



Final Report

Economic Analysis of Oakland's Industrial Lands

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Prepared for:
City of Oakland

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1. Introduction and Study Overview

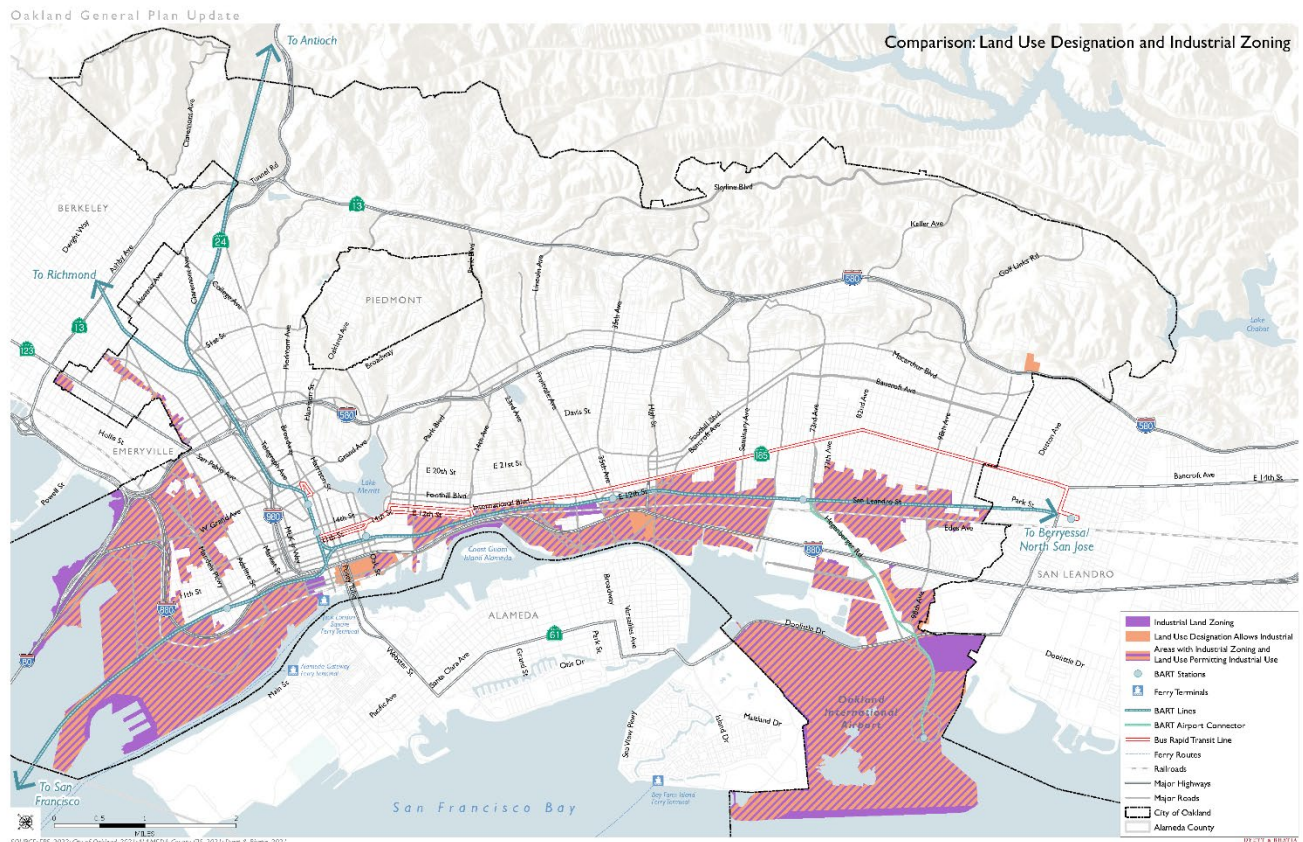
This report evaluates economic and market conditions and trends specific to Oakland's industrially zoned lands. As illustrated in **Figure 1**, the industrial lands planning areas stretch along the City's waterfront south of the Bay Bridge to, and inclusive of, the Oakland International Airport. Covering roughly 20 percent of Oakland's land area, 75 percent of its waterfront, and served by excellent transportation infrastructure, the area represents a tremendous opportunity for the city to foster sustainable economic growth.

This report is designed to inform the land use policies and alternatives that will be considered as part of the City of Oakland's (City) General Plan Update. It has been prepared for the City by Economic & Planning Systems, Inc. (EPS) as part of a multidisciplinary consultant team led by Dyett & Bhatia and selected by the City to lead the General Plan Update study process. This report supplements the previously released Economic Trends and Prospects, published in June 2022.¹

The purpose of this study is to present a broad-based overview of existing conditions in the industrial lands, prospects for continuation of present uses, and potential opportunities and obstacles to respond to longer-term economic changes. The report does not provide recommendations about the type, amount, or location of land use that should be allowed in Oakland's industrial lands. Rather, it is intended to inform land use policies that in turn will shape future development patterns. As such, it is important to note that this analysis is based on all land in Oakland currently under industrial zoning (Phase II of the Oakland General Plan Update process will culminate in more refined industrial land designations). Lastly, while this analysis focuses on the planning areas depicted in **Figure 1**, the economic activity discussed has implications for the entire city.

¹This document can be found at [FINAL-
Economic Trends Prospects EPS 2022.06.02.pdf \(cao-94612.s3.amazonaws.com\)](https://cao-94612.s3.amazonaws.com/Economic_Trends_Prospects_EPS_2022.06.02.pdf)

Figure 1 Map of Planning Area



Scope, Approach, and Context

Prospects and opportunities in Oakland's industrial lands are informed by the demographic, socioeconomic, housing, and economic context of the areas as well as Oakland and the region more broadly. Accordingly, this report draws upon existing studies prepared as part of the General Plan Update process and other efforts. These studies are referenced where appropriate and include, without limitation, the following:

- [Current Conditions Report: Industrial Land Uses and Business Activities in Oakland](#) (2019), prepared by Hausrath Economics Group.
- [Seaport Stakeholder Roundtable Meetings](#) (2021-2022), led by the Port of Oakland.
- [Environmental Justice and Racial Equity Baseline](#) (2022), prepared by Dyett & Bhatia.
- [History of Industrial Activities and Industrial Zoning in Oakland](#) (2022), prepared by the City of Oakland Department of Planning and Building.

- [Economic Trends and Prospects](#) (2022), prepared by EPS.
- Industrial Lands Stakeholder Focus Groups (2022), led by Dyett & Bhatia (see <https://cao-94612.s3.amazonaws.com/documents/Stakeholder-Interviews-Summary-Oakland-GP-6.3.2022.pdf#page=21>).

This report also relies on publicly available economic and market data from a variety of sources, as well as input from two focus groups led by Dyett & Bhatia. The focus groups engaged industrial developers and business owners, as well as environmental justice-focused community organizations. Additional targeted community and stakeholder outreach activities are being conducted as part of the broader General Plan Update study process, as reflected in separate deliverables from the Dyett & Bhatia consultant team.

Oakland has a long history of industrial land uses, shaped in part by the city's location as the western terminus of the Transcontinental Railroad, a long waterfront, and the presence of the largest port in Northern California. The industrial lands have and continue to be a major economic engine for the city and the region and provide considerable job opportunities for residents. However, some economic activities in Oakland's industrial lands have caused pollution and resulted in negative health impacts for generations in nearby communities which predominantly consist of low-income households and people of color. Health disparities persist today, partly attributable to heavy industrial uses operating near residential areas, as well as the resultant truck traffic from the Port and industrial operations.

The industrial lands in particular present an opportunity to support the City's transition to a cleaner and more sustainable economy, supported by the Port of Oakland's electrification goals, and the significant amount of land in the area (the industrial lands cover about 20 percent of the city's land area). However, the City will need to implement a range of policies to achieve its goal of fostering job-dense and sustainable economic growth. While this report is not intended to propose or resolve critical land use and policy issues, it can inform decisions and direction on questions to be addressed in subsequent phases of the General Plan, including but not limited to the following:

- **Economic Transition:** What industries currently contribute most significantly to the industrial lands' economy? How might the shift towards new industries shape the economic and social conditions of the industrial lands?
- **Land Use Changes:** What are the long-term market prospects facing the land uses currently active in the industrial lands? How might City land use regulations encourage growth in industry sectors and development that supports community and citywide environmental goals?
- **General Plan Implementation Policies and Initiatives:** What additional policy initiatives might the City pursue to address historical and existing inequities and achieve other desired outcomes in the industrial lands?

Study Overview

While the industrial lands have played an important role in Oakland's economic evolution for over century, growth in the area has also exposed generations of residents to environmental hazards, particularly among disadvantaged communities of color. The following overview provides the research, analysis, and findings from this study, as further documented in subsequent chapters:

- Covering slightly more than 20 percent of Oakland's land area, occupying roughly 75 percent of its waterfront, and accounting for about 40 percent of the nonresidential building space, the industrial lands represent a vital economic asset for the City. However, with about 15 percent of the city's jobs and three percent of its housing units and residents, the area is characterized by relatively low intensity development patterns and land uses.
- Approximately 70 percent of the jobs in the industrial lands are in "blue collar" professions such as transportation and warehousing, manufacturing, and construction, which offer an opportunity for employed residents without college degrees to make a living. But employment in the industrial lands has remained stagnant over the past two decades, and only one-fifth of these jobs are filled by residents and only 40 percent by persons of color.
- Goods movement-related sectors currently represent the predominant industry cluster in the industrial lands, largely attributable to the facilities and activities of the Port of Oakland. A renewed emphasis on goods movement-related activity within the industrial lands could facilitate more logistics-related land uses, such as warehousing, cold storage, and services related to international trade. In contrast to historical patterns, this approach could also be pursued in a manner more compatible with adjacent land uses through, for example, the establishment of buffer and transition zones, transition to "cleaner" technologies, and adoption of alternative transportation strategies (e.g., electrification and rail).
- Other models of economic development for the industrial lands include an emphasis on fast-growing and emerging Bay Area sectors such as life sciences and green technology, a strategy that could increase employment diversification, intensity, and growth opportunities. Contingent upon the decarbonization of the area's industrial uses, this approach could be combined with residential mixed-use districts that include a variety of population and visitor-serving commercial uses (e.g., retail, hotels, entertainment venues). While additional residential and commercial mixed-use development in the industrial lands has strong market support given its excellent location attributes and regional housing shortages, land-use conflicts remain a significant impediment. Therefore, future land-use decisions will need to balance the economic benefits of industrial uses with the health, safety, and social needs of residents.

Policy Implications and Next Steps

As noted, this economic analysis is designed to inform subsequent planning and policy-related decisions to be addressed as part of the General Plan Update process. The Report does not analyze or recommend specific policy actions, rather it documents current conditions and provides a realistic assessment of economic opportunities and directions the City might pursue.

The Report finds that while the industrial lands include a diverse range of land uses and economic activity, the area is currently dominated by industrial uses with relatively low job densities, including many locations and properties that have undergone minimal re-investment, in part due to uncertainty about the City's long term planning priorities. At the same time, the industrial lands have experienced persistent land-use conflicts between polluting industrial activity and other long-standing as well as new land uses, including housing. The industrial lands hold a small share of the city's overall jobs (only 16 percent), despite comprising a significant portion of the city's land area. Given these circumstances, the City faces multiple potential non-exclusive paths for the future of its industrial lands:

1. Leveraging the Port's position as the economic anchor of the industrial lands by solidifying surrounding areas as a goods movement and logistics network. In this scenario, these areas would service the Port's economy and the City would tighten zoning regulations to disallow land uses that are incompatible with continued Port expansion.
2. Modernizing the industrial lands toward denser, cleaner job centers, emphasizing growing sectors such as biotechnology and clean energy. Such a plan would likely require a range of investments, including economic development initiatives related to de-carbonization, job training, and infrastructure as well as land-use policy changes to attract growing sectors not well represented in Oakland.
3. Transitioning portions of the industrial lands into denser mixed-use neighborhoods with housing, commercial (e.g., retail, hospitality, entertainment) and recreation amenities. Under this scenario, the City may need to heavily regulate and ultimately downsize industrial activity in targeted locations to allow for transition to alternative uses. Such a strategy would also need to consider if alternative, non-industrial lands are available to support the City's housing development goals.

The City can pursue one or a combination of these scenarios simultaneously or in different locations within the industrial lands. Each approach will require different levels of public and private investment, land-use planning, policy, and zoning changes, and, most importantly, a vision that guides all of the above. In deciding which scenario or combination of scenarios to pursue, the City will need to consider whether the industrial lands would be best served by tightening land-use

requirements to disallow continued incursion of land uses that are incompatible with industrial activity, or to harness emerging and regional market opportunities for alternative uses and economic growth trajectories. This Report provides context for understanding how the trajectories might successfully unfold over time.

2. Historical and Planning Context

This chapter provides a brief history of the evolution of Oakland's industrial lands and the policy context that has, and continues to, shape economic activity and development in the area. It is provided as context for the more detailed data analysis in subsequent chapters.

Historical Context

Oakland has been an industrial hub in Northern California for over a century. The city became the western terminus of the First Transcontinental Railroad in 1868, which spurred job growth and mass migration to the city (Oakland's population ballooned by more than 2,000 percent from 1860 to 1880). Then, during World War II, Oakland's shipyards became a major employer under the Nation's Emergency Shipbuilding Program, which brought an influx of African American residents during the Great Migration. Meanwhile, the Oakland Army base served as a major cargo- and personnel-movement hub during World War II, as well as during the subsequent wars in Korea and Vietnam. Subsequently, during the Postwar era, the advent of containerized shipping made the Port of Oakland one of the busiest seaports in the world by the 1960s.

The activities of Oakland's industrial base began to focus on goods movement-related sectors following the decline of manufacturing nationwide, combined with the relocation of the city's automotive manufacturers to suburban East Bay, its food manufacturers further inland to the San Joaquin Valley, and the electronic manufacturing industry overseas. For the last 50 years, the Port has been instrumental in Oakland's industrial success, led by the pioneering of containerized shipping and the use of gantry cranes in the early 1960s. Since then, Oakland's seaport supplanted the Port of San Francisco and became the nation's leading exporter of high-value agricultural commodities like wine, nuts, and meat.² In its current state, the Port of Oakland serves as an important node in a global supply chain, connecting Asia and the Pacific with Northern California and the midwestern United States.

Coincidentally, areas surrounding the Port of Oakland have been disproportionately impacted by the pollution generated by goods movement-related activities. Increased truck traffic to, from, and within the industrial lands has created an environmental hazard for the generations of residents living in or near the area. Indeed, current studies supporting Oakland's General Plan Update show a strong correlation between diesel and traffic emissions and the incidence of asthma in

² The Port of Oakland exports nearly double the value of agricultural commodities than the Port of Long Beach and the Port of Los Angeles combined.

residents who live near and among Oakland's industrial lands and major truck routes. Further, because of the ad hoc nature of the development of Port-supporting uses in Oakland's industrial lands, there are areas where industrial uses (e.g., warehouses) are near residential areas or lack adequate buffers to contain pollution. As such, pollution levels and disparities in health outcomes in these areas (i.e., parts of West and East Oakland) are among the worst in California.³

Traffic-induced air pollution is a citywide problem, but the high incidence of pollution-related health conditions in Oakland's industrial lands spotlights longstanding environmental racism and exclusion toward the City's low-income residents of color. Employment opportunities in railyards, wartime shipyards, and the Oakland Army Base brought ethnic and racial minorities to West Oakland en masse during the early 20th century, where they were contained through exclusionary housing practices such as restrictive covenants and mortgage discrimination. Meanwhile, industrial uses had been disproportionately zoned among or adjacent to existing minority neighborhoods in Oakland since at least as far back as the 1930s. People of color branched out of West Oakland toward North Oakland and East Oakland only when White residents freed up housing as they moved east toward the hills and suburbs.

As the goods movement industry in Oakland grew through the second half of the 20th century, so did the pollution from freight transport interfacing with the Port. Moreover, this became an environmental hazard that many disadvantaged populations of Oakland found difficult to escape, as they remained relegated to the same areas for economic reasons - namely, the deindustrialization and disproportionate unemployment in minority communities. This problem persists today, as most of Oakland's industrial lands remain low-income and non-White. At the same time, economic and policy trends have converged to support Oakland's position at the center of the Bay Area's maritime industry.

Snapshot of Citywide Policy Guidance

While Oakland has never adopted an official industrial lands policy, the City has acknowledged the historical and ongoing land-use conflicts that prevail in its industrial lands since at least as far back as the 1998 General Plan. Since then, there have been numerous zoning changes made to ameliorate land-use conflicts and more carefully delineate buffers between industrial and residential uses.

The current efforts of the City's General Plan Update process complement existing initiatives that aim to address the historical and ongoing inequities related to land-use conflicts in Oakland's industrial lands. Each study has a specific focus,

³ For additional analysis on environmental justice and land use conflicts, see *Environmental Justice and Racial Equity Baseline (2022)*, prepared by Dyett and Bhatia, and *History of Industrial Activities and Industrial Zoning in Oakland (2022)*, prepared by the City of Oakland Department of Planning and Building.

but they all seek to address climate change or long-term health and economic disparities by reducing greenhouse gas emissions, incorporating green infrastructure, and supporting equitable growth. Many initiatives have been led by the City and regional agencies, while others have been community-driven and in partnership with local and regional agencies. The following list provides a cursory account of recent efforts:

- **History of Industrial Activities and Zoning in Oakland (2022):** The City of Oakland Planning & Building Department (PBD) developed a white paper detailing the political, social, and economic conditions that have guided Oakland's industrial development. The report focuses particularly on the emergence of racial disparities in air quality for communities in East and West Oakland through restrictive zoning, beginning with the City's first zoning ordinance that excluded Black communities from residentially zoned areas and surrounded the areas relegated to the Black population with industrial uses. The paper provides historical background to help decision makers understand how policy decisions contributed to the disparities that persist today.
- **East Oakland Neighborhoods Initiative (2021):** Developed by the City's Planning Bureau in concert with 12 community-based organizations, the East Oakland Neighborhoods Initiative (EONI) establishes the primary concerns, goals, and priorities of East Oakland residents and stakeholders. The Initiative mainly focuses on the needs of residents in "Deep East" Oakland, where residential and industrial uses coexist. The EONI supports rezoning and creating buffers between industrial and residential areas by incorporating green infrastructure. The EONI also identifies opportunities to make the local economy less reliant on industrial investment, recommending programs that support local business development and energy independence.
- **Oakland 2030 Equitable Climate Action Plan (2020):** Guided by the input of 2,100 Oaklanders and City staff from 13 different departments, the Equitable Climate Action Plan (ECAP) identifies an equitable and cost-effective path to meeting the City's climate goals, which include reducing emissions by at least 56 percent by 2030. The ECAP specifically advocates for independence from fossil fuels and prioritizes the resilience of Oakland's communities in the face of climate change. An engagement survey identified reducing pollution from industrial facilities adjacent to residential neighborhoods and schools as a top community priority. To reduce these emissions, ECAP recommends transitioning to electric vehicles and buildings and expanding and protecting green infrastructure.
- **Industrial Lands Inventory (2019-2021):** Oakland's Economic and Workforce Development Department (EWDD) commissioned an industrial lands inventory and impact analysis to inform decision-making on managing Oakland's most important industrial uses. EWDD was particularly focused on assessing the impact of the legalized cannabis industry on existing local manufacturers and transportation firms.

- **Priority Production Areas (PPA) Guidance (2019):** Established by ABAG, PPAs encourage middle-wage job growth near affordable housing and help to support clusters of industrial activity through prioritized grant awards. The Oakland Planning Commission recommended the designation of Oakland Airport and the Port of Oakland as PPAs to the Association of Bay Area Governments (ABAG) for inclusion in the Bay Area's long-range plan, Plan Bay Area 2050. The City has since designated the Port and the Airport as a PPA encompassing over 2,700 acres of land. The PPA designation enables the City to pursue funding that supports equitable and resilient growth opportunities in Oakland's industrial areas.
- **West Oakland Community Action Plan (2019):** The West Oakland Environmental Indicators Project, in coordination with the Bay Area Air Quality Management District (BAAQMD), developed the West Oakland Community Action Plan (WOCAP) in recognition of longstanding disparities in air quality and health conditions for West Oakland residents compared to the rest of the state. The Plan endorses the adoption of zero-emissions freight trucks, expanding green infrastructure, and prohibiting backyard burning and additional truck yards in West Oakland.
- **Workforce Development Strategic Plan (2017-2020):** The Oakland Workforce Development Board (OWDB) created the Workforce Development Strategic Plan in response to the growing disparities in economic outcomes for communities such as those in or adjacent to the city's industrial lands. The (OWDB) has taken several steps to address these disparities by partnering with local and regional employers to expand support services at job sites and create apprenticeship programs to increase access to educational and job opportunities. The OWDB also created the West Oakland Job Resource Center to educate and prepare residents for careers in building trades.
- **Oakland Department of Transportation (OakDOT) Strategic Plan (2016):** Developed by the City's Department of Transportation, this plan acknowledges the transportation sector as the largest source of greenhouse gas emissions and identifies several opportunities to improve air quality, particularly in affected communities such as West Oakland. Specific opportunities include addressing approval requirements for development projects to allow for greater community input prior to development, and reevaluating truck routes within the city.

3. Real Estate Profile

This chapter describes the composition of existing land uses in the City's industrially zoned lands. It evaluates what developments exist in the area, the age and quality of the buildings, and the performance of industrial space over the last decade. It also documents the amount and growth of residential land uses in the city's industrial lands.

Overall, industrial lands account for slightly over one-third of nonresidential real estate building space in Oakland and covers about 20 percent of the city's total land area. The buildings are comprised chiefly of industrial sector uses along with small concentrations of office, retail, lodging, and residential. While tenants have come and gone, most of the nonresidential buildings in the area are at least 40 years old, as 70 percent were built between 1930 and 1979. Additionally, industrial market indicators are currently in a state of flux amid a widespread surge in demand for logistics space spurred by the rise of e-commerce. The Port of Oakland is the industrial nexus of the area, operating on half of the City's industrially zoned land.

Nonresidential Real Estate

Nonresidential real estate in Oakland's industrial lands is mostly made up of industrial properties (i.e., properties utilized by transportation and warehousing, manufacturing, and wholesale trade) but contains small amounts of office, retail, and lodging. As shown in **Figure 2**, industrial uses make up about 88 percent of the building space in Oakland's industrial lands, with the remaining 12 percent consisting of offices, hotels, and other smaller uses. Other findings based on EPS' analysis of nonresidential real estate data (and summarized in **Figure 2**) include:

- About 88 percent of the city's total inventory of property classified as industrial is located within the industrial land area (see **Figure 2**).
- Industrial buildings within the industrial lands area account for roughly 36 percent of total nonresidential real estate citywide.
- The industrial lands area accounts for about 40 percent of all nonresidential building space in the city (excluding miscellaneous nonresidential uses such as self-storage, parking garages, and schools).
- About 20 percent of the city's inventory of hotel space, 8 percent of the office space, and 7 percent of the retail space is located within the industrial lands.

Figure 2 Nonresidential Building Space by Type in Oakland's Industrial Lands

Product Type ¹	Total Non-Residential Building Space (Square Feet)		Industrial Lands as a % of Non-Residential Sq.Ft. Citywide	% of Citywide Product Type Located in Industrial Lands
	Amount (2022)	Share of Total Non-Residential		
Industrial	31,893,858	88%	36%	88%
Office ²	2,578,320	7%	3%	8%
Retail	1,178,606	3%	1%	7%
Lodging ³	<u>473,898</u>	<u>1%</u>	<u>1%</u>	<u>20%</u>
Total	36,124,683	100%	41%	41%

[1] Excludes miscellaneous non-residential uses such as self-storage, parking garages, and schools

[2] Includes health care facilities

[3] Assumes 500 sq.ft. per room

Source: CoStar Group; Analysis by Economic & Planning Systems, Inc.

Looking more closely at the composition of industrial properties in the industrial lands, about 60 percent of the building space consists of warehouse and distribution centers (logistics facilities). These buildings were developed and located in this area to serve goods movement activities associated with the Port. Meanwhile, about another 17 percent is made up of manufacturing facilities (excluding food processing and light manufacturing, which, combined, make up only three percent of nonresidential real estate in industrial lands). Finally, research and development (R&D) and 'flex' properties make up only one percent of nonresidential real estate space. The negligible amount of R&D space in the industrial lands is noteworthy given surrounding clusters of R&D/flex-utilizing life science and biotech activity in Alameda, Berkeley, and Emeryville.

Non-industrial properties (i.e., office, retail, and lodging) make up only 12 percent of nonresidential building square feet in the area. While comprehensive and up-to-date data on office space in the city's industrial lands is difficult to come by, space likely is used by an eclectic mix of firms engaged in activities ranging from real estate to engineering and graphic design, as discussed and further documented in Chapter 4.

Meanwhile, retail and service nonresidential, which makes up only three percent of nonresidential building space in the area, is mostly auto repair establishments and larger-format, freestanding retail (e.g., strip malls and neighborhood

centers). In fact, the average retail property in the area is slightly larger than the citywide average (5,860 square feet versus 5,800 square feet). Lastly, there are nine lodging establishments on industrially zoned land, which make up only one percent of nonresidential real estate space in the area, but one-fifth of lodging space citywide because of their proximity to the Oakland Airport and the Oakland Marinas.

Much of the non-industrial properties in and adjacent to the city's industrial lands have been converted from earlier industrial uses, sometimes as adaptive reuse of existing buildings and others through demolition and redevelopment. An ongoing example is Brooklyn Basin (adjacent to the city's industrial lands), where 64 acres of old shipping land currently is being developed into a mixed-use project planned for over 3,000 residential units and over 200,000 square feet of nonresidential space. Other examples include Embarcadero West, a two-story office building on industrially zoned land in West Oakland, formerly a Del Monte canning factory; and 101 Linden, a nearby mixed-use office/retail building initially built as the west coast factory for The Standard Underground Cable Company in 1905.

Age and Quality of Building Stock

Historically, the growth of industrial properties in Oakland's industrially zoned lands have mirrored the broader macroeconomic trends that shaped the goods-producing and goods-movement industries over the past 70 to 90 years. As shown in **Figure 3**, three-quarters of industrial property square footage in the area was built sometime between the 1930s and the end of the 1970s, concurrent with the rise of the goods-movement industry and the rise and subsequent weakening of goods-producing activity in Oakland. During this time, warehouses became the dominant land use as the Port of Oakland became one of the busiest seaports in the world.

The demand for additional manufacturing space in Oakland tempered after the 1950s because of the large-scale, post-war exodus of manufacturing firms – a shared phenomenon among major American cities associated with the “suburbanization of industry” and the increased competition for manufacturing labor from overseas. More recently, distribution facilities have become the preferred land use, making up nearly half of all new industrial development in the area since 2000, while the areas' aging manufacturing properties are finding increased use as artisan and maker spaces.

Oakland's industrial lands also include a mix of new and old non-industrial properties. For example, almost half of all existing office space in the area was developed alongside the roughly 20 million square feet of industrial properties built from the 1930s through the 1970s, much of it likely in support of the goods-movement industry. Retail development, on the other hand, has been more evenly distributed across Oakland's history, likely in response to population growth in both West Oakland and East Oakland and the rise of the automobile. Since 2000, about half of all new retail development in the area are mixed-used

properties, including the large-scale additions made to Jack London Square, which began in 2002.

Meanwhile, most of the lodging space is relatively new. Just over two-thirds of lodging square footage in the area was built after 2000, most likely to meet the needs of patrons of the Oakland Airport and the Oakland Marinas.

Figure 3 Share of Nonresidential Inventory by Period Built in Oakland's Industrial Lands

Time Period	Share of Inventory Built ¹				
	Industrial	Office	Retail	Lodging	All Types
Pre-1900s through the 1920s	8%	22%	19%	0%	9%
1930s through the 1970s	73%	46%	39%	18%	70%
1980s	5%	20%	10%	5%	6%
1990s	4%	1%	24%	9%	5%
2000 to Present	<u>10%</u>	<u>11%</u>	<u>8%</u>	<u>68%</u>	<u>11%</u>
Total	100%	100%	100%	100%	100%

[1] Results exclude miscellaneous nonresidential uses such as self-storage, parking garages, and schools

Source: CoStar Group; Analysis by Economic & Planning Systems, Inc.

In addition to being primarily composed of older building stock, most nonresidential real estate inventory in Oakland's industrial lands lack modern improvements. As shown in **Figure 4**, roughly more than three-quarters of nonresidential inventory in the area is classified as Class C by the real estate brokerage community, indicating a lack of modern amenities and improvements such as renovated interiors, up-graded utilities systems (e.g., HVAC, elevators, telecommunications), security services and equipment, and the like. Furthermore, the proportion of Class C properties in Oakland's industrial lands is considerably larger than citywide and state averages.

That considered, it is important to note that quality is a weaker indicator of value for industrial properties (nearly 80 percent in the area are Class C) than for other nonresidential properties, especially near major goods-movement nodes such as the Port of Oakland. For example, warehousing, particularly of dry goods, does

not generally require highly finished or amenitized facilities, which is evidenced by the consistently high degree of demand for Oakland's stock of warehouses.

Indeed, the demand for industrial properties in the city is primarily driven by its strategic location near the Port and among multiple interstate highways, a characteristic that firms are willing to pay a premium for over quality. Information provided by real estate professionals active in the area suggests that the locational advantages of the industrial lands, combined with lack of certainty about the future of the area, has disincentivized some property owners from reinvesting in their stock. Many comparable areas in adjacent cities of Emeryville and Alameda have undergone more significant transformations.

The lack of investment in this older building stock means that a high proportion of properties in the industrial lands are not currently attractive or suitable for many modern industrial sectors, particularly those with high employment intensity (Chapter 6 provides further detail on labor intensity in Oakland's industrial lands compared to other cities). Converting these properties to accommodate tenants involved in innovation- and technology-based fields, including life sciences, would likely require significant investments, such as significant upgrading or redevelopment, rather than minor updating, with supportive district-scale policies to create suitable environments.

Figure 4 Nonresidential Inventory by Class in Oakland's Industrial Lands

Class	Share of Inventory			
	Class A	Class B	Class C	Total
Industrial				
Industrial Lands	6%	15%	79%	100%
Citywide	5%	16%	79%	100%
Statewide	14%	44%	42%	100%
Office				
Industrial Lands	0%	47%	53%	100%
Citywide	33%	47%	20%	100%
Statewide	32%	47%	21%	100%
Retail				
Industrial Lands	0%	24%	76%	100%
Citywide	2%	17%	81%	100%
Statewide	8%	49%	43%	100%
Total ¹				
Industrial Lands	5%	18%	77%	100%
Citywide	15%	27%	58%	100%
Statewide	17%	46%	37%	100%

[1] Excludes lodging

Source: CoStar Group; Analysis by Economic & Planning Systems, Inc.

That said, the market has responded to the increasing need for industrial properties fit for more advanced uses (e.g., distribution and cold storage). Specifically, almost the entirety of the area's Class A industrial space has been built just within the last two decades, nearly all of which make up distribution centers (75 percent) and cold storage facilities (15 percent). These newer developments include the City's 160-acre Gateway Industrial District project (former site of the Oakland Army base) and the 270,000 square-foot cold storage facility, Cool Port Oakland, built on Port property in 2018. Further, the share of Class A industrial properties in the city is slated to increase as significant pipeline projects include a 534,208 square-foot distribution facility located near International Boulevard and Seminary Avenue in East Oakland, which will be the largest industrial development in the city's history (specific tenants have yet to be identified).⁴

⁴ See [Bridge Development Breaks Ground on 534,000 SQFT Bridge Point Oakland - The Registry \(theregistrysf.com\)](https://theregistrysf.com)

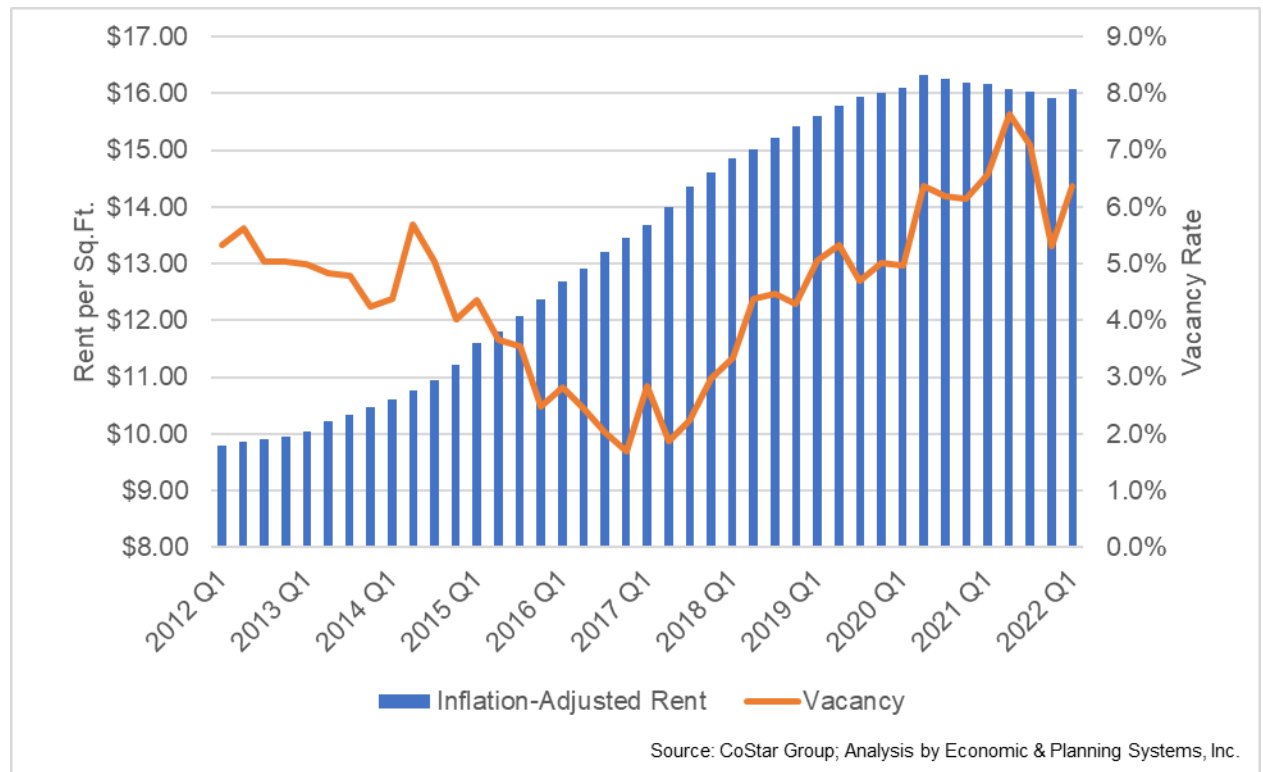
For non-industrial properties, on the other hand, quality is a stronger determinant of building value and tenancy. There are no Class A office buildings located in the area, as the city's newer and higher-quality office properties, utilized mainly by knowledge-based and tech-oriented professional services firms, are anchored downtown within the city's "central business district" and close to public transit and other urban amenities. The composition of retail inventory in Oakland's industrial lands is more akin to the city as whole in terms of level of improvements (e.g., predominantly Class C). Finally, available information from CoStar Group shows mainly upscale lodging facilities near the Oakland Marinas, upper-midscale properties near the Airport, and economy-tier properties near the Coliseum.

Performance of Industrial Sector Building Stock

Because of the small sample size of non-industrial properties in the area, this brief subsection will only focus on the market performance of industrial properties. As noted earlier, industrial properties comprise most of the nonresidential real estate in Oakland's industrial lands, thereby reflecting the aggregate market performance of the area.

Figure 5 provides information on vacancy rates and inflation-adjusted rents of industrial properties in Oakland's industrial lands over the last ten years. As shown, there was immense growth in industrial rents in the decade leading up to the pandemic, in lockstep with the concurrent rise of e-commerce over the same period. Meanwhile, vacancy rates began to rise steadily, likely due to the completion of pipeline projects from the industrial building boom in the broader East Bay, which began in 2014. However, market indicators for industrial properties moderated at the outset of the pandemic: inflation-adjusted rents tempered while vacancy fluctuated from 2020 through the beginning of 2022.

Figure 5 Real Annual Industrial Rents and Vacancy in Oakland's Industrial Lands (2012-2022)



There are a variety of factors why industrial performance in the area has cooled in recent years. For roughly half of 2021, the global supply chain gridlock led many ocean carriers to bypass the Port of Oakland out of fear of increased delays, creating lower trade volumes and less demand for local facilities. As a result, the Port of Oakland did not experience congestion like other West Coast ports. Also, the increase in industrial stock from projects like those described above (i.e., Cool Port Oakland and the Gateway Industrial District) could be responsible for lease rate moderation, as over 1.8 million square feet of industrial space came online over the last decade. Further, rents for industrial cannabis facilities plummeted statewide after post-legalization demand expectations failed to materialize, pulling down aggregate industrial rent.

Industrial development elsewhere in the East Bay, which shifted demand out of Oakland, could also be a factor. Additionally, there may be rent increases in the city that have not occurred due to many existing, long-term leases. Lastly, inflation has been historically high since mid-2021, masking any marginal increases in nominal rents over the past year. All that considered, the demand remains high for industrial stock in Oakland (lease rates are still higher than the state average) despite recent headwinds.

Port of Oakland's Property Holdings

The Port of Oakland manages key economic assets in the city's industrial lands — the seaport, airport, and its commercial properties. In addition to several thousand acres of waterway, the Port oversees the 1,300-acre Oakland Seaport and the 2,400-acre Oakland International Airport, which combined make up half of the City's industrially zoned land. Additionally, as a California State Tidelands Trust grant, the Port maintains a significant portion of waterfront property for parks and public recreation.

Indeed, the Port's operations in the area encompass a wide range of both industrial and non-industrial activities. In addition to its core functions of operating the Seaport and Airport, the Port also oversees the conversion of underutilized acreage into commercial properties through its Commercial Real Estate (CRE) Division. The CRE Division's holdings include approximately 100 tenant accounts across 850 acres along the Oakland waterfront, encompassing hotels, storefronts, restaurants, offices, and warehouses. For example, Jack London Square, one of the Port's most recognized commercial properties, was originally a warehouse and industrial area that the Port, starting in the 1950s, gradually converted into a publicly accessible mixed-use waterfront destination and maritime landmark.

Residential Real Estate Profile

In addition to nonresidential uses, Oakland's industrially zoned lands contain a small but fast-growing number of residents and housing units. While the residential community in the industrial lands area is small relative to the city overall, there has been a rapid increase in the area's population and housing stock over the past decade driven by regional housing shortages and price escalation. The increased housing and industrial interface in Oakland's industrial lands has also reinforced longstanding land use conflicts that affect both the health and welfare of residents and viability of many job-generating uses.

As shown in **Figure 6**, roughly 12,500 residents and almost 5,000 housing units occupied the industrial lands in 2021, an increase of 19 percent and 15 percent from 2010, respectively. This level of growth significantly outpaced the city. Much of the growth has occurred through the redevelopment of vacant or under-utilized warehouse or industrial properties into higher-density multi-family apartments and condos, particularly in and adjacent to Jack London Square and West Oakland. These redevelopments have been driven by the increasing market value of residential projects relative to existing industrial uses.

Still, the industrial lands only accounted for about three percent of the population and housing units in the city as of 2021. That said, the percentage is expected to increase over time, with over 5,000 new units already in the planning pipeline in

Jack London Square and West Oakland alone (more than doubling the current population).

Figure 6 Housing and Population Trends

	Industrial lands ¹			Citywide			Industrial Lands as a % of City Total	
	2010	2021	% Change	2010	2021	% Change	2010	2021
Housing Units	4,291	4,952	15%	169,710	180,178	6%	3%	3%
Population	10,512	12,486	19%	390,724	430,100	10%	3%	3%

[1] 2021 data for the industrial lands is estimated by Esri, not recorded.

Sources: U.S. Census Bureau; Esri; Analysis by Economic Planning & Systems, Inc.

Compared to the rest of Oakland, the population in its industrial lands consists of higher percentages of renters, people of color, and households with lower median incomes and home values. The households living in Oakland's industrial lands include an even mix of families and individuals, with an estimated median income of \$70,730 in 2021, 12 percent below the city's median household income of \$80,143, and 10 percent below the state's median household income of \$78,672.

The industrial lands also include a higher percentage of Asian and Latinx residents and a slightly smaller percentage of Black residents compared to the city. Partially due to the negative impact of heavy industrial uses on residential quality of life, the estimated median home value in the industrial lands was roughly \$599,300 in 2021, about 18 percent below the city's median home value of \$730,000.

Due to the Bay Area's housing affordability crisis and residential displacement, many people informally occupy the vast public and private spaces of the industrial lands. In 2022, the non-profit led Point-in-Time report for Oakland counted over 5,000 people experiencing homelessness, an increase of 24 percent since 2019.⁵ Furthermore, data from the Anti-Eviction Mapping Project show that the neighborhoods in and adjacent to Oakland's industrial lands have among the highest counts of homeless encampments, alongside other areas of the city, such as Downtown and North Oakland.⁶

In addition to homelessness, anecdotal reports suggest that many in Oakland currently find shelter in warehouse or industrial buildings that are not designated for residential uses. While data on the illegal use of industrial space for housing is

⁵ <https://everyonehome.org/wp-content/uploads/2022/05/Oakland-PIT-2022-Infographic-Report.pdf>

⁶ [Oakland Homeless Encampments — Anti-Eviction Mapping Project \(antievictionmap.com\)](https://antievictionmap.com/)

sparse, the issue received heightened public attention in the aftermath of a 2016 fire in an illegally occupied warehouse in the Fruitvale neighborhood that tragically killed 36 people.⁷ The event spurred awareness and policy debate about how best to address the unsafe conditions that often characterize such living arrangements while also taking into account underlying housing insecurity. It is unknown how much space (land or buildings) in the industrial lands currently function as informal shelter.

⁷Located in the Fruitvale neighborhood, the so-called Ghost Ship building operated informally as a live/work artist's loft and event space and caught fire during a non-permitted concert. The warehouse was zoned for industrial purposes and residential and entertainment uses were not allowed.

4. Employment Profile

This chapter details the composition and trends of employment in the city's industrial lands. It also profiles the workers employed in these sectors in terms of education, race/ethnicity, and place of residence. The information provides insight into current economic specializations and emerging opportunities.

Over the last decade, job growth in Oakland's industrial lands has not kept pace with the city and the region. Furthermore, the area employs only a small percentage of the city's employed residents and acts as more of a regional employer, much like the city. That said, the area offers an opportunity for employed residents without college degrees to make a living, as the predominant industries have low education requirements and pay relatively well.

Job Trends

The industrial lands currently account for about 15 percent of Oakland's total jobs, a share that has gradually declined over the last two decades. As shown in **Figure 7**, job growth in Oakland's industrial lands has lagged the city, Alameda County, and the Bay Area since 2002 (the earliest year for which reliable data is available). This discrepancy is primarily attributable to the disproportionate impact of the Great Recession on the city's industrial sector.

While the city, anchored by its flagship sectors (i.e., Health Care and Social Assistance and Public Administration), was somewhat insulated from the effects of the Great Recession, its industrial base mirrored declines experienced both statewide and nationally. For broader context, the manufacturing industry in California shed 143,000 jobs from 2008 to 2009 and shed another 39,000 jobs from 2009 to 2010, bringing the industry's total losses from the recession to 182,000 jobs before growth resumed in 2011. By comparison, jobs in California's Health Care and Social Assistance industry increased by 73,000 from 2008 to 2010.

Figure 7 Employment Trends

Location	Jobs by Year			% Change		
	2002	2010	2019	2002 - 10	2010 - 19	2002 - 19
Industrial Lands	31,845	30,248	33,210	-5%	10%	4%
As % of Oakland	18%	16%	15%			
Oakland	173,228	193,214	217,679	12%	13%	26%
Alameda County	690,603	650,526	807,173	-6%	24%	17%
Bay Area	3,197,984	3,159,673	4,040,793	-1%	28%	26%

Source: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

Employment by Sector

As shown in **Figure 8**, roughly 70 percent of all employment in industrial lands are in goods-movement or goods-producing industrial sectors (i.e., Transportation and Warehousing, Manufacturing, Construction) or industrial-supporting sectors (i.e., Administrative Support, Waste Management, and Remediation; and Wholesale Trade). As the five largest employment sectors in the area, they provide roughly 23,000 jobs. However, these industries have not contributed equally to overall job growth throughout the past decade. Manufacturing, the second-largest industry in the area, declined the most, while a mix of industries - large and small - each contributed more than a fifth to overall job growth in the area, as detailed below:

- Transportation and Warehousing:** Largely consisting of port-related and logistics activities, this sector is the largest in Oakland's industrial lands and is inclusive of the Port itself (except Port administrative offices located outside industrial lands). This sector makes up nearly a third of jobs and is responsible for almost 40 percent of the job growth in the area from 2010 to 2019. This growth aligns with trends in Transportation and Warehousing more broadly, which grew by 58 percent at the state level and 36 percent at the national level over the same period. This broader trend coincided with the growth in e-commerce (or direct-to-consumer goods shipping), which skyrocketed in the last decade. Two of the three largest employers in Oakland's industrial lands are logistics establishments: the U.S. Postal Service in West Oakland, which employs roughly 700 workers, and the Dreisbach Enterprises cold storage facility in the Fruitvale District, which employs over 300 workers.

- **Educational Services:** Educational Services, which make up only three percent of jobs in Oakland's industrial lands, contributed the second most to job growth in the area over the last decade, adding 760 jobs. The growth in Educational Services in Oakland's industrial lands differs from what occurred in the city during the same period. Specifically, Educational Services declined by 37 percent in the city from 2010 to 2019. While robust data for employment in Educational Services is difficult to come by at the city level, a significant portion of the industry's job growth likely resulted from the addition of charter schools in Oakland's industrial lands, such as Lodestar in 2016 and Downtown Charter Academy in 2014 (the industry's largest employers in the area are elementary or other secondary schools). That said, most of the educational establishments in the area specialize in tutoring and other personal development services (e.g., music, cooking, or driver's education).
- **Professional, Scientific, and Technical Services (Prof, Sci, & Tech):** This industry is the sixth largest with respect to employment in Oakland's industrial lands and contributed the third most (24 percent) to job growth, adding 717 jobs from 2010 to 2019. The growth in Professional, Scientific, and Technical Services jobs reflects what occurred in the city overall, where the industry contributed the fourth most to job growth. Prof, Sci, & Tech firms located in Oakland's industrial lands are engaged in a range of services, including engineering, architectural design, graphic design, and accounting.
- **Construction:** This industry, which includes occupations like plumbers, roofers, and home builders, is the third largest in Oakland's industrial lands and contributed the fourth most to job growth in the area, adding 644 jobs from 2010 to 2019. The Construction industry also grew significantly at the city level, growing by 35 percent and contributing the sixth-most to overall job growth.
- **Wholesale Trade:** Wholesale Trade, which includes wholesale grocers and the wholesale distribution of various goods ranging from machinery, chemicals, and home furnishings, is a fixture in Oakland's industrial lands. Despite adding less than 200 jobs to Oakland's industrial lands, this industry remains its fourth largest and maintains a sizable presence in the area. The sector's presence in industrial lands represents nearly half of all Wholesale trade employment in Oakland and accounted for 95 percent of the industry's growth in the city from 2010 to 2019.
- **Administrative and Support and Waste Management and Remediation Services (Admin Support):** This industry is the fifth largest in Oakland's industrial lands, comprising 2,532 jobs. Because of the lack of granular data at the city level and the diverse nature of the industry, it is not easy to disaggregate the various sub-sectors and occupations that comprise Admin Support in the city and its industrial lands. That said, of those employed in Admin Support within Alameda County as a whole, many hold jobs in private investigation and security services (23 percent), building services

(22 percent), personnel supply services (17 percent), and landscaping services (16 percent). It is worth noting that marine terminals generally hire many of their workers from daily registries or staffing agencies, recorded as Admin Support employment in each case.

- **Manufacturing:** This industry is the second largest in Oakland's industrial lands after Transportation and Warehousing. However, similar to what occurred in the city overall, the industrial lands' Manufacturing sector shed 499 jobs over the last decade, dragging 17 percent on overall growth. Currently, the activities of this industry in Oakland's industrial lands primarily consist of durable and nondurable consumer goods manufacturing (e.g., furniture and apparel) and metals and miscellaneous materials manufacturing (e.g., rubber, plastics, and concrete).

Figure 8 Employment by Sector in Oakland's Industrial Lands

Sector	Jobs (2019)		Growth (2010 - 19)		Industrial Lands Jobs Relative to Same Sector In:	
	Amount	Share of Total	Change	Share of Change	Oakland	Alameda County
Transportation and Warehousing	10,204	31%	1,159	39%	48%	27%
Manufacturing	3,832	12%	-499	-17%	55%	4%
Construction	3,108	9%	644	22%	37%	6%
Wholesale Trade	3,078	9%	174	6%	47%	8%
Administration & Support, Waste Mgmt. and Remediation	2,532	8%	60	2%	25%	5%
Professional, Scientific, and Technical Services	2,060	6%	717	24%	13%	3%
Retail Trade	1,808	5%	-174	-6%	15%	3%
Health Care and Social Assistance	1,450	4%	254	9%	3%	1%
Other Services (excluding Public Administration)	1,341	4%	-395	-13%	14%	5%
Educational Services	1,112	3%	760	26%	6%	2%
Accommodation and Food Services	1,064	3%	439	15%	7%	2%
Real Estate and Rental and Leasing	659	2%	204	7%	20%	6%
Management of Companies and Enterprises	292	1%	76	3%	6%	2%
Information	204	1%	10	0%	5%	1%
Arts, Entertainment, and Recreation	177	1%	-157	-5%	4%	1%
Finance and Insurance	171	1%	21	1%	2%	1%
Agriculture, Forestry, Fishing and Hunting	94	0%	81	3%	61%	16%
Public Administration	13	0%	-214	-7%	0%	0%
Utilities	7	0%	-189	-6%	0%	0%
Mining, Quarrying, and Oil and Gas Extraction	4	0%	-9	0%	100%	3%
Total	33,210	100%	2,962	100%	15%	4%

Source: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

Wages

Industrial jobs hold the potential to provide pathways for residents with low education levels to attain middle-wage careers. **Figure 9** compares the annual

wages of common industrial occupations to the middle-wage range in Alameda County as defined by EPS as 75 to 125 percent of the county's annual median income (or \$40,200 to \$67,000) in 2021.⁸ As shown, while pay levels for most entry-level positions in these occupational categories are below the middle-income range, all "experienced" wages fall within or above this range. This suggests that industrial jobs provide opportunities for workers to achieve middle wages after gaining sufficient work experience.

Figure 9 Industrial Occupations by Wage and Employment Count (2021)

Alameda County		Median Income Range	
		Lower Bound	Upper Bound
		\$40,200	\$67,000
Occupation	Employment Count	Entry Level	Experienced
Material Moving	57,635	\$32,800	\$46,300
Construction Trades	49,483	\$44,000	\$85,300
Motor Vehicle Operators	36,178	\$35,500	\$59,900
Assemblers and Fabricators	26,378	\$35,100	\$52,400
Material Management and Distribution	18,521	\$35,200	\$56,300
Food Processing	6,382	\$32,600	\$42,300
Transportation Supervisors	5,231	\$43,500	\$74,300
Textile, Apparel, and Furnishing Manufacturing	2,882	\$31,400	\$41,300
Air Transportation	1,818	\$48,500	\$172,000

Sources: U.S. Bureau of Labor Statistics; JobsEQ; Analysis by Economic & Planning Systems, Inc.

Worker Profiles

The commuting patterns of workers employed in Oakland's industrially zoned lands provide useful insights into the labor markets serving the area and how it contributes to the broader economy.

Commuting Patterns and Job Capture

The commuting patterns of workers employed in Oakland's industrially zoned lands mirror the commuting patterns of workers citywide, as shown in **Figure 10**. For example, approximately 22 percent of jobs in industrial lands are held by

⁸ While there is no official definition of "middle-income", for the purposes of this analysis, EPS assumes a symmetric range around the annual median income for Alameda County of 25 percent, which is consistent with existing research on the topic.

Oakland residents, compared to 24 percent citywide. Meanwhile, an additional 38 percent commute from other locations in Alameda and Contra Costa counties (compared to 42 percent citywide).

Figure 10 Industrial Lands Commute Trends

Where Oakland Workers Live (2019)			Where Industrial Lands Workers Live (2019)		
Origin	Amount	Share of Total	Origin	Amount	Share of Total
Oakland	47,818	24%	Oakland	6,714	22%
Other Alameda County	47,106	24%	Other Alameda County	7,005	23%
Contra Costa County	34,596	18%	Contra Costa County	4,711	15%
Peninsula/South Bay	14,472	7%	Peninsula/South Bay	2,476	8%
San Francisco	13,795	7%	San Francisco	1,892	6%
North Bay ¹	11,152	6%	North Bay	1,874	6%
Stockton-Modesto Area	6,894	3%	Stockton-Modesto Area	1,540	5%
Greater Sacramento	6,885	3%	Greater Sacramento	1,328	4%
All Other Locations	<u>14,368</u>	<u>7%</u>	All Other Locations	<u>3,431</u>	<u>11%</u>
Total	197,086	100%	Total	30,971	100%

[1] North Bay includes the counties of Marin, Napa, Sonoma, and Solano.

Source: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

While the largest share of the jobs in industrial lands are held by city residents, the area is not a major job center for Oaklanders overall. Specifically, Oakland's industrial lands employ only three percent of the city's employed residents (6,714 workers commute to the city's industrial lands from within Oakland compared to Oakland's 183,563 employed residents).

The industrial lands accommodate only 16 percent of Oakland's jobs (30,971 employed in industrial lands compared to 196,086 employed in Oakland altogether). This relatively small job share is particularly noteworthy given the size of the industrial lands, which covers about 20 percent of the City's land area (and an even higher proportion of nonresidential areas). In other words, the city's industrial lands are not a major provider of jobs to Oakland's residents, and they are not an area of high job intensity despite covering a significant portion of the city. This last conclusion aligns with the findings in *Economic Trends and Prospects*, which established that industrial uses in Oakland are less job-intensive than office or retail uses. In general, industrial areas are less job-intensive than office and retail areas since industrial uses – particularly logistics-related uses – require less job intensity per area than jobs in Trade and Professional services.

Race/Ethnicity

The employment diversity in Oakland's industrial lands is either greater than or on par with the state and the region in percentage terms, as shown in **Figure 11**. Both Oakland and its industrial lands appear more inclusive of Black or African Americans than California and the Bay Area, correlating strongly with the large concentration of minority populations in the East Bay in general (26 percent Asian and 10 percent Black or African American) than in the state and the region.

That said, the proportion of White workers employed in Oakland's industrial lands is larger than the proportion of White workers in the city altogether. However, this figure likely includes the number of Hispanic/Latinx workers reported as White in the Census. Oakland's industrial lands employ a quarter of Hispanic or Latinx workers citywide – greater than the region and on par with the state, which is the largest employer of Hispanic or Latinx workers in the U.S. in absolute terms.⁹ Oakland's industrial lands are also on par with the state in its employment of Asian workers; California also is the largest employer of Asian workers in the U.S. in absolute terms (40 percent work in the Bay Area).¹⁰

Figure 11 Employee Demographics

Ethnicity/Race	Local Workers in California		Local Workers in Oakland		Local Workers in Industrial Lands		Percent of City Workers in Industrial Lands
	Amount	Share	Amount	Share	Amount	Share	
White Alone ¹	11,266,095	72%	108,358	55%	18,970	61%	18%
Black or African American Alone	1,023,986	7%	32,729	17%	5,051	16%	15%
American Indian or Alaska Native Alone	202,689	1%	1,886	1%	408	1%	22%
Asian Alone	2,601,016	17%	44,480	23%	5,042	16%	11%
Native Hawaiian or Other Pacific Islander Alone	74,908	0%	1,406	1%	307	1%	22%
Two or More Race Groups	<u>474,597</u>	<u>3%</u>	<u>8,227</u>	<u>4%</u>	<u>1,193</u>	<u>4%</u>	<u>15%</u>
Total / Weighted Average	15,643,291	100%	197,086	100%	30,971	100%	16%
Not Hispanic or Latinx	10,216,461	65%	154,680	78%	21,211	68%	14%
Hispanic or Latinx	<u>5,426,830</u>	<u>35%</u>	<u>42,406</u>	<u>22%</u>	<u>9,760</u>	<u>32%</u>	<u>23%</u>
Total / Weighted Average	15,643,291	100%	197,086	100%	30,971	100%	16%

[1] White Alone may also include information for workers of Hispanic or Latinx origin.

Source: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

⁹ California is the second-largest employer of Hispanic or Latinx workers in percentage terms (35 percent of total employment) among the 50 U.S. states, behind New Mexico (46 percent of total employment).

¹⁰ California is the second-largest employer of Asian workers in percentage terms (17 percent total employment) among the 50 U.S. states, behind Hawaii (42 percent of total employment).

Education Attainment

Overall, the education levels of workers in industrial lands are well below that of the Bay Area as a whole. As shown in **Figure 12**, three-quarters of workers older than 30 employed in Oakland's industrial lands have less than a bachelor's degree education. This aligns with the industry composition of the area and the education required in those industries. More than 60 percent of employment in Oakland's industrial lands is in industrial sectors (e.g., Manufacturing, Construction, and Transportation and Warehousing). These industries present an opportunity for lower-income residents to increase their earnings as they provide high-paying jobs with low barriers to entry (i.e., low educational attainment requirements).

While many of the sectors active in industrial lands provide opportunities for workers without formal degrees, the actual portion of Oakland residents employed in the industrial lands is quite small. As noted above, despite Oakland residents accounting for 22 percent of the industrial lands' workforce, those workers only comprise three percent of the city's employed residents. Therefore, the area is not currently benefitting the residents of Oakland as much as the 24,000 workers that commute in from elsewhere. Notably, the educational attainment of workers employed in Oakland's industrial lands is more on par with the state than Oakland overall. Like the state as a whole, Oakland's industrial land exhibits more variation across education levels. Meanwhile, Oakland's largest sectors - Health Care and Social Assistance and Public Administration - are industries generally awash with workers who possess bachelor's and advanced degrees.

Figure 12 Educational Attainment of Employees

Educational Attainment ¹	California Education Levels		Oakland Education Levels		Industrial Lands Education Levels		Percent of City Workers in Industrial Lands
	Amount	Share	Amount	Share	Amount	Share	
Less Than High School	2,236,994	18%	23,546	14%	5,070	20%	22%
High School or Equivalent	2,527,048	21%	32,041	20%	6,061	24%	19%
Some College or Associate's Degree	3,633,785	30%	49,149	30%	7,828	31%	16%
Bachelor's or Advanced Degree	<u>3,828,388</u>	<u>31%</u>	<u>58,932</u>	<u>36%</u>	<u>6,058</u>	<u>24%</u>	<u>10%</u>
Total	12,226,215	100%	163,668	100%	25,017	100%	15%

[1] Reflects educational attainment information for workers over the age of 30

Source: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

5. Business Profile

This chapter provides an overview of the composition and geographic distribution of establishments within Oakland's industrial lands. While establishment-level data may not directly correlate with employment due to variations in firm size, it can provide insight to the type of businesses that locate in the various industrial land sub-markets. As the most significant business category, this chapter also takes a closer look at the market position and context facing goods movement sectors, with a particular emphasis on the Port's facilities and services, the industrial lands' largest establishment and landowner.

Businesses Composition and Geography

Figure 13 displays the distribution of establishments by broad sector category and denotes whether most establishments in the sector lie in East Oakland or Northwest of Fruitvale Avenue.¹¹ It is important to note that the establishment count reflects only a representative sample of all tenants in industrial lands due to data limitations (most of the data is from CoStar, a proprietary data source with inconsistent coverage). As indicated, most establishments in Oakland's industrial lands are in East Oakland, southeast of Fruitvale Avenue.

Of all establishments in Oakland's industrial lands, about 40 percent are engaged in Trade or Hospitality, with three-quarters of Trade and Hospitality establishments engaged in Wholesale Trade, automotive (i.e., dealers, auto repair, and gasoline services), general merchandise, and personal services like beauty salons and barbershops. Food and Drinking Places make up less than 10 percent of Trade and Hospitality establishments. Further, about three-quarters of establishments in Health and Professional Services (an amalgamation of Professional Services and Health Care and Social Assistance) provide highly technical services such as accounting and engineering and other business services, including finance and insurance.

Unlike the overall distribution of establishments in Oakland's industrial lands, most Health and Professional Services establishments lie northwest of Fruitvale Avenue, ostensibly connected to the outsized presence of Health Care and Professional Services firms Downtown and in "Pill Hill." Construction establishments in Oakland's industrial lands are mostly made up of special trade contracting (such as plumbers, roofers, and electricians) and are roughly evenly distributed on either side of Fruitvale Avenue. While logistics firms are mostly

¹¹ Northwest of Fruitvale Avenue spans the area from Fruitvale Avenue to North Oakland, including all industrial zones in West Oakland.

located in East Oakland, demand for industrial space is higher closer to the Port, as evidenced by lease rate data from CoStar Group. Lastly, as detailed above, educational establishments in industrial lands, mainly engaged in personal development services, are primarily located northwest of Fruitvale Avenue.

Figure 13 Location of Industrial Establishments

Industry	Establishments	Share of Total	Mostly Located In ¹ :
Trade and Hospitality	621	41%	East Oakland
Wholesale Trade	155	10%	East Oakland
Health and Professional Services	333	22%	Northwest of Fruitvale
Manufacturing	133	9%	East Oakland
Transportation and Warehousing	119	8%	East Oakland
Motor Freight Transport	37	2%	East Oakland
Warehousing	23	2%	East Oakland
Construction	111	7%	Equally Distributed
Education	22	1%	Northwest of Fruitvale
Other ²	188	12%	N/A
Total	1,527	100%	

[1] Northwest of Fruitvale Avenue spans the area from Fruitvale Avenue to North Oakland, including all industrial zones in West Oakland.

[2] Other includes the four smallest employment industries in Oakland's industrial lands: Agriculture, Mining, Utilities, and Public Administration.

Source: CoStar Group; Analysis by Economic & Planning Systems, Inc.

While logistics-related activities make up about 60 percent of the building space (**Chapter 3**) and just over 30 percent of jobs (**Chapter 4**) in industrial lands, they only represent eight percent of all establishments. This discrepancy reflects the predominance of larger firms and the space-intensive nature of this activity. As noted, most firms engaged in freight transport and warehousing are located mainly in East Oakland, particularly around heavyweight truck routes, such as the Dreisbach Enterprises cold storage facility, which specializes in the warehousing, transloading, and drayage of refrigerated goods.

It is important to note that while logistics-related activities make up most of the space in Oakland's industrially zoned lands, non-logistics activities also are prominent in the area (non-logistics firms take up 40 percent of nonresidential building space). Indeed, some of the largest employers in the area are not related to the goods movement sector. For example, Condon-Johnson & Associates, a construction firm from East Oakland specializing in geotechnical contracting and engineering, employs about as many people as the Dreisbach Enterprises cold storage facility (over 300 workers).

Other large employers in the area include Alameda County Social Services, with two offices in East Oakland, the prominent paint contractor George E. Masker Inc., located in East Oakland, and Peerless Coffee and Tea, the long-established craft coffee roaster located near Jack London Square. Significant newcomers include take-out- and delivery-only “ghost kitchens” like the Oakland Food Hall in the Jingtowntown/Fruitvale Area and the Longfellow Food Hall on Adeline Street in North Oakland.

Goods Movement

Goods movement related sectors currently represent the predominant industry cluster in the city's industrial lands. This economic profile is largely attributable to the facilities and activities of the Port of Oakland, the single largest landowner in the area. The economic prospects for goods movement related sectors will depend on both land use policy priorities articulated in the General Plan as well as local and national market trends, as summarized below.

National Trends in Logistics

The emergence and rising prominence of e-commerce as a method for purchasing goods has transformed the demand for logistics hubs across the country. Nationwide, the industrial market has experienced significant growth in recent years due to accelerated e-commerce demand from changing consumption patterns, a trend accentuated by the pandemic. This trend has placed increased pressure on the transportation and warehousing industries as businesses face inventory shortages and supply-chain bottlenecks.

As the sector providing the most jobs in Oakland's industrial lands, Transportation and Warehousing trends greatly impact Oakland's economy (Trade and Hospitality have the most individual establishments, as noted above). Nationally, goods movement and transportation services have experienced increasing demand over the past decade. The Bureau of Transportation Statistics' (BTS) Freight Transportation Services Index (TSI) measures the volume of freight moved monthly by all modes in the national, for-hire transportation sector.

As shown in **Figure 14**, freight TSI has been increasing since 2010 and as of June 2022 had returned to the 2019 peak after its drop at the start of the COVID-19 pandemic in early 2020. The nation's continued upward trajectory in the imports of goods indicates growing opportunity to strengthen logistics hubs nationwide. As the U.S. continues to import goods from overseas, ports with fast access to major trade partners in Asia, like the Seattle and Tacoma ports, have grown in prominence. However, the Port of Oakland is currently struggling to capitalize off of this trend, as discussed further below.

Figure 14 National Freight Transportation Services Index (2000 - 22)



Role of the Port of Oakland

Because of its significant landholdings and wide-reaching economic impact, the Port and its operations have significant influence on the development of properties and distribution of employment in the city's industrial lands. The Port directly employs 470 people but indirectly contributes to significantly more jobs in both down- and up-stream industries.¹² Together with its tenants and users, the Port in its most recent economic impact report estimates that its operations generate over 84,000 jobs in the region. While detailed employment data is difficult to come by, analyzing the land covered by the seaport and airport shows that over 700 businesses and more than 7,000 employees are attributed to land inside the Port's jurisdiction.¹³

The Port operates through its three branches: the seaport, the airport and commercial real estate development. The seaport operates three container terminals and two intermodal rail facilities to serve the Oakland waterfront. Through its terminal operators, Oakland handles approximately 60, 65, and 71 percent of the nation's edible nut, rice, and tomato exports, respectively. The airport similarly holds regional and national significance as it is the fourth-busiest passenger airport and the second-busiest air cargo airport in California.

¹² For more information please see: [About the Port of Oakland - Port of Oakland](#)

¹³ Analyzed using a custom industrial lands geography in Business Analyst Online, a geographical information system interface hosted by Esri

Additionally, Oakland has the best on-time arrival and departure rates of the three major Bay Area airports.¹⁴

Freight generation to and from the city's industrial lands includes import (i.e., supplying the consumer markets of the Bay Area, Northern California, and the western U.S.) and export activity (i.e., exporting high-value agricultural commodities from Wine Country and the San Joaquin Valley). Heavyweight truck routes, which extend from the Port of Oakland to East Oakland along San Leandro Street, facilitate the expansion of port-related establishments beyond the Port's jurisdiction. Outbound trucks carrying heavy loads use these routes to access transloading facilities where their goods are transferred to 50-foot, "highway-legal" containers. Conversely, inbound trucks use these routes to access transloading facilities where goods are transferred to heavyweight, seaborne containers.

The Port's Changing Competitive Position

The economic anchor provided by the Port of Oakland potentially positions the city well to capitalize off growth in the industrial market. As a result of its location, the seaport has a captive Northern California market with a two-day distribution capability to seven western states. However, despite broader macroeconomic trends indicating growth potential for ports and logistic hubs nationwide, Oakland's opportunities for long-term growth will be affected by several local market considerations.

Over the last several decades, the Port of Oakland has confronted constraints to growth, including lack of land for expansion of logistics-related facilities and services, and the challenges posed by bottlenecks on freight movement. Oakland's seaport growth in terms of trade volume over the past two decades has remained stagnant compared to its peers, contributing to the Port's year-over-year decline in the rankings of the busiest seaports in North America.

As shown in **Figure 15**, Oakland's seaport has exhibited the least growth since 2003 among the top five western seaports. In fact, Oakland is the only one to have not surpassed its 2003 volume. Looking more specifically at Oakland's change in imports and exports over this period, imports have driven the overall decline in trade while exports have grown substantially, demonstrating the Port's stronghold on the exporting of high-value agricultural commodities, as shown in **Figure 16**.

¹⁴ For more information, please see the Port of Oakland's most recent Strategic Plan

Figure 15 Growth in Total Trade Volume (Kilograms) by Major West Coast Seaport Complex (2003 - 21)

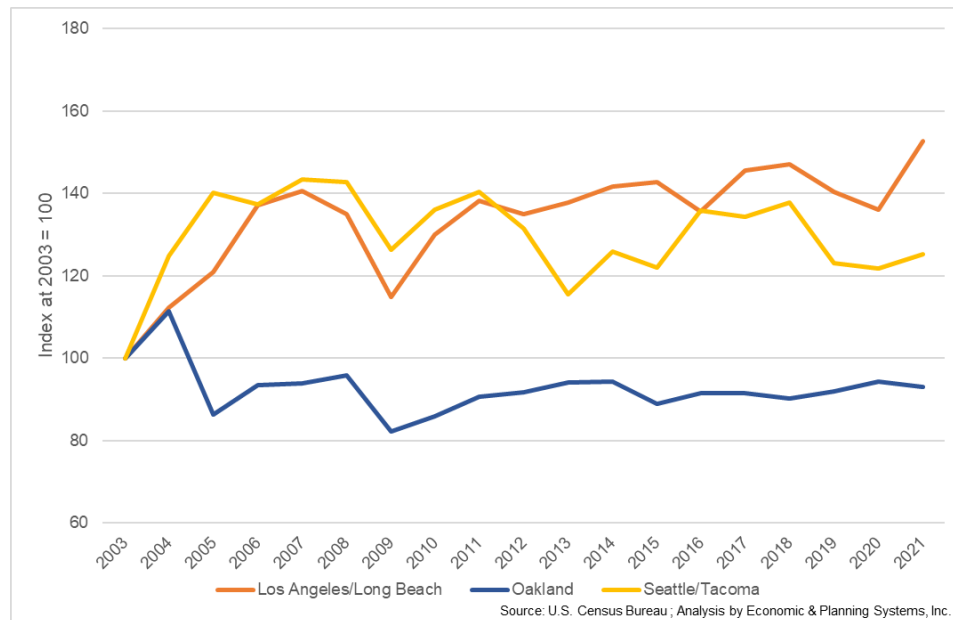
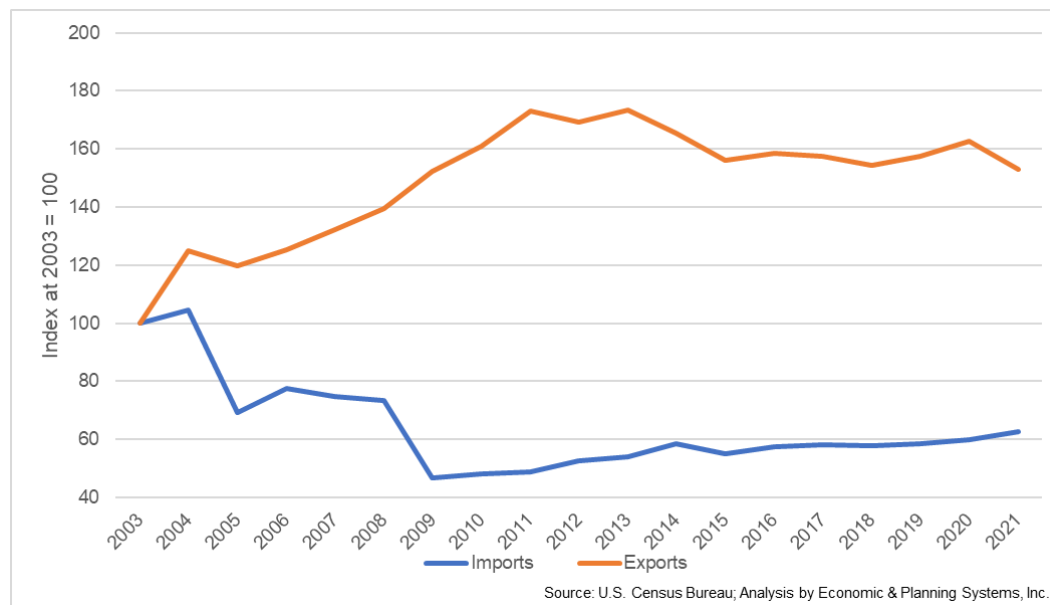


Figure 16 Growth in Imports and Exports (Kilograms) at Port of Oakland (2000 - 21)



The two biggest obstacles prohibiting the Port of Oakland's growth are market size and land constraints. The 9-county Bay Area is home to about 8 million residents compared to 22 million in the Greater Los Angeles and San Diego markets serviced by the Los Angeles and Long Beach Ports.¹⁵ In addition, competing ports like the Port of Seattle are closer to key export markets in East Asia. Furthermore, Oakland's seaport is limited in size by the physical constraints of the I-880 and nearby residential neighborhoods.

¹⁵ The Greater Los Angeles Area includes the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

6. Industrial Lands Growth Prospects

This chapter addresses factors contributing to the strength and potential growth of Oakland's industrial lands as well as its challenges and constraints. The information is intended to provide an analytical framework for envisioning potential economic and land use directions for the industrial lands that, in turn, can be supported by General Plan policies and subsequent implementation efforts.

National and regional economic trends along with excellent locational attributes, transportation infrastructure and port facilities provide a strong foundation for Oakland's industrial lands. However, obstacles limiting Oakland's growth in development, including incompatible land uses and inadequate infrastructure, present challenges that will need to be addressed to realize this potential. At the same time, there exist opportunities for the City to shift the composition of economic activity to sectors with fewer negative, or even more positive, environmental impacts as well as more residential development.

To inform the General Plan process, this chapter has identified three broadly defined models of economic development that appear applicable to the industrial lands, in part because they represent land uses that are already present in varying degrees. The models have been formulated based on the research described in previous chapters, stakeholder input, and economic development analogues from other communities. They differ in how each emphasize the following three distinct economic and land use directions: (1) goods movement, (2) other job-generating industrial activity, and (3) residential-commercial mixed-use.

The above broadly defined models are designed to illustrate the spectrum of economic activity that could be promoted through General Plan policies and implementation measures. They are not intended to be mutually exclusive and could all potentially co-exist in the industrial lands through, for example, the establishment of buffer and transition zones, transition to "cleaner" technologies, and adoption of alternative transportation strategies (e.g., electrification and rail). The economic assets and challenges within the industrial lands, as described further below, will affect the prospects and viability of each development model.

Economic Assets and Challenges

Oakland's industrial lands face fundamental challenges and strategic opportunities, defined by its history and location, that will shape its economic trajectory going forward. The preceding chapters have documented the conditions and trends for workers, businesses, industry sectors, property owners, and others in the industrial lands. This information portrays the area as both diverse and

economically vibrant, experiencing relatively fast population and modest job growth over the last 20 years. The following geographic, land use, and infrastructure attributes will play a key role in the competitive position of the industrial lands in the years to come.

Location and Accessibility

A defining characteristic of the industrial lands is its strategic and accessible location within the dynamic Bay Area economy. With direct access to world class water, air, transit, and auto-related transportation infrastructure, the industrial lands are well-positioned to attract a variety of land uses. Businesses and residents in the area are within walking distance to a variety of transit options, including five BART stations (West Oakland, 12th Street, Lake Merritt, Fruitvale, and Coliseum), Amtrak, and direct ferry service to San Francisco. The industrial lands are also easily accessible by I-880 and well-served by an international airport and world-class marine port facilities.

The transportation assets serving the industrial lands facilitate access to and from global markets and destinations as well as the broader San Francisco Bay Area region. In addition to regional and international connectivity, the industrial lands boast over 20 miles of waterfront property, offering spectacular views and access to recreational facilities, such as bike-pedestrian paths and marinas. This central and strategic position in one of the most dynamic and prosperous economies in the world represents a tremendous competitive asset that can be leveraged to fuel investment and growth.

Land Use Compatibility

In part because of its highly connected location, the industrial lands have attracted a variety of residential, commercial, and industrial land uses over its history. While this diversity contributes to its economic vibrancy, it has also led to land use conflicts that have and remain a recurring theme in the industrial lands that has affected the amount, type and location of growth and investment. As described further below, addressing land use conflicts, both between population and job-serving uses and among economic sectors, will be a critical factor in defining the direction of economic growth.

Residential Land Use Conflicts

As has been documented in other General Plan studies, air, noise, and visual pollution have disproportionately affected disadvantaged communities living in and adjacent to industrial lands. Oakland's residential areas near industrial uses experience pollution levels and disparities in health outcomes among the worst in California. According to the CalEnviroScreen, most census tracts in West Oakland rank in at least the 70th percentile of pollution burden in the state, with two of

the tracts landing in the highest percentile category.¹⁶ A leading cause of pollution in West Oakland is the heavyweight truck traffic that runs through neighborhoods as well as the idling of diesel trucks waiting for cargo shipments.

At the same time, residential growth continues to encroach on industrial areas, in many cases compromising the ability of industrial uses to expand. The growing residential development in the industrial lands over the past two decades has been met with some resistance from industrial stakeholders wary of future constraints on their activities.

Inter-Industry Land Use Conflicts

In addition to land use conflicts with residential uses, many economic activities also experience compatibility issues as well as internal competition for space and labor. For example, many of the heavy industrial activities have lower margins than other property types, leaving them potentially vulnerable to redevelopment. For example, the City-designated cannabis cultivation and distribution zone is coterminous with the industrial lands and in some cases, cannabis businesses have priced out traditional industrial users.¹⁷ In other cases, emerging, "lighter" industrial users have voiced concerns over air, noise, and visual pollution from more traditional, "heavy" industrial activity.

Infrastructure, Public Services, and Amenities

In addition to environmental considerations (e.g., air and noise pollution), the industrial lands also face significant infrastructure deficiencies that deter new sectors. According to analysis by BKF and Kittleson Associates, the civil and transportation engineers assisting with the General Plan Update, the existing level of basic infrastructure would likely need to be upgraded to accommodate more intensive use. The key constraints are enumerated below:

- **Utilities:** Increased development intensity in most of the areas covered by industrial lands will likely require significant upgrades to the power (e.g., PG&E) and water supply covering the area. For example, even today, new and existing development in the industrial lands can face significant delays and costs for PG&E service upgrades, which poses challenges in meeting the City's electrification goals. In addition, the typical demands of higher-intensity development (e.g., office, R&D, and life science tenants), will require increased water capacity for both building functionality and fire coverage.
- **Transportation:** Additional development will likely also translate to additional transportation improvements. Many areas of Oakland's industrial lands lack sidewalks, are inaccessible on bicycle, and have deteriorating roadways, each of which pose a safety hazard for residents and employees in the area. For

¹⁶ For more information, please see:
<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>

¹⁷ See [Cannabis Facilities Permitted Zones \(arcgis.com\)](https://arcgis.com)

example, the pavement on most roads in industrial lands is badly damaged and lacks adequate drainage. As a result, many industrial areas adjacent to the bay experience ponding, which could be exacerbated by sea-level rise.

- **Resiliency Infrastructure:** As further discussed in Chapter 3 of the Environmental Justice and Racial Equity Baseline (2022), large portions of the industrial lands are in a liquefaction zone or 100-year flood plain and highly susceptible to sea-level rise. The (re-) development of properties that are susceptible to earthquakes, floods, or sea-level rise generally require additional investments that can affect project feasibility.

Compounding physical infrastructure deficiencies, many portions of the industrial lands lack urban services and amenities and exhibit an overall “look and feel” that does not present well to prospective tenants or investors. These issues are magnified by numerous homeless encampments, litter and illegal dumping, and concerns related to safety.

All the above factors are likely to increase the development costs for a particular project as well as require the City and other public agencies to advance public financing tools and resources to deliver necessary infrastructure and public services. While not insurmountable, these challenges will need to be addressed for the industrial lands to remain economically vibrant and attract new sectors.

Economic Development Models

This section describes economic opportunities across the spectrum of established and emerging land use activities in the industrial lands. While not mutually exclusive, these delineations are designed to highlight land use and policy directions that may be emphasized as part of the General Plan Update. The subsection below also includes case studies from other cities that provide analogues of success for each of the three economic development models considered.

Goods Movement Sectors

As described in previous chapters, goods movement related sectors currently represent the predominant industry cluster in the industrial lands, largely attributable to the facilities and activities of the Port of Oakland. A renewed emphasis on goods movement related activity within the industrial lands could facilitate more logistics-related land uses, such as warehousing, cold storage, and services related to international trade. The development profile within and around southern California's San Pedro Bay Port Complex, the nation's largest, provides insight into the land use character and regional economic factors contributing to this success of this model (see text box below).

The San Pedro Port Complex and the Port of Long Beach



Consisting of both the Port of Long Beach and the Port of Los Angeles, the so-called San Pedro Bay Port Complex is the logistics nexus of Southern California. Totalling 11,000 acres of land along a roughly six-mile stretch of the San Pedro Bay, the San Pedro Bay Port Complex is a significant contributor to the region's economy and is the busiest port complex in the nation (among the largest in the world). Much like Oakland's Industrial Lands, the San Pedro Bay Port Complex generates significant demand for logistics-related sectors and land uses. At the same time, pollution burdens in Wilmington, eastern San Pedro, and western Long Beach are also on par with those experienced in Oakland's industrial lands.

The Port of Long Beach and the Port of Los Angeles serve the consumer market of the Greater Los Angeles Area, a region of roughly 18.5 million residents (compared to 7.6 million for the nine-county Bay Area). There is also an estimated 888 million square feet of industrial space and 642 million square feet of logistics space in Los Angeles County (compared to 223 million and 132 million in Alameda County, respectively). The Complex is also adjacent to the so-called Inland Empire (covering Riverside and San Bernardino counties), a region that boasts over 600 million square feet of logistics space, with nearly half built within the last 15 years, including fulfillment facilities of major retailers such as Amazon. Finally, the Complex is supported by a robust rail network. At the Port of Los Angeles, for example, over one-third of intermodal containers interface with the port's 65-mile rail network (versus rail making up only three percent of inbound and outbound trips at the Port of Oakland's marine terminals).

The prosperity of the San Pedro Bay Port Complex is a result of over 100 years of support and commitment from the City of Los Angeles and the City of Long Beach, the State of California, and the Federal Government. The Complex's immensely positive economic impact has allowed each port to make significant business and land-use decisions in its interests. Furthermore, each port has enduring relationships with the public sector and is relied on frequently to serve the public's needs. Recent examples include when the Federal Government called upon the San Pedro Bay Port Complex to expand its operations during the supply chain crisis of 2021 and when the City of Los Angeles leveraged its relationship with its port to implement a program to stockpile personal protective equipment (PPE) during the early stages of the COVID-19 Global Pandemic.

In Oakland, a goods movement economic development model could be supported by investment in transportation facilities improvements, including those supporting trucks, electric rail, and other vehicles and equipment. In contrast to historical patterns, this approach could also be pursued in a manner more compatible with adjacent land uses through, for example, the establishment of buffer and transition zones, transition to "cleaner" technologies, and adoption of alternative transportation strategies (e.g., electrification and rail).

As described in **Chapter 5**, while the Port continues to support Oakland's economy and regional trade, its position has slipped over the last decade because of growing competition as well existing physical and transportation bottlenecks (some of which might be addressed through additional investment and policy initiatives). The Port is in the process of completing a market assessment that will identify opportunities to strengthen and expand its hold in the market. This study may provide additional insights on future growth opportunities for goods movement related sectors and associated investments needed to realize them.

The Port faces challenges related to future growth, including market size, land constraints, and growing competition. While the Port can continue to service the Northern California market, its changing competitive position may place limits on this economic development model. It is also worth noting that logistics-related sectors tend to be land intensive and would likely occupy large areas of the industrial lands without providing as many jobs as other potential uses. In addition, rising housing costs are increasingly inhibitive for attracting and retaining workers.

Other Job-Oriented Industry Sectors

Another development model for industrial lands would be to pursue continued economic diversification with an emphasis on fast-growing and emerging Bay Area sectors. While goods movement is the predominant economic activity in Oakland's industrial lands, numerous other activities are also present with many experiencing relatively fast growth over the last decade, as indicated in **Chapter 4**. While many of the sectors in the city's industrial lands are linked to or dependent on goods movement, others are not and provide more intensive employment activity with fewer adverse environmental consequences.

As described in the text box below, New York City's Brooklyn Navy Yard exemplifies the transition of a traditional industrial location into a modern manufacturing hub with a focus on jobs for residents. This successful transition has been overseen by the Brooklyn Navy Yard Development Corporation (BNYDC). BNYDC is a non-profit organization created with the mission to "fuel New York City's economic vitality by creating and preserving quality jobs, growing the City's modern industrial sector and its businesses, and connecting the local community with the economic opportunity and resources of the Yard."¹⁸

¹⁸ [Mayor Bill de Blasio and the Brooklyn Navy Yard Development Corporation Announce Brooklyn Brewery to | City of New York \(nyc.gov\)](#)

Brooklyn Navy Yard, New York City



New York City's Brooklyn Navy Yard exemplifies the transition of a traditional industrial location into a modern manufacturing hub with a focus on jobs for residents. The 300-acre site along Brooklyn's waterfront Brooklyn Navy Yard was a prolific shipbuilding facility for over 150 years. Today, the Yard is a modern center for urban manufacturing operated by the Brooklyn Navy Yard Development Corporation (BNYDC) on behalf of the City. With over 450 businesses employing more than 11,000 people, the Yard caters to a range of industries from A-I technology development to food processing and clothing manufacturing companies. The Yard also operates an employment center designed to create pathways for sustainable middle-class jobs through workforce training programs and job matching services. In 2021 alone, the Yard hired 151 employees, 87% of which were Brooklyn residents. BNYDC plans to further expand the Yard's capabilities with a \$2.5 billion investment in vertical manufacturing space that would bring the total number of onsite jobs to 30,000. The following policies and processes have helped BNYDC work toward its mission:

- **Neighborhood Input:** A major component of the Yard's mission is to serve local residents. Consequently, in development of the Yard's 2018 masterplan, BNYDC consulted with local tenants, government representatives, and community stakeholders on how to improve the Yard. The community emphasized the desire for increased connectivity between the Yard and the neighborhood. In response, BNYDC has since increased the bikeability and walkability of the Yard's waterfront as well as created a new doc for the City's ferry.
- **Zoning:** BNYDC requested a special-use district designation for the Yard in order to reduce parking requirements and accommodate educational programming.¹
- **Community Partnerships:** The Navy Yard manages a range of public and private partnerships to strive toward its mission. For example, partnerships with the Department of Education and several technical colleges allow BNYDC to provide educational programming and workforce training for careers in modern manufacturing.
- **Finance and Capital:** Over \$2 billion in redevelopment and financing support have been provided to BNYDC by a range of private and public partners over the last five years. EB-5 funds in particular were used to finance the Yard's infrastructure improvements.

¹ Brooklyn Navy Yard's new master plan includes 'vertical manufacturing' - Curbed NY

In the Bay Area, economic sectors that have been frequently mentioned as potential candidates for expansion in the industrial lands include those associated with life sciences and green industry, as described below:

- **Life Sciences:** The life sciences sector is booming in the Bay Area with strong clusters in Berkeley, Emeryville, and Alameda. To date, however, life sciences firms have only minimal presence in Oakland or the industrial lands. But with nearby support from UC Berkeley and industry leaders in health care like

Sutter and Kaiser, Oakland has significant potential to host the growing life sciences sector. Compared to existing industrial uses, the employment density of life science properties and strong regional growth prospects could help Oakland attract more employment to the industrial lands area relative to existing uses.

- **Green Industry:** Regional and national trends suggest that Oakland's industrial lands may be well-positioned to accommodate the emergence of clusters of businesses supporting green industry. Although the sector is broadly defined, the BLS categorizes green jobs as "employment in businesses that produce goods or produce services that benefit the environment or conserve natural resources".¹⁹ California has made a concerted effort to encourage the growth of green businesses to support the state's transition to a cleaner economy. For example, the California Green Business Network supports small- to medium-sized green businesses in coordination with cities and counties.

Oakland is home to 176 certified California Green Businesses, many of which are located in industrial lands.²⁰ For example, Impossible Meat, whose company goal is to "restore biodiversity and reduce the impact of climate change by transforming the global food system", has its first large-scale food manufacturing site in Oakland. In addition, Green Planet Shredding, which specializes in sustainable document shredding and commercial recycling, is also located in Oakland's industrial lands. With the emergence of green industry clusters and the support of state and local government, Oakland's industrial lands can harness the increasing momentum of the green sector.

Diversifying the businesses in Oakland's industrial lands could potentially increase employment intensity and opportunity in the area. As noted previously, the industrial lands occupy over 20 percent of Oakland's land area and approximately 40 percent of the nonresidential building space. However, the industrial lands account for only 15 percent of the City's jobs. By way of example, neighboring cities, such as Emeryville and Alameda, that have done a better job at attracting emerging sectors like life sciences, also capture significantly more jobs per square foot in their commercially- and industrially-zoned areas than does Oakland. As shown in **Figure 17**, the job density, or square footage per worker, in both Emeryville and Alameda is less than half that achieved in industrial land buildings. The stark comparison further demonstrates the relatively low intensity of development in the industrial lands.

¹⁹ See https://stats.bls.gov/green/green_definition.htm

²⁰ See <https://greenbusinessca.org/alamedacounty>

A variety of historical, economic, and policy factors have led to the disparate outcomes between Oakland and Emeryville and Alameda. For example, Emeryville benefited from spill-over demand from an emerging biotechnology sector in the early 1990s supported by cutting-edge research from UC Berkeley at a time when the City of Berkeley was less receptive to these types of tenants. Today there are more than 150 life science companies in Emeryville, such as Novartis, Bayer, Amyris, and Zymegen. Meanwhile, Alameda has long cultivated a more exclusive, professional business park environment, catering to tenants that are less dependent on immediate freeway accessibility. In contrast, Oakland's industrial lands have historically remained less viable for redevelopment in part due to the competitive advantages of Port proximity for continued use as warehouse and industrial purposes.

Figure 17 Nonresidential Job Density (2019)

Place	Nonresidential Building Square Feet ¹	Jobs ²	Square Feet per Job
Alameda	11,200,000	22,566	496
Emeryville	9,600,000	19,297	497
Industrial Lands	34,500,000	30,338	1,136

Sources: U.S. Census Bureau; Analysis by Economic & Planning Systems, Inc.

[1] Non-residential square footage includes, office, industrial and flex space.

[2] Employment excludes retail trade and accommodation and food services.

To attract and sustain new types of development, it's likely that the industrial land areas would need to undergo significant transformation. While sectors tied to Port operations have no choice but to be in or near to industrial lands, sectors considering development in the area can choose from a variety of locations. Real estate professionals and some businesses active in the area indicate that potential tenants are put off by the existing environment, including homeless encampments, crime, lack of adequate or well-maintained infrastructure, and impacts of existing heavy industries (e.g., air and noise pollution).

Residential-Commercial Mixed-Use

As documented in Chapter 3, the city's industrial lands currently host a rapidly growing residential population as well as a variety of population and visitor-serving commercial uses (e.g., retail, hotels, entertainment venues). For example, neighborhoods in Jack London Square, and West Oakland (not entirely within industrial lands) have added more than 1,500 residential units over the last decade, and even more are in the development pipeline. Residents and

developers are attracted to the area by its excellent locational attributes (e.g., waterfront property, BART and ferry service), the value premium for high-density residential development combined with successful commercial amenities, and other factors. The real estate value of these type of projects is often high enough to attract the level of capital investment necessary to facilitate redevelopment.

Mission Bay, San Francisco



San Francisco's Mission Bay neighborhood demonstrates the successful transition of a former industrial area into a vibrant, dense, and mixed-use urban environment. Once a 303-acre rail yard and warehouse industrial area, the Mission Bay neighborhood is now a thriving mixed-use community with over 6,000 housing units, 3.4 million square feet of commercial space, and numerous entertainment and recreation venues (including Chase Center and 49 acres of public parks).² The transformation was initiated by a public-private partnership between the City and University of California San Francisco (UCSF) to create a satellite campus for its premier medical school and world-class life sciences research programs. In 2015, UCSF's Mission Bay Medical Center became San Francisco's first new hospital to open in 30 years .

While the Mission Bay neighborhood is anchored by UCSF's satellite campus and medical facilities, it has experienced a rapid wave of real estate development over the last 15 years with a focus on R&D buildings serving the life science industry as well as mid- and high-rise residential. The life sciences industry grew from one company when UCSF's Genentech Hall opened in 2003, to more than 100 in 2013, and now includes a range of large pharmaceutical and biotech companies, smaller startups, and venture capital firms. Entertainment uses include the Chase Center, (the current home of the Golden State Warriors, after relocating from the Oakland Coliseum in 2019), waterfront parks, and outdoor food and recreation venues such as SPARK Social SF, a food truck park, a beer and sangria garden, and event space adjacent to a mini-golf theme park (Stagecoach Green).

The transition of Mission Bay from an industrial area to a dense, high-value, and mixed-use neighborhood was driven by a complimentary interaction of a prominent and well-funded anchor tenant (UCSF), a favorable market context, and a receptive, and often proactive, city government. In addition to creating a relatively permissive land use policy environment, the City of San Francisco actively supported key funding and financing tools necessary to deliver vital infrastructure to the area (with benefit of a Redevelopment Agency). Meanwhile, UCSF's world leadership and life-sciences and investment in major research activity and facilities also attracted and spawned major private sector biotechnology firms at a time when this sector was experiencing tremendous growth.

² Mission Bay | mbdg (mbaydevelopment.com)

³ Mission Bay | UC San Francisco (ucsf.edu)

The General Plan Update can provide further impetus for mixed-use neighborhoods within Oakland's industrial lands. As described in the text box

above, San Francisco's Mission Bay neighborhood demonstrates the successful transition of a former industrial area into a vibrant, dense, urban environment. The Brooklyn Basin development, located on the Oakland Waterfront just outside industrial lands, represents another example of this type of transformation currently underway.

The Port of Oakland has historically transitioned some of its real estate property in a manner consistent with this economic development model by facilitating major development of the industrial waterfront for residential and mixed-use properties. The commercial, entertainment, and recreation uses at the Port-managed Jack London Square represent the most prominent example of this phenomena. Moreover, the Port and City are currently examining a proposal to develop one of the Port's six marine terminals, Howard Terminal, into a new stadium for the Oakland A's along with significant residential and commercial uses.²¹

While additional housing and commercial mixed-use development in the industrial lands appear to have strong market support, land-use conflicts remain a significant impediment. Therefore, future land-use decisions will need to balance the economic benefits of industrial uses with the health, safety, and social needs of residents.

Concluding Comments

As described throughout this Report, Oakland's industrial lands occupy a strategic position in the city both geographically and economically. While the area is currently dominated by industrial activity and relatively low employment intensities, particularly in logistics related sectors, these uses co-exist with other commercial and institutional uses, including office, retail, hospitality, and health care and education. At the same time, the area includes a growing residential population, driven by strong locational attributes and regional housing shortages, as well as existing populations that have suffered health and economic hardships attributable to long-standing land use conflicts and other factors.

The report described the types of sectors and land uses that might be viable in the area over the long term within the industrial lands. Through the General Plan Update process, the City is seeking to further refine a vision and path forward for the industrial lands. The Report has found that this vital area of the city offers a viable opportunity for a variety of economic development models to succeed, although each will likely require proactive efforts from both public and private stakeholders. Once a clear vision for the industrial lands has been established, the next steps will be to create land use and related policy incentives to ensure it can be realized.

The Howard Terminal Ballpark project proposes 3,000 units of housing in addition to more than 1 million square feet of commercial space.