

bae urban economics

Industrial Market Study

Prepared for the County of San Joaquin

October 2, 2023

bae urban economics

October 2, 2023

Jennifer Jolley, Director
Community Development Department
County of San Joaquin
1810 E. Hazelton Ave.
Stockton, CA 95205

Dear Ms. Jolley:

BAE is pleased to submit the attached San Joaquin County Industrial Market Study. This study provides an analysis of the long-term balance of supply and demand for industrial land within San Joaquin County, considering land zoned for industrial development within the county's cities as well as the unincorporated areas. In addition, the report includes an assessment of the economic benefits of industrial development within the local community, including property tax and other revenue as well as the employment benefits of warehouse/distribution centers.

I am available to walk you and your staff through the report and to answer any questions.

Sincerely,



Matt Kowta, MCP
Managing Principal

Table of Contents

| | |
|--|-----------|
| EXECUTIVE SUMMARY | iv |
| INTRODUCTION | 1 |
| Study Purpose | 1 |
| Regional Industrial Market Area..... | 1 |
| Study Timeframe | 7 |
| EXISTING INDUSTRIAL REAL ESTATE MARKET CONDITIONS | 8 |
| Industrial Real Estate Market Data..... | 8 |
| LAND SUPPLY FOR INDUSTRIAL DEVELOPMENT | 10 |
| Vacant Land Identified Through Assessor’s Use Codes | 10 |
| Vacant Land Identified Based on Zoning District and I/L Ratio..... | 10 |
| INDUSTRIAL DEMAND PROJECTIONS | 15 |
| 5-Year Absorption Trend | 15 |
| 15-Year Absorption Trend..... | 17 |
| 2018 to 2028 Industrial Employment Growth Projection | 17 |
| BALANCE OF INDUSTRIAL LAND SUPPLY AND DEMAND | 20 |
| Current Industrial Land Supply by Sub-Area..... | 20 |
| Planned and Proposed Industrial Rezoning Projects..... | 22 |
| Possible Future Changes to Industrial Demand Patterns | 25 |
| ECONOMIC BENEFITS OF INDUSTRIAL DEVELOPMENT | 29 |
| Employment Benefits Assessment | 29 |
| Economic Benefits Assessment..... | 32 |
| CONCLUSIONS | 37 |

List of Tables

| | |
|---|----|
| Table 1: San Joaquin and Stanislaus County Industrial Inventory | 5 |
| Table 2: San Joaquin County Industrial Real Estate Market..... | 8 |
| Table 3: Acres of Vacant Industrial Land (Parcels \geq 5 acres) (a) (b)..... | 11 |
| Table 4: Acres of Vacant Industrial Land (Parcels \geq 20 acres) (a) (b)..... | 13 |
| Table 5: Projected Industrial Land Demand 2023 to 2045 | 19 |
| Table 6: Planned and Proposed Industrial Rezonings..... | 23 |
| Table 7: Potential Industrial Employment Generation, 2023-2045..... | 30 |
| Table 8: Job Types and Characteristics Typically Associated with Warehouse/Distribution Facilities | 32 |
| Table 9: Property Tax Revenue Estimate for 500,000 Sq. Ft. Logistics Center | 33 |
| Table 10: Property Tax In-Lieu of Vehicle License Fee Revenue Estimate | 34 |
| Table 11: Estimated Annual Employee Wage Generation, Industrial Employment Scenarios Through 2045 | 35 |

List of Figures

| | |
|---|----|
| Figure 1: San Joaquin County Regional Location | 3 |
| Figure 2: U.S. E-Commerce Sales, 2018 to 2023 | 4 |
| Figure 3: San Joaquin/Stanislaus County Industrial Building Inventory (Square Feet) by Sub-Market | 6 |
| Figure 4: Map of Vacant Industrial Land (5 acres or larger) | 12 |
| Figure 5: Map of Vacant Industrial Land (parcels larger than 20 acres in size)..... | 14 |
| Figure 6: Map of Planned and Proposed Industrial Rezoning..... | 24 |
| Figure 7: TradePort Concept Map..... | 26 |
| Figure 8: Main Line Freight Rail Network..... | 28 |

EXECUTIVE SUMMARY

Study Purpose

The goal of this study is to estimate the amount of land needed through 2045 to accommodate the expansion of the industrial building supply, compare the land demand estimate to estimates of the amount of industrially-zoned land that is available for development within the County, and evaluate the balance of long-term demand supply of land for industrial development.

Regional Industrial Market

San Joaquin County serves as a primary regional market area for industrial development in the northern San Joaquin Valley. Key drivers of demand for industrial space include rapid growth in the e-commerce sector, accelerating during the COVID pandemic; shift in logistics strategies from “just in time” to “just in case” which creates a need for more goods storage close to population centers in the event of supply chain disruptions; scarce land and high prices for Bay Area real industrial real estate; and labor supply issues in the Bay Area. Key location criteria for industrial and logistics users include existing or easily buildable infrastructure (water, sewer, power, and roads), proximity to major highways and rail lines, access to the Port of Oakland, Port of Stockton, Stockton Metropolitan Airport, and cheaper land relative to the Bay Area. San Joaquin County, and the southwestern part of the county in particular, provides the key locational attributes that the warehouse/distribution sector is seeking.

Existing Industrial Real Estate Market Conditions

The countywide industrial vacancy rate as of the first quarter of 2023 was a relatively low 4.4 percent. Unlike areas with higher vacancy rates, increasing demand within the San Joaquin County market area can be expected to trigger the need for construction of new industrial space. The average annual asking rent as of the first quarter of 2023 for industrial space in San Joaquin County was \$8.09 per square foot. Given the relatively low vacancy rate, it is not surprising that the Q1 2023 rate was a substantial 18.4% increase above the average asking rent in Q1 2022. Net absorption of San Joaquin County industrial space accelerated sharply in the 2018 to 2023 period, averaging approximately 4.6 million square feet per year, compared to an average absorption of about 3.2 million square feet per year over the long-term 2008 to 2023 time period. The fact that the San Joaquin County market maintained a vacancy rate under five percent while even with new deliveries averaging about 5.1 million square feet per year between 2018 and 2023 indicates that the market has seen robust increases in demand.

Land Supply for Industrial Development

BAE undertook a two-step process to identify existing vacant land within the county’s industrial land use zones (in cities as well as the unincorporated area) that is zoned for industrial development, including identifying vacant land via use codes assigned by the San Joaquin

County Assessor's office and via identification of parcels that have improvement-to-land value ratios of 0.20 or below. In total, BAE identified approximately 5,000 acres of industrially-zoned land available for development in San Joaquin County, with most of that land available within the prominent South San Joaquin County industrial areas of Stockton, Tracy, and Lathrop. About 22 percent of the vacant land supply is located in unincorporated San Joaquin County; however, this land is scattered throughout the county. About 62 percent of the acreage was identified via Assessor's use codes and approximately 38 percent was identified via I/L ratios.

BAE then screened the vacant land to only include parcels that were at least 20 acres in size, which approximates the minimum parcel size to accommodate a warehouse/distribution center of approximately 500,000 square feet if developed at typical intensity. When only considering these larger parcels, the available industrial land supply is substantially reduced, by approximately one-third, to around 3,400 acres.

Industrial Demand Projections

This study projected increases in demand for industrial building space through the year 2045 under several scenarios and then converted the building demand projections into estimates of industrial land absorption under different assumptions regarding building floor to land area ratio (floor area ratio, or FAR). The three industrial building space demand scenarios are as follows:

5-Year Absorption Trend (Aggressive Scenario)

The aggressive growth scenario estimates total potential industrial absorption of just over 100 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.40, this amount of new industrial development would require approximately 5,800 acres of industrial land, or approximately 3,900 acres of land if developed at 0.60 FAR.

15-Year Absorption Trend (Moderate Scenario)

The moderate growth scenario estimates total potential industrial absorption of just under 70 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.60, this amount of new industrial development would require approximately 2,700 acres of industrial land, or approximately 4,000 acres of land if developed at 0.40 FAR.

2018 to 2028 Industrial Employment Growth Projection (Conservative Scenario)

The conservative growth scenario estimates total potential industrial absorption of just under 45 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.60, this amount of new industrial development would require approximately 1,700 acres of industrial land, or approximately 2,600 acres of land if developed at 0.40 FAR.

Balance of Industrial Land Supply and Demand

A comparison between the projected land demand under three different scenarios and the available land supply, focusing primarily on the supply of land in parcels 20 acres or larger

indicates that the San Joaquin County jurisdictions collectively have sufficient land to satisfy the demand through 2045 under the Conservative demand scenario (~3,400 vacant acres of land on parcels of 20 acres or larger available versus demand for between about 1,700 to 2,600 acres of land). This scenario would have a reasonable buffer of available land supply relative to the upper end of the demand estimate and there would be additional capacity on industrial parcels smaller than 20 acres. In the case of the Moderate demand scenario (demand for ~2,700 to 4,000 acres of land), San Joaquin County jurisdictions may be able to satisfy long-term demand if future industrial development averaged 0.60 FAR; otherwise, the land supply would likely fall short of the demand under this growth scenario unless additional parcels sized smaller than 20 acres were utilized for development. Even if the existing land supply could numerically accommodate the demand with parcels as small as five acres, there would be relatively little in the way of a buffer, suggesting that land availability issues could arise as 2045 approaches when there would be relatively little remaining land available for development, which could decrease competition among land owners and cause land prices to increase, taking away one of the locational advantages that currently makes San Joaquin County a competitive location for new industrial development. Under the Aggressive demand scenario (~3,900 to 5,800 acres of land demand), San Joaquin County jurisdictions would likely fall short of having sufficient industrial land available to accommodate the long-term demand through 2045, unless a substantial portion of the vacant industrial land on parcels as small as five acres is developed at an average of 0.60 FAR. It would most likely be necessary to identify additional land for re-zoning to accommodate industrial demand well before 2045 in order to ensure an adequate supply of land reasonably priced to accommodate user needs, and provide a reasonable buffer.

Planned and Proposed Industrial Rezoning Projects

In addition to San Joaquin County, jurisdictions across the County are considering various projects that could add to the inventory of industrial land and help to satisfy some of the long-term increase in demand for industrial space. The largest proposed industrial development in the 3,800-acre Mariposa Lakes Specific Plan area southeast of the City of Stockton could represent an approximately 75 percent increase in the overall industrial land supply in the county if the entire acreage were approved for industrial development. The next largest proposed industrial rezoning projects are in the unincorporated area, including the 1,312-acre Pacific Gateway project and the 278-acre ProLogis project.

Possible Future Changes to Industrial Demand Patterns

Any number of factors can change patterns of demand for real estate, such as changes in technology, changes in governmental policy, and patterns of public and private investment. In fact, all of these factors are a component in a large-scale project called TradePorts, which is being advanced by a coalition of public and private interests as a way to modernize and increase the efficiency of the goods movement system in California. The TradePorts project is still in its early stages of planning; thus, it is difficult to fully understand how quickly the project could come to fruition and its implications for demand for industrial real estate in San Joaquin

County; however, as a current focal point for distribution of goods into and out of the Bay Area, San Joaquin County would likely play a key role in a future TradePorts system. San Joaquin County would be a logical location for one of the major (e.g., ~6,000-acre) TradePorts Logistics and Investment zones, or hubs, and it will likely be desirable to locate TradePort Logistics and Investment zones in close proximity to existing freight rail main lines, which could potentially make industrial sites near the existing BNSF and Union Pacific freight rail lines that are also easily accessible via the freeway network more attractive if the TradePorts vision comes to fruition. The areas where the rail lines and the freeways intersect in close proximity are in the same areas where San Joaquin County's industrial real estate market is already focused, particularly between Tracy, Lathrop, and Stockton.

Economic Benefits of Industrial Development

Decisions about allocation of land for industrial development involve choices about how to allocate limited resources of land, infrastructure capacity, government resources, and available labor. With this in mind, the community should consider the tradeoffs of accommodating expansion of the warehouse and logistics sector in San Joaquin County compared to the likely benefits.

Amount of Job Generation

A typical warehouse/distribution center has a fairly low job density. The employment estimate can be extended to the industrial demand projection scenarios, dividing the total projected building space under each scenario by an estimated total building square feet per employee (2,100 sq. ft.). Based on these assumptions, the long-term increase in industrial employment could range between about 21,000 and 48,000 jobs, depending on the growth scenario. To put this range into context, the Employment Development Department reports that as of May, 2023, there were just under 300,000 total jobs in all industries in San Joaquin County.

Warehouse/Distribution Jobs and Wage Levels

One of the main objectives of many jurisdictions that are courting new warehouse and distribution projects is the potential for new job creation. Warehouse/distribution centers offer a range of occupational opportunities; however, most of the jobs will likely fall fairly near the existing median wage for all workers in San Joaquin County, which is \$22.40 per hour. While most of the warehouse/distribution jobs are lower-paid, it is interesting to note that the manager and supervisor positions typically do not require higher education and training, meaning that the industry does offer a career ladder to a select number of workers who could advance to higher positions over time without the need to undertake additional education or specialized training.

Economic Benefits Assessment

This portion of the study considers several types of economic benefits typically associated with warehouse/distribution center development, including local property taxes, property taxes in-lieu of vehicle license fees, and sales taxes. These revenues represent key sources of local

government funding for ongoing operations and maintenance of public facilities. A 500,000 square foot warehouse/distribution center could be expected to generate annual ad-valorem property tax for the San Joaquin County General Fund of approximately \$62,000 to \$103,000 per year, depending on the specific location. In addition to property taxes, a facility would also generate new property tax in-lieu of vehicle license fee (ILVLF) revenue of approximately \$51,000 per year.

New employee wage generation associated with the Conservative, Moderate, and Aggressive industrial absorption projections could range between \$901 million and \$2.0 billion per year (2023 \$) by 2045, at an overall average annual wage of \$42,535.

Depending on the specific user, a new warehouse/distribution center could also generate sales tax revenue for San Joaquin County, if the center is identified as the point of sale for goods shipped from the center.

While the various economic benefits of warehouse/distribution centers are significant in the abstract, the net community benefits may vary depending on a number of factors, such as costs for public services, the impact of new workers on housing demand and demand for other community services and amenities, impacts of trucks on roadways and other environmental factors, and so forth. How these factors and many others balance with economic benefits must be considered in making long-term industrial land use policy.

Conclusions

San Joaquin County jurisdictions collectively have sufficient land to satisfy the projected industrial real estate demand through 2045 under the Conservative demand scenario on parcels of 20 acres or larger. In the case of the Moderate demand scenario, San Joaquin County jurisdictions may be able to satisfy long-term demand if future industrial development averaged 0.60 FAR; otherwise, the land supply would likely fall short of the demand under this growth scenario unless additional parcels sized smaller than 20 acres were utilized for development. Even so, there would be relatively little in the way of a buffer, suggesting that land availability issues could arise as 2045 approaches when there would be relatively little remaining land available for development. Under the Aggressive demand scenario, San Joaquin County jurisdictions would likely fall short of having sufficient industrial land available to accommodate the long-term demand through 2045. It would most likely be necessary to identify additional land for re-zoning to accommodate industrial demand well before 2045 in order to ensure an adequate supply of land reasonably priced to accommodate user needs.

San Joaquin County should give careful consideration to proposals to increase the supply of industrially zoned land. Of the San Joaquin County jurisdictions, the County has received two of the three largest proposals to rezone land for industrial development; thus, the County's land use decisions will potentially have a substantial impact on the countywide industrial land supply.

BAE recommends that the County look not only at how many acres a proposed new industrial development would provide to accommodate future demand, but whether that proposal is located at a site that possesses the locational attributes that would support a development that would help to maintain or increase the County's competitiveness as a regional industrial hub, while minimizing the impacts on farmland resources and the potential for creating adverse impacts on local communities (e.g., residential uses and/or other sensitive land uses) and/or environments.

The County will also want to carefully monitor the progress of the TradePorts project, as the planned coordination of infrastructure investments associated with that project could have a disruptive effect on the San Joaquin County industrial market and is a good chance that there would be interest in rezoning additional land that could accommodate a full buildout of the TradePort hub area if the TradePorts project partners designate a location in San Joaquin County to serve as a Tradeports hub.

In conjunction with considering the need to accommodate industry growth, the County will also want to consider the potential economic benefits of expanding the amount of land allocated for industrial development. Such as the potential for a substantial increase in jobs, personal income, and county revenues, and balancing this with other community considerations, such as costs for public services, the types of jobs that would be created, and environmental and other community impacts that large-scale industrial development could bring.

INTRODUCTION

Study Purpose

San Joaquin County has received substantial interest from land developers to re-zone land in unincorporated areas of the county to permit new industrial development. While the project proponents cite the demand for land to build new industrial buildings as creating the need for these rezonings, the County also has an interest in balancing an interest in economic development with protecting agricultural land as a natural resource and planning for orderly urban growth and an efficient land use pattern. The County also wishes to understand these land use proposals in the context of the supply and demand for industrial buildings and land in the cities that are adjacent to the unincorporated areas, to ensure that the County and cities are not collectively chasing industrial demand with a supply of land that is out of balance with the long-term areawide demand.

The goal of this study is to estimate the potential long-term growth in demand for industrial building space within the market area, convert building demand into estimates of the amount of land needed to accommodate the expansion of the industrial building supply, and then compare the land demand estimate to estimates of the amount of industrially-zoned land that is available for development within the County. To the extent that this study projects a shortfall in industrial land supply, this would indicate a need to identify additional land suitable for industrial development, and the findings from this study can be used to help identify the land most suitable, from a market standpoint, to accommodate the excess demand.

Regional Industrial Market Area

The first step in conducting a market analysis is to define the market area. This geographic area is used to guide collection of market data, including the existing base of industrial building space, growth projections, and the supply of land available to accommodate new industrial development, and planned and proposed projects to increase the land supply. Based on a review of industrial real estate market reports from commercial real estate brokerages, interviews with staff from the San Joaquin Partnership economic development organization, and review of industrial building inventory data from CoStar, a commercial real estate data vendor, BAE determined that San Joaquin County serves as a primary regional market area for industrial development in the northern San Joaquin Valley.

According to staff from the San Joaquin Partnership (Bob Gutierrez, San Joaquin Partnership/BG Strategies; Brad Ecker, San Joaquin Partnership), San Joaquin County does not compete intensely for industrial demand with neighboring counties; rather, most of the competition occurs between cities within the county for new industrial development. Neighboring Stanislaus County is competitive with its labor pool and training, specifically around the Modesto area, but has seen about one-tenth the amount of development compared to San Joaquin County has over the last fifteen years. Within San Joaquin County, development has

been clustered in the southern part, around Tracy, Mountain House, Manteca, Lathrop, and South Stockton. These choice locations can be attributed to their proximity to the Bay Area and their access to major transportation corridors for the region. A lot of this development is concentrated along key highways for shipping activities, including Interstates 5 and 205 and State Highway 120. In addition, these areas are well-served by main rail lines that are part of the national shipping networks operated by the Union Pacific and BNSF railroads, and are also in proximity to the air freight shipping node at Stockton Metropolitan Airport and the inland Port of Stockton which connects via the deepwater channel to Northern California's major international seaport in Oakland. See Figure 1, below.

San Joaquin Partnership staff indicate that San Joaquin County has seen unprecedented development over the last fifteen years in its industrial sector, including food processing, automotive production, and shipping/logistics. Not only is the industrial market a major component of the County's economy, but it has one of the highest concentrations of industrial jobs in the United States. As of 2021, the Stockton Metropolitan Statistical Area had the second-highest concentration of transportation and warehousing jobs in the country, according to the US Census Bureau.

With the uptick in industrial development, many industrial developers saw this progress, anticipated future growth, and began developing major projects speculatively, with the expectation that tenants would naturally seek them out to meet their growing space needs. Even before the March of 2020 when the COVID-19 pandemic took hold domestically, the e-commerce sector had been growing rapidly and this trend continues. Figure 2, below, illustrates that between 2018 and 2023, quarterly U.S. e-commerce sales nearly tripled, from \$111.7 billion to \$302 billion. The shift from bricks-and-mortar retail to e-commerce prompted the demand for warehousing space to store goods and products coming in from outside the country and distributing them along the west coast and the rest of the country. For example, this prompted Amazon to build multiple facilities in Tracy to receive all the cargo coming in from the airport. At one point, Amazon was reportedly receiving four flights of cargo per day, in addition to deliveries by truck. At the same time, the disruptions associated with the COVID-19 pandemic caused logistics managers to re-think the prevailing "just-in-time" strategies for retail goods distribution and begin to start building more goods storage capacity near local markets, to increase resilience to supply chain disruptions, such as those that occurred at the height of the COVID-19 pandemic lockdowns and caused widespread goods shortages. While there is ample land in the Central Valley to accommodate growth, within the Bay Area region, land available for industrial development is more scarce and more expensive and the labor market is more competitive. These factors have caused logistics managers to seek development opportunities in lower-cost locations like San Joaquin County that are close enough to serve Bay Area customers. These compounding factors steepened the curve of growth for industrial real estate from historic trends, driven primarily by growth in the warehouse/distribution sub-sector, which has translated to unprecedented industrial expansion and interest in new industrial development in San Joaquin County.

Figure 1: San Joaquin County Regional Location

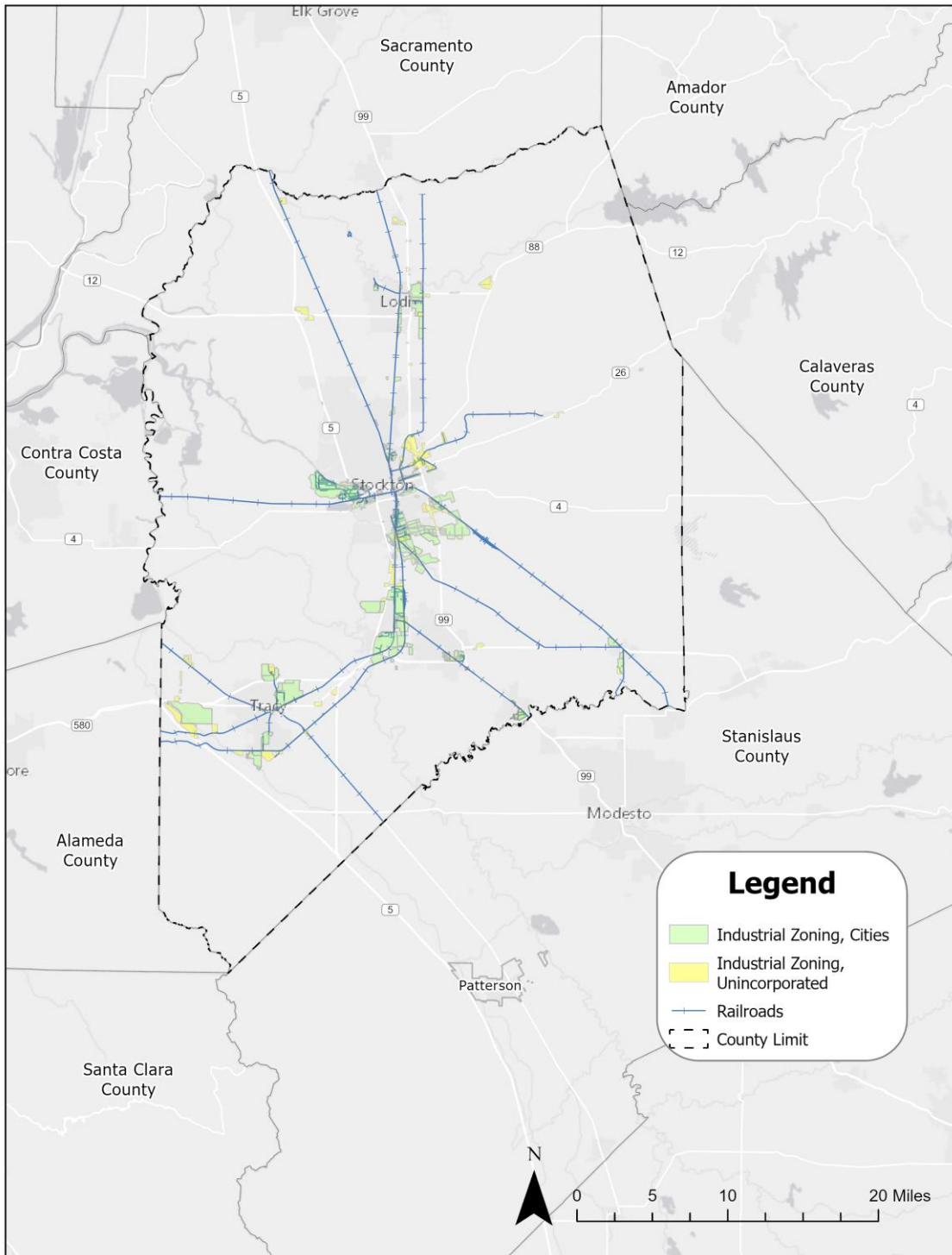
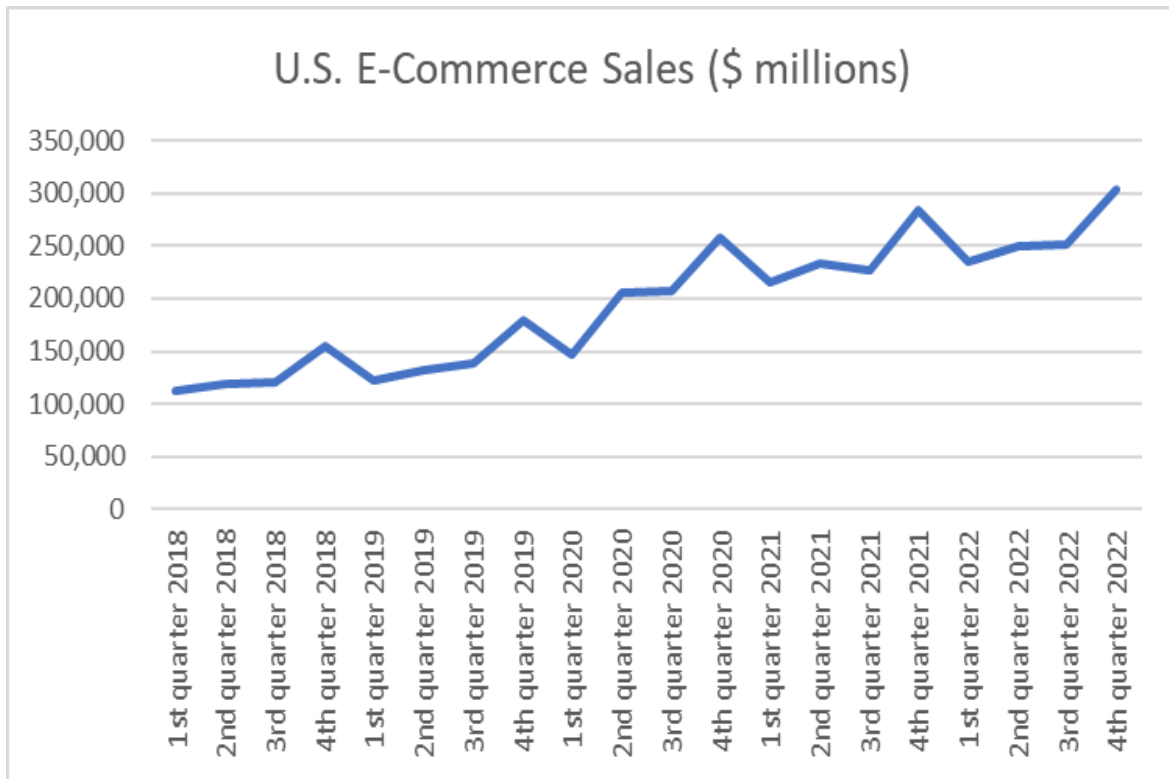


Figure 2: U.S. E-Commerce Sales, 2018 to 2023



Source: U.S. Census, 2023

Key location criteria for industrial and logistics users include existing or easily buildable infrastructure (water, sewer, power, and roads), proximity to major highways and rail lines, access to the Port of Oakland, and cheaper land relative to the Bay Area. These elements are essential for businesses who are dependent on importing goods through the Port of Oakland, transporting them to nearby warehouse facilities, and distributing them along the west coast, or bringing goods from other locations through the west coast shipping network, to be distributed to end-users in the Northern California region. As shown in Figure 1, San Joaquin County, and the southwestern part of the county in particular, provides the key locational attributes that the warehouse/distribution sector is seeking.

Other Market Report Findings

Table 1, below summarizes industrial real estate market data published by JLL, a commercial real estate brokerage company, for San Joaquin and Stanislaus Counties. As shown in the table, the total inventory in the two counties is approximately 146 million square feet of industrial building space. Of this, almost 90 percent of the building space is classified as Warehouse and Distribution space and most of the balance is Classified as Manufacturing (11.7% of total inventory) while a very small portion (0.3%) is classified as Special Purpose. The largest concentrations of industrial space are found in Tracy (34.9 million square feet) and Southeast Stockton (33.3 million square feet), while the next largest concentration is in

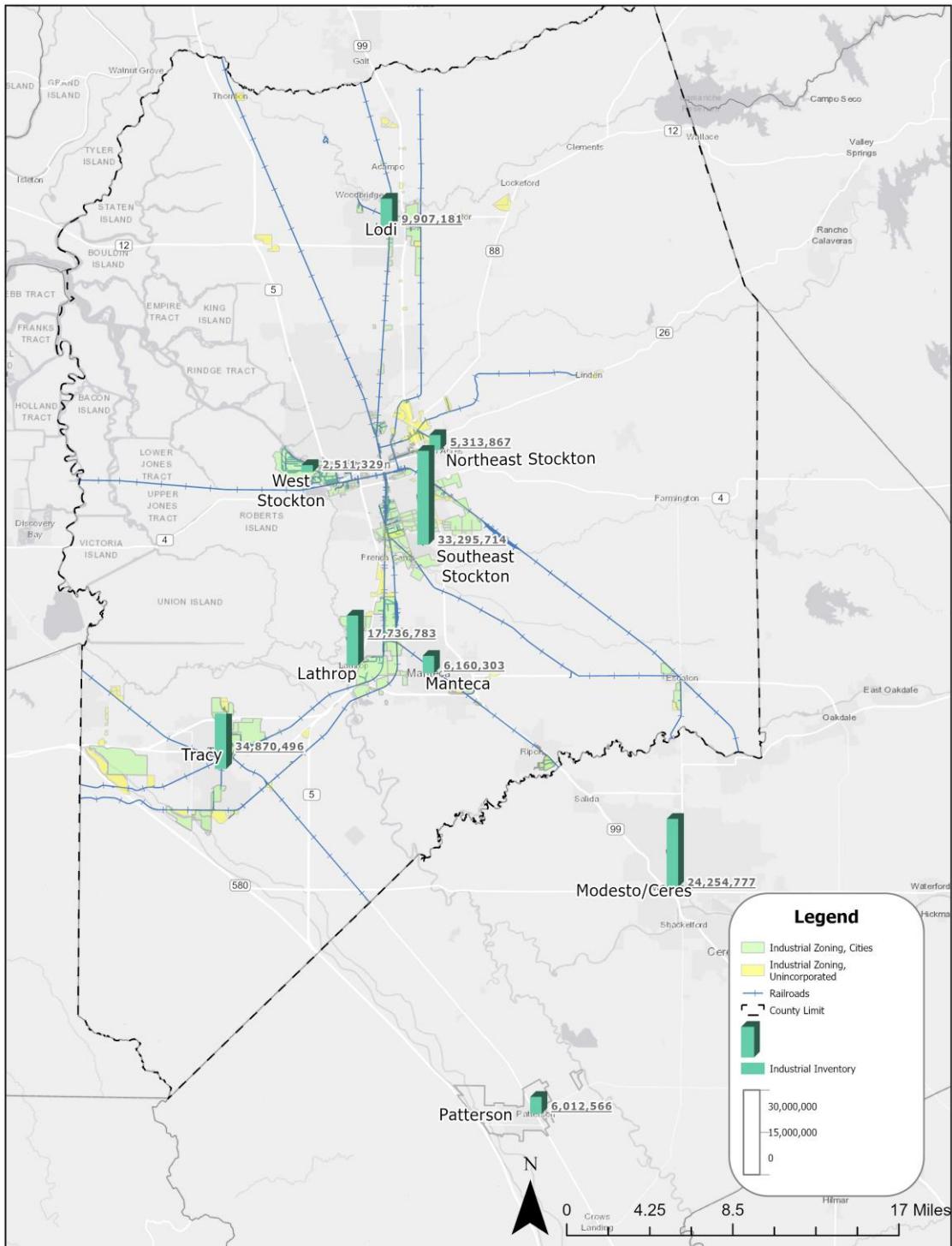
Modesto/Ceres, in Stanislaus County (24.3 million square feet). Lathrop is another major concentration, with 17.7 million square feet of space, and all of the other sub-areas at less than 10 million square feet have considerably smaller inventories of industrial space. Overall, San Joaquin County dominates the Northern San Joaquin Valley industrial market, with about 75 percent of the total inventory.

Table 1: San Joaquin and Stanislaus County Industrial Inventory

| <u>Sub-Market</u> | <u>Industrial Inventory</u> | <u>% of Total</u> |
|--|-----------------------------|-------------------|
| Lathrop | 17,736,783 | 12% |
| Lodi | 9,907,181 | 7% |
| Manteca | 6,160,303 | 4% |
| Northeast Stockton | 5,313,867 | 4% |
| Southeast Stockton | 33,295,714 | 23% |
| Tracy | 34,870,496 | 24% |
| West Stockton | 2,511,329 | 2% |
| <i>Sub-Total, San Joaquin County</i> | <i>109,795,673</i> | <i>75%</i> |
| Modesto/Ceres | 24,254,777 | 17% |
| Patterson | 6,012,566 | 4% |
| Turlock | 3,147,288 | 2% |
| Greater Stanislaus | 2,530,107 | 2% |
| <i>Sub-Total, Stanislaus County</i> | <i>35,944,738</i> | <i>25%</i> |
| Total San Joaquin/Stanislaus Counties | 145,740,411 | 100% |

Sources: JLL Industrial Insight, Q4 2022; BAE, 2023.

Figure 3: San Joaquin/Stanislaus County Industrial Building Inventory (Square Feet) by Sub-Market



Sources: JLL, 2022, BAE, 2023.

Key Findings

San Joaquin County functions as a primary market area for industrial development, with Stanislaus County playing a secondary role. The southern part of San Joaquin County, near Interstates 5 and 205 for access into the East Bay area, along with access to the regional rail networks, Port of Stockton, and Stockton Metropolitan Airport forms a hub of warehouse/distribution center activity.

Study Timeframe

This report focuses on a 2045 time horizon, based on the availability of long-term growth projections that extend to this date. This time span provides a reasonable planning period to consider land use needs. It recognizes that land and building development is a long-term process and will be subject to economic cycles that can typically last five to ten years. It also recognizes that land use planning is a long-term process and ideally will consider longer-term needs while at the same time focusing on the reasonably foreseeable future conditions.

EXISTING INDUSTRIAL REAL ESTATE MARKET CONDITIONS

Industrial Real Estate Market Data

While Table 1 presented industrial real estate inventory by sub-market published by JLL, Table 2, below, presents industrial real estate data that BAE compiled using the CoStar commercial real estate database. While the inventory amounts differ between JLL and CoStar, they indicate the same magnitude, and differences may be explained by differences in how industrial buildings are defined, and the level of coverage provided by different data sources. The data suggest that CoStar has more comprehensive coverage than JLL, which may exclude certain types of buildings that CoStar includes.

Table 2: San Joaquin County Industrial Real Estate Market

| Industrial | San Joaquin County | |
|--|--------------------|-----------|
| | Total | Avg./Year |
| Inventory (sf), Q1 2023 | 143,967,627 | |
| Occupied Stock (sf) | 136,257,921 | |
| Vacant Stock (sf) | 6,374,459 | |
| Vacancy Rate | 4.4% | |
| Avg. Asking NNN Rents | | |
| Avg. Annual Asking Rent, Q1 2022 | \$6.83 | |
| Avg. Annual Asking Rent, Q1 2023 | \$8.09 | |
| % Change Q1 2022 - Q1 2023 | 18.4% | |
| Net Absorption | | |
| Net Absorption (sf), Q2 2008 - Q1 2023 | 47,636,401 | 3,175,760 |
| Net Absorption (sf), Q2 2018 - Q1 2023 | 22,966,035 | 4,593,207 |
| New Deliveries (sf), Q2 2018 to Q1 2023 | 25,623,322 | 5,124,664 |
| Under Construction (sf), Q1 2023 | 7,699,935 | |

Sources: CoStar; BAE, 2023.

Inventory

As shown in the table, CoStar tracks about 144 million square feet of industrial buildings in San Joaquin County.

Occupancy Rate

The countywide industrial vacancy rate as of the first quarter of 2023 was a relatively low 4.4 percent. Typically, when non-residential vacancy rates are below ten percent, this is considered a market with strong demand. Unlike areas with higher vacancy rates, increasing

demand within the San Joaquin County market area can be expected to trigger the need for construction of new industrial space.

Rental Rates

As shown in Table 2, the average annual asking rent as of the first quarter of 2023 for industrial space in San Joaquin County was \$8.09 per square foot. Given the relatively low vacancy rate, it is not surprising that the Q1 2023 rate was a substantial 18.4% increase above the average asking rent in Q1 2022.

Absorption Rate

CoStar data indicate that net absorption of San Joaquin County industrial space accelerated sharply in the 2018 to 2023 period, averaging approximately 4.6 million square feet per year, compared to an average absorption of about 3.2 million square feet per year over the long-term 2008 to 2023 time period.

The fact that the San Joaquin County market maintained a vacancy rate under five percent while even with new deliveries averaging about 5.1 million square feet per year between 2018 and 2023 indicates that the market has seen robust increases in demand.

LAND SUPPLY FOR INDUSTRIAL DEVELOPMENT

The starting point for determining if the supply of land for industrial development is adequate is to document the amount of vacant land that is available for industrial development. BAE undertook a two-step process to identify existing vacant land within the county that is zoned for industrial development.

Vacant Land Identified Through Assessor's Use Codes

San Joaquin County furnished BAE with the County Assessor's parcel data with use code data to make a first pass at identifying vacant industrial land within the county, including the unincorporated county and incorporated cities. After reviewing these data, consulting with County staff, and spot-checking land identified as vacant in industrial zones via use codes by cross-checking with aerial imagery of the industrially-zoned areas, BAE determined that relying on assessor's use code data alone would not be sufficient to put together a complete inventory of vacant industrial land within the County.

Vacant Land Identified Based on Zoning District and I/L Ratio

To augment the land identified via Assessor's use codes, BAE obtained zoning maps in Geographic Information Systems (GIS) format for the County as well as for several cities, to identify areas of the county with industrial zoning. Some cities did not have zoning maps available in GIS format, so BAE reviewed zoning maps and identified industrially-zoned parcels within those jurisdictions manually and mapped them in BAE's GIS system. To identify the vacant land within the industrially-zoned areas that had not already been identified via the Assessor's use codes, BAE utilized a commonly utilized technique of analyzing the Improvement-to-Land Value ratio on each industrially-zoned parcel that was not already identified as vacant based on assessor's use codes. For each parcel, the Assessor's data includes a field for the assessed value of land and a field for the assessed value of improvements. Dividing the improvement value by the land value (I/L ratio), the resulting numeric value provides an indicator of the value of improvements relative to the land value. The higher the I/L ratio, the more intensively developed the property. For fully developed properties, the improvement value typically exceeds the land value, or I/L ratio is larger than 1.0; however, there can be a wide range of I/L ratios for properties that are not fully developed, but also are not technically vacant, such as properties that are developed, but at relatively low intensities. In order to conservatively identify vacant land through this approach, BAE initially set an I/L ratio threshold of 0.25 and identified all properties in industrially-zoned areas that were not already identified as vacant via the Assessor's use codes that have I/L ratios of 0.25 or less. BAE then conducted spot checking via aerial imagery to see if properties screened in this way appeared to be truly vacant. BAE found that some properties did not appear vacant and thus reduced the threshold to 0.20 and found that this more reliably identified properties that would be considered available for development.

Table 3, below summarizes the results of the two-step process to identify land available for industrial development. Recognizing that industrial development is typically on a larger scale, BAE also screened out properties that were smaller than five acres in size. As shown in the table, there are approximately 5,100 acres of industrially-zoned land available for development in San Joaquin County, with most of that land available within the prominent South San Joaquin County industrial areas of Stockton, Tracy, and Lathrop. About 22 percent of the vacant land supply is located in unincorporated San Joaquin County; however, this land is scattered throughout the county. Figure 4, on the following page, shows the locations of the vacant industrial land throughout the San Joaquin County jurisdictions, signified by parcels colored red (if identified via Assessor’s use codes) or orange (if identified via I/L ratio). As shown in the table, about 62 percent of the vacant acreage was identified via Assessor’s use codes and approximately 38 percent was identified via I/L ratios.

Table 3: Acres of Vacant Industrial Land (Parcels >= 5 acres) (a) (b)

| Vacant Acres | Jurisdiction | | | | | | | | Total |
|------------------------------|--------------|-------------|--------------|----------------|----------------|-------------|--------------|----------------|----------------|
| | Ripon | Escalon | Lodi | Stockton | Tracy | Manteca | Lathrop | Unincorp. | |
| Land Size (by Usecode) (c) | 14.4 | 18.4 | 131.9 | 1,183.6 | 656.8 | 80.3 | 282.3 | 780.4 | 3,148.1 |
| Land Size (by I:L Ratio) (d) | 6.0 | 74.3 | 26.8 | 316.7 | 626.4 | 13.6 | 460.3 | 389.0 | 1,913.1 |
| Total Acres | 20.4 | 92.7 | 158.7 | 1,500.3 | 1,283.2 | 93.9 | 742.6 | 1,169.4 | 5,061.2 |

Notes:

- (a) Includes only parcels 5 acres or larger.
- (b) Zoning categories considered industrial for each jurisdiction: IL, IG, M1, M2, BIP, NEI, BPI, Industrial, AP-X, CRSP, and Light Industrial.
- (c) County Assessor usecodes used to determine vacant parcels within industrial zoning districts: 020, 030, 040, 050, 053, 01A, 02A, 03A, 04A, 05A, 06A, 100, 101, 102, 300, 301, 302, 900, 910, 920, 930.
- (d) Includes additional parcels not identified as vacant through assessor use codes within industrial zones that have I:L ratios of 0.20 and below.

Sources: San Joaquin County Assessor's Office; city and County zoning maps; BAE, 2023.

The most prevalent new industrial development in San Joaquin County tends to be relatively large-scale, requiring larger site sizes to accommodate buildings or collections of buildings which may be as large as one million square feet in size. In recognition of this market characteristic, BAE screened the vacant land to only include parcels that were at least 20 acres in size. A parcel of this size could accommodate a warehouse/distribution center of approximately 500,000 square feet if developed at typical intensity. The results are shown in Table 4. The table demonstrates that the available industrial land supply is substantially reduced, by approximately one-third, when considering only the larger parcels that could accommodate modern large-scale warehouse/distribution centers.

Table 4: Acres of Vacant Industrial Land (Parcels >= 20 acres) (a) (b)

| Vacant Acres | Jurisdiction | | | | | | | | Total |
|------------------------------|--------------|-------------|-------------|----------------|--------------|------------|--------------|--------------|----------------|
| | Ripon | Escalon | Lodi | Stockton | Tracy | Manteca | Lathrop | Unincorp. | |
| Land Size (by Usecode) (c) | 0.0 | 0.0 | 67.0 | 796.7 | 460.8 | 0.0 | 138.9 | 493.7 | 1,957.1 |
| Land Size (by I:L Ratio) (d) | 0.0 | 74.3 | 0.0 | 268.0 | 526.9 | 0.0 | 340.8 | 273.4 | 1,483.4 |
| Total Acres | 0.0 | 74.3 | 67.0 | 1,064.7 | 987.7 | 0.0 | 479.6 | 767.1 | 3,440.4 |

Notes:

(a) Includes only parcels 20 acres or larger.

(b) Zoning categories considered industrial for each jurisdiction: IL, IG, M1, M2, BIP, NEI, BPI, AP-X, CRSP, Industrial, and Light Industrial.

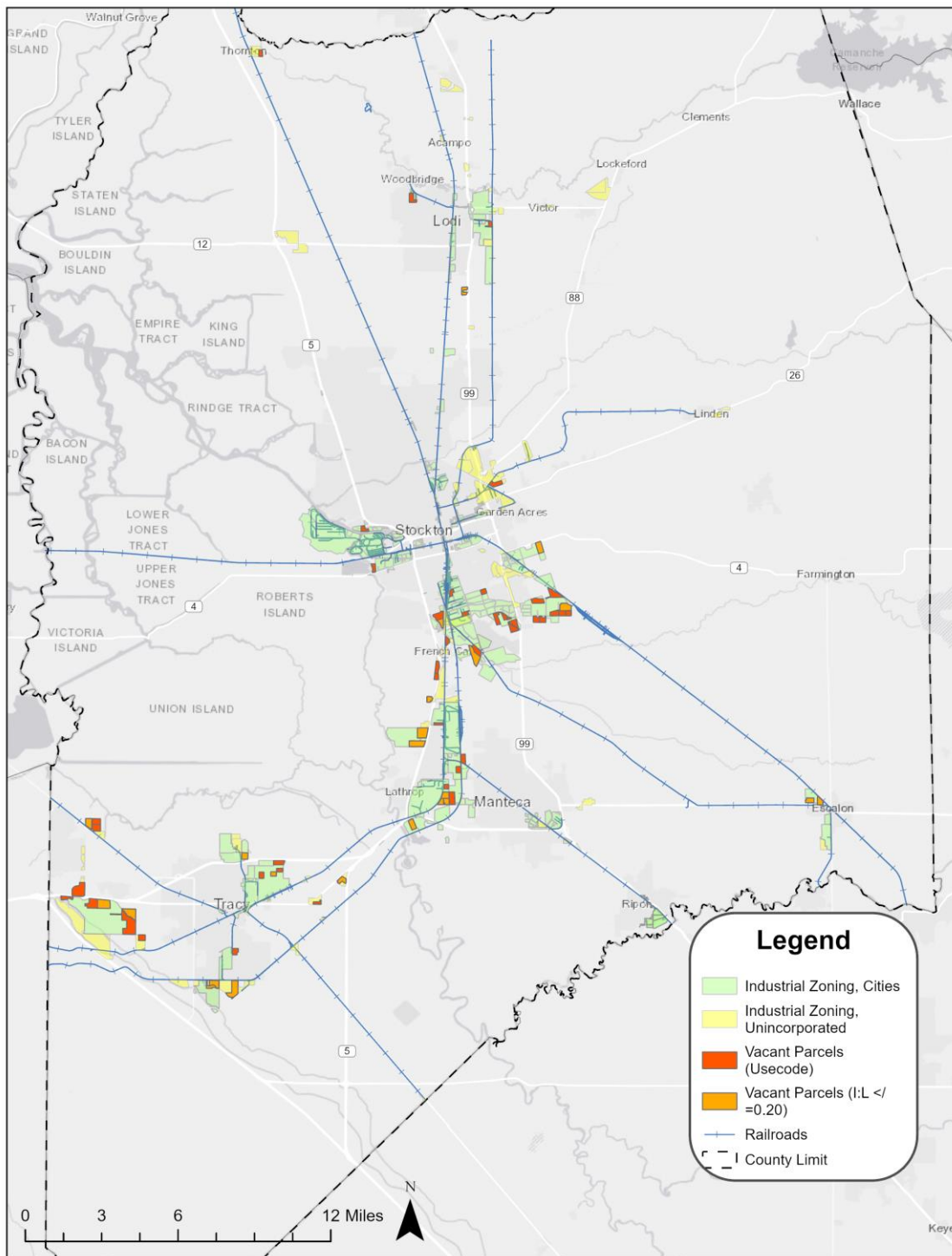
(c) County Assessor usecodes used to determine vacant parcels within industrial zoning districts: 020, 030, 040, 050, 053, 01A, 02A, 03A, 04A, 05A, 06A, 100, 101, 102, 300, 301, 302, 900, 910, 920, 930.

(d) Includes additional parcels not identified as vacant through assessor use codes within industrial zones that have I:L ratios of 0.20 and below.

Sources: San Joaquin County Assessor's Office; city and County zoning maps; BAE, 2023.

Figure 5 maps the parcels that are 20 acres or larger that meet the criteria for vacant industrial land.

Figure 5: Map of Vacant Industrial Land (parcels larger than 20 acres in size)



Sources: San Joaquin County Assessor's Office; city and County zoning maps; BAE, 2023.

INDUSTRIAL DEMAND PROJECTIONS

To understand the relationship between long-term demand for industrial land and the available supply of industrial demand, it is necessary to estimate the future demand for industrial buildings. As industrial real estate development proceeds, this activity consumes the land that is zoned for industrial uses and available for development within a market area. This chapter projects increases in demand for industrial building space through the year 2045 under several scenarios and then converts the building demand projections into estimates of industrial land absorption under different assumptions regarding building floor to land area ratio (floor area ratio, or FAR). As mentioned previously in the market conditions section there existing San Joaquin County industrial real estate inventory currently has a very low vacancy rate, meaning that there is little to no current excess supply that can absorb increases in demand; rather, increases in demand can be expected to translate directly into demand for construction of new industrial building space.

The three industrial building space demand scenarios are as follows:

- **5-Year Absorption Trend** – This represents an aggressive growth scenario that assumes that the trend in industrial building absorption seen between 2018 and 2023 will continue through 2045.
- **15-Year Absorption Trend** – This represents a moderate growth scenario that assumes that the trend in industrial building absorption seen between 2008 and 2023 will continue through 2045.
- **2018 to 2028 Industrial Employment Growth Projection** – This represents a conservative growth scenario that assumes that the growth rate for demand for industrial real estate will grow at the same rate through 2045 as the projected employment growth rate between 2018 and 2028 for industry sectors typically associated with industrial real estate.

For each of the above scenarios, this chapter provides a conversion from projected industrial building space absorption to industrial land absorption under two different FAR scenarios: 0.40 FAR and 0.60 FAR. Each of these demand scenarios and land conversion calculations is discussed in more detail below. Table 5, below, summarizes the demand scenarios and land absorption estimates.

5-Year Absorption Trend

Over the past five years (short-term), industrial building absorption in San Joaquin County has averaged about 4.6 million square feet per year, according to building inventory estimates prepared by CoStar. This short-term absorption trend represents a sharp increase from the longer term trend. For example, as discussed below, the average annual absorption from

2008 to 2023 was significantly lower, at around 3.2 million square feet per year, including the more rapid absorption of the last five years.

As mentioned in the Introduction, the short-term absorption has been influenced by a number of factors, including an ongoing shift towards online shopping that was stimulating demand for warehouse/logistics space even before the COVID epidemic, which then accelerated sharply as the COVID-19 pandemic that spurred an even more rapid shift in U.S. consumer shopping habits towards online shopping beginning in early 2020. This shifted the way consumers get goods, placing more emphasis on delivery from warehouse/logistics centers versus consumers shopping for goods in brick-and-mortar retail establishments. Simultaneously, COVID-related disruptions to the supply chain caused goods producing and goods selling businesses of all types to re-examine “just in time” delivery strategies and place more emphasis on having larger inventories of materials and/or goods in inventory, ready for use as needed, as a means to increase resilience to supply chain disruptions. This created a need for more warehousing space in or near urban centers. To meet the increased demand for warehouse/logistics space, the industrial real estate industry steeply increased production of new building space.

A confluence of factors led to more recent increases in industrial real estate demand and production. It is not clear that these factors will support continued growth at the same rates; rather, it is more likely that the industrial real estate market is responding to changes in the market and that once pent-up demand for more industrial space to respond to the “new reality” is satisfied, industrial real estate absorption will settle to more moderate growth rates that are more consistent with overall economic growth rates. This view suggests that continued growth at the 2018 to 2023 levels is not likely to be sustained over the long-term through 2045; thus, the aggressive growth projections likely overstate future industrial growth potential within San Joaquin County. For example, national real estate brokerage reports from firms such as Jones Lang Lasalle (JLL), Marcus & Millichap, and others cite factors such as slowing consumer demand for goods due to the ending of COVID stimulus payments and shifting of consumer demand back to services that were reduced or curtailed during the pandemic and shifting of imports to the U.S. from West Coast ports to Gulf Coast and East Coast ports since completion of the Panama Canal expansion in 2016 as factors that will temper industrial demand over the long term. Further, these same sources observe that end users, such as Amazon are starting to cut back on their planned expansions, either slowing or dropping certain planned projects.

Land Absorption Estimate

As mentioned previously, this analysis estimates the amount of industrial land that will be consumed to accommodate each industrial building space absorption scenario. Different building types are typically developed at different FARs based on practical considerations such as the function of the building and the related requirements of the building occupants. Modern industrial space tends to be developed at FARs ranging between approximately 0.40 and 0.60, meaning that there is typically 0.4 to 0.6 square feet of building space for each

square foot of site area. This allows for development of single-story buildings covering roughly 40 to 60 percent of the site area and provision of ample un-built space on the lot for vehicle circulation, staging, and parking, considering the needs of heavy trucks that are typically utilized to transport materials and goods to and from the facilities for turning space and docking space. For each building space absorption scenario, Table 5 provides an estimate of the amount of land consumed, assuming either 0.40 or 0.60 FAR development intensity.

As shown in the upper part of the table, the aggressive growth scenario estimates total potential industrial absorption of just over 100 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.40, this amount of new industrial development would require approximately 5,800 acres of industrial land, or approximately 3,900 acres of land if developed at 0.60 FAR.

15-Year Absorption Trend

This represents a moderate absorption scenario that assumes that the long-term absorption trend for industrial land in San Joaquin County will track with the rate of absorption seen over the 15-year period from 2008 through 2023, when the rate of industrial building absorption averaged just under 3.2 million square feet per year. This period of time covers a range of economic cycles, including the Great Recession that included 2008 and ended in 2009, followed by a period of economic expansion that lasted until the COVID-19 pandemic took hold in early 2020. As mentioned, although economic growth slowed with the beginning of the economic pandemic, the effects on the industrial sector were to stimulate industrial growth as businesses adapted to pandemic-induced conditions.

Carrying the 2008 to 2023 average rate of growth forward from the 2023 baseline to 2045 results in a projected 70 million square foot increase in industrial space between 2023 and 2045.

Land Absorption Estimate

As shown in the middle part of Table 5, the moderate growth scenario estimates total potential industrial absorption of just under 70 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.60, this amount of new industrial development would require approximately 2,700 acres of industrial land, or approximately 4,000 acres of land if developed at 0.40 FAR.

2018 to 2028 Industrial Employment Growth Projection

While the first two industrial demand scenarios considered the potential growth in demand for industrial real estate in terms of continuation of rates of building absorption over time, this third scenario looks to projections of increased employment in industry sectors typically associated with industrial building space. Employment growth can be a driver of increased building demand, as companies seek space to accommodate increased numbers of employees, the work that they do, and the associated need for building space to house the

expanded operations. This scenario is based on industry employment projections prepared by the California Employment Development Department for San Joaquin County, for the 2018 to 2028 time period. These projections were prepared in 2019, before the effects of the COVID pandemic were known and employment in industrial sectors, particularly in the trade/transportation/warehousing sector expanded much more rapidly than expected between 2018 and 2023. To accommodate that surge in employment growth, the lower part of Table 5, applies the average annual growth rate for industrial employment sectors projected for 2018 to 2023 to the base year 2023 estimate of industrial building space to project growth in industrial building space through 2045. This approach assumes that the relationship between the number of employees in industrial sectors and the amount of industrial building space (i.e., employment density) remains relatively constant from 2023 through 2045.¹ This assumption and the related estimate of industrial building demand may be somewhat conservative, given that reports of concerns of labor ability and increasing wage levels may push industrial businesses to increase the level of automation in their facilities, reducing labor needs for a given amount of production, and thus reducing employment densities. This means that for a given amount of industrial employment growth (i.e., number of workers) the actual building square footage may increase. Based on the stated assumptions, this scenario projects absorption of approximately 44.5 million square feet of additional industrial building space between 2023 and 2045.

Land Absorption Estimate

As shown in the lower part of Table 5, the conservative growth scenario estimates total potential industrial absorption of just under 45 million square feet of industrial building space between 2023 and 2045. At a building intensity of 0.60, this amount of new industrial development would require approximately 1,700 acres of industrial land, or approximately 2,600 acres of land if developed at 0.40 FAR.

¹ The current estimated industrial employment density in San Joaquin County is approximately 2,300 industrial building square feet per industrial employee, based on CoStar's Q1 Industrial building inventory of 143,967,627 square feet of building space, divided by the CA Employment Development Department's

Table 5: Projected Industrial Land Demand 2023 to 2045**Scenario 1 - Projected Demand 2023 to 2045 (2018-2023 Absorption Trend)**

| | 2023 | 2025 | 2030 | 2035 | 2040 | 2045 | 2023-2045 Increase |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|
| Industrial Inventory (Sq. Ft.) | 143,967,627 | 153,154,041 | 176,120,076 | 199,086,111 | 222,052,146 | 245,018,181 | 101,050,554 |
| Increase from Prior Period (Sq. Ft.) | | 9,186,414 | 22,966,035 | 22,966,035 | 22,966,035 | 22,966,035 | |
| <i>Acres Required (at .60 FAR)</i> | | 351 | 879 | 879 | 879 | 879 | 3,866 |
| <i>Acres required (at .40 FAR)</i> | | 527 | 1,318 | 1,318 | 1,318 | 1,318 | 5,800 |

Note:

Average Annual Increase (Sq. Ft.): 4,593,207 Based on short-term absorption trend from 2018 to 2023

Scenario 2 - Projected Demand 2023 to 2045 (2008 to 2023 Absorption Trend)

| | 2023 | 2025 | 2030 | 2035 | 2040 | 2045 | 2023-2045 Increase |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|
| Industrial Inventory (Sq. Ft.) | 143,967,627 | 150,319,147 | 166,197,947 | 182,076,748 | 197,955,548 | 213,834,348 | 69,866,721 |
| Increase from Prior Period (Sq. Ft.) | | 6,351,520 | 15,878,800 | 15,878,800 | 15,878,800 | 15,878,800 | |
| <i>Acres Required (at .60 FAR)</i> | | 243 | 608 | 608 | 608 | 608 | 2,673 |
| <i>Acres required (at .40 FAR)</i> | | 365 | 911 | 911 | 911 | 911 | 4,010 |

Note:

Average Annual Increase (Sq. Ft.): 3,175,760 Based on longer-term absorption trend from 2018 to 2023

Scenario 3 - Projected Demand 2023 to 2045 (2018 to 2028 Industrial Employment Projection Trend)

| | 2023 | 2025 | 2030 | 2035 | 2040 | 2045 | 2023-2045 Increase |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|
| Industrial Inventory (Sq. Ft.) | 143,967,627 | 147,536,796 | 156,851,655 | 166,754,615 | 177,282,807 | 188,475,705 | 44,508,078 |
| Increase from Prior Period (Sq. Ft.) | | 3,569,169 | 9,314,859 | 9,902,960 | 10,528,192 | 11,192,898 | |
| <i>Acres Required (at .60 FAR)</i> | | 137 | 356 | 379 | 403 | 428 | 1,703 |
| <i>Acres required (at .40 FAR)</i> | | 205 | 535 | 568 | 604 | 642 | 2,554 |

Sources: CoStar, CA Employment Development Department, BAE; 2023.

BALANCE OF INDUSTRIAL LAND SUPPLY AND DEMAND

A comparison between the projected land demand under three different scenarios and the available land supply, focusing primarily on the supply of land in parcels 20 acres or larger indicates that the San Joaquin County jurisdictions collectively have sufficient land to satisfy the demand through 2045 under the Conservative demand scenario (~3,400 vacant acres of land on parcels of 20 acres or larger available versus demand for between about 1,700 to 2,600 acres of land). Although this scenario would have a modest buffer of available land supply relative to the upper end of the demand estimate, there would be additional capacity on industrial parcels smaller than 20 acres.

In the case of the Moderate demand scenario (demand for ~2,700 to 4,000 acres of land), San Joaquin County jurisdictions may be able to satisfy long-term demand if future industrial development averaged 0.60 FAR; otherwise, the land supply would likely fall short of the demand under this growth scenario unless additional parcels sized smaller than 20 acres were utilized for development. Even if the existing land supply could numerically accommodate the demand with parcels as small as five acres, there would be relatively little in the way of a buffer, suggesting that land availability issues could arise as 2045 approaches when there would be relatively little remaining land available for development, which could decrease competition among land owners and cause land prices to increase, taking away one of the locational advantages that currently makes San Joaquin County a competitive location for new industrial development.

Under the Aggressive demand scenario (~3,900 to 5,800 acres of land demand), San Joaquin County jurisdictions would likely fall short of having sufficient industrial land available to accommodate the long-term demand through 2045, unless a large proportion of all industrial parcels as small as five acres in size were developed at an average FAR of 0.60. It would most likely be necessary to identify additional land for re-zoning to accommodate industrial demand well before 2045 in order to ensure an adequate supply of land reasonably priced to accommodate user needs with reasonable buffer.

Current Industrial Land Supply by Sub-Area

In terms of the location of the industrial land supply, as mentioned previously, it is generally located in areas that are seeing strong demand for industrial development, with the majority of the vacant industrial land located in the southern part of the County, around the cities of Stockton, Lathrop, Tracy, and unincorporated areas near these cities. This indicates that the location of the available industrial land is pretty well matched with the existing patterns of demand; however, if the overall industrial land supply is discounted for the fact that some of the available land is located in areas that are less desirable for the types of industrial

development that are driving demand for new buildings within the County, the industrial land supply is tighter in all scenarios than described above.

Planned and Proposed Industrial Rezoning Projects

In addition to San Joaquin County, jurisdictions across the County are considering various projects that could add to the inventory of industrial land and help to satisfy some of the long-term increase in demand for industrial space. Table 6, on the following page lists the pending project applications that involve proposed industrial projects on land that is not currently zoned for industrial development. As shown, applications on file with San Joaquin County represent some of the larger proposals in terms of the number of acres proposed for rezoning, including projects ranging from as small as 194 acres to as large as 1,312 acres. The planned and proposed projects in the cities would collectively have a limited impact on the long-term supply of industrial land within the County, with the exception of the proposed Mariposa Lakes project. This project is on currently unincorporated land and, if approved, would be annexed to, and developed as part of the City of Stockton. This project could represent an approximately 75 percent increase in the countywide developable industrial land supply if the entire acreage were approved for industrial development.

Figure 6, following Table 6, illustrates the locations and the number of proposed industrial acres for the projects listed on the table. The projects are identified by their Map Key number from Table 6 and the size of the markers on the map indicates the relative scale of each project proposal, in terms of the number of acres proposed for rezoning to allow industrial uses.

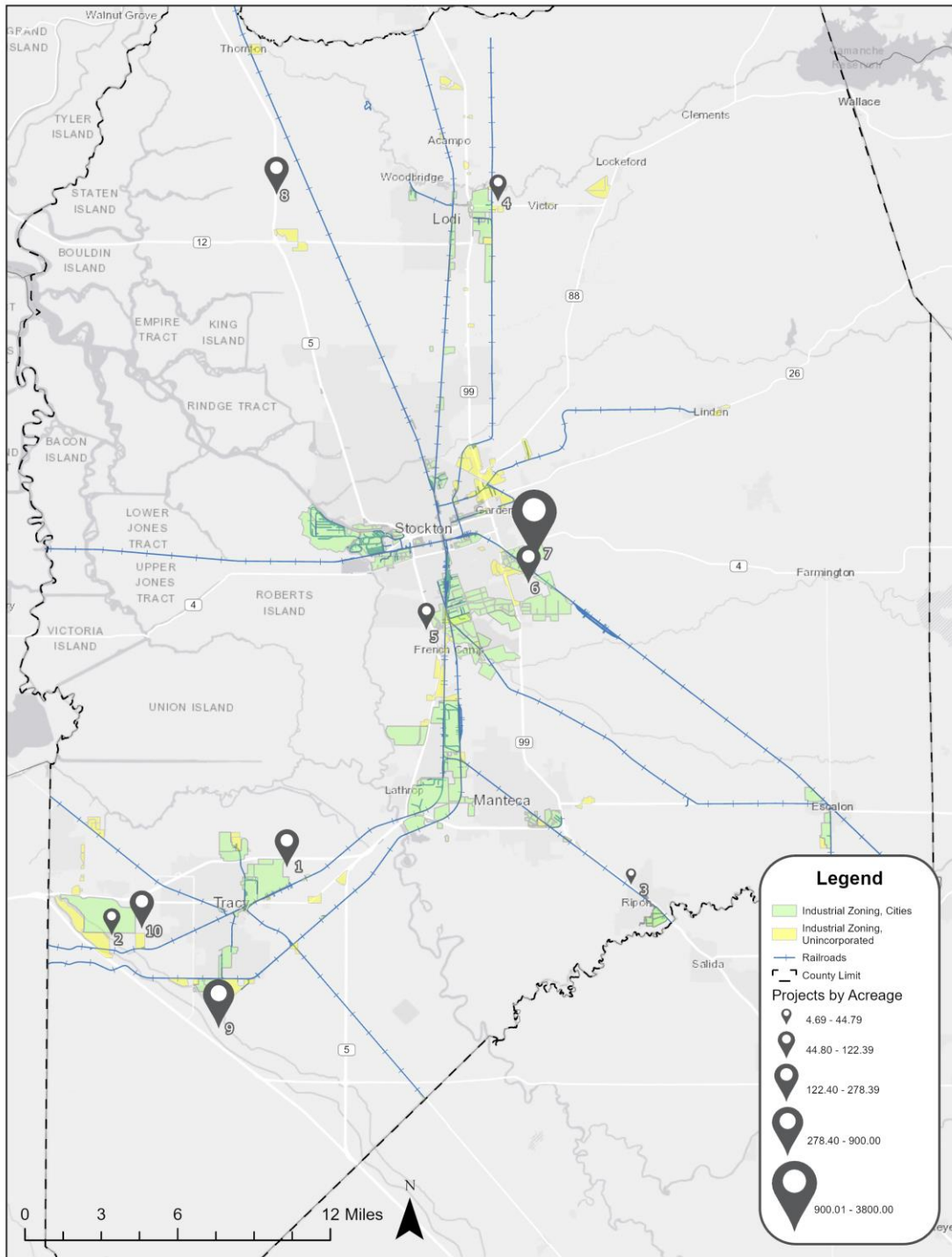
As illustrated on the table, Project 7 in the City of Stockton and Project 9 in the unincorporated area, have the potential to most significantly expand the inventory of vacant industrial land, involving 3,800 and 1,312 acres, respectively. Most of the proposed industrial re-zonings are for sites that are located near existing industrial areas, with the exceptions of Project 3, the Noosa Energy battery storage project in Ripon; and Project 8, on Thornton Road south of Turner Road, near Lodi; however, Project 8 is located near both I-5 and a rail line. Project #s 1, 2, 5, 6, 7, 9, and 10 are generally located within San Joaquin County's existing focal areas for industrial development.

Table 6: Planned and Proposed Industrial Rezoning

| Jurisdiction | Map Key # | Project Name | Status | Address | Description | Acres | Current Zoning |
|----------------|-----------|---|--|---|---|--------|---------------------------|
| Tracy | 1 | Tracy Alliance - 4 Industrial Buildings | Under Review , Not Yet Approved | 6599 W. Grant Line Rd. | 4 Industrial Buildings | 122.39 | Agricultural |
| | 2 | Schulte Warehouse/Annexation | Under Review , Not Yet Approved | 16286 W. Schulte Rd. | Schulte Warehouse | 18.66 | Agricultural |
| Ripon | 3 | Noosa Energy Project | Approved, Not Yet Under Construction, Requested Extension | 1302 Frontage Road | Battery Energy Storage Project | 4.9 | Commercial |
| Lodi | 4 | Wine distribution facility | Under Review , Not Yet Approved | | Wine distribution facility | 20.6 | Agricultural |
| Stockton | 5 | P21-0789 | Under Review , Not Yet Approved | 537 W Yettner Rd. | Annexation, GPA | 16.119 | Agricultural |
| | 6 | P20-0805 | Approved, Not Yet Under Construction | 5110 E Mariposa Rd. | Annexation/Environmental Review | 203.48 | Residential |
| | 7 | Mariposa Lakes Specific Plan | Unincorporated land; Under Review , Not Yet Approved; Would be annexed and developed in City of Stockton | South of SR 4 & E of BNSF | 3,800 acres COS approved development in 2008 - looking to develop industrial area | 3,800 | Agricultural |
| Unincorporated | 8 | Flag City Development | Under Review , Not Yet Approved | East side of Thornton Road, south of Turner Road, Lodi | Rezoning for a new industrial/w arehouse development w ith 3.1 million sq. ft. of building space | 194 | Agricultural/ Residential |
| | 9 | Pacific Gateway | Under Review , Not Yet Approved | North of CA Aqueduct betw een Tracy Blvd and Bird Rd., southeast of Tracy | Rezoning for a mixed-use project proposing 1,312 acres of light industrial/w arehouse development (27 million sq. ft. building space) | 1,312 | Agricultural/ Residential |
| | 10 | ProLogis | Under Review , Not Yet Approved | North and South side of W. Shulte Rd., West of S. Lammers Rd., Tracy | GP, ZR, SP | 278.33 | Agricultural |

Sources: Respective jurisdictions' development project lists, zoning maps; San Joaquin County Assessor's Office; BAE, 2023.

Figure 6: Map of Planned and Proposed Industrial Rezoning



Note:
See project descriptions on Table 6.

Sources: Respective jurisdictions' pending development lists and zoning maps; BAE, 2023.

Possible Future Changes to Industrial Demand Patterns

TradePorts Project

Any number of factors can change patterns of demand for real estate, such as changes in technology, changes in governmental policy, and patterns of public and private investment. In fact, all of these factors are a component in a large-scale project called TradePorts, which is being advanced by a coalition of public and private interests as a way to modernize and increase the efficiency of the goods movement system in California.

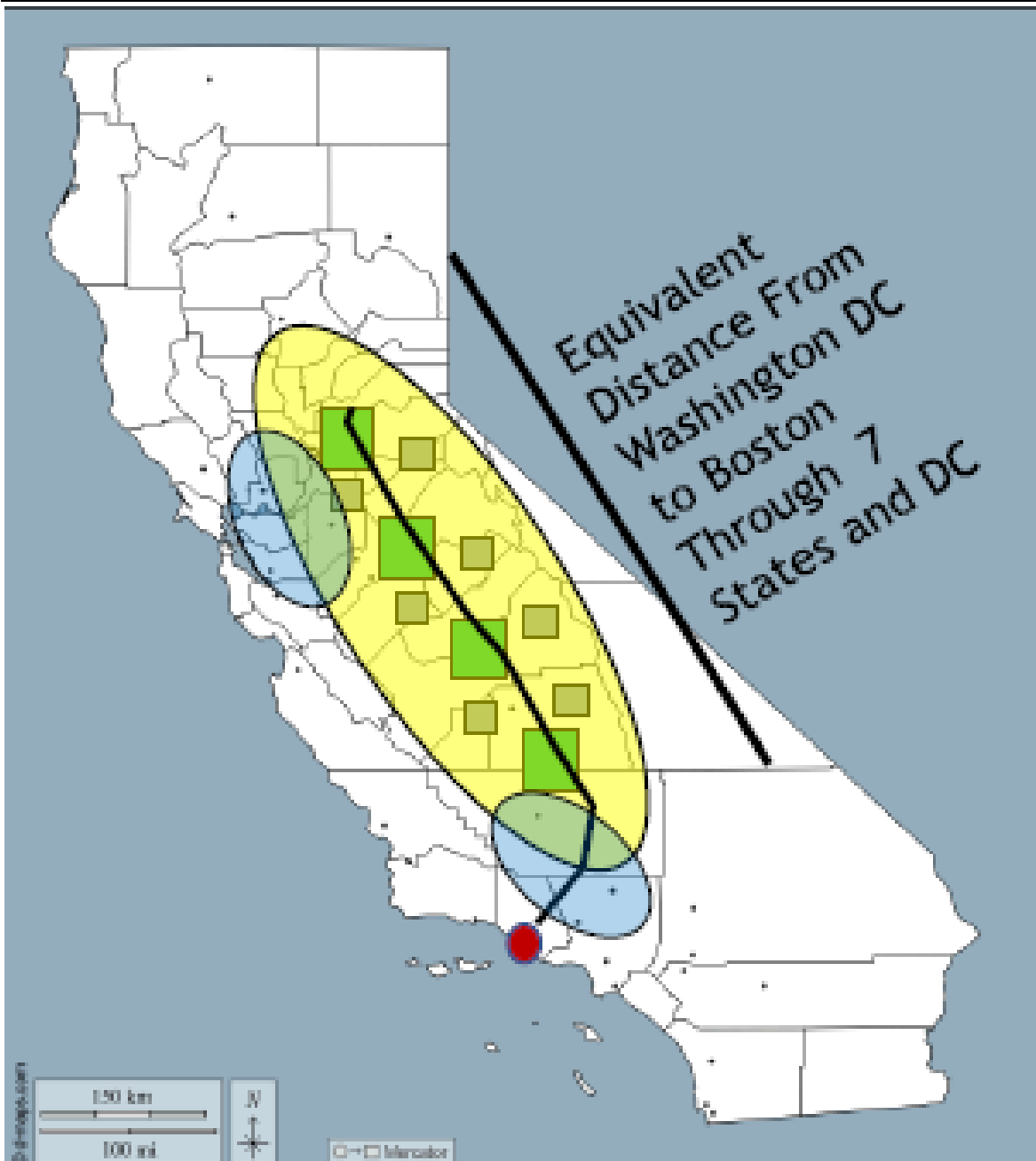
According to a project summary provided by the Fresno Council of Governments, “the California Inland Port System (TradePorts) is a \$30 billion transportation, logistics, and economic development project that will create approximately 100,000 new high-quality jobs in the San Joaquin Valley/Sacramento region while serving a market population of over 14 million people.” It is envisioned as an “integrated logistics system [that] will support higher cargo movement efficiencies through new strategic mobility hubs, sustainable technologies, and logistics system and infrastructure investment partnerships.

The system would include a series of approximately four TradePort Logistics and Investment Zones (hubs) in the Central Valley, each consisting of a roughly 6,000-acre Logistics and Investment Zone connected to a series of smaller Satellite TradePorts. The hubs would be spaced along an approximately 425-mile transportation corridor extending from the Port of Los Angeles/Long Beach north through the Central Valley (see Figure 7). Each Logistics and Investment Zone would be centered on an approximately 300-acre TradePort Logistics Core which would integrate intermodal rail facilities with a Truck Mobility Complex that includes charging/fueling facilities, maintenance and support services, cargo transfer/handling areas, short-term demurrage/equipment management, and onside “fence-adjacent” distribution facilities.

The project aims to create the largest and most sophisticated corridor in the world by creating integrated multimodal cargo transport and hubs, organized around a truck and rail spine that connects seaports (e.g., Los Angeles/Long Beach, Oakland and Stockton) and markets (e.g., Southern California, Central Valley, Bay Area) and replaces “all-truck” conditions with intermodal truck and rail to create greater efficiency, reduce GHG and air pollution, increase economic opportunity, and reduce VMT, road congestion, and maintenance costs while increasing traffic safety by reducing the number of truck trips from the seaports complex in the Los Angeles region to the San Joaquin Valley, the Sacramento Region, and the Bay Area.

The project information sheet indicates that it has participation from a wide range of public agencies from the local to national government level as well as various private stakeholders, including companies from the logistics industry, ports (Oakland, Stockton, Los Angeles, Long Beach) and the major railroads (UP, BNSF).

Figure 7: TradePort Concept Map



Source: Fresno Council of Governments

The information sheet also indicates that the U.S. Department of Transportation (USDOT) designated the project as a Regional Infrastructure Accelerator and that the California State Transportation Agency (CalSTA) has designated the project as an “emerging project” under an agreement to advance solutions to the national supply chain crisis.

A presentation by the Fresno Council of Governments from 2022 indicated an aggressive timeframe for advancing the TradePorts project, including:

- 2022: Finalize Organizational/Delivery Entity, Site, Selection Begun, Financing Structure Development, Establish Partners
- 2023: Acquire Sites, First TradePorts Under Construction, Clean Energy Deals In-Place, Risk Capital Investment Partners, Shipper/Partners Announced
- 2024: All TradePort Sites Under Control, Operations Begun, Initial Development of Investment Districts

Although these timelines are likely too optimistic, it indicates that the project stakeholders are attempting to move the project along quickly.

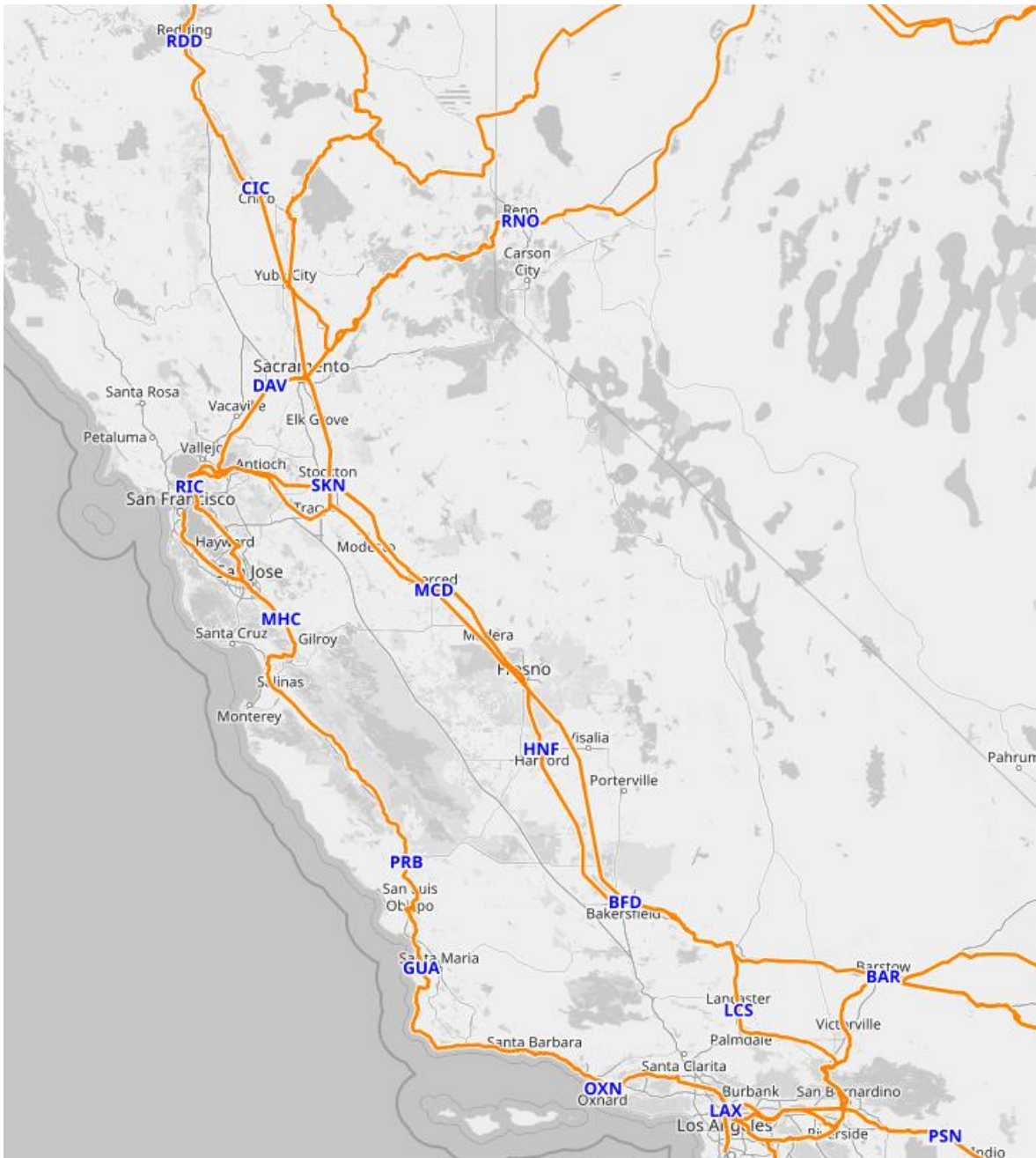
Potential Implications for Industrial San Joaquin County Industrial Demand

The TradePorts project is still in its early stages of planning; thus, it is difficult to fully understand how quickly the project could come to fruition and its implications for demand for industrial real estate in San Joaquin County; however, as a current focal point for distribution of goods into and out of the Bay Area, San Joaquin County would likely play a key role in a future TradePorts system. San Joaquin County would be a logical location for one of the major (e.g., ~6,000-acre) TradePorts Logistics and Investment zones. Based on the information shared to date identifying the Logistics Core of these zones as intermodal nodes connecting rail and truck transportation, and assuming that it will be desirable to locate TradePort Logistics and Investment zones in close proximity to existing freight rail main lines, this could potentially make industrial sites near the existing BNSF and Union Pacific freight rail lines more attractive if the TradePorts vision comes to fruition.

Under current conditions, with most freight destined for the Bay Area traveling through the Central Valley arriving via the highways in trucks, the San Joaquin County industrial real estate market is focused on locations along the I-5 corridor in the western part of the County that have ready access to I-580, such as Tracy and Lathrop. These areas are also served by the main UP and BNSF rail lines, as illustrated in Figure 8. The areas where the rail lines and the freeways intersect in close proximity are in the same areas where San Joaquin County's industrial real estate market is already focused, particularly between Tracy, Lathrop, and Stockton. A site within these areas would likely make a good location for a TradePort Logistics and Investment zone; however, there are no existing vacant industrially-zoned sites that are large enough to meet the targeted 6,000-acre size. If the TradePorts team were to focus on San Joaquin County to designate a Logistics and Investment zone in any location, it would be

necessary to at least undertake some rezoning of current non-residential land in order to create a contiguous 6,000-acre industrial zone. If such a development were to occur, it is likely that it would tend to consolidate much of the regional warehouse/distribution center activity in or near that location, and some existing secondary locations (e.g., locations further from available transportation networks) would become further marginalized and might struggle to continue to attract tenants, eventually leading to a need for redevelopment.

Figure 8: Main Line Freight Rail Network



Source: OpenRailwayMap.org

ECONOMIC BENEFITS OF INDUSTRIAL DEVELOPMENT

Employment Benefits Assessment

Decisions about allocation of land for industrial development involve choices about how to allocate limited resources of land, infrastructure capacity, government resources, and available labor. With this in mind, the community should consider the tradeoffs of accommodating expansion of the warehouse and logistics sector in San Joaquin County compared to the likely benefits.

Amount of Job Generation

Among non-residential land uses, warehouse/distribution centers have among the lowest employment densities (e.g., jobs per building area). This means that for a given facility size, these types of developments tend to support a limited number of jobs. To estimate potential job-generation from new warehouse/distribution centers, BAE looked at the total industrial building inventory in San Joaquin County, as reported by CoStar, and the total employment in business sectors typically associated with industrial land uses. As shown in Table 7, dividing the total industrial building inventory by the total employment in employment sectors associated with industrial development, yields an estimated countywide employment density of approximately one employee per 1,500 square feet of industrial space. Modern logistics-oriented may have employment densities significantly lower than this figure, with one recent analysis conducted for a local logistics project estimating an employment density of as low as approximately one employee per 2,700 square feet of building space. Applying a mid-point assumption of about one employee per 2,100 square feet, for the purposes of this analysis to a warehouse/distribution center of 500,000 square feet, this would translate to approximately 240 jobs.

Table 7: Potential Industrial Employment Generation, 2023-2045

| Industrial/Flex Building Space | San Joaquin County |
|--|---------------------------|
| Inventory (sf), Q1 2023 | 143,967,627 |
| Occupied Stock (sf) | 136,257,921 |
| Vacant Stock (sf) | 6,374,459 |
| Vacancy Rate | 4.4% |
| <hr/> | |
| Industrial, Manufacturing, Warehouse, and Logistic Industries, EDD 2022 | Number |
| Construction, Natural Resources, and Mining | 15,100 |
| Manufacturing | 22,600 |
| Transportation, Warehousing, and Utilities | 48,800 |
| Wholesale Trade | 11,400 |
| Total | 97,900 |
| <hr/> | |
| Estimated Square Feet per Employee | 1,471 |

Possible Long-Term Employment Generation, Projected Industrial Real Estate Expansion through 2045

| | | |
|---|---------------------------------|-----------------|
| Assumed Employment Density in New Warehouse/Distribution Centers (a) | 2,100 sq. ft. / employee | |
| <hr/> | | |
| New Jobs in New Industrial Space | New Industrial Space | New Jobs |
| Aggressive Growth Scenario | 101,050,554 | 48,119 |
| Moderate Growth Scenario | 69,866,721 | 33,270 |
| Conservative Growth Scenario | 44,508,078 | 21,194 |

Note:

(a) 2,100 sq. ft. represents the mid-point between the employment density calculated for existing countywide buildings and industrial employment and a recent employment density estimate prepared for a modern local warehouse/distribution center project.

Sources: CoStar; State of California, Employment Development Department; BAE, 2023.

As shown in the lower part of Table 7, the employment estimate can be extended to the industrial demand projection scenarios, dividing the total projected building space under each scenario by the same estimated building square feet per employee (2,100 sq. ft.). Based on these assumptions, the long-term increase in industrial employment could range between about 21,000 and 48,000 jobs, depending on the growth scenario. To put this range into context, the Employment Development Department reports that as of May, 2023, there were just under 300,000 total jobs in all industries in San Joaquin County.

It should be noted that, as the industry continues to develop, large players (e.g., Amazon) are leveraging recent advancements in robotics and drone technologies to further reduce the need to employ actual people, meaning that employment densities may decrease further over time and that the number of new jobs associated with a given amount of new industrial building space would decline as employers seek to reduce their labor costs and reduce their dependence on a limited labor pool. The increasing use of automation and other labor-saving technologies will also mean that the employee profile would likely also change over time, with lower proportions of relatively low-paid positions requiring lower skills, education, and training, and larger proportions of positions requiring higher skills, more education, and more training and presumably commanding higher wages. A shift towards automation would likely lead to

increased capital investment relative to current levels (see Economic Benefits Assessment section, below).

Warehouse/Distribution Jobs and Wage Levels

One of the main objectives of many jurisdictions that are courting new warehouse and distribution projects is the potential for new job creation. According to data from the Occupational Employment Survey (OES), warehouse and logistics employers in San Joaquin County generally offer wages starting at around \$17 to \$20 per hour for packers, order pickers and laborers, while jobs with higher skill requirements such as industrial truck drivers pay around \$22 per hour, while supervisors and managers in these types of facilities tend to be paid around \$30 to \$50 per hour, respectively, as summarized in Table 8. The table also indicates the relative prevalence of these jobs, indicating that the higher-wage supervisor and manager jobs represent only about six percent of the frontline warehouse and transportation workers in San Joaquin County. For context, the Employment Development Department indicates that during the first quarter of 2022 (the most recent time period available), the median hourly wage for all jobs in San Joaquin County (Stockton-Lodi MSA) was \$22.40, meaning that most of the jobs within the warehouse and logistics industrial are likely to be clustered just above or below the area's median wage.

According to the California Department of Housing and Community Development (HCD), a single person living alone would qualify as “Low Income” if their income is \$49,100 per year. Assuming full-time work and two weeks of vacation time per year, this equates to an hourly wage of about \$24.55. A supervisor earning about \$50 per hour would have an annual income of around \$100,000, which would place them in the “Above Moderate-Income” category, meaning their income would be more than 120 percent of the area median income for a single-person household, and roughly equal to the overall area median income (all households, regardless of household size).

These data indicate that the majority of workers in warehouse/distribution facilities are paid relatively low wages, even considering the relatively low-cost of living in San Joaquin County relative to other parts of California. At the same time, the Central Valley is known for relatively low wages across all sectors and unemployment rates that tend to be consistently higher than statewide averages. Some of this is due to the historically dominant position of agriculture as a Central Valley employer and the often seasonal nature of agricultural work. In contrast, work in warehouse/distribution centers can be year-round, although depending on the type of operation there may be seasonal spikes in demand for employees (e.g., holiday season surge for facilities handling consumer goods). In fact, marketing information for industrial facilities in the International Park of Commerce in Tracy tout the availability of a large “blue collar” labor pool to fill warehouse/distribution jobs, including existing workers in the agricultural industry, who might be attracted to are warehouse/distribution facility by a slight increase in pay.

While most of the warehouse/distribution jobs are lower-paid, it is interesting to note from the jobs skills/educational requirements noted on Table 8 that the manager and supervisor positions do not require higher education and training, meaning that the industry does offer a career ladder to a select number of workers who could advance to higher positions over time without the need to undertake additional education or specialized training.

Table 8: Job Types and Characteristics Typically Associated with Warehouse/Distribution Facilities

| Standard Occupational Code/Name | # in San Joaquin County | % of Frontline Warehouse/Transportation Workers in County | Average Hourly Wage | Entry Level Education | Work Experience Needed | Job Training |
|--|-------------------------|---|---------------------|-----------------------------------|------------------------|--------------------------------|
| 53-7062 Laborers and Freight, Stock, and Material Movers, Hand | 12,740 | 33% | \$19.98 | No formal educational credential | None | Short-term on-the-job training |
| 53-7065 Stockers and Order Fillers | 8,530 | 22% | \$19.65 | High school diploma or equivalent | None | Short-term on-the-job training |
| 53-7064 Packers and Packagers, Hand | 2,420 | 6% | \$16.63 | No formal educational credential | None | Short-term on-the-job training |
| 53-7051 Industrial Truck and Tractor Operators | 9,870 | 26% | \$22.32 | No formal educational credential | None | Short-term on-the-job training |
| 43-5071 Shipping, Receiving, and Inventory Clerks | 2,690 | 7% | \$19.90 | High school diploma or equivalent | None | Short-term on-the-job training |
| 53-1047 First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors | 1,600 | 4% | \$31.15 | High school diploma or equivalent | Less than 5 years | None |
| 11-3071 Transportation, Storage, and Distribution Managers | 680 | 2% | \$49.07 | High school diploma or equivalent | 5 years or more | None |
| Total Frontline Warehouse/Transportation Workers | 38,530 | 100% | | | | |

Sources: California Employment Development Department, OEWS Employment and Wage Statistics, 2022; California Employment Development Department, Long-Term Occupational Employment Projections, 2020: BAE, 2023

Economic Benefits Assessment

This portion of the study considers several types of economic benefits typically associated with warehouse/distribution center development, including local property taxes, property taxes in-lieu of vehicle license fees, and sales taxes. These revenues represent key sources of local government funding for ongoing operations and maintenance of public facilities.

Property Tax Generation

Property tax is a particularly desirable form of local revenue because it is relatively stable and predictable. Table 9 calculates the potential property tax revenue generation from a 500,000

square foot warehouse/distribution center in the unincorporated area. Property revenue allocations to the County General Fund can vary depending on the location, which is designated by Tax Rate Area (TRA). For the purposes of the table, BAE selected a range of TRAs that are associated with properties in the unincorporated area that have expressed interest in approvals for industrial development. As can be seen in the upper part of the table, the County's share of the one percent ad-valorem property tax collected in the TRAs listed ranges from about 13.6 percent to about 22.6 percent.

The driver of new property tax revenues is assessed valuation. To estimate the potential assessed valuation of new warehouse/distribution facilities, BAE researched the current assessed valuations of a number of newer existing warehouse/distribution facilities in the International Park of Commerce, in Tracy. As indicated at the bottom of the table, the facilities averaged \$82.06 per square foot in assessed valuation for land and buildings and an additional \$9.08 per square foot in business property. Based on these assumptions, a new 500,000 square foot warehouse/distribution facility would have an assessed value of approximately \$45.6 million. The annual ad-valorem property tax (one percent of assessed value) would be approximately \$456,000, and the County General Fund's share would range from approximately \$62,000 to \$103,000 per year, depending on the TRA.

Table 9: Property Tax Revenue Estimate for 500,000 Sq. Ft. Logistics Center

| Tax Rate Areas | 118067 | 102016 | 099218 | 118064 | 088010 | 092002 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Tax Increment Allocation | | | | | | |
| Share to County General Fund | 20.7578% | 20.3312% | 13.5623% | 22.6337% | 20.1490% | 21.5945% |
| Share to Other Tax-Receiving Entities | 79.2422% | 79.6688% | 86.4377% | 77.3663% | 79.8510% | 78.4055% |
| Annual Property Tax Generation: 500,000 sq. ft. Warehouse/Distribution Center | | | | | | |
| Estimated Assessed Value | | | | | | |
| Land/Buildings/Improvements (Secured) (a) | \$41,030,527 | \$41,030,527 | \$41,030,527 | \$41,030,527 | \$41,030,527 | \$41,030,527 |
| Business Property (Unsecured) (b) | \$4,537,551 | \$4,537,551 | \$4,537,551 | \$4,537,551 | \$4,537,551 | \$4,537,551 |
| Total Assessed Value | \$45,568,078 | \$45,568,078 | \$45,568,078 | \$45,568,078 | \$45,568,078 | \$45,568,078 |
| Ad-Valorem Property Tax (Annual) | \$455,681 | \$455,681 | \$455,681 | \$455,681 | \$455,681 | \$455,681 |
| Distributed to County General Fund | \$94,589 | \$92,645 | \$61,801 | \$103,137 | \$91,815 | \$98,402 |
| Distributed to Other Tax-Receiving Entities, including ERAF | \$361,091 | \$363,035 | \$393,880 | \$352,543 | \$363,866 | \$357,279 |

Notes:

- (a) Assumed assessed valuation for land/buildings/improvements: \$82.06 per building square foot
- (b) Assumed assessed valuation for business property \$9.08 per building square foot

Sources: San Joaquin County Auditor-Controller's Office; BAE, 2023.

Property Tax In-Lieu of Vehicle License Fee Generation

The County General Fund receives property tax in-lieu of vehicle license fee (ILVLF) revenue from the State of California in proportion to the countywide assessed valuation. According to the 2023-2024 Proposed County Budget, the total property tax roll administered by the County Assessor's office was \$99,178,491,000 in 2022/2023. According to the County Budget, the total ILVLF for the 2022/2023 fiscal year was estimated at \$110,831,228. This translates to ILVLF revenue of \$1.12 per \$1,000 in assessed valuation. If this figure is applied to the

estimated \$45.6 million assessed valuation for a 500,000 square foot warehouse/distribution center, the facility would generate approximately \$51,000 per year in new ILVLF revenues for the County General Fund, as shown in Table 10, on the next page.

Table 10: Property Tax In-Lieu of Vehicle License Fee Revenue Estimate

| Current Countywide Property Tax In-Lieu of Vehicle License Fee Revenue | |
|---|------------------|
| Total Countywide AV (2022/2023) | \$99,178,491,000 |
| Total ILVLF to County General Fund (2022/2023) | \$110,831,228 |
| \$ of ILVLF Per \$1,000 in Assessed Valuation | \$1.1175 |
| ILVLF Generated by New 500,000 Warehouse/Distribution Facility | |
| Estimated Total Assessed Valuation (See Table 9) | \$45,568,078 |
| Estimated ILVLF Generation (Annual) | \$50,922 |

Sources: San Joaquin County Budget, Proposed 2023/2024; BAE, 2023.

Personal Income/Wages from Jobs

Compared to property tax and ILVLF revenues that would accrue to San Joaquin County, the potential employee wage generation associated with new long-term industrial development is quite substantial. Table 11, on the following page, combines the occupational distribution and wage information from Table 8 with the employment projection scenarios from Table 7 to estimate the potential employee wage generation associated with the three different industrial employment projections through 2045. As summarized at the bottom of the table, new employee wage generation could range between \$901 million and \$2.0 billion per year (2023 \$) by 2045, at an overall average wage of \$42,535, assuming that the occupational profile is similar to the County’s existing industrial employment base.

Table 11: Estimated Annual Employee Wage Generation, Industrial Employment Scenarios Through 2045

| Standard Occupational Code/Name | # in San Joaquin County | % of Frontline Warehouse/Transportation Workers in County | Average Hourly Wage | Estimated Annual Wage (a) | Estimated Jobs - Aggressive Scenario (b) | Estimated Jobs - Moderate Scenario (b) | Estimated Jobs - Conservative Scenario (b) | Estimated Income - Aggressive Scenario | Estimated Income - Moderate Scenario | Estimated Income - Conservative Scenario |
|--|-------------------------|---|---------------------|---------------------------|--|--|--|--|--------------------------------------|--|
| 53-7062 Laborers and Freight, Stock, and Material Movers, Hand | 12,740 | 33% | \$19.98 | \$39,960 | 15,911 | 11,001 | 7,008 | \$635,803,560 | \$439,599,960 | \$280,039,680 |
| 53-7065 Stockers and Order Fillers | 8,530 | 22% | \$19.65 | \$39,300 | 10,653 | 7,365 | 4,692 | \$418,662,900 | \$289,444,500 | \$184,395,600 |
| 53-7064 Packers and Packagers, Hand | 2,420 | 6% | \$16.63 | \$33,260 | 3,022 | 2,090 | 1,331 | \$100,511,720 | \$69,513,400 | \$44,269,060 |
| 53-7051 Industrial Truck and Tractor Operators | 9,870 | 26% | \$22.32 | \$44,640 | 12,326 | 8,523 | 5,429 | \$550,232,640 | \$380,466,720 | \$242,350,560 |
| 43-5071 Shipping, Receiving, and Inventory Clerks | 2,690 | 7% | \$19.90 | \$39,800 | 3,359 | 2,323 | 1,480 | \$133,688,200 | \$92,455,400 | \$58,904,000 |
| 53-1047 First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors | 1,600 | 4% | \$31.15 | \$62,300 | 1,998 | 1,382 | 880 | \$124,475,400 | \$86,098,600 | \$54,824,000 |
| 11-3071 Transportation, Storage, and Distribution Managers | 680 | 2% | \$49.07 | \$98,140 | 849 | 587 | 374 | \$83,320,860 | \$57,608,180 | \$36,704,360 |
| Total Frontline Warehouse/Transportation Workers | 38,530 | 100% | | \$42,535 | 48,119 | 33,270 | 21,194 | \$2,046,695,280 | \$1,415,186,760 | \$901,487,260 |

Notes:

(a) Estimated annual wage is average hourly wage times 2,000 hours/year.

(b) Column may not sum to total due to rounding.

Sources: California Employment Development Department, OEWS Employment and Wage Statistics, 2022; California Employment Development Department, Long-Term Occupational Employment Projections, 2020: BAE, 2023

Sales Tax Revenues

Another common objective among communities vying for new warehouse and distribution development is the generation of new sales tax revenues. Under current California State law, many communities have managed to have local warehouse/distribution centers identified as the legal point-of-sale for purchases made over the internet (e-commerce sales), therefore allowing the jurisdiction to collect the local share of the one percent Bradley-Burns sales tax, plus any additional adopted local sales taxes.² This has resulted in windfall sales tax receipts for some jurisdictions and has become a primary rationale for the recruitment of new warehouse and distribution projects. However, warehouse/distribution centers may or may not generate local sales taxes, depending on their function. For example, a wholesale distribution center that supplies goods to retail stores will not generate local sales tax revenue, as the retail store would be designated as the point of sale for sales tax allocation purposes. Further, proposed legislation may impact the way that sales taxes generated through online retailing are distributed, with revenue being allocated based on the delivery address, versus the location of the distribution facility. This would have the effect of redistributing sales tax generation away from communities that host warehouse and distribution hubs, therefore removing one of the main incentives that jurisdictions have to approve new warehouse and distribution projects.

Other Considerations

While the various economic benefits of warehouse/distribution centers are significant in the abstract, the net community benefits may vary depending on a number of factors, such as costs for public services, the impact of new workers on housing demand and demand for other community services and amenities, impacts of trucks on roadways and other environmental factors, and so forth. Some stakeholders have questioned the comparative desirability of warehouse/distribution center development, recognizing the relative scarcity of land and the community's other finite resources, like labor, housing, and public service capacity. Other communities are also questioning the environmental justice implications of warehouse/distribution center development because it is often sited on relatively low-cost land in proximity to lower-income households and communities of color, subjecting residents to increased noise and light pollution, traffic congestion, and particulate emissions. How these factors and many others balance with economic benefits must be considered in making long-term industrial land use policy.

² According to the California Department of Tax and Fee Administration (CDTFA), warehouse and distribution facilities that simply fulfill orders on behalf of a seller are not required to register as the point of sale; however, in cases where the facility has physical possession or control of the goods, and the power to transfer ownership to the buyer, the transaction is classified as a consignment sale and the distribution facility is designated as the point of sale. Other types of facilities, including those classified as "drop shippers" who technically sell goods to retailers but deliver the goods directly to consumers, are designated as the point of sale.

CONCLUSIONS

San Joaquin County is the primary market area for industrial development in the northern San Joaquin Valley. The area has seen explosive growth in industrial development over the last five years, increasing the rate of absorption substantially over the longer-term trend. A number of factors have contributed to this growth; however, it is difficult to determine whether the more recent rate of growth is sustainable over the long-term, or whether growth rates will settle down to rates more closely resembling historic patterns.

Given uncertainty over the potential rate of industrial growth through 2045, this study included three different growth scenarios, an Aggressive scenario, a Moderate scenario, and a Conservative scenario. The study compared these potential industrial land demand associated with these growth scenarios with the estimated supply of industrially-zoned land available for development and found that the San Joaquin County jurisdictions collectively have sufficient land to satisfy the demand through 2045 under the Conservative demand scenario (~3,400 vacant acres of land on parcels of 20 acres or larger available versus demand for between about 1,700 to 2,500 acres of land), including a reasonable buffer of available land supply relative to the upper end of the demand estimate. There would also be additional capacity on industrial parcels smaller than 20 acres.

In the case of the Moderate demand scenario (demand for ~2,700 to 4,000 acres of land), San Joaquin County jurisdictions may be able to satisfy long-term demand if future industrial development averaged 0.60 FAR; otherwise, the land supply would likely fall short of the demand under this growth scenario unless additional parcels sized smaller than 20 acres were utilized for development. Even if the existing land supply could numerically accommodate the demand with parcels as small as five acres, there would be relatively little in the way of a buffer, suggesting that land availability issues could arise as 2045 approaches when there would be relatively little remaining land available for development, which could decrease competition among land owners and cause land prices to increase, taking away one of the locational advantages that currently makes San Joaquin County a competitive location for new industrial development.

Under the Aggressive demand scenario (~3,900 to 5,800 acres of land demand), San Joaquin County jurisdictions would likely fall short of having sufficient industrial land available to accommodate the long-term demand through 2045, even if considering industrial parcels as small as five acres in size and developing all of it at an average FAR of 0.60. It would most likely be necessary to identify additional land for re-zoning to accommodate industrial demand well before 2045 in order to ensure an adequate supply of land reasonably priced to accommodate user needs.

These findings suggest that San Joaquin County should give careful consideration to proposals to increase the supply of industrially zoned land, including a single project proposed in the unincorporated area that could more than double the existing countywide supply of vacant industrial land on sites of 20 acres or larger, or increase the supply by more than 75 percent if considering vacant sites that are five acres or larger. The County has received two of the three largest rezoning proposals, ranging from 194 acres to 1,312 acres; thus, the County's land use decisions will potentially have a substantial impact on the countywide industrial land supply.

BAE recommends that the County look not only at how many acres a proposed new industrial development would provide to accommodate future demand, but whether that proposal is located at a site that possesses the locational attributes that would support a development that would help to maintain or increase the County's competitiveness as a regional industrial hub, while minimizing the impacts on farmland resources and the potential for creating adverse impacts on local communities (e.g., residential uses and/or other sensitive land uses) and/or environments. Beneficial site characteristics would include:

- A location in the general vicinity of the county's core industrial hub area, between Stockton and Tracy that is well-served by the existing goods movement infrastructure.
- Ready access to existing utility and roadway infrastructure that is appropriately designed to serve the development and which has adequate capacity to serve the increased demand, so as to limit the need for costly infrastructure upgrades, which would increase the costs that must be passed on to tenants or owner-users and would diminish regional competitiveness.
- Convenient connections to the regional transportation network, including freeways, rail lines, the Stockton Airport, and/or the Port of Stockton.
- Limited exposure to sensitive environmental areas and residential areas, but reasonable proximity and access to housing suitable for the targeted labor pool, including affordable housing.
- Situated to provide for an orderly development pattern that will be efficient for extension, maintenance, and operation of public services.

The County will also want to carefully monitor the progress of the TradePorts project, as the planned coordination of infrastructure investments associated with that project could have a disruptive effect on the San Joaquin County industrial market. If the group were to designate a 300-acre TradePort Logistics Core within the county and commit to developing the associated infrastructure to connect the Core with the regional highway and rail networks, this would likely create a distinct locational advantage for property in the vicinity and reinforce an existing industrial hub or create a new industrial focal point that would attract substantial industrial developer interest in properties in and surrounding the TradePort Logistics Core. Given that the existing countywide supply of vacant industrial land, scattered throughout the County's many industrial nodes is about 5,000 acres (considering parcels larger than five acres in size) and the TradePort partners anticipate TradePort Hubs of around 6,000 acres surrounding

each Core, there is a good chance that there would be interest in rezoning additional land that could accommodate a full buildout of the TradePort Hub area.

In conjunction with considering the need to accommodate industry growth, the County will also want to consider the potential economic benefits of expanding the amount of land allocated for industrial development. Data presented in this report indicate that long-term demand for industrial space could be associated with an increase of between about 21,000 and 48,000 new jobs. This would represent an approximately seven to 16 percent increase from the total existing jobs in San Joaquin County, including a substantial increase in personal income that the new employees would earn. It appears that most of the new workers, at least initially, would be employed at or near wage levels equal to the countywide median wage across all industries. Over time, changes in technology may reduce the need for new workers to some degree but with such a reduction in labor needs, there may be increased capital investment and possible a shift of employees to higher wage categories.

The County and the local economy would see a range of economic benefits from expanded industrial sector development and employment. Increases in County property taxes due to new industrial development will vary depending on the specific Tax Rate Areas in which the projects are located. This could be another important factor for consideration of proposals to re-zone land for industrial development. The net fiscal benefits to the County will also vary depending on the locations of the projects and the extent to which new industrial developments can take advantage of existing county service capacity, or whether they will trigger the need for service expansion and associated service expenditure increases. Other economic benefits of new industrial development, such as employee income, will be more diffuse, depending on where new employees live. Overall, approximately 21,000 to 48,000 potential new workers could earn wages in the range of \$901 million to \$2.0 billion per year, a portion of which would be spent within the local economy, depending on where new workers live (e.g., within San Joaquin County or in surrounding areas) and how much of their income is spent within the local economy.