

Evaluating Tradeoffs in Warehousing and Drayage Costs in the Greater Los Angeles Region

Research Brief for Project Number 4.1i

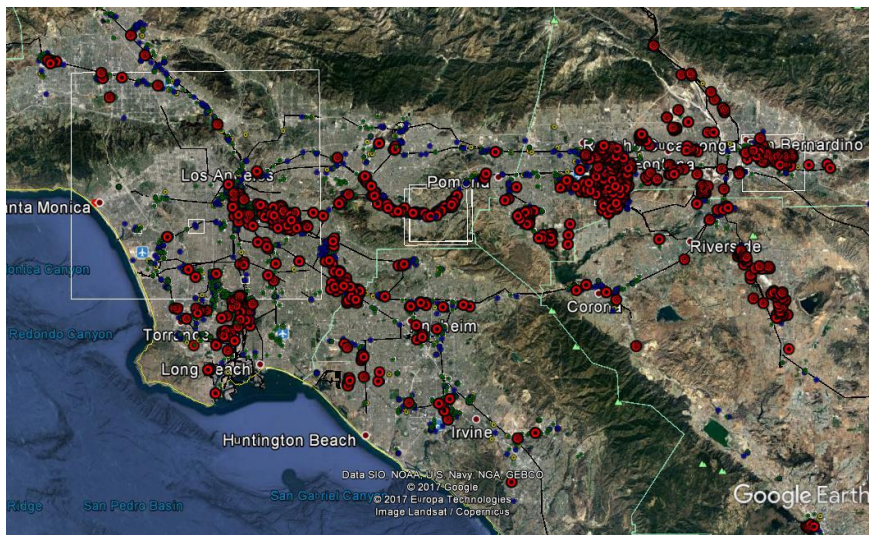
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The Los Angeles region has a complex network of warehouses and distribution centers for handling both domestic and foreign trade. Los Angeles' freight system serves the local market and distributes goods around the country that arrive in Los Angeles via air or maritime ports. The warehousing needs of individual shippers vary significantly based upon their supply chain, customer base and product type. For this reason, the question of the optimal warehouse location has no easy answer. This study focuses on shippers whose primary decision factor is accessibility to the ports of Los Angeles and Long Beach.

Zip Code Selection

We selected 50 representative zip codes that host warehousing and distribution activity intended to represent the major submarkets for warehousing and distribution. These include clusters near the Ports of Los Angeles and Long Beach, and in the downtown area that are largely focused on serving the intermodal rail terminals and downtown customers. The APM Maersk terminal is the default point of origin for all shipments. The research team surveyed drayage operators who service these markets and asked for quotes of base drayage rate plus fuel surcharge for each zip code.

Map 1: Clusters of Warehousing and Distribution Centers in the LA Metro Area (Source: COSTAR)



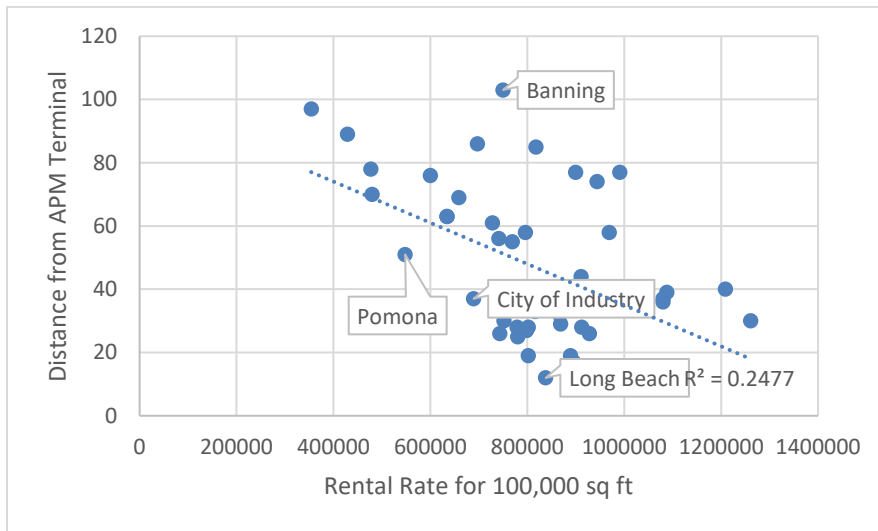
Data Collection: Drayage Price Bids

The principal mechanism of gathering data was through phone requests. In addition, the Harbor Truckers Association (HTA) sent an email to their membership encouraging participation. The physical location and rental rates of the warehouses were retrieved from the COSTAR commercial real estate database.

Results

The average distance from the APM terminal to all dray destinations is 48.5 miles whereas the average dray cost is \$481. For near port deliveries, the vast majority of the drayage cost is actually a container retrieval cost. Pure container retrieval cost was estimated at \$250. Dray cost is directly correlated with dray distance. Dray companies consistently quote rates that are linearly proportional to driving distance. Access to the port can be assumed to be only one of many factors driving rental rates. There is a weak correlation between warehouse rental rates and distance from the port.

Figure 2: Correlation Between Dray Distance and Warehouse Rental Rate for a 100,000 sq foot facility



The next step in the analysis was to determine whether or not the avoidance of higher drayage cost is sufficient to outweigh potentially lower rental rates in the exurban locations. The average 100,000 sq ft warehouse was estimated to generate 1,140 truck trips per month. We conclude that there is no single warehousing cluster in the Los Angeles area that is, under all circumstances, the superior choice for locating a business that is fully reliant on port deliveries. Other factors to be considered would include travel time reliability, which would be lower for the more distant destinations, as well as the end point for the deliveries after they reach the warehouse. More distant delivery locations were found to be potentially problematic for the availability of return cargo. Finally, this analysis does not take into account the externalities associated with very long dray deliveries such as emissions, traffic congestion and safety impacts. In situations where the shipper is truly indifferent to locating distribution near the port as opposed to an exurban location, there is the potential for policy incentives to encourage shippers to choose a more sustainable location.

Acknowledgment

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