

Should State Land in Southern California Be Allocated to Warehousing Goods or Housing People? Analyzing Transportation, Climate, and Unintended Consequences of Supply Chain Solutions

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Introduction

The COVID-19 pandemic revealed limitations in California's supply chain resiliency with an unprecedented cargo surge and congestion, leading to Executive Order N-19-21's proposal to use state land for expanded warehousing. This highlighted a land-use paradox between economic and environmental goals: adding warehouse capacity increases climate and air pollution and traffic congestion around ports and warehouses. It also raised questions about whether state land should instead be used for purposes of affordable housing and serving the homeless in port-adjacent underserved communities. In practice, should city and transportation planners and regional development agencies support land use and zoning that promotes economic growth, or should they allocate land resources to protect environmental assets that benefit local residents and workers? These complicated decisions involve trade-offs and uncertain outcomes. Therefore, this study looks at one such decision area: whether to use land for warehousing or housing.

Study Methods

This study explores different scenarios for the use of state-owned property while considering the impacts on the economy and environment, as well as implications for other societal issues, such as housing for people who are homeless. Regression analysis, time-series forecasting, and literature review are used to estimate current and future supply and demand of warehousing and housing in Southern California through 2040 across numerous forecast scenarios. These projections are then used to evaluate the environmental impact of meeting demand across three key warehousing traffic pollution scenarios: (1) warehousing in the N-19-21 policy, (2) warehousing development to meet 2040 demand, and (3) warehousing development using state land at different levels and comparable scenarios for affordable housing development using

the Community LINE Source Model, a community-based tool, to characterize roadway air pollution emissions.

Findings

The study's analysis reveals significant warehousing supply shortfalls in Los Angeles County and Orange County across four out of six scenarios considered. The Inland Empire region (consisting of Riverside and San Bernardino) is anticipated to absorb much of the unmet demand for warehouses, despite some cities imposing warehouse development moratoriums. Projections indicate a potential two-percentage-point increase in the Inland Empire's share of warehouse space by 2040, possibly leading to a warehouse demand-supply gap in the Southern California Association of Governments region as early as Q1 2028.

The study also underscores California's overall shortage in housing, especially in affordable and low-income segments. Despite a recent population decline, Southern California faces an annual projected housing deficit of 120,000 units, which worsens low-income housing availability related to unemployment rates. Concerning the environment, the study reaffirms worries about warehouses clustering near disadvantaged communities, increasing pollution exposure and health risks for low-income and minority groups. In comparison, housing has a relatively lower environmental impact in various scenarios. Moreover, adding warehouses to regions with low air pollution levels, such as Ventura and Orange Counties, could significantly raise air pollution hotspots. While electrifying trucking fleets seems promising for emissions reduction, the study warns that increasing state-owned land use for warehousing may harm air quality.

A balanced land use approach is needed to address economic growth, housing shortages, environmental justice concerns, and air quality impacts with evolving supply chain challenges exacerbated by the COVID-19 pandemic.

Policy/Practice Recommendations

This study informs regional policymakers, transportation planners, community interest groups, and business stakeholders about the trade-offs between housing and warehousing when considering both economic and environmental impacts. Alternative solutions should be explored to address the short-term demand for warehousing while considering environmental factors. One approach involves comparing the environmental impacts (e.g., air pollution) of using higher percentages of state land for warehousing with other strategies. Additionally, the fair distribution of the benefits and costs of warehousing across different communities is important. Communities disproportionately affected by warehousing activities and associated air pollution should not be further burdened by adding new warehouses.

About the Authors

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2231



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