

West
Oakland

TRUCK
MANAGEMENT
PLAN

APPENDIX B
**Truck Movement and
Safety Technical Memorandum**

A joint plan by the
City of Oakland and
Port of Oakland



PORT OF OAKLAND



**CITY OF
OAKLAND**

TRUCK MOVEMENT AND SAFETY TECHNICAL MEMORANDUM

West Oakland Truck Management Plan

Date: November 1, 2018 Project #: 21509

To: Andrea Gardner, Port of Oakland

From: Aaron Elias and Alex Garbier, Kittelson & Associates, Inc.

Subject: **Truck Movement and Safety Technical Memorandum
for the West Oakland Truck Management Plan**

This memorandum summarizes analysis and findings regarding the movement of commercial trucks serving the Port of Oakland and former Oakland Army Base (OAB) in the Port of Oakland and West Oakland. The information presented is based on a review of rules and regulations, community input, and analysis of trip data for commercial trucking vehicles. The information was used to inform future actions identified in the Truck Management Plan (TMP).

The memo is organized into five sections:

1. Findings and Recommendations
2. Existing Rules and Regulations
3. Community Input
4. Truck Movement and Routes
5. Conclusions

1. FINDINGS AND RECOMMENDATIONS

Based on a review of the existing truck movement regulations, community input, and the truck movement analysis (described herein), the following is a summary of the findings:

Commercial Truck Destinations

- The large majority of commercial trucks that leave the Port of Oakland go directly to freeway on-ramps adjacent to the Port of Oakland without driving through West Oakland. Similarly, most commercial trucks driving to the Port of Oakland arrive from freeways using off-ramps adjacent to the Port.

- Six percent of the commercial truck trips starting at the Port of Oakland finish in West Oakland. Similarly, a relatively low percentage of commercial truck trips starting in West Oakland finish at the Port, less than 10 percent.
- Trips that start or end in West Oakland are more likely than trips that start or end at the Port to access West Oakland from roads around I-580 to the north or I-980 to the east.

Truck Routes

- Truck Routes and Truck Prohibited Streets need to be well communicated to ensure commercial trucks use the Truck Routes and avoid residential areas.
- Commercial trucks are legally allowed to diverge from Truck Routes onto local roads, including onto streets designated as prohibited to trucks, to complete deliveries.

Safety Concerns

- There are safety concerns at several street intersections near the freeway access ramps due to conflicts between trucks, traveling between the Port of Oakland and the I-880 freeway ramps, and pedestrians and bicyclists accessing locations on Union Street between 5th and 7th Streets, on Adeline Street between 3rd and 7th Streets, and along 7th Street west of Wood Street.

Recommendations to address the truck movement findings

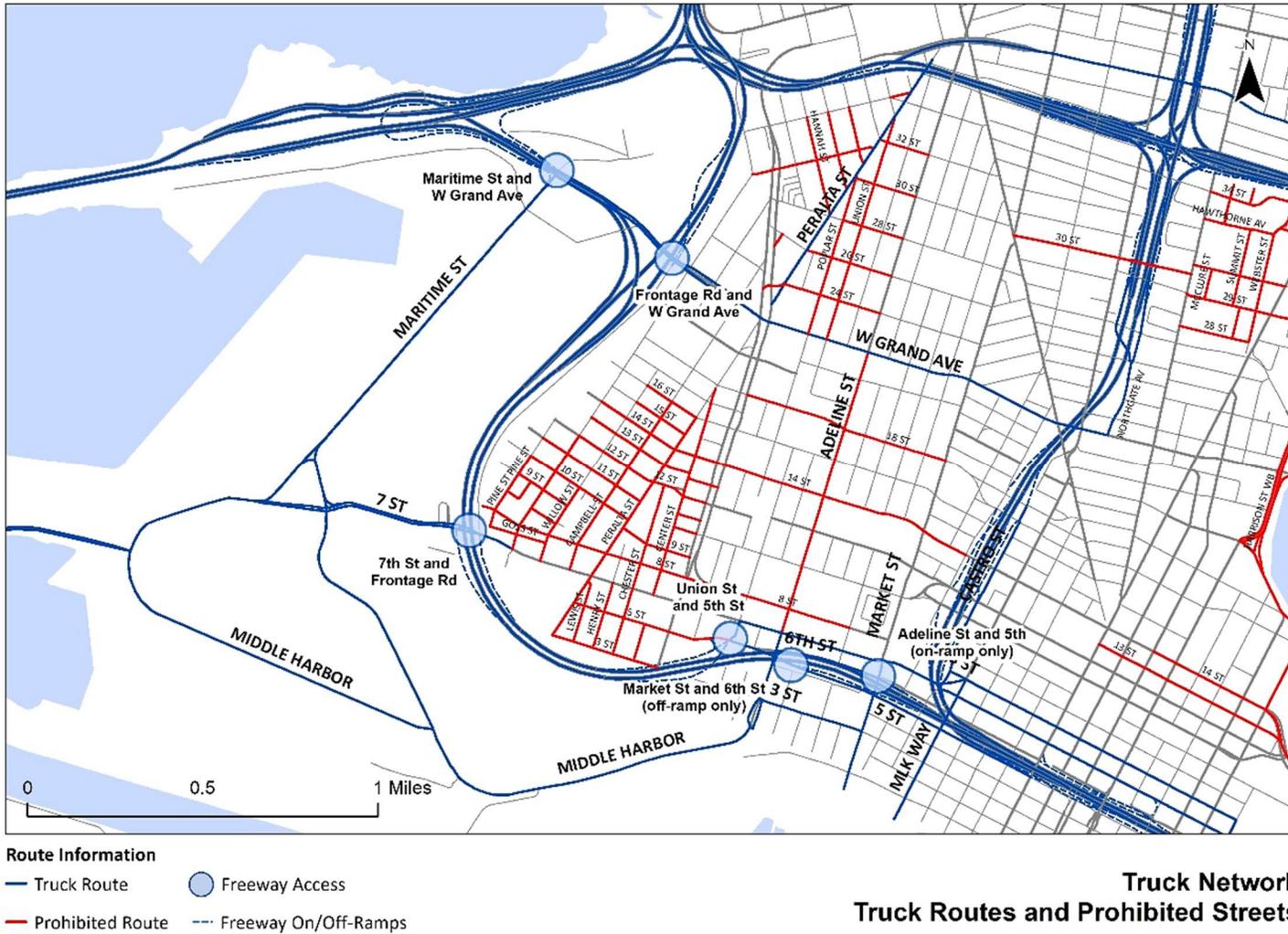
- Improve signage along the Truck Routes and communicate with trucks drivers about the location of Truck Routes to further discourage trucks from driving in residential areas and encourage them to stay on Truck Routes.
- Perform a Truck Route and Truck Prohibited Street sign inventory in West Oakland to determine where new signs could be added to fill gaps or replace damaged signs to make it clearer where truck drivers are supposed to drive.
- Work with businesses that are not located on Truck Routes to identify preferred routes for completing deliveries that minimize time spent on streets in residential areas.
- Improve safety at intersections that are frequently used by commercial trucks serving the Port.

2. EXISTING RULES AND REGULATIONS

Under the Oakland Municipal Code, movement of large commercial trucks on city streets is regulated under rules and regulations identified in Chapter 10.52 – Commercial Vehicles and Vehicle Size and Weight Limits. City streets generally fall into one of three general categories (shown in Exhibit 1):

- *Local Truck Routes (10.52.120)* – Local Truck Routes in Oakland are the designated routes for commercial vehicles to travel through and within the city. Operators are required to stay on these routes unless it is necessary to deviate to reach a destination for loading or unloading.
- *Truck Prohibited Streets (10.52.060)* – Specific streets, or parts of streets, are designated as prohibited to vehicles exceeding four and one-half tons. Under Municipal Code 10.52.110, commercial vehicles can deviate onto prohibited roads only to reach a destination for loading or unloading goods. The City places signs indicating the streets that are prohibited.
- *Streets Not-Defined in the Oakland Municipal Code* – The majority of the streets in West Oakland are not designated under the Oakland Municipal Code as Truck Routes or Prohibited Streets. Trucks must minimize their travel on these roads. Specifically, under Oakland Municipal Code 10.52.110, operators can only leave truck routes to complete deliveries or pick-ups, provided the deviation minimizes the distance traveled off of the truck route.
- *Regional Truck Routes and Freeways* – Trucks are allowed to use the interstate highway system for moving goods, unless specifically restricted. California Department of Transportation (Caltrans) maintains a current California Truck Network Map accessible online. Regarding the freeways adjacent to West Oakland, trucks are allowed on I-880, I-980, I-80 and the portion of I-580 from the Bay Bridge to the Grand Avenue exit ramps.

Exhibit 1: Truck Routes and Prohibited Street, 2018



Source: Created by Kittelson and Associates, 2018, Route Designations from Oakland Municipal Code and Caltrans Truck Network

Trucks are allowed to divert off of Truck Routes, including onto Truck Prohibited Streets, to complete deliveries. This limits the effectiveness of the Prohibited Street designation and makes enforcement more difficult as citing an operator requires following a vehicle to confirm the final destination of the vehicle (see Enforcement of Parking Regulations and Truck Routes Technical Memorandum in the Appendix for more information). It also makes the Truck Prohibited Street designation more confusing for local residents.

The review of rules and regulations identified variations in where prohibited routes are located. Per Exhibit 1, Truck Prohibited Routes are located throughout the residentially-zoned Prescott neighborhood in the southwest corner of West Oakland. Further north, Truck Prohibited Streets are located in the industrial area east of Peralta Street. This has the potential to create confusion for truck drivers, who may view the area east of Adeline Street, which is zoned residential, as a preferred route since the area has no prohibited streets.

Closer to I-880, the local truck routes network does not include road segments that were designed for truck movement, or which could reduce truck mileage without impacting residences. Specifically, Frontage Road, which was designed and functions as an on-off ramp to enter and exit I-880, could be added to the Truck Route Network to indicate the preferred route for trucks to travel north and south in West Oakland south of West Grand Avenue.

3. COMMUNITY INPUT

Community input was collected at multiple steps during the formulation of the TMP. This included multiple community outreach events and direct emails to the Port of Oakland and the City of Oakland. The community input received is documented in more detail in the Appendix Stakeholder Comments Spreadsheet. Overall, the input on truck movement linked to three central themes:

- Commercial trucks are driving on streets not on the Truck Route Network, including on Truck Prohibited Streets, generating noise, damaging roads, and creating safety concerns.
- There is minimal enforcement of problem areas where trucks leave Truck Routes and no clear process for registering complaints with City or Port staff.
- Truck Routes and Truck Prohibited Routes are not clear due to a lack of clear signage and communication (see Appendix Signs and Communication Technical Memorandum for more detail).

Residents also identified several locations of particular concern:

- Commercial vehicles traveling to and from the industrial area north of West Grand Avenue and east of Peralta Street are traveling east to Adeline Street through residential areas rather than west to the Truck Route on Peralta Street.
- Commercial vehicles are traveling on 28th Street between Poplar Street and Mandela Parkway. 28th Street is not a Truck Route.
- Commercial trucks use Center Street between 7th Street and 12th Street, which is on the Trucks Prohibited Street Network.
- Commercial trucks use Market Street between 7th Street and West Grand Avenue as a north/south connection. This section of Market Street is not a designated Truck Route and includes multiple schools.
- Commercial trucks travel east/west along 7th Street between Union Street and Wood Street. This is not a Truck Routes and includes BART and local destinations for residents.

4. TRUCK MOVEMENT ANALYSIS

The TMP evaluated commercial vehicle travel using data generated by StreetLight Data (StreetLight). StreetLight is a San Francisco-based company that collects, aggregates, and analyzes GPS data to evaluation trip patterns. For the TMP report, StreetLight data was used to evaluate commercial vehicle trips on weekdays (Tuesday to Thursday) between December 1, 2016 and November 30, 2017.

StreetLight data is separated into two datasets; one dataset describes commercial vehicle patterns and the other personal vehicle trips. The analysis conducted for the TMP examined the dataset for commercial trips. The commercial trip category includes all commercial trucks, including large drayage trucks that are used in the Port of Oakland as well as smaller delivery vehicles. Note that smaller commercial vehicles are not used at the Port of Oakland. As a result, the StreetLight data for trips to and from the Port of Oakland provides a clear description of travel patterns for drayage trucks accessing the Port.

The analysis separated commercial vehicle trips into two origin-destination pairs: (1) local trips between locations within the boundaries of the Port of Oakland and West Oakland, and (2) regional trips where vehicles have a start or end outside of the Port of Oakland or West Oakland. For the second set of trips, the analysis looked at individual freeway on- and off-ramps to identify how trips were entering or leaving the immediate area.

The results from this analysis are summarized in the Exhibit 2 and Exhibit 3. In each exhibit, the area of focus is highlighted with red shading. For example, the arrow at 5th Street and Adeline

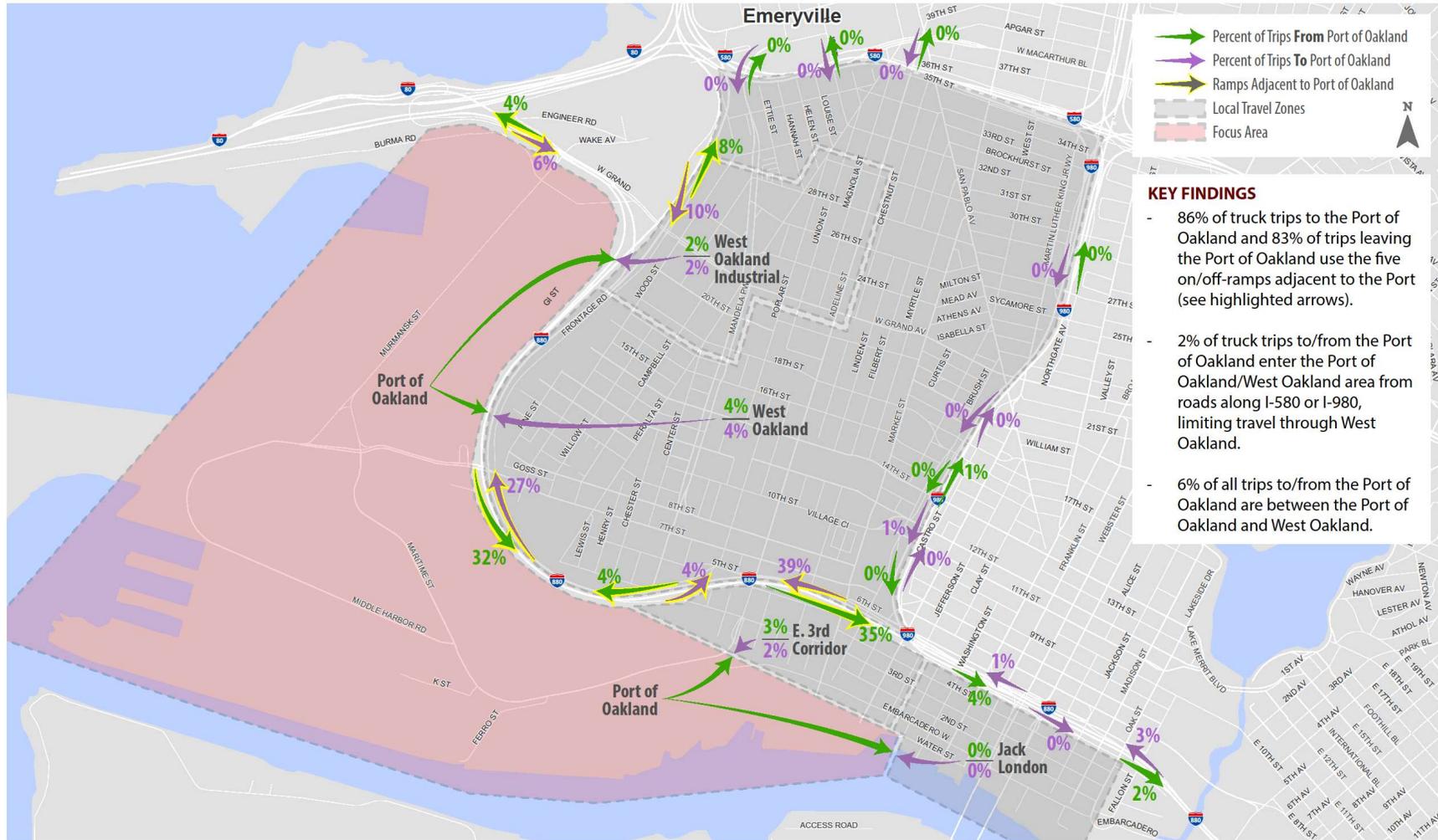
Street in Exhibit 2 shows that 35% of commercial trucks leaving the Port of Oakland exit the area using the on-ramp adjacent to that intersection.

- Over 80 percent of the truck trips associated with the Port of Oakland are regional truck trips that enter and leave the Port of Oakland through one of the five on- and off-ramps adjacent to the Port (see the highlighted arrows in Exhibit 2).
- The analysis shows that truck associated with the Port of Oakland do not travel through West Oakland to leave the area; only 2 percent of trips to and from the Port of Oakland access the area from roads along I-580 or I-980.
- Around 30 percent of commercial vehicle trips that start or end in West Oakland are local trips on city streets within West Oakland and between West Oakland and the Port, the 3rd Street Corridor, and Jack London Square.
- Trips associated with West Oakland that have a start or end outside the immediate area are not clustered at specific on- and off-ramps like Port associated trips. Instead, they are distributed geographically around West Oakland.

The findings support and provide additional context to resident input. In particular,

- The on- and off-ramps that serve the majority of truck trips are some of the same areas that residents identified as being safety concerns for pedestrians and bicyclists – Union Street between 5rd and 7th Street, Adeline Street between 3rd and 7th Street, and 7th Street west of Wood Street.
- Truck trips associated with West Oakland are distributed throughout the entry and exit points to West Oakland and not concentrated near truck routes. This supports the community input that trucks are found driving off the designated Truck Routes. Reasons for this may include:
 - Truck-related businesses are not all located along Truck Routes requiring truck drivers to travel on Truck Prohibited or non-designated streets to complete trips.
 - Truck trips in West Oakland tend to be local rather than regional trips. This requires drivers to get off the interstate Truck Routes to access destinations.
 - Drivers lack of knowledge about the location and rules governing Truck Routes.

Exhibit 2: Truck Movement in and out of the Port of Oakland, Dec 2016 – Nov 2017



Data Source: StreetLightData Inc., Dec 2016 – Nov 2017

Exhibit 3: Truck Movement in and out of West Oakland, Dec 2016 – Nov 2017



Data Source: StreetLightData Inc., Dec 2016 – Nov 2017

5. CONCLUSIONS

Based on a review of the existing truck movement regulations, community input, and truck movement analysis, the following can be concluded:

- The existing network of Truck Routes which includes the freeways provides good truck access to the Port of Oakland.
- The existing network of Truck Prohibited Streets in the industrial area of West Oakland east of Peralta Street/north of West Grand Avenue is confusing and does not clearly discourage Trucks from driving through adjacent residential areas.
- There are opportunities to clarify preferred routes and further discourage travel through non-industrial areas through better signage and communication with truck drivers.
- Port truck trips make heavy use of the freeway ramps. Several of the freeway access points are located near the 7th Street corridor and are therefore likely to experience growth in pedestrian and bicycle usage due to anticipated development at the West Oakland BART station and at other sites along 7th Street.

The TMP proposes three initial strategies to address truck movement concerns in West Oakland, and two follow-up strategies to pursue if problem areas persist:

Initial Strategies

- Strategy 2: Improve Truck Routing (for Completing Deliveries for Truck-Oriented Businesses)
- Strategy 3: Update the Network of Truck Routes and Truck Prohibited Streets
- Strategy 4: Improve Truck Route Signage

Follow-Up Strategies

- Strategy 5: Conduct enforcement Spot-Checks
- Strategy 6: Use Urban Design to Promote Use of Truck Routes