveyed were classified as light weight, and none reported carrying an oversize load. These results are different from the data collected from

the Port of Hueneme survey, where the significant majority of trucks surveyed were classified as heavy (over 33,001 pounds).

Information was also collected regarding the number of axles for each truck. The axle data for the NBVC survey is summarized in Table 4-12.

**Table 4-12 Number of Axles**

| Number of Axles                         | Percentage of Total | Trucks |
|---|---------------------|--------|
| Single Unit                             | 43%                 | 114    |
| Semi (all tractor-trailer combinations) | 56%                 | 151    |
| Other                                   | 1%                  | 3      |
| Responses Received                      |                     | 268    |
| Declined to State                       |                     | 8      |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

Similar to the truck size data, the truck axle data suggests a greater diversity of truck types accessing NBVC when compared to the Port of Hueneme. The distribution between single unit trucks and semi-trucks is substantially closer in the NBVC survey results.

Cargo type data was also collected for each truck entering the NBVC Victoria Gate. The survey included five categories, with military cargo allocated to the "Other" category so as to avoid security issues. The cargo data from the NBVC survey is summarized in Table 4-13.

**Table 4-13 Type of Cargo**

| Type of Cargo        | Percentage of Total | Trucks |
|----------------------|---------------------|--------|
| Perishables          | 16%                 | 43     |
| Non-Perishable goods | 6%                  | 17     |
| Construction         | 6%                  | 16     |
| Auto                 | 27%                 | 72     |
| Other                | 44%                 | 116    |
| Responses Received   |                     | 264    |
| Declined to State    |                     | 12     |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

The NBVC data shows a greater percentage of trucks involved in the transport of autos when compared to the Port of Hueneme. Perishable goods, which are a major component of truck trips traveling to and from the Port of Hueneme, are a much smaller component of truck trips at NBVC. Additionally, many of the trucks classified into the perishables category were engaged in delivering items such as groceries or produce to the base retail outlets rather than shipping the goods as cargo. A substantial majority of the freight or goods related cargo accessing the NBVC Victoria Gate were observed to be auto transport related. This observation would be expected given the presence of Global Auto Processing Services (GAPS) operating on the base under a lease with the Navy.

### **Truck Origins and Destinations**

Truck trip origin and destination data for NBVC has been grouped into five primary categories. Local trips are those starting or ending in Ventura County. Southern California trips include Los Angeles, San Diego and other points south of Ventura County. Northern and Central California origins and destinations include Santa Barbara, Santa Maria and points north. Locations outside of California were allocated into northern and southern categories based on a reasonable estimate of the route that the driver would follow to access the Interstate Highway System. For example, Las Vegas was categorized as a southern destination since most drivers with this destination reporting accessing the US-101 freeway to travel south, reaching Las Vegas via Los Angeles. Table 4-14 summarizes the truck trip origins. Reported truck trip destinations are summarized in Table 4-15.

**Table 4-14 NBVC Truck Trip Origins**

| Coming From                   | Percentage of Total | Trucks |
|-------------------------------|---------------------|--------|
| Local                         | 42%                 | 109    |
| Southern California           | 37%                 | 97     |
| Northern / Central California | 9%                  | 24     |
| South beyond California       | 3%                  | 9      |
| North beyond California       | 7%                  | 17     |
| Unknown                       | 1%                  | 3      |
| Responses Received            |                     | 259    |
| Declined to State             |                     | 17     |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

**Table 4-15 Truck Trip Destinations**

| Going to                      | Percentage of Total | Trucks |
|-------------------------------|---------------------|--------|
| Local                         | 45%                 | 114    |
| Southern California           | 37%                 | 94     |
| Northern / Central California | 10%                 | 26     |
| South beyond California       | 1%                  | 3      |
| North beyond California       | 2%                  | 4      |
| Unknown                       | 6%                  | 15     |
| Responses Received            |                     | 256    |
| Declined to State             |                     | 20     |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

When the NBVC survey data is compared to the survey data collected from the Port of Hueneme truck survey, some similarities and some differences between truck distribution patterns become apparent. Similarities include the percentage of local origins for trucks traveling to each facility. Both surveys

reported between 40% and 50% of trip origins in local (Ventura County) area. In contrast, NBVC survey shows that a much higher percentage trucks traveling both to and from the base have an origin or destination in Southern California (about 37% for both directions of travel). The Port of Hueneme survey showed a much lower percentage of truck origins from Southern California (about 6%) and destinations in Southern California (about 21%). Destinations to the north, in Central California, Northern California, and beyond the State comprise a significant percentage of truck trips destinations for the Port of Hueneme (48.6%).

### **Truck Trip Distribution**

Truck drivers were asked to provide information on the streets that they used to travel between the NBVC Victoria Gate and the US-101 freeway for their trip on the day of the survey. The objective of this question is to identify the most commonly used routes by trucks, particularly regional cargo trucks, traveling to and from NBVC. Truck drivers were asked to provide the origin of their trip to NBVC and the destination that they would be traveling to once they left NBVC. Truck trip distribution for inbound trips to NBVC is summarized in Table 4-16. Truck trip distribution information for trips traveling outbound from NBVC is reported in Table 4-17. The total responses for each route add up to more than 100 percent due to truck drivers reporting multiple routes. For example, a driver may follow a route along Hueneme Road and Rice Avenue to access US-101. In this case, both streets are reported in the survey.

**Table 4-16 Route Traveled to Access NBVC**

| Route              | Percentage of Total | Trucks |
|--------------------|---------------------|--------|
| Rice Avenue        | 5%                  | 12     |
| Hueneme Road       | 5%                  | 13     |
| Rose Avenue        | 2%                  | 5      |
| Oxnard Boulevard   | 1%                  | 2      |
| Ventura Road       | 4%                  | 11     |
| Victoria Avenue    | 64%                 | 167    |
| Other              | 32%                 | 82     |
| Responses Received |                     | 259    |
| Declined to State  |                     | 17     |

Source: NBVC Truck Survey Data  
The 276 survey responses were collected over a three-day period.

**Table 4-17 Route Traveled to Access US-101 Freeway**

| Route   | Percentage of Total | Trucks |
|---|---------------------|--------|
| Hueneme Road to Rice Avenue                       | 5%                  | 14     |
| Victoria Avenue                                   | 54%                 | 139    |
| Ventura Road to Gonzales Road to Oxnard Boulevard | 3%                  | 7      |
| Other   | 40%                 | 103    |

| Route              | Percentage of Total | Trucks |
|--------------------|---------------------|--------|
| Responses Received |                     | 257    |
| Declined to State  |                     | 19     |

Source: NBVC Truck Survey Data

The 276 survey responses were collected over a three-day period.

The survey data collected from NBVC shows a much higher rate of use of Victoria Avenue to access the US-101 freeway compared to trucks traveling to and from the Port of Hueneme. The high percentage of routes classified as "Other" reflects the higher percentage of local trucks accessing the NBVC Victoria Gate compared to the Port of Hueneme. Many of the local truck trips, remaining in the Port Hueneme, Oxnard, and Ventura area did not report a specific route on their survey, so it is not possible to allocate these local trips to a specific corridor. However, the regional truck trips do show strong usage of the Victoria Avenue corridor for traveling between NBVC and the US-101 freeway.

### NBVC Truck Trip Distribution

Based on the data collected through the NBVC Truck Questionnaire, it is estimated that the Base generates an average of 92 entering and 92 exiting trips per day in the spring season. The questionnaire responses related to travel routes were used to estimate the typical daily distribution of the NBVC generated truck trips through the study area network. The daily Base truck volumes, the total daily truck traffic count volumes, and the percentage of the total truck trips attributable to the Base on selected arterials are shown in Figure 4-4.

The data collected for this study suggest that most of the trucks traveling to and from the Base utilize Victoria Avenue, and the Base generates approximately 5% of the truck traffic volume on Victoria Avenue. About 40% of the truck traffic generated by NBVC has origins and destinations in the local area, and may utilize a variety of different truck routes. Less than 1% of the truck volume on Hueneme Road and Rice Road is estimated to be generated by the Base.





### 4.3 TELEPHONE SURVEY RESULTS

Private businesses also generate daily truck trips throughout the Cities of Port Hueneme and Oxnard. Major generators include agricultural growers and distributors, automobile distributors, off-shore oil supply companies, and other uses. A small sample of private businesses were surveyed by telephone for this study to identify the number of truck trips generated by the businesses, the distribution of the trips on the surrounding street network and the peak time periods, days, and months of truck activity for each business.

The private business survey is not intended to be an exhaustive review of every business that generates truck trips. Instead, this information is intended to supplement the daily and peak hour traffic and truck volumes presented earlier in this report. The survey results provide a snapshot of selected land uses that generate truck trips and seek to provide the reader with an understanding of diversity of truck trip generation rates, the distribution of trucks on major streets in the study area, and the peak time periods when trucks would travel through the study area.

Port of Hueneme staff provided contact information for 16 different private companies that maintain operations in or near the study area. These companies either typically do business with the Port, generating truck trips between their base of operation and the Port, or operate businesses (agriculture, sod farms, automobile distribution) that generate a substantial number of truck trips on a daily basis. Several of the businesses generate truck trips that originate at the Port of Hueneme, for example Del Monte Foods picks up shipments of bananas at the Port and then transports them throughout the Western United States.

Automobile transport operations can provide one example of how the supply chain works and where truck trips associated with this activity enter the study area roadway network. Pacific Vehicle Processors is a major auto transport company operating in the study area. This business stores automobiles that are shipped into the Port of Hueneme at off-site private facilities located along Hueneme Road. In this case, automobiles are off-loaded from ships and then driven to the private off-site storage lot located along Hueneme Road. The trip from the Port to the private storage lot is an auto trip, not a truck trip, and is therefore not considered in this analysis. At the off-site storage facility, automobiles are then loaded onto trucks and transported to various destinations in the Western United States. The truck trip originates from the off-site facility rather than the Port of Hueneme.

A second example of an off-site business with operations that are interrelated to the Port of Hueneme is Channel Island Logistics. This business operates a produce storage and distribution operation located in study area along Hueneme Road. The operations conducted by Channel Islands Logistics generate truck trips that are of interest to this study effort. In this case, the truck trips generated by this business have two components. The first is a trip between the off-site location and the Port of Hueneme (as well as the return trip), where the trucks are picking up a load of produce cargo directly from the Port and transporting to the off-site storage/distribution facility. This trip is accounted for in the Port of Hueneme gate and survey data. The second component is the truck trip generated from the off-site facility to a regional destination outside of the study area. This trip would involve a potential greater impact to the study area roadway network since it would involve traveling a greater distance and involve accessing the US-101 freeway.

Making a distinction between the two types of private business truck trips identified above and those trips generated by the Port of Hueneme and NBVC is important in order to have an understanding of the various origin points that truck trips have in the study area. In this case, the regional truck trips generated by businesses like Pacific Vehicle Processors and Channel Island Logistics traveling to and from US-101 do not have origins on Port of Hueneme or NBVC property, but the activities maintained by the businesses that create the truck trips are directly related to cargo that enters the study area through the Port.

The third type of private business operating in the study area is an operation that generates a substantial number of truck trips on a daily basis, but is not related to the Port of Hueneme/NBVC activities. An example of this type of business is Southland Sod Farms, which maintains a large sod farm located west of the Hueneme Road and Rice Avenue intersection. Truck trips generated by this business utilize the same truck routes and roadways as truck trips generated by the Port of Hueneme and NBVC, but these truck trips have no relationship to the port area. There are numerous other private businesses in the study area that would also fall into this third category, from small generators such as grocery stores and big-box home improvement stores to other industrial land uses such as the distribution centers located along Rice Road in Oxnard.

Representatives from each of the 16 companies were contacted by IBI Group via telephone, and asked a series of survey questions designed to obtain information regarding the average number of daily truck trips generated by the business, the distribution of the truck trips, major destinations, and the peak hours, days, and months for truck operations. Fourteen of the contacted companies agreed to participate in the survey and provided answers to the survey questions. The companies that participated in the survey are:

1. AG RX
2. BMW North America
3. Channel Islands Logistics
4. Chiquita Fresh
5. Del Monte Fresh Produce
6. General Petroleum
7. Hoskins Brothers Trucking
8. OST Trucks and Cranes
9. Pacific Fruits-Bonita
10. Southland SOD Farms
11. T&T Truck and Crane Service
12. Terminal Freezers
13. Waggoners Trucking
14. Yara North America

The following companies were contacted via telephone about the survey, but declined to participate:

1. Pacific Vehicle Processors
2. Sysco Foods of Ventura

Table 4-18 summarizes the information collected from each of the contacted businesses. Figure 4-5 shows the approximate location of each company contacted for this survey. A sample of the survey is shown in Figure 4-6. The routes that each company reported to be used by their trucks are identified in Figures 4-7 through 4-20.

While a variety of routes are used by companies for travel to and from regional origins and destinations, the most common route used by drivers to access the US-101 is Hueneme Road to Rice Avenue. Companies also reported various other routes taken by drivers to access the 101 freeway, including Rose Avenue, Ventura Road, Las Posas Road and Pleasant Valley Road. About half of the companies reported that their drivers sometimes stop when getting on or off the US-101 freeway at a gas station, small shopping center or restaurant close to the freeway. On average, companies reported about 50 truck trips per day as a high estimate. The number of truck trips per day reported by each company ranged from 12 trips to a maximum of 100 trips.

Table 4-18. Telephone Survey Data Summary

| Business Contacted        | Type of Cargo   | Origin/ Destination                            | Typical Route   | Intermediate Stops                                       | Peak Seasonal Activity        | Peak Weekly Activity            | Peak Activity Time Period                 | Typical Truck Size       | Maximum Number Daily Truck Trips |
|---------------------------|-----------------|--|---|--|-------------------------------|---------------------------------|---|--------------------------|----------------------------------|
| Southland SOD Farms       | Sod, Fertilizer | Greater LA area                                | North-Rice Avenue<br>South-Hueneme Road to Lewis            | Doughnut shop along Pleasant Valley right before freeway | Long peak May-Sept            | Saturday morning<br>Friday      | 2 am -5 am                                | 18 wheeler<br>80,000 lbs | 80 trucks<br>160 total trips     |
| AG RX                     | Agricultural    | Northern Santa Barbara County                  | Rose Avenue   | Don't know   | May-October but Mostly stable | No—Mon-Fri                      | Before 3:00pm                             | 8-10 tons, 6 tons        | 50-60 max                        |
| Waggoners Trucking        | BMW automobiles | Nine Western states                            | Rice Avenue   | No stops   | Sept-Dec                      | No                              | Afternoon                                 | 8 car hauler             | 50 trucks                        |
| Hoskins Brothers Trucking | Mostly Paper    | North-Salinas<br>Ventura<br>South- Los Angeles | North and South-Hueneme to Rice,<br>One truck takes Ventura | Las Posas by US-101                                      | None                          | 5 days/week<br>Sat/Sun not busy | 4am-7am and early afternoon around 3:00pm | 3 axel-80,000 lbs.       | 12-13 a day                      |
| Channel Islands Logistics | Fresh Fruit     | Western United States                          | 50% take Rice<br>50% take Las Posas                         | Mac Valley Oil (Sturgis/Del Norte)                       | Nov/Dec-May                   | Mon, Tues, Fri                  | Mid Morning (9-11)<br>Evening (3-5:30)    | 48-53 feet               | 70-80 max                        |
| Pacific Fruit Bonita      | Agricultural    | Western United States                          | Hueneme Road/Rice Avenue                                    | Don't know   | None                          | No                              | 8-4, 7-8am loading and right after lunch  | 42-56 feet               | 25-30 trucks                     |

CITIES OF PORT HUENEME AND OXNARD TRUCK TRAFFIC STUDY

| Business Contacted          | Type of Cargo                | Origin/ Destination   | Typical Route                             | Intermediate Stops                                 | Peak Seasonal Activity      | Peak Weekly Activity            | Peak Activity Time Period  | Typical Truck Size                    | Maximum Number Daily Truck Trips             |
|-----------------------------|------------------------------|-----------------------|---|--|-----------------------------|---------------------------------|--|---------------------------------------|--|
| Del Monte                   | Agricultural                 | Pacific Northwest     | Hueneme Road to Rice Avenue               | Direct   | Dec-May                     | Mon, Tues, Fri                  | 8am - 4:30pm   | 45-53 feet trailers                   | 70-80 day, 400 week                          |
| Yara North America          | Liquid Fertilizer            | Throughout California | Hueneme Road to Rice Avenue               | Hueneme Road, Mexican Rest. 2 miles east of Harbor | Spring, March-May/June      | Mon-Fri, 24/7                   | No Peak Period<br>24/7, 6am-5pm                                      | Tanker, 40 feet, Single/double Tanker | Slow time-15/day<br>Busy time-70-100 Per day |
| T & T Truck & Crane Service | N/A                          | Multiple destinations | Ventura to Victoria or Hueneme to Rice    | Shopping Center at 5 <sup>th</sup> /Victoria       | None                        | No, 7 days                      | No, 24/7   | Class 8 semis - 5 axel                | 20 - 25                                      |
| Chiquita Fresh              | Agricultural - bananas       | Multiple destinations | Hueneme Road to Rice Avenue               | Don't know   | Fall season                 | Monday & Friday                 | 8 am - 5pm   | 18 wheeler semis                      | 50 trucks                                    |
| BMW North America           | Automobiles                  | Western United States | Most trucks – Hueneme Road to Rice Avenue | Gas station on Rice near US-101                    | All months except September | Depends on arrival of shipments | 24 hours – Local cargo loads during day and regional cargo at night. | 53 foot trailers                      | 38   |
| Terminal Freezers           | Frozen fruits and vegetables | Multiple Destinations | Rose to 101 (5 <sup>th</sup> to Del Norte | MacValley Oil @ Sturgis/Del Norte                  | May to June (8 weeks)       | Friday                          | 6 am to 5 pm   | 45 foot refrigerated trailers         | 20   |

CITIES OF PORT HUENEME AND OXNARD TRUCK TRAFFIC STUDY

| Business Contacted  | Type of Cargo                    | Origin/ Destination             | Typical Route                | Intermediate Stops   | Peak Seasonal Activity | Peak Weekly Activity | Peak Activity Time Period | Typical Truck Size                  | Maximum Number Daily Truck Trips |
|---------------------|----------------------------------|---------------------------------|------------------------------|--|------------------------|----------------------|---------------------------|-------------------------------------|----------------------------------|
| General Petroleum   | Fuel, gasoline, diesel, chemical | Central and Southern California | Vineyard to US-101 or SR-126 | Don't usually stop, only sometimes at donut shop near Vineyard/101 | Summer                 | Middle of the week   | 5 am to 5 pm              | 3 axel fuel trucks, flat bed trucks | 8 trucks – 16 trips maximum      |
| OST Trucks & Cranes | Various                          | Multiple Destinations           | Hueneme Road to Rice Avenue  | No stops   | None                   | Mon, Tues, Wed       | 8 am to 5 pm              | 50 foot trailers                    | 50 to 60 maximum                 |



Business: \_\_\_\_\_

Contact Person: \_\_\_\_\_

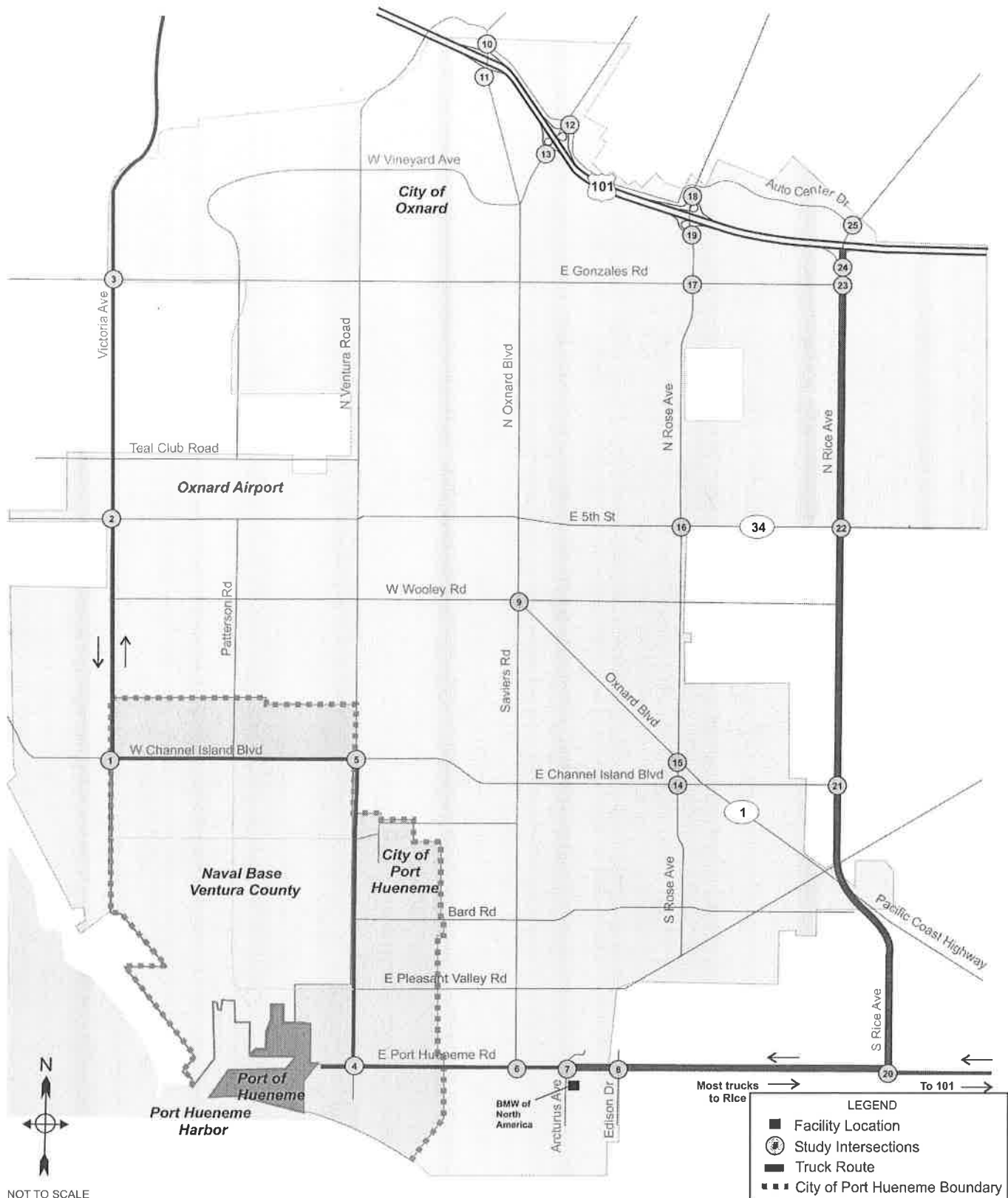
Phone Number: \_\_\_\_\_

Introduction: We are working with the City of Hueneme and the Port of Hueneme on a Truck Traffic Study. As part of the study we are conducting research on how trucks travel through the area surrounding Port of Hueneme. Port of Hueneme has provided your contact. The information you provide will be used only for the purpose of this study.

1. Type of Cargo handled through your facility?
2. Where are Origin / Destination located – local or regional?
3. Typical routes their drivers follow to:
  - To access 101 freeway – for outgoing trucks?
  - To reach their facility – for incoming trucks?
4. Do truck drivers like to stop for refreshments getting on/ off from the 101 freeway? Where?
5. Seasonality? Peak activity period during the year?
6. Peak days of activities during the week?
7. Peak time periods of activities during the day?
8. Typical Truck Size?
9. Average / maximum number of truck trips in a day?

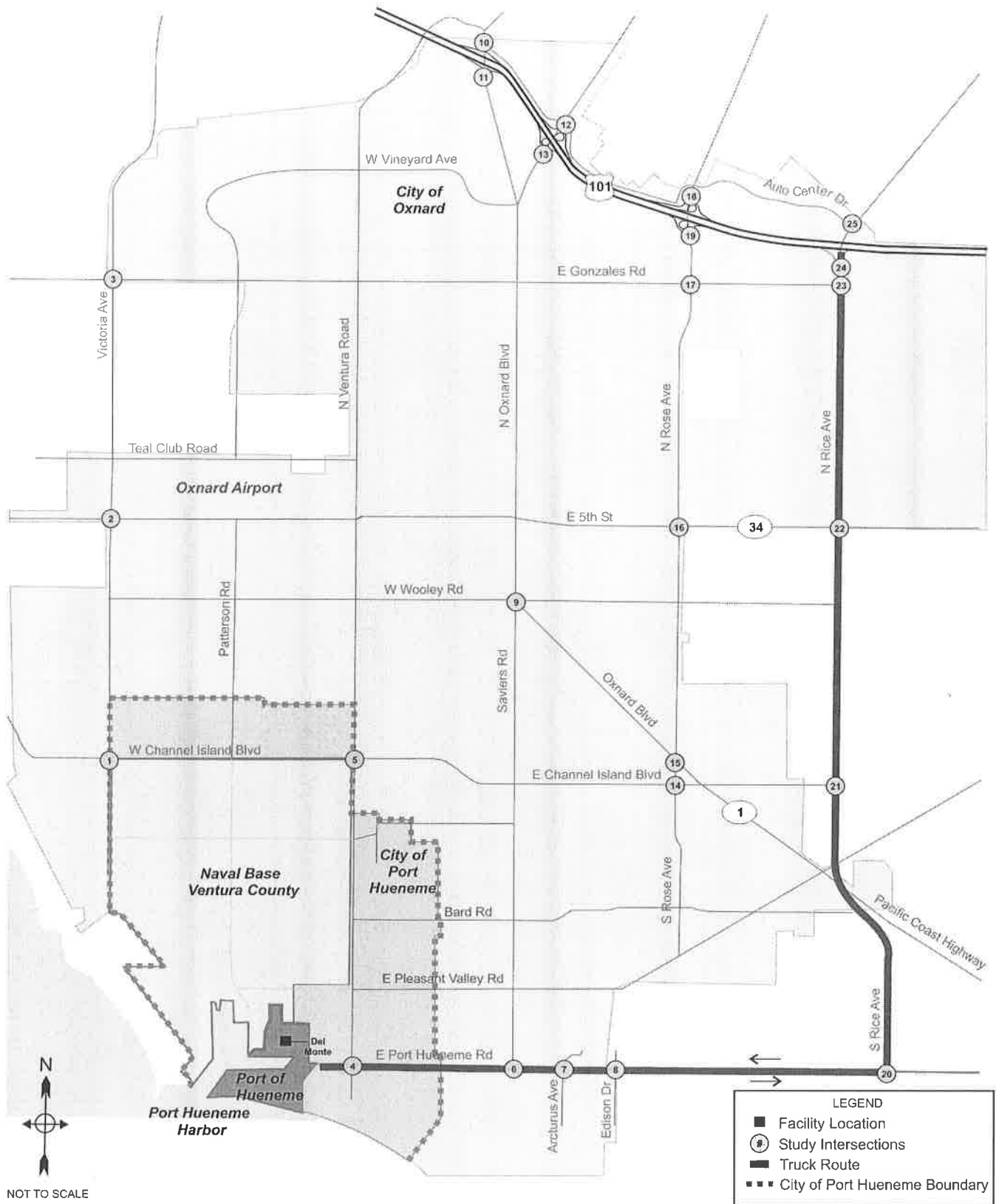




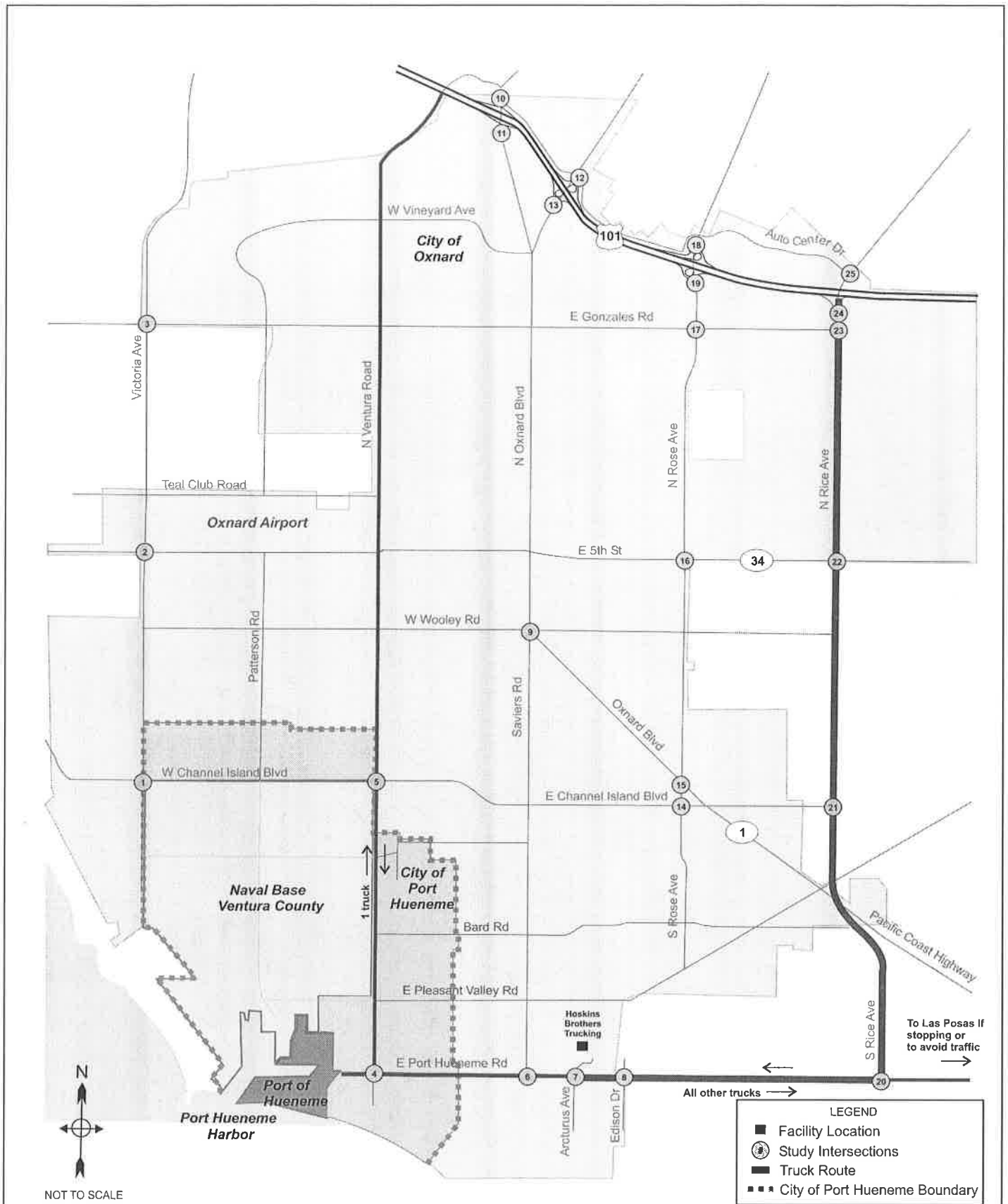


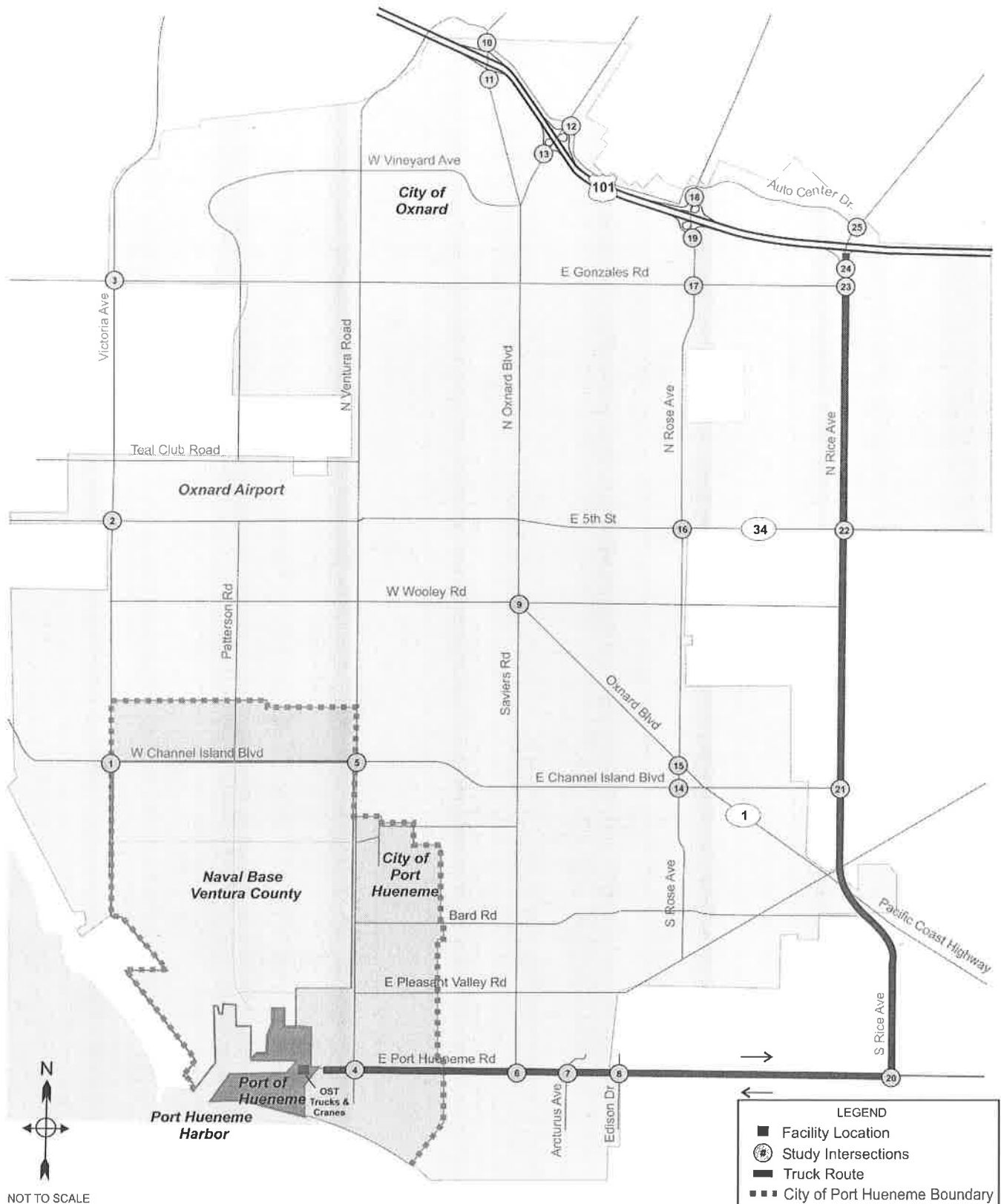


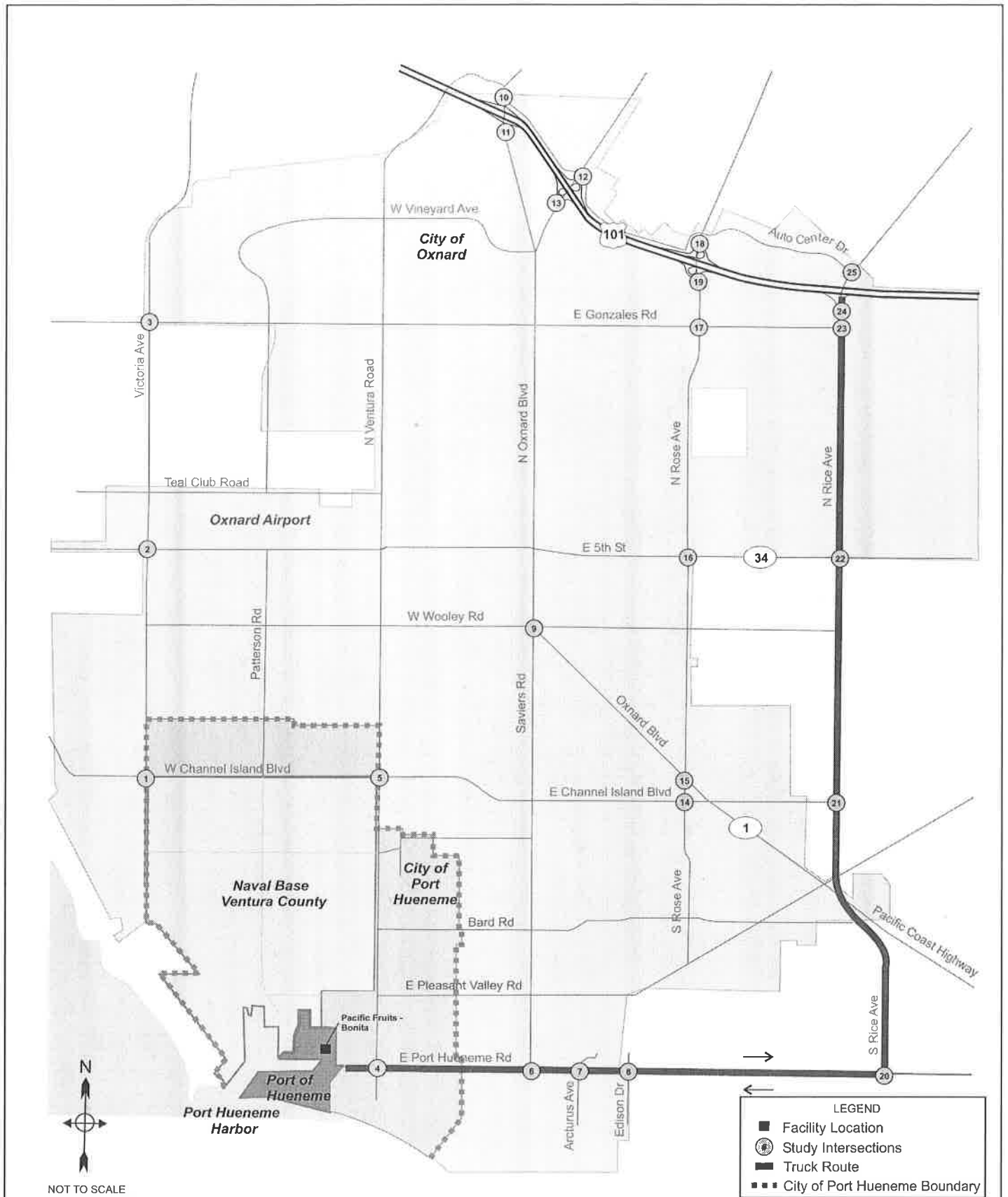






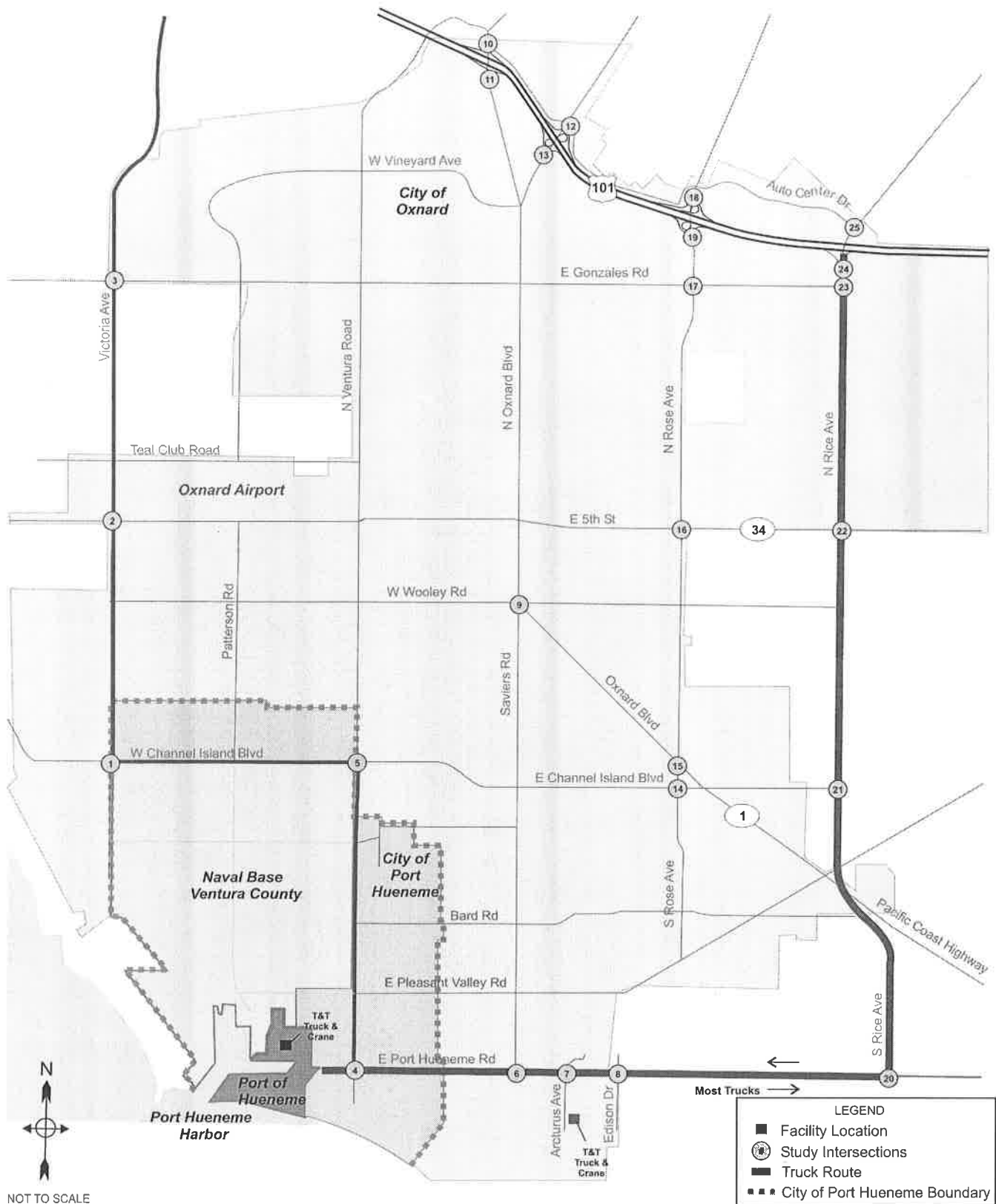


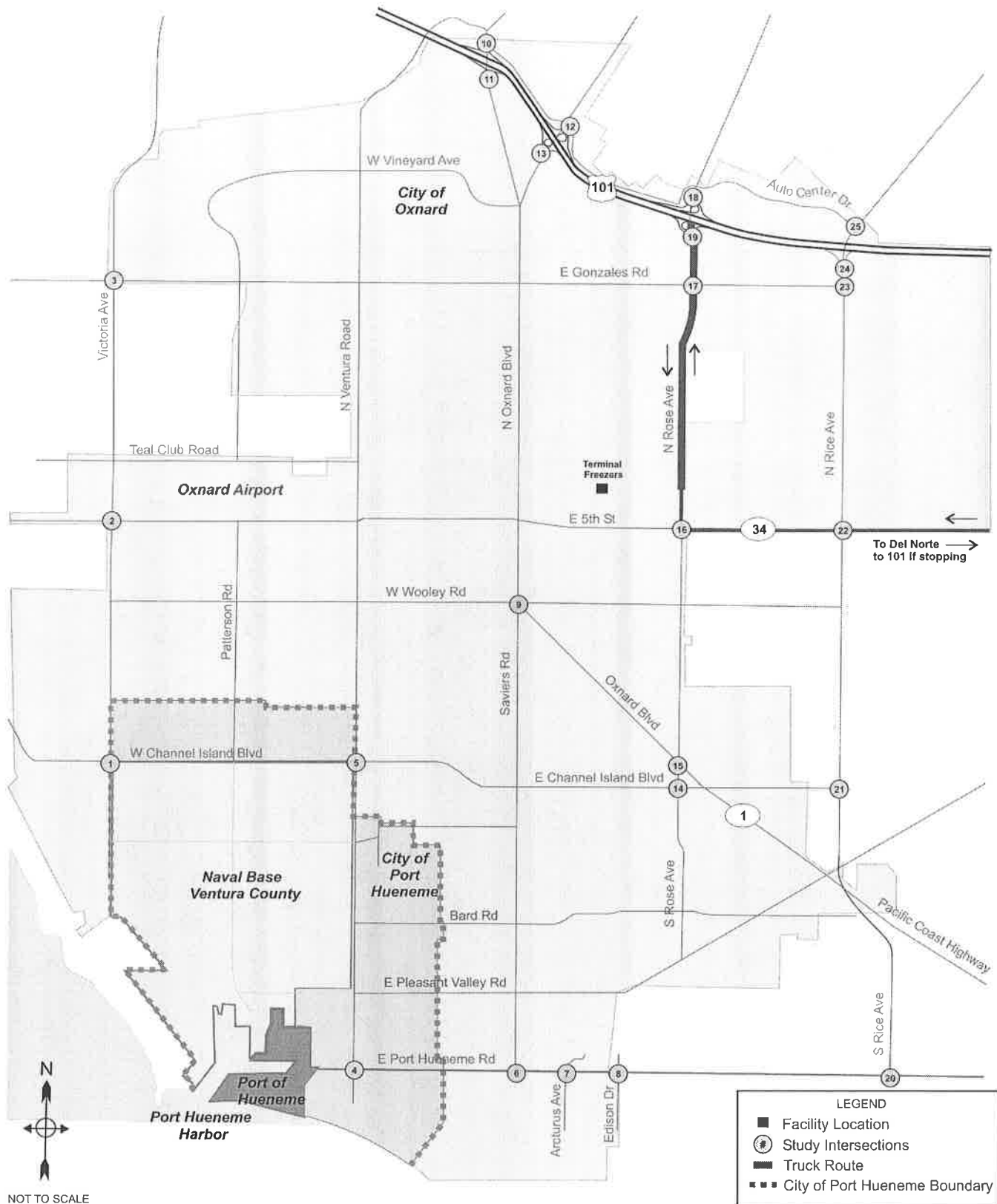


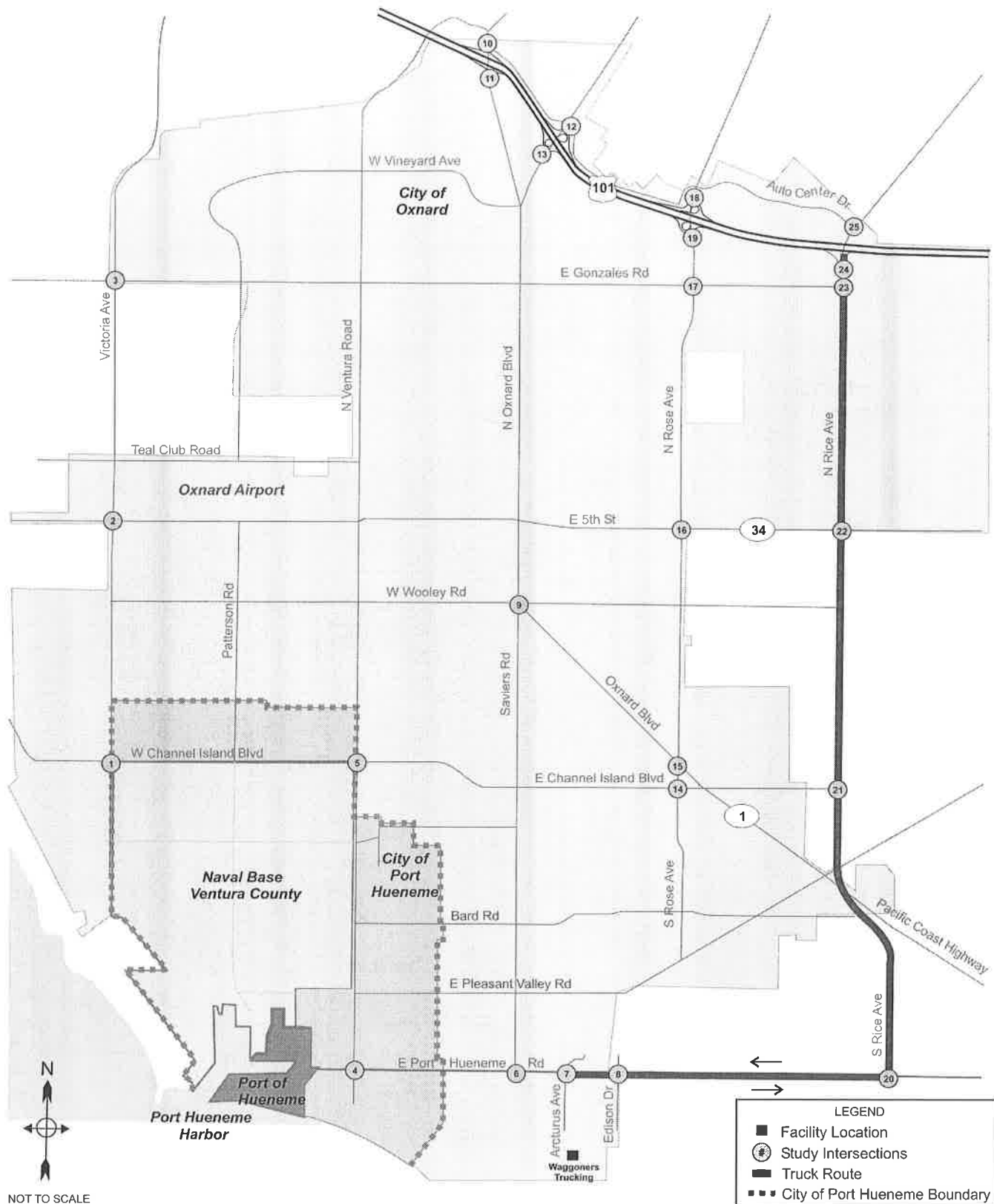














## 5 IMPACTS OF TRUCK TRAFFIC THROUGH RESIDENTIAL NEIGHBORHOODS

An established network of truck routes is important to ensure the efficient flow of trucks through a city and to reduce potential impacts from truck trips on sensitive land uses. The study area includes an extensive network of truck routes that provide access to the US-101 freeway and land uses that are generators of truck trips. The survey data collected from the Port of Hueneme, NBVC, and selected private businesses in the study area suggests that the existing designated study area truck routes are well utilized by trucks traveling to and from the US-101 freeway.

Figure 5-1 is an excerpt from the City of Oxnard General Plan Land Use Map that shows the large percentage of the study area that is zoned for residential use. This truck traffic study includes a review and evaluation of the impacts of truck traffic on residential neighborhoods in Port Hueneme and Oxnard. As the two cities continue to grow and develop, new residential development is occurring or is planned in areas that have historically been used for agricultural or other uses. There are several examples in both the City of Port Hueneme and the City of Oxnard of new residential developments along identified major truck routes such as Hueneme Road and Victoria Avenue. These developments will expose more people to the existing traffic on the truck routes, and increase the magnitude of the impacts created when incompatible land uses are combined.

The Recommendations section of this report identifies selected measures that could be implemented to further strengthen truck drivers' awareness and use of existing truck routes, along with recommendations related to land use design for residential or other sensitive land uses that may be planned adjacent to designated arterial roadway truck routes.

### 5.1 CITY OF OXNARD RESIDENTIAL DEVELOPMENT PROJECTS ALONG TRUCK ROUTES

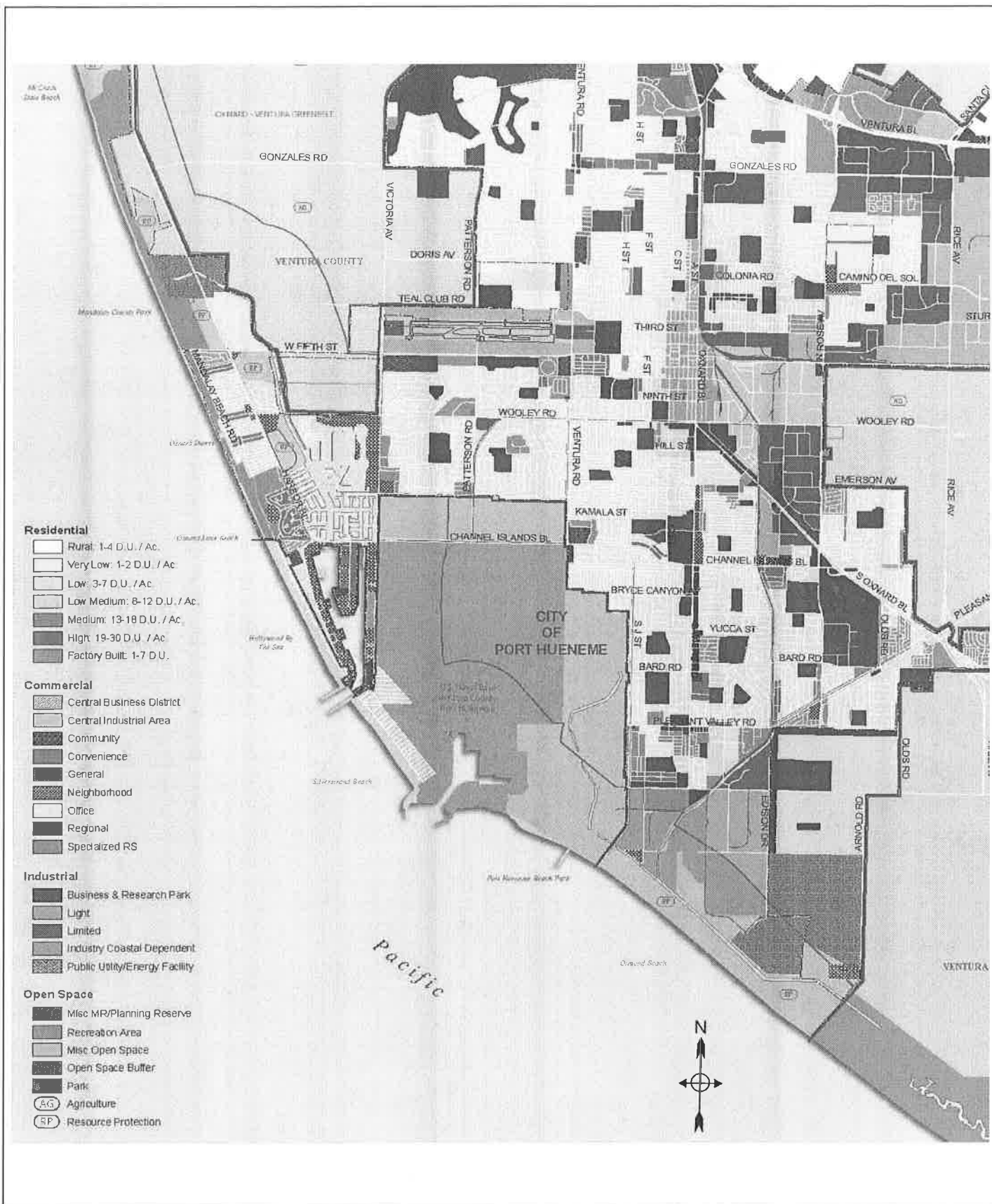
Residential development projects proposed or planned along roadways that serve as truck routes through the study area are noted in this section. Project information was obtained from the City of Oxnard Planning Division Development Project List dated January 2008.

#### Victoria Avenue

Victoria Avenue is a north-south designated truck route located along the western edge of the project study area. It travels through the City of Port Hueneme, the City of Oxnard, and unincorporated Ventura County. South of Channel Islands Boulevard, Victoria Avenue is bordered by the Naval Base Ventura County (NBVC) and Boat Landings Park. There are primarily residential uses adjacent to Victoria Avenue between Channel Islands Boulevard and 5<sup>th</sup> Street, and recreational and agricultural uses between 5<sup>th</sup> Street and the US-101 freeway.

There are three residential projects on Victoria Avenue within the City of Oxnard that are currently in the planning phases or under construction.

- The Seabridge project is being built on the southwest corner of Victoria Avenue and Wooley Road. It consists of 276 single family dwelling units, 432 multi-family dwelling units, 240 public docks, and a 16-acre park.
- The Orbela project includes 105 condominium units on the southeast corner of Victoria Avenue and 5<sup>th</sup> Street, and is currently under construction.
- Tucker Investments plans to build 112 condominium units on the northeast corner of Victoria Avenue and Hemlock Street.



### **Hueneme Road**

Hueneme Road is an east-west truck route that is located along the southern edge of the project study area. It is bordered by primarily residential uses and undeveloped land between Ventura Road and Cypress Road, and industrial and agricultural uses between Cypress Road and Rice Avenue.

There are three residential projects and one Specific Plan project on Hueneme Road that are currently in the planning phases or under construction.

- Paragon Communities is constructing 159 residential condominiums north of Hueneme Road between Saviers Road and Cypress Road.
- The Westwinds II project is located at 5482 Cypress Road and includes 48 condominium units. This approved project involves a General Plan Amendment.
- The proposed Paseo Nuevo project is located north of Hueneme Road and east of Cypress Road, and includes 60 residential condominiums in multi-family buildings.
- The Hearthside Homes Ormond Beach project site is located on approximately 300 acres north of Hueneme Road between Edison Drive and Olds Road. The Ormond Beach project includes the construction of up to 1,293 residential units of varying density, 50,000 square feet of retail, a commercial self storage facility, an elementary school, a high school, and 39,000 square feet of parks and community open space.

### **Pleasant Valley Road**

Pleasant Valley Road is an east-west truck route that travels through the southern portion of the study area between the Naval Base Ventura County and the Highway 1/Rice Avenue interchange. Adjacent land uses are mainly low and medium density residential, with some general commercial and light industrial uses. There are two residential projects in the planning stages along Pleasant Valley Road.

- The Villa San Lorenzo project includes 16 condominium units on the southwest corner of Saviers Road and Pleasant Valley Road. This approved project is currently in the plan check stage.
- Tucker Investments has proposed to build 98 condominium units and 12 live/work units on the southwest corner of Rose Avenue and Pleasant Valley Road.

### **Channel Islands Boulevard**

Channel Islands Boulevard is an east-west truck route that travels through the center of the project study area. Within the City of Port Hueneme, Channel Islands Boulevard is bordered by commercial and open space land uses. Between Ventura Road and Rice Avenue in the City of Oxnard, Channel Islands Boulevard is bordered by residential and commercial uses. The Cervantes Condo complex project is located south of Channel Islands Boulevard on Cheyenne Way, and includes three residential units.

### **Wooley Road**

Wooley Road is an east-west truck route that travels through the center of the project study area. It is bordered by residential land uses between Victoria Avenue and "E" Street, and central business commercial and industrial uses between "E" Street and Rose Avenue. Shea Homes is constructing the Cottages project on a 5 acre site near the southeast corner of Wooley Road and Patterson Road. The Cottages project includes 52 detached condominiums.



**5<sup>th</sup> Street**

Fifth Street is an east-west truck route that travels through the center of the project study area. Oxnard Airport is located on the north side of 5<sup>th</sup> Street between Victoria Avenue and Ventura Road. Fifth Street is bordered by residential land uses between "H" Street and "D" Street, and central business commercial and industrial uses between "D" Street and Rice Avenue. The proposed Arbor View (Mira Loma) project includes 103 apartments and 188 townhouses with 51 affordable units on the south side of 5<sup>th</sup> Street just west of Ventura Road.

**Gonzales Road**

Gonzales Road is an east-west truck route in the northern portion of the study area. It is bordered by residential and commercial land uses. Shea Properties has proposed the East Village Apartments project on the southeast corner of Williams Drive and Gonzales Road, which would include 272 apartment units.

**Rose Avenue**

The portion of Rose Avenue north of Wooley Road within the project study area is designated as a truck route. Adjacent land use types include residential, industrial, and commercial. The Courts is a proposed project on the west side of Rose Avenue on Carmelita Court, and consists of 340 apartments, 101 single family dwellings, and 60 condominiums. A total of 362 units would be affordable, including 10 single family dwellings, 340 apartments, and 12 condominiums.

**Oxnard Boulevard/Highway 1**

Oxnard Boulevard/Highway 1 is a north-south truck route that travels through the center of the project study area. Adjacent land uses are primarily commercial and industrial, with some residential developments on the north side of the street between Rose Avenue and Rice Avenue. There are six residential projects on Oxnard Boulevard/Highway 1 that are currently in the planning phases or under construction.

- Gateway Walk has been approved for construction at 1250 S Oxnard Blvd. The project consists of 190 residential units, including 104 town homes, 28 three-story townhouses, 49 single family homes, and 9 commercial condos with 14 affordable units to be built onsite.
- One single family dwelling unit is under construction at 525 E. First St.
- The proposed Press Courier Lofts project is located at 3000 W Ninth St. and involves the conversion of an existing 52,000 square foot industrial building into 52 condominiums, including 4 affordable units.
- Two single family homes are proposed for 128 N Hayes Ave. on a vacant lot. The homes would be 1,616 and 1,522 square feet.
- Habitat for Humanity has proposed an affordable duplex project at 315 Cooper Rd., including one studio unit and one 1-3 bedroom unit.
- The Colonial House mixed use project is proposed at 747 and 711 N Oxnard Blvd. The project includes 40 residential units (6 affordable) with 16,000 square feet of commercial.

**Ventura Road**

Ventura Road is a north-south truck route that travels through the center of the project study area. The Oxnard Airport is located on the west side of Ventura Road between 5<sup>th</sup> Street and Teal Club Road.

Other land uses along Ventura Road are primarily residential with some community commercial and agricultural uses. Four new single family residences are proposed by Lauterbach and Associates as the Oneida Courts project on the west side of Ventura Road near Oneida Place.

## **5.2 TECHNOLOGICAL AND DESIGN PRACTICES TO REDUCE THE IMPACTS OF TRUCK TRAFFIC THROUGH RESIDENTIAL AREAS**

If a project with a residential component is proposed near an existing truck route, there are design features that may be implemented to reduce noise and vibration impacts. Roads paved with rubberized asphalt have been shown to reduce road noise by as much as 12 decibels. Acoustical site design uses the placement of buildings, open space, nonresidential land uses, and barrier buildings to shield noise sensitive areas such as residential buildings from busy roadways. The strategic placement of rooms can also reduce noise impacts within a residential building. Other architectural design features that may be implemented to reduce noise impacts include:

- Permanent window seals
- Window mountings made of rubber, cork, or felt
- Reduced window sizes
- Increased window glass thickness
- Double-paned windows
- Window coatings
- Central air conditioning systems
- Sound-dampening insulation

## 6 RECOMMENDATIONS

The Cities of Port Hueneme and Oxnard truck traffic study provides an overview of existing traffic conditions and truck volumes at selected locations within the designated project study area. The study effort also included a survey process to obtain information regarding the generation and distribution of truck trips from the Port of Hueneme and NBVC, as well as a sampling of private businesses that operate in the study.

This section of the report identifies a series of recommendations for the Study TAC to consider to address existing traffic deficiencies present in the study area, improve the identification and use of existing truck routes, and strategies for future improvements or studies that would be intended to maintain or enhance traffic operations for both trucks and general traffic in the study area.

The recommendations outlined in this section are presented in the following groupings:

- Intersection and Roadway Improvements
- Strategies to Address Residential Neighborhood Impacts
- Improving Awareness and Use of Designated Truck Routes
- Next Steps

### Intersection and Roadway Improvements

An unacceptable LOS was observed in the existing condition for either AM or PM peak hours at six intersections. Potential measures to improve the LOS have been identified at each intersection. In the interest of encouraging trucks to utilize these designated truck routes, it is recommended that traffic improvements be focused on existing truck corridors to improve traffic and flow and reduce congestion.

- Intersection of Victoria Avenue and Channel Islands Boulevard operates at LOS D (v/c of 0.898) during the PM peak hour. Existing northbound geometry at the intersection is dual left turn lanes, one through and one shared through/ right turn lane. Widening the northbound approach to provide two left turn lanes, two thru lanes, and one shared thru right turn lane will improve the level of service to LOS C (v/c of 0.783).
- Intersection of Oxnard Boulevard/Saviors Road and Wooley Road operates at unsatisfactory conditions under both the AM and PM peak hours. The area surrounding the intersection is built-out and there is no room to construct additional lanes. Discouraging trucks from using this intersection will improve the LOS in the AM peak hour from LOS F to LOS E and decrease the volume to capacity ratio from 1.07 to 1.03 (both being LOS F) in the PM peak hour. Note that this does not restore operations to satisfactory conditions per City of Oxnard standards. Directional signage can be used along Hueneme Road south of this intersection at Saviers Road to direct trucks to more preferred routes such as Rice Avenue.
- Intersection of Rose Avenue and Gonzales Road operates at LOS D (v/c of 0.882) during the PM peak hour. The improvements necessary to bring this intersection back to an acceptable level of service (LOS C or better) would likely result in significant right of way impacts as a fourth southbound through lane and a third eastbound left turn lane would need to be considered. This intersection is located in close proximity to the Rice Avenue corridor, which will be significantly improved as part of the now-funded interchange reconfiguration at the US-101 freeway. Improvements to the Rice Avenue interchange may divert some traffic from Rose Avenue to Rice Avenue, potentially reducing the impacts to this intersection. The City of Oxnard should reevaluate this intersection after the completion of the Rice Avenue improvements.

- Intersection of Rice Avenue and Gonzales Road operates at LOS D (v/c of 0.822) during AM peak hour. By installing overlap signal phasing for existing southbound right turn lane, level of service would improve to LOS B (v/c of 0.642).
- Intersection of Rice Avenue and US-101 Southbound Ramps operates at LOS E (v/c of 0.912) during AM peak hour and LOS D (v/c of 0.858) during PM peak hour. Existing northbound geometry at the intersection is one through and one shared through/ right turn lane. A specific improvement is not identified for this location, as this intersection will be improved as part of the proposed reconfiguration of the interchange. The proposed reconfiguration was recently approved for funding through the Proposition 1B Trade Corridors Improvement Fund.

Order of magnitude cost estimates are identified for each of the proposed improvements identified above. Costs are capital dollars only and do not include estimates for right-of-way costs. Table 6-1 summarizes the cost estimate information.

**Table 6-1 Order of Magnitude Cost Estimates for Recommended Intersection Improvements**

| Intersection                                  | Proposed Improvement   | Order of Magnitude Cost Estimate<br>(Year 2008\$) |
|---|--|---|
| Victoria Avenue and Channel Islands Boulevard | Widening the northbound approach to provide two left turn lanes, two thru lanes, and one shared thru right turn lane.                | \$200,000 to \$300,000                            |
| Oxnard Boulevard and Saviers Road/Wooley Road | No feasible capacity improvement possible. Implement directional signage to discourage trucks from traveling through intersection.   | < \$10,000 for new signage                        |
| Rose Avenue and Gonzales Road                 | Future study of the intersection is recommended after completion of Rice Avenue/US-101 interchange improvements.                     | N/A   |
| Rice Avenue and Gonzales Road                 | By installing overlap signal phasing for existing southbound right turn lane, level of service would improve to LOS B (v/c of 0.642) | \$10,000 for signal modifications                 |
| Rice Avenue and US-101 Southbound Ramps       | Not applicable. To be improved as part of US-101 interchange project.  | N/A   |

### Strategies to Address Residential Neighborhood Impacts

Two primary strategies are recommended to address concerns and potential impacts associated with trucks traveling on major arterial roadways and truck routes located adjacent to residential neighborhoods. These strategies are:

- Encourage trucks traveling to and from major generators in the study area (Port of Hueneme, NBVC, private businesses) to utilize the established preferred truck routes on Hueneme Road/Rice Avenue and Victoria Avenue as much as possible to limit the potential impacts of high truck volumes on other streets through residential areas such as Ventura Road and Channel Islands Boulevard. Measures could include the installation of directional signage, restrictions placed on heavy trucks prohibiting them from traveling certain arterials such as Channel Islands Boulevard, and capacity or traffic signal improvements to Victoria Avenue, Hueneme Road, and Rice Avenue to make these corridors more attractive to travel.
- Consider truck volumes on adjacent arterial roadways when designing adjacent residential neighborhoods. If residential developments are proposed along the preferred truck routes, the design of the neighborhoods should consider the potential impacts caused by trucks traveling

on the adjacent truck route. Strategies to address this issue include larger setbacks for homes located along the truck route and/or the construction of walls between the truck routes and the residential neighborhood to reduce noise impacts.

These strategies are intended to serve as suggestions for the Cities of Port Hueneme and Oxnard to consider when approving new residential projects near existing truck routes. There are several well-established truck routes in the study area (Victoria Avenue, Hueneme Road, Rice Avenue), and these routes will continue to be utilized by truck traffic into the future. Ensuring that land uses developed adjacent to these corridors incorporate design features that are sensitive to the existing street and traffic context will be essential to minimize potential impacts associated with truck traffic.

### **Improving Knowledge and Use of Designated Truck Routes**

The survey data collected from the Port of Hueneme, NBVC, and selected private businesses suggest that the existing designated truck routes in Port Hueneme and Oxnard are well utilized by a majority of trucks operating in the study area. However, the survey was not a comprehensive collection of all land uses that generate truck trips within the study area, and there may be instances of trucks traveling on routes that are not designated as truck routes. To address this condition, a series of recommendations have been identified to increase the awareness of truck routes for truck drivers traveling through Port Hueneme and Oxnard, and to implement specific measures to improve traffic flow along designated truck routes to encourage more use of the corridor by improving traffic flow and travel times. The recommended improvements are:

- Continue to emphasize the use of Port Hueneme Road/Hueneme Road and Rice Avenue as the primary truck access corridors to the Port of Hueneme. The existing designation of this route as the primary access corridor for the Port appears to be very successful in focusing truck traffic in this corridor. Additional steps should be taken by the Cities of Port Hueneme and Oxnard to work with local distribution, agriculture, and industrial uses to encourage these businesses to utilize these roadways to the extent feasible for their operations.
- Install directional signage along Port Hueneme Road/Hueneme Road and Rice Avenue directing trucks exiting the Port of Hueneme main gate to access the US-101 freeway via this route.
- Explore the feasibility of implementing traffic signal coordination along Port Hueneme Road/Hueneme Road between Ventura Road and Rice Avenue to improve traffic flow and truck travel times in the corridor.
- Continue to pursue grade separation at Rice Avenue at the Union Pacific rail corridor immediately north of Fifth Street. The City of Oxnard should continue to pursue this improvement. Train traffic operating in the rail corridor creates traffic congestion at the Rice Avenue/Fifth Street intersection, and eliminating this conflict would improve traffic safety and traffic operations for trucks traveling on Rice Avenue.
- Widen Hueneme Road to a full four lane divided arterial street for the full length between Ventura Road and Rice Avenue. Portions of this corridor are already improved to four lanes west of Saviers Road, and the City of Oxnard plans to widen the portion between Arcturus Avenue and Saviers Road to provide two lanes in each direction. Widening the full corridor would further improve traffic flow and enhance the connection to Rice Avenue not only for trucks traveling to and from the Port of Hueneme, but also for trucks origination from the private distribution, industrial, and agricultural uses located along Hueneme Road.
- Work with Caltrans District 7 to install signage along US-101 identifying Rice Avenue as a designated access truck route to the Port of Hueneme.

- Work with Caltrans District 7 to install signage along US-101 identifying Victoria Avenue as a designated access truck route to NBVC Port Hueneme.

### **Next Steps**

As noted above, the analysis completed as part of this study provides a snapshot of existing traffic conditions and truck volumes in the study area. Specific recommendations are included to address existing traffic impacts that occur as a result of truck traffic in Port Hueneme and Oxnard. This study effort should be seen as a first step to a coordinated plan of action for addressing not only the existing condition for truck traffic, but potential future increases in truck and automobile traffic in the study area. Recommended next steps include the following:

- Identify potential funding sources and the responsible agencies for implementing the recommendations identified in this report.
- The recommended improvements identified in this report are tailored towards existing traffic impacts and deficiencies identified through the review of existing traffic data and truck trips. Analyze future traffic conditions, truck trip generation rates, and the operation of the future study area roadway network. The benefit of this approach would be to identify additional improvements that would supplement the recommendations identified in this report and address future increases in traffic volumes and truck volumes.
- Explore the feasibility of installing intelligent transportation system (ITS) improvements to track and direct truck trips between major traffic generators and the US-101 freeway. Funding sources for these types of improvement could include source tied to goods movement-related improvements (Proposition 1B Trade Corridor Improvement Fund), funding tied to Homeland Security improvements for the Port of Hueneme or NBVC, or local and regional sources (sales tax measures, regional funding grants, etc).