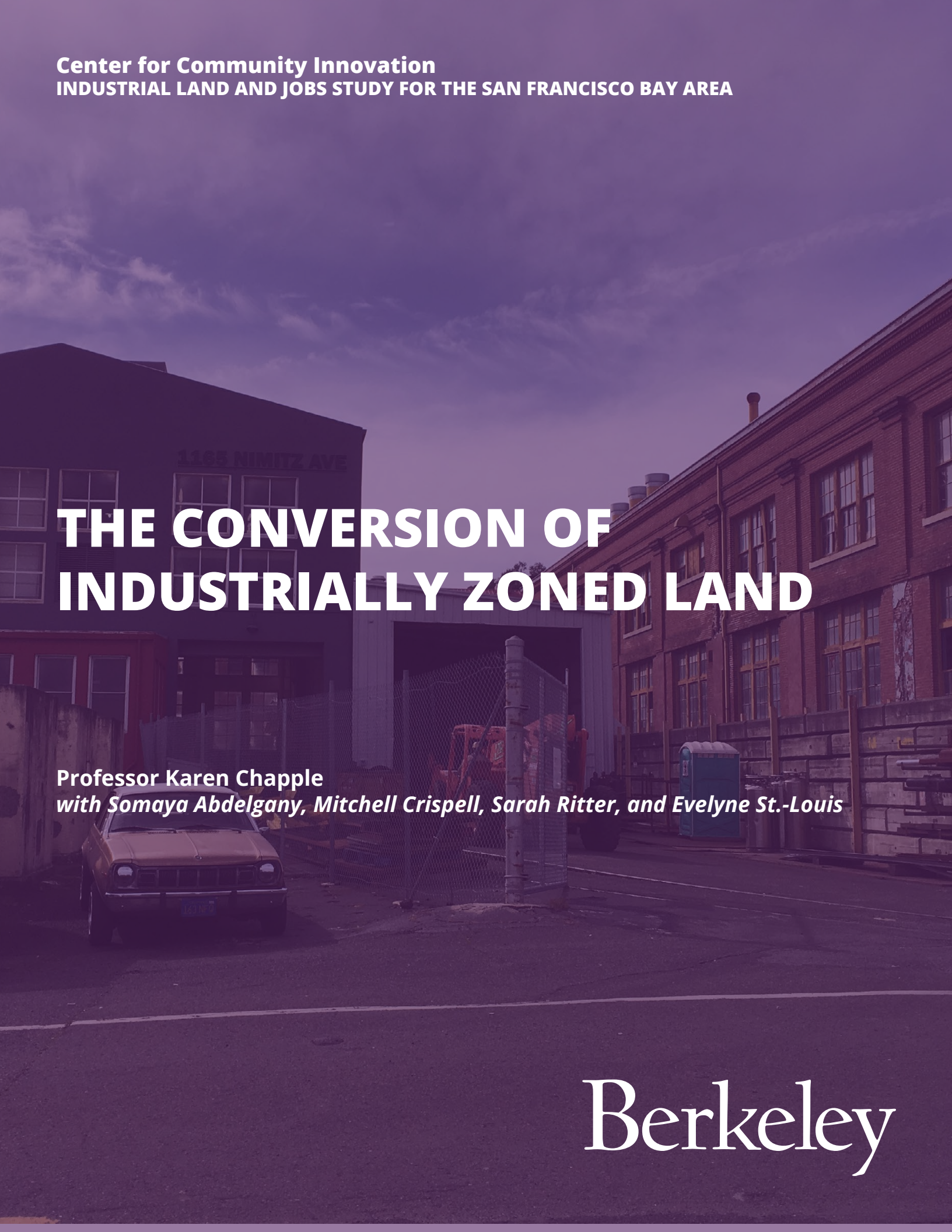
**Center for Community Innovation**
**INDUSTRIAL LAND AND JOBS STUDY FOR THE SAN FRANCISCO BAY AREA**




# THE CONVERSION OF INDUSTRIALLY ZONED LAND

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**Report prepared for the Association of Bay Area Governments/Metropolitan Transportation Commission**

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# Contents

## INTRODUCTION

The intent of this study, the second output from the Industrial Land and Jobs study, is to assess how much of the region's industrially zoned land has already been converted, how much is likely to be converted in the near future, and whether there is likely to be sufficient industrial land to accommodate demand in 2040.

Overall, a small but significant share of exclusive industrial land (i.e., industrial land that does not allow mixed-use or office) has been converted to other uses. Our fieldwork estimated that 10% of industrial land had been converted, but an analysis of assessor data suggested a lower conversion rate, 0.8% over a six year period. There has been little encroachment of new housing on industrial land: in the cities where it is most likely, San Jose and Oakland, about 1-3% of units have been built on industrial land.

Overall, about 7% of the exclusive industrial land in the region is vacant. However, vacancy varies throughout the region, with very little vacant acreage in the core, and large reservoirs of industrial land in the North Bay. As noted in Technical Memo #1, vacancy rates for industrial space are even lower, from 2-6%.

This report also looks at the extent to which industrially zoned land is designated for other uses according to the general plan, or conflicts with a Priority Development Area (PDA) designation. In the nine-County Bay Area region, a total of 15,084 acres of industrially zoned land are potentially in conflict with non-industrial designations, comprising about 17% of the region's current industrially zoned land. The share of industrially zoned land overlapping with non-industrial general plan or PDA designations varies significantly across the different counties. In Napa County, which has a small share of the region's industrial land, there is only a 1% overlap between industrial land (exclusive and mixed-use) and non-industrial general plan or PDA designations. This is most likely because much of its stock has already been rezoned to nonindustrial uses, such as office and commercial development. On the other extreme, almost half of all industrial land in San Francisco is potentially in conflict due to widespread introduction of mixed-use zones throughout the city. In Alameda County, which has the highest share of industrial land in the region, a more moderate 14% of industrial land is overlapping with non-industrial designations.

A considerable amount of industrially zoned land falls within the region's PDAs. Across all counties, about 16,700 acres out of a total 96,700 acres of industrially zoned land overlap with PDAs—about 17%. Nearly half of this overlap is exclusive industrial land, and half is mixed-use industrial land.

Based on this analysis, we next estimate the amount of industrially zoned land available in the future, after accounting for land that is already converted and/or overlapping and in conflict with other designations. Comparing the available land to the employment projections for 2040, we can determine whether there is sufficient land to meet future demand. The majority of counties in the region's core—particularly Santa Clara, San Mateo,

and Alameda—will experience a significant shortage of industrially zoned land, offset by considerable surpluses in more peripheral areas of Contra Costa, Napa, and Solano counties. Altogether, a surplus of 1,944 acres of industrially zoned land is anticipated in 2040, but much is located far from the greatest demand for industrial land, in the core, where there is a deficit of over 900 acres.

Case studies next suggest criteria for when to redevelop industrial land, and when to preserve it. Mission Bay illustrates a clear case for redevelopment, due to the long-term decline of industrial uses surrounding the site, as well as specific site characteristics (e.g., very few land owners). In contrast, Richmond and West Oakland cases illustrate the complications of conversion. For instance, in Oakland, though the area is clearly undergoing a transition away from industrial land-dependent uses to a more mixed-use economy, the City is not providing the support and infrastructure that businesses will need to survive. Without such actions, the area will likely lose much of its employment base in years to come, becoming exclusively residential. In contrast, two cases where housing growth is hindering significant opportunities for economic development make the case for industrial land preservation: San Jose and Contra Costa's Northern Waterfront.

Overall, this analysis suggests that the conversion of industrial land is proceeding at a slow pace, but is likely to accelerate in coming years due to the visions put forward in general plan and PDA designations. To guide city decision-making about where to preserve industrial land and where to convert it, MTC/ABAG should develop criteria. Below are potential criteria in terms of transportation, economy, equity, site characteristics, and environment. These may serve as the basis for designating Priority Production Areas in the future.

## CRITERIA FOR INDUSTRIAL LAND PRESERVATION AND CONVERSION

*Retain as Industrial* ← → *Convert to Residential or Mixed-use*

| | | |
|---|---|---|
| **Transportation** | • Proximity to freight and/or port facilities<br>• Low VMT for workers on industrial land | • Proximity to transit<br>• High VMT for workers on industrial land |
| **Economy** | • Production or related employment<br>• Proximity to business clusters/suppliers/markets<br>• Critical supplier to local businesses<br>• Industry stable or growing | • High-density non-production employment<br>• Proximity to markets/customers<br>• Limited linkages to local economy<br>• Industry in decline |
| **Equity** | • Offers middle-wage jobs for less-skilled workers | • Potential for affordable housing |
| **Land use/zoning compatibility** | • Surrounded by medium/heavy industrial zoning | • Adjacent to residential |
| **Environment** | • Brownfield site, remediation infeasible | • Environmental health hazard for surrounding communities (especially if historically disadvantaged) |
| **Adequacy of supply** | • In areas with projected deficit of industrial land<br>• Low vacancy rates for industrial buildings | • In areas with projected surplus of industrial land<br>• High vacancy rates for industrial buildings |

# REPORT


# PART I: INTRODUCTION

The intent of this study, the second output from the Industrial Land and Jobs study, is to assess how much of the region's industrially zoned land has already been converted, how much is likely to be converted in the near future, and whether there is likely to be sufficient industrial land to accommodate demand in 2040.

To determine the extent of conversion, we use several methods. We first estimate the extent to which the industrially zoned land is occupied by nonconforming uses, through two methods: fieldwork to check land uses on the ground, and analysis of the tax assessor database to determine how many industrial parcels have been recently converted in use. Next, we identify which cities with industrial land have experienced extensive building permit activity, mapping conflicts for the top three: San Jose, Oakland, and San Francisco.

Much industrial land has not been converted, but is underutilized. Building on Memo #1, which found very low industrial vacancy rates, this analysis uses assessor data linked to business data to determine where industrial land is vacant.

Previous work, most notably the Hausrath Economics/Cambridge Systematics report,[1] found that some industrially zoned land was at risk because it had already been designated for other uses in local general plans. Thus, the next section analyzes two kinds of conflicts: conflicts between existing industrial zoning and recent general plans, and conflicts between existing industrial zoning and designation as a Priority Development Area.

Based on the data from these analyses, we estimate for each county how much industrial land remains after removing land that has already been converted or is likely to be converted. We then compare that to the anticipated demand for land based on the 2040 employment forecast.

Finally, we use five cases to illustrate the opportunities and challenges presented by the conversion of industrial land: Mission Bay demonstrates a case where the choice to convert from industrial to mixed use made sense for San Francisco; the City of Richmond debatably also illustrates a case where conversion might work, while West Oakland offers a more complicated set of choices; and the experiences of San Jose and the Northern Waterfront in Contra Costa provide arguments for industrial land preservation. An appendix goes into more detail on Mission Bay and West Oakland.


# PART II:
# THE CONVERSION OF INDUSTRIALLY ZONED LAND IN THE BAY AREA

In Technical Memo #1, we found 97,823 acres of industrially zoned land in the 9-county Bay Area. Yet, zoning may not reflect what is on the ground. This occurs because many industrial zones have nonindustrial uses that predate the industrial zoning of the area, or simply because the zoning has not been updated as the land has been converted to other uses.

To determine the amount of industrially zoned land that has already been converted, we conducted three analyses: (1) fieldwork to verify zoning; (2) change of use according to historic tax assessor data; and (3) evidence of building activity on industrial land.

## CONVERSION: FIELDWORK

To estimate the nonindustrial uses on industrial land in the Bay Area, we first took a geographically random sample of fifty industrially zoned parcels for each of the nine counties using GIS software. We inspected each parcel first via Google Maps satellite view, and if we were not able to verify the site's use, we visited it in person to make a determination.

Across the Bay Area, we found that 10% of the sampled parcels had current nonindustrial uses, or a total of 6.5% of the industrial acreage in the region. The highest levels of nonindustrial uses on industrial land by county were in Santa Clara and Sonoma Counties. Housing accounted for much of the nonindustrial uses on industrial land, particularly in San Francisco. Other nonindustrial uses included parks, dog parks, cemeteries, schools, and retail. Most of the land with nonindustrial uses was zoned for light industrial.

## CONVERSION: TAX ACCESSOR DATA

The next step was to examine changes in use over time. The tax assessor data for each county includes a use code that identifies property use based on data provided by jurisdictions from a combination of general plan, zoning, and permit files. Although the data is likely of inconsistent quality between jurisdictions, there is very little missing data and it is updated yearly. Thus we were able to analyze changes in use code on industrially zoned land between 2007 and 2013.

As shown in Table 1, this analysis found that 0.8% of the industrially zoned acreage had changed in use over the six-year period, from a high of 1.5% in Alameda County to no little or no conversion in Napa and Solano counties. Table 2 zeroes in on the cities with the most industrially zoned parcels converted to residential use, finding 97 in Emeryville and 87 in San Francisco, but just a handful in other cities like Oakland, San Jose, Santa Rosa, and Richmond. Overall, just 14 acres of industrially zoned land were converted to residential use in the entire region from 2007 to 2013.

To verify that residential conversion had taken place, we inspected every parcel via Google Maps or fieldwork. In Alameda, San Francisco, and San Mateo counties, most of the parcels with suspected conversion had indeed experienced conversion, most with new residential construction. However, very little actual conversion to residential had occurred in Contra Costa and Sonoma counties; the change of the use code may reflect new residential permitting that has not yet resulted in construction.

| | Industrial-Commercial | | Industrial-Residential | | Industrial-Other | | Total | | Total Exclusive Industrial Land | Industial Acreage Converted |
|---|---|---|---|---|---|---|---|---|---|---|
| County | Parcels | Acres | Parcels | Acres | Parcels | Acres | Parcels | Acres | | |
| Alameda | 56 | 132.04 | 16 | 9.4 | 48 | 220.04 | 120 | 361.48 | 20,656 | 1.8% |
| Contra Costa | 2 | 5.16 | 1 | 0.25 | 8 | 181.01 | 11 | 186.42 | 16,237 | 1.1% |
| Marin | 2 | 4.60 | -- | -- | -- | -- | 2 | 4.60 | 646 | 0.7% |
| Napa | -- | -- | -- | -- | -- | -- | -- | -- | 2,395 | 0.0% |
| San Francisco* | 5 | 0.86 | 87 | 0.29 | 1 | 0.10 | 93 | 1.25 | 986 | 0.1% |
| San Mateo | 15 | 24.96 | 2 | 0.58 | 9 | 15.50 | 26 | 41.04 | 6,240 | 0.7% |
| Santa Clara | 26 | 92.19 | -- | -- | 15 | 55.95 | 41 | 148.14 | 8,662 | 1.7% |
| Solano | 27 | 2.99 | -- | -- | -- | -- | 27 | 2.99 | 9,975 | 0.0% |
| Sonoma | 3 | 6.86 | 17 | 3.13 | 1 | 1.79 | 3 | 11.78 | 972 | 1.2% |
| TOTAL | 136 | 269.66 | 123 | 13.65 | 82 | 474.38 | 323 | 757.69 | 66769 | 1.1% |

Table 1. Conversion of industrially zoned parcels from industrial to other use, 2007-2013.
* Acreage not included for condominium lots.

| City | Total Industrial Parcels Converted, 2007-13 | Industrial Parcels Converted to Residential, 2007-13 |
|---|---|---|
| Emeryville | 100 | 97 |
| San Francisco | 93 | 87 |
| Oakland | 54 | 22 |
| San Jose | 102 | 21 |
| Santa Rosa | 17 | 16 |
| RICHMOND | 32 | 14 |
| PITTSBURG | 13 | 8 |
| Berkeley | 14 | 6 |
| Mountain View | 26 | 4 |
| Hayward | 61 | 3 |
| Sunnyvale | 21 | 2 |
| Milpitas | 17 | 2 |
| Alameda | 8 | 2 |
| San Leandro | 29 | 1 |
| Santa Clara | 21 | 1 |
| ANTIOCH | 6 | 1 |
| San Bruno | 6 | 1 |
| North Fair Oaks | 2 | 1 |
| Graton | 2 | 1 |
| Daly City | 1 | 1 |

Table 2. Conversion of industrially zoned parcels, 2007-2013, cities with residential conversion.

# CONVERSION: RESIDENTIAL PERMITS

Many of the cities with concentrations of industrially zoned land also have high levels of housing construction. Most notably, San Jose, with over 6,400 acres of industrially zoned land, gained some 11,000 housing units from 2009 to 2013 (Table 3). Other cities in this category include Oakland, Fremont, Hayward, Pittsburg, Fairfield, Santa Clara, and Vacaville. Overall, the correlation between a city having industrially zoned land and it attracting housing unit construction is positive and significant ($r = 0.37$), possibly due to new interest in building housing near transit in the region's core—which is also where much of the region's industrial land is located.

| County | City | Industrial Acres | Housing units built 2009-2013 |
|---|---|---|---|
| Alameda | Oakland | 6,999 | 1,879 |
| Santa Clara | San Jose | 6,410 | 10,937 |
| Contra Costa | Martinez | 4,956 | 16 |
| Contra Costa | Richmond | 4,919 | 326 |
| Solano | Unincorporated Area | 4,487 | 76 |
| Alameda | Fremont | 4,180 | 554 |
| Alameda | Hayward | 3,610 | 1,043 |
| San Mateo | Unincorporated Area | 3,143 | 254 |
| Contra Costa | Concord | 2,722 | 95 |
| Solano | Benicia | 2,702 | 35 |
| Contra Costa | Pittsburg | 2,521 | 853 |
| Solano | Fairfield | 2,517 | 961 |
| Napa | Unincorporated Area | 2,354 | 157 |
| San Mateo | South San Francisco | 2,301 | 126 |
| Santa Clara | Santa Clara | 2,197 | 885 |
| Solano | Vacaville | 2,170 | 1,102 |
| Alameda | San Leandro | 1,788 | 78 |
| Alameda | Livermore | 1,762 | 694 |
| Santa Clara | Palo Alto | 1,673 | 603 |
| Santa Clara | Sunnyvale | 1,585 | 2,229 |
| Contra Costa | Rodeo | 1,537 | - |
| Santa Clara | Gilroy | 1,496 | 684 |
| San Mateo | Brisbane | 1,436 | 59 |
| Santa Clara | Milpitas | 1,374 | 1,537 |
| San Francisco | San Francisco | 1,276 | 10,460 |

Table 3. Relationship between industrially zoned land and housing unit construction.

This relationship raises the question: In these cities with strong residential demand, how much encroachment is there on industrially zoned land? To analyze this, we obtained permit databases for Oakland and San Jose, the two top cities, and mapped them against land zoned exclusively industrial (not mixed use). Figure 1 shows the encroachment of residential units on industrially zoned land in Oakland, which is quite minimal: just 3.6% of units were located on industrially zoned land.[2] In San Jose, less than 1% of new housing units were located on industrially zoned land (Figure 2).[3]

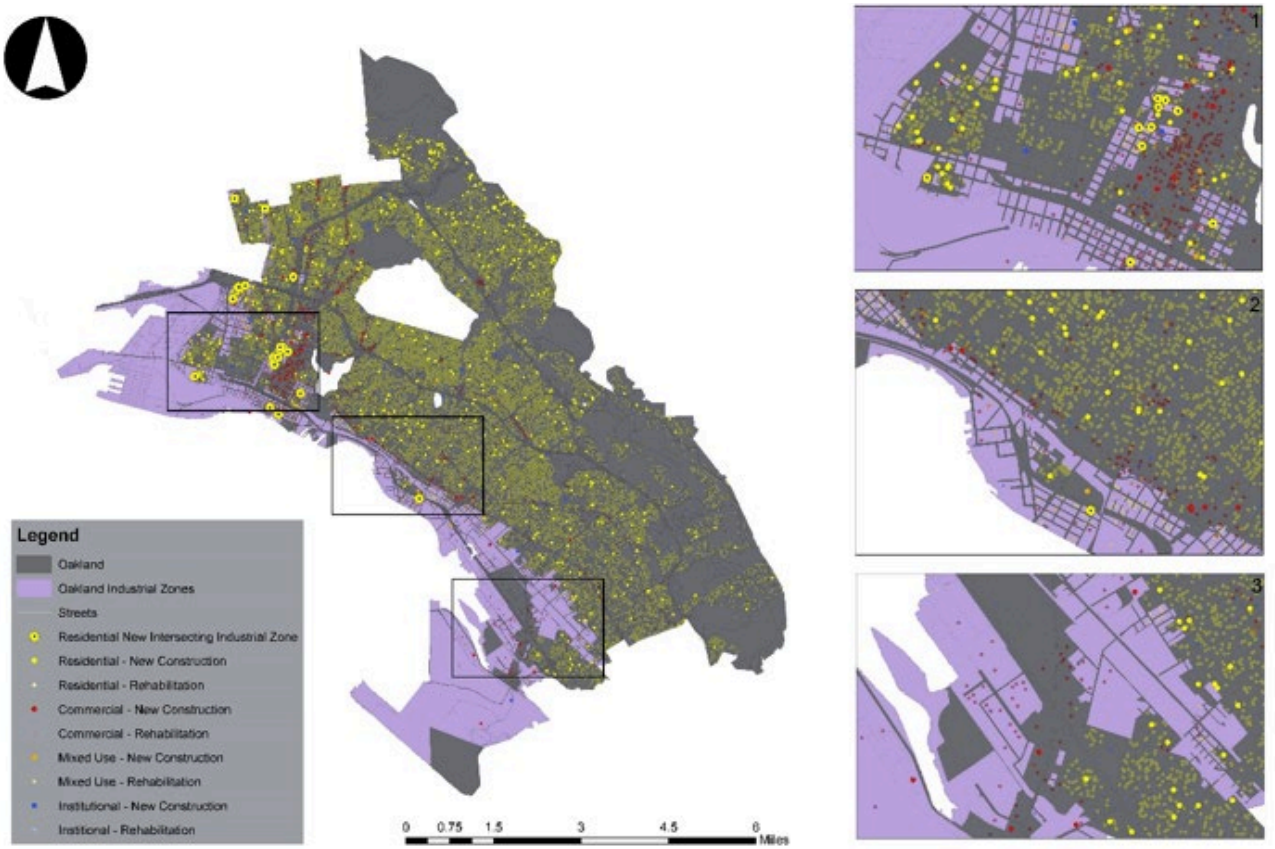



Figure 1. New residential units in Oakland, 2005-2015.

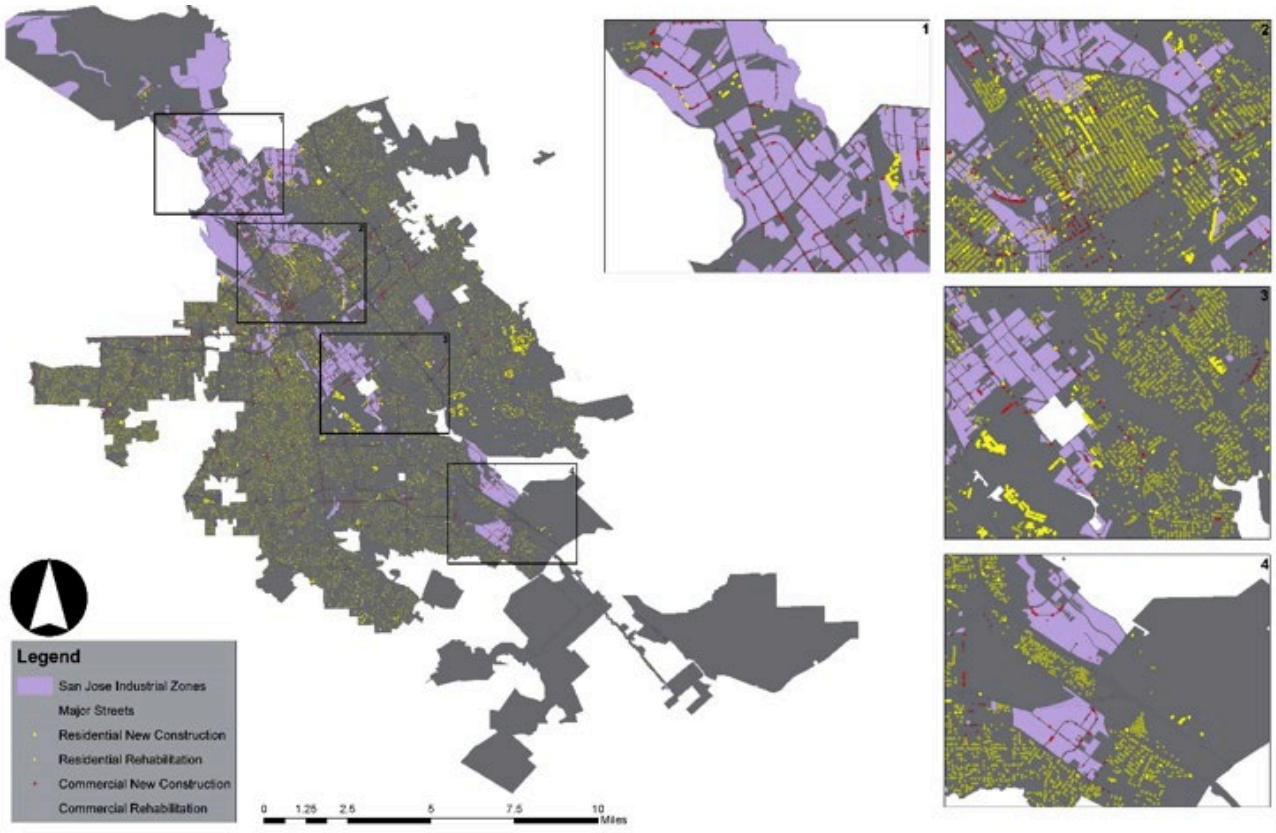



Figure 2. New residential units in San Jose, 2001-2014.

# PART III: VACANT LAND IN THE BAY AREA

Technical Memo #1 analyzed vacancy rates for the region's industrial space, finding that building vacancy was reaching historic lows, from 2% in the South Bay to 6% in the North Bay. Here we look at the vacancy on industrially zoned land, based on the use code in the county assessor databases, which indicates whether industrial land is occupied or vacant. Looking only at parcels identified as industrially zoned, we find that 6% of the industrially zoned parcels (and 6.9% of the acreage) in the nine counties is vacant (Table 4). The vacancy rates on industrial land vary widely across the region. San Francisco and San Mateo counties have no vacant industrial land, according to the assessor database, suggesting either that the vacant industrial land in those counties has already been re-programmed for other uses—or that there are problems with the assessor data in those counties. There is very little vacant industrial acreage in Santa Clara and Alameda counties, but high rates in the North Bay, especially Napa (25%) and Solano (19%) counties. This suggests that the region has a potential reservoir of vacant industrial land in the North Bay.[3]

This analysis does not account for underutilization. Significant amounts of industrial land may also be underutilized, with the potential for redevelopment at higher densities.

| County | Vacant Industrial Parcels | Vacant Industrial Parcels on Industrially Zoned Land | Vacant Industrial Acreage on Industrially Zoned Land | % Industrial Parcels Vacant | % Industrial Acreage Vacant |
|---|---|---|---|---|---|
| Alameda | 1196 | 463 | 578.1 | 6.9% | 2.4% |
| Contra Costa | 694 | 338 | 2011.9 | 8.1% | 10.0% |
| Marin | 115 | 39 | 114.7 | 4.6% | 6.6% |
| Napa | 204 | 156 | 996.6 | 19.1% | 25.4% |
| San Francisco | 0 | N/A | N/A | N/A | N/A |
| San Mateo | 0 | N/A | N/A | N/A | N/A |
| Santa Clara | 52 | 36 | 145.0 | 0.4% | 0.8% |
| Solano | 557 | 409 | 2763.7 | 16.3% | 19.1% |
| Sonoma | 360 | 92 | 170.0 | 5.9% | 8.5% |
| TOTAL | 3178 | 1533 | 6780.1 | 6.0% | 6.9% |

Table 4. Vacant industrially zoned land


# PART IV: INDUSTRIAL LAND OVERLAPS WITH OTHER DESIGNATIONS

For this analysis, we examine the extent to which industrially zoned land has conflicting general plan or Priority Development Area (PDA) designations. Because a jurisdiction's general plan and/or PDA designation is intended to guide the long-term development of land, parcels now zoned for industrial activities can be considered overlapping or in conflict if the general plan or PDA proposes future non-industrial activities for that parcel. The analysis of conflicts between industrial zoning and general plans focuses on exclusive industrial land and industrial-office zones, since mixed-use industrial land already permits a variety of uses and thus is not necessarily in conflict with residential or commercial designation. For the analysis of conflict with PDA designations, we include both exclusive and mixed-use industrial land in order to demonstrate the potential conflict with these areas of future concentrated growth.

## GENERAL PLAN ANALYSIS: BACKGROUND AND METHODOLOGY

This calculation was conducted through an assessment of the general plan land use designations for each industrially-zoned parcel in the region. In this analysis, general plan designations that move away from industrial uses were coded into the following three categories (Table 5):

| | |
|---|---|
| **Residential** | The residential category refers to all single-family and multi-family residential land use designations, as well as mixed-use designations intended to introduce or increase residential uses in particular areas of a jurisdiction. Converting industrial land to residential has become an attractive option for some cities in the face of housing shortages, making this category of special interest to the study. |
| **Commercial** | This category includes all commercial designations that support activities such as restaurants, hotels, and retail businesses, as well as mixed-use designations that promote the intensification of these commercial activities in select districts or corridors. |
| **Other** | The other category encompasses all land use designations other than residential and commercial ones that also move away from industrial activities. This includes general mixed-use districts, parks and open space, and public and institutional centers. It should be noted that areas designated for use by public and quasi-public agencies for their industrial activities, such as airports and water management facilities, are excluded from the other category. |

Table 5. General Plan Designations Conflicting with Industrial Zoning

In order to generate an estimate for the proportion of land that is at risk of conversion, the acreage of parcels with non-industrial general plan categories was divided by the total acreage of parcels with the exclusive industrial and industrial-office zoning categories (outlined in Technical Memo #1). The following analysis breaks these percentages down by county as well as by general plan category.

**% of Industrial Land Susceptible to Conversion =**

(Acres of industrially zoned land with nonindustrial general plan category (Residential,Commercial,or Other))

---

(Acres of land with industrial zone category (Heavy,Medium,or Light Industrial or Industrial Office))

**Note: The denominator excludes two industrial zone categories identified in Section 3 – Mixed Use Industrial-Residential and Mixed Use Industrial-Commercial – because these zones are already moving away from traditional industrial activities with the introduction of residential and commercial uses. For industrial-office land, we only consider conversion risk to residential, since most commercial uses are permitted as-of-right.*

Figure 3. Calculation of Industrial Land Susceptible to Conversion

Because San Francisco County's general plan does not include a land use element, its risk percentage was calculated using an alternative method (see Appendix 1).

# CONFLICTS BETWEEN GENERAL PLAN AND INDUSTRIAL ZONING DESIGNATIONS, SF BAY AREA

According to our analysis, in the nine-County Bay Area region, a total of 15,084 acres of industrially zoned land are potentially in conflict with non-industrial designations (such as a PDA or a general plan designation), comprising about 17% of the region's current industrial land area. Using a similar methodology, the Hausrath Economics/Cambridge Systematics 2008 report found that 38% of industrial land area was in conflict; however, their analysis looked at two small sub-areas, the 880 and 101 corridors, rather than the whole nine-county region.

As Table 6 shows, the percentage of industrially zoned land overlapping with non-industrial designations varies significantly across the different counties. In Napa County, which has a small share of the region's industrial land, there is only a 1% overlap between industrial land (exclusive and mixed-use) and non-industrial general plan or PDA designations. This is most likely because much of its stock has already been rezoned to nonindustrial uses, such as office and commercial development. On the other extreme, almost half of all industrial land in San Francisco is in conflict due to the strategic introduction of mixed-use zones in parts of the city. In Alameda County, which has the highest share of industrial land in the region, a more moderate 14% of industrial land overlaps with other designations (Figure 4).

***Housing is the least likely use to replace industrial land in the region overall.***

When the area of land in conflict is broken down by the proposed land uses that are expected encroach on existing industrial uses, one can see that the Other category comprises the majority conflicting land uses (Table 7). This could be due to the fact that the other category is made up of a wide variety of general plan designations that are not explicitly focused on either residential or commercial, both of which are more narrow and defined uses. Thus, this particular methodology indicates that housing is the least likely to replace industrial land in the region overall.

| County | Total Acres of Industrial Land* | Acres of Industrial Land in Conflict | Percentage of Industrial Land in Conflict |
|---|---|---|---|
| Alameda | 22,127 | 3,135 | 14% |
| Contra Costa | 18,357 | 4,207 | 23% |
| Marin | 1,426 | 410 | 29% |
| Napa | 3,809 | 33 | 1% |
| San Francisco** | 1,971 | 957 | 49% |
| San Mateo | 8,883 | 389 | 4% |
| Santa Clara | 18,501 | 1,424 | 8% |
| Solano | 11,911 | 4,142 | 35% |
| Sonoma | 1,437 | 387 | 27% |
| **Bay Area** | **88,422** | **15,084** | **17%** |

Table 6. Industrial Land Conflicting with Other Designations, by County

* Includes exclusive industrial land plus industrial-office land; thus totals differ from Table 9.
**Because the San Francisco General Plan does not include a land use element, acres at risk was calculated using an alternative method described in Appendix 1.

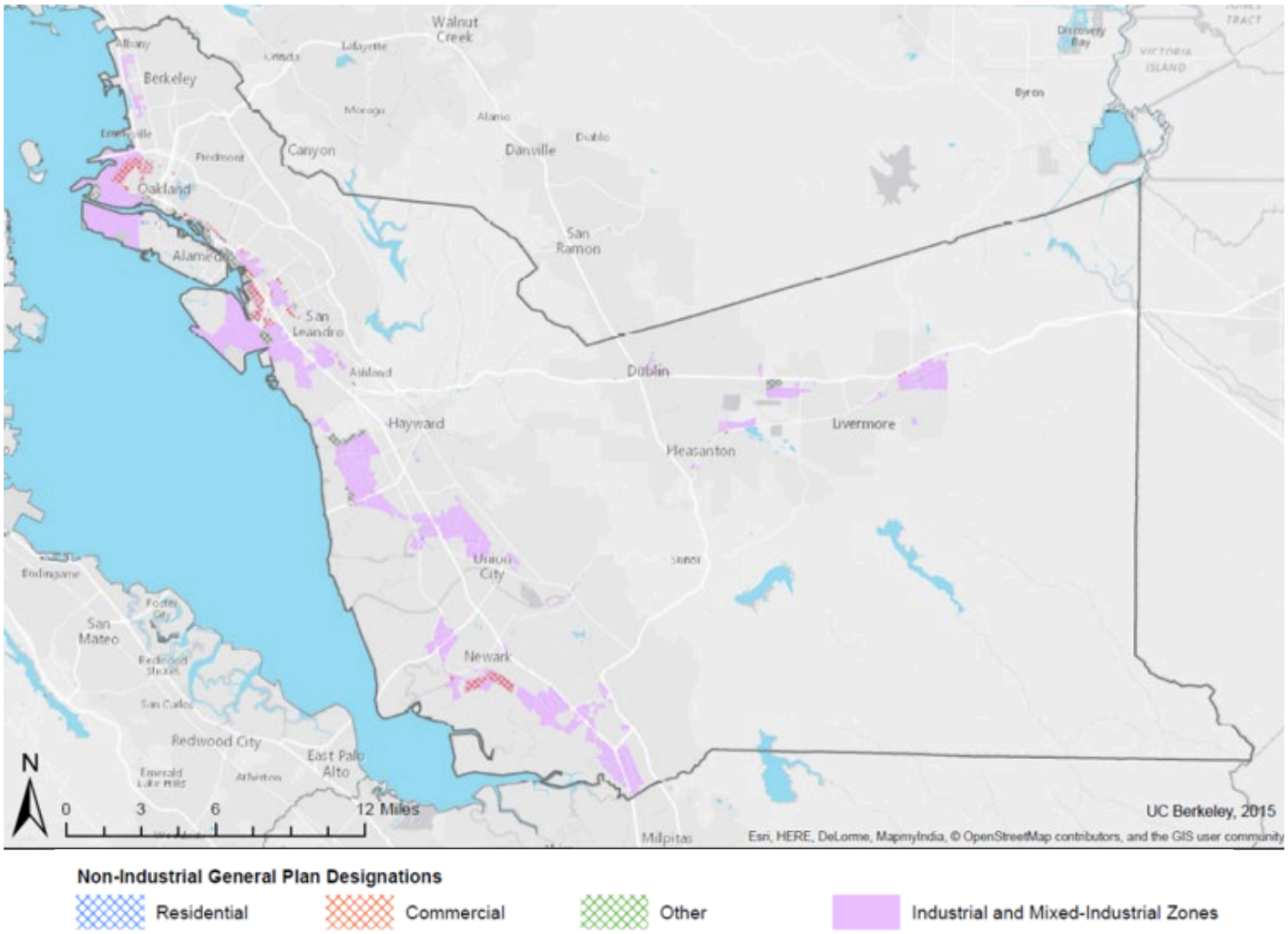



Figure 4. Industrial Land in Conflict with Other Designations in Alameda Countynt on industrial land > 100

| Land Use Conflicting with Industrial | Total (Acres) | Percentage |
|---|---|---|
| **Residential** | 1,124 | 7% |
| **Commercial** | 4,031 | 27% |
| **Other** | 9,929 | 66% |
| **Total Acres of Industrial Land at Risk** | **15,084** | **100%** |

Table 7. Industrial Land in Conflict with General Plan Designations, Bay Area

The proportion of industrial land that is in conflict with a general plan designation varies slightly across each of the counties (Figure 5). The Other category comprises more than half of all general plan conflicts with industrial land in all of the counties except for Sonoma County. Most of the industrial land in Sonoma County (44%) overlaps with new residential designations, and San Francisco and Santa Clara have notable areas of potential conversion to residential as well, both above 20%. The potential conflict to industrial from new commercial designations is most prevalent in Alameda County, San Mateo County, Solano County, and Sonoma County, all of which have commercial conflict percentages over 34%. For more detailed analysis of each county, please see Appendix 1.

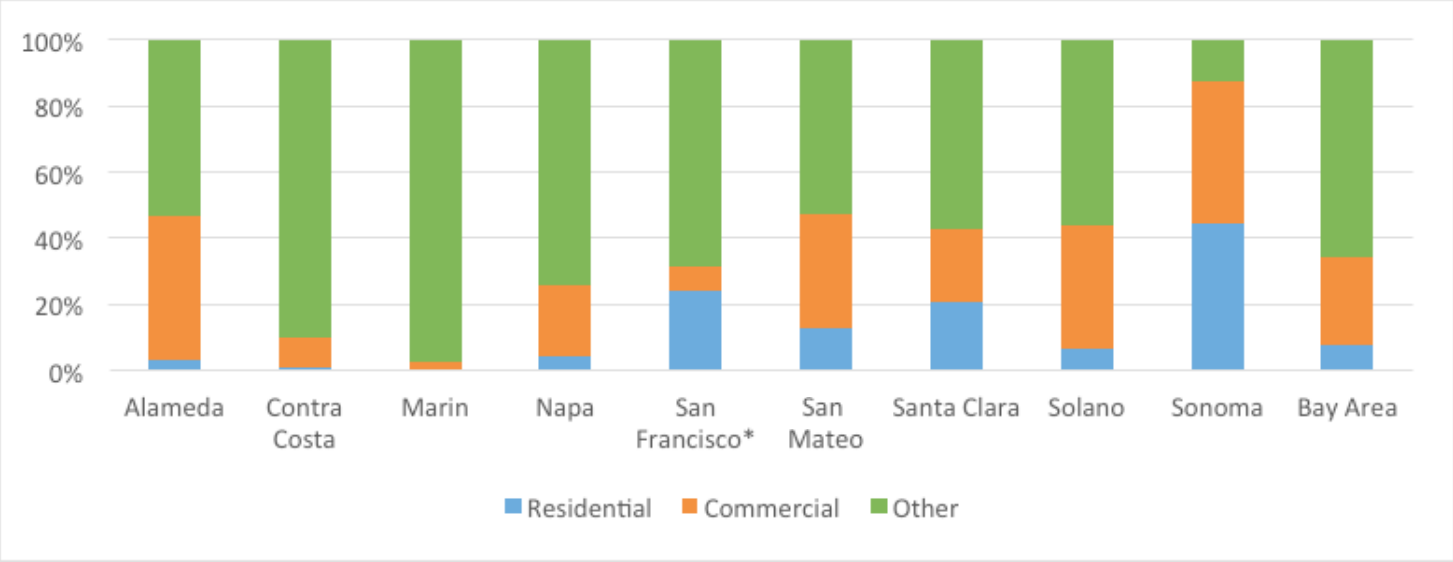



Figure 5. Industrial Land in Conflict with General Plan Designation, Bay Area Counties

*Because the San Francisco General Plan does not include a land use element, the percentage of acres at risk was calculated using an alternative method (see Appendix 1).

## CONFLICTS BETWEEN PDA AND INDUSTRIAL ZONE DESIGNATIONS, SF BAY AREA

A considerable amount of industrially zoned land falls within the region's PDAs (Table 8 and Figures 6-9). Across all counties, about 16,700 acres out of a total 97,800 acres of industrially zoned land overlap with PDAs—about 17%, a land area that encompasses about one-fifth of the region's industrial jobs (see Technical Memo #3). Nearly half of this area of overlap is on exclusive industrial land, and half is on mixed-use industrial land. The distinction between exclusive and mixed-use is significant, as mixed-use areas are, by nature of their zoning, more vulnerable to partial or total encroachment from commercial, office, or residential uses. Since higher rent users can outbid industrial users, mixed-use industrial land is usually considered somewhat "already at-risk". Therefore, the overlap of exclusive IL with PDAs, making up 8% of the Bay Area's total industrial land base, is an unexpected finding.

***The overlap of exclusive IL with PDAs, making up 8% of the Bay Area's total industrial land base, is an unexpected finding.***

| County | | Total IL | Total exclusive IL | Total mixed IL | Total PDA/IL overlap | Overlap w/ exclusive IL | Overlap w/ mixed IL |
|---|---|---|---|---|---|---|---|
| **Alameda** | Acres | **24,192** | 20,656 | 3,535 | **5,894** | 4,000 | 1,894 |
| | Percent | **100%** | 85% | 15% | **24%** | **17%** | **8%** |
| **Contra Costa** | Acres | **19,373** | 15,645 | 3,729 | **1,909** | 616 | 1,293 |
| | Percent | **100%** | 81% | 19% | **10%** | **3%** | **7%** |
| **Marin** | Acres | **1,744** | 639 | 1,105 | **27** | 15 | 12 |
| | Percent | **100%** | 37% | 63% | **2%** | **1%** | **1%** |
| **Napa** | Acres | **3,994** | 2,423 | 1,571 | **22** | 22 | 0 |
| | Percent | **100%** | 61% | 39% | **1%** | **1%** | **0%** |
| **San Francisco** | Acres | **1,971** | 986 | 985 | **1,939** | 976 | 963 |
| | Percent | **100%** | 50% | 50% | **98%** | **50%** | **49%** |
| **San Mateo** | Acres | **10,853** | 6,062 | 4,791 | **1,314** | 303 | 1,011 |
| | Percent | **100%** | 56% | 44% | **12%** | **3%** | **9%** |
| **Santa Clara** | Acres | **18,500** | 8,661 | 9,839 | **4,103** | 869 | 3,235 |
| | Percent | **100%** | 47% | 53% | **22%** | **5%** | **17%** |
| **Solano** | Acres | **14,066** | 9,742 | 4,324 | **1,267** | 1,114 | 153 |
| | Percent | **100%** | 69% | 31% | **9%** | **8%** | **1%** |
| **Sonoma** | Acres | **2,003** | 979 | 1,024 | **307** | 214 | 93 |
| | Percent | **100%** | 49% | 51% | **15%** | **11%** | **5%** |
| **Total Bay Area** | Acres | **96,696** | 65,793 | 30,903 | **16,782** | 8,129 | 8,653 |
| | Percent | **100%** | 68% | 32% | **17%** | **8%** | **9%** |

Table 8. Summary data on the amount of industrially zoned land, by county, that overlaps with PDAs

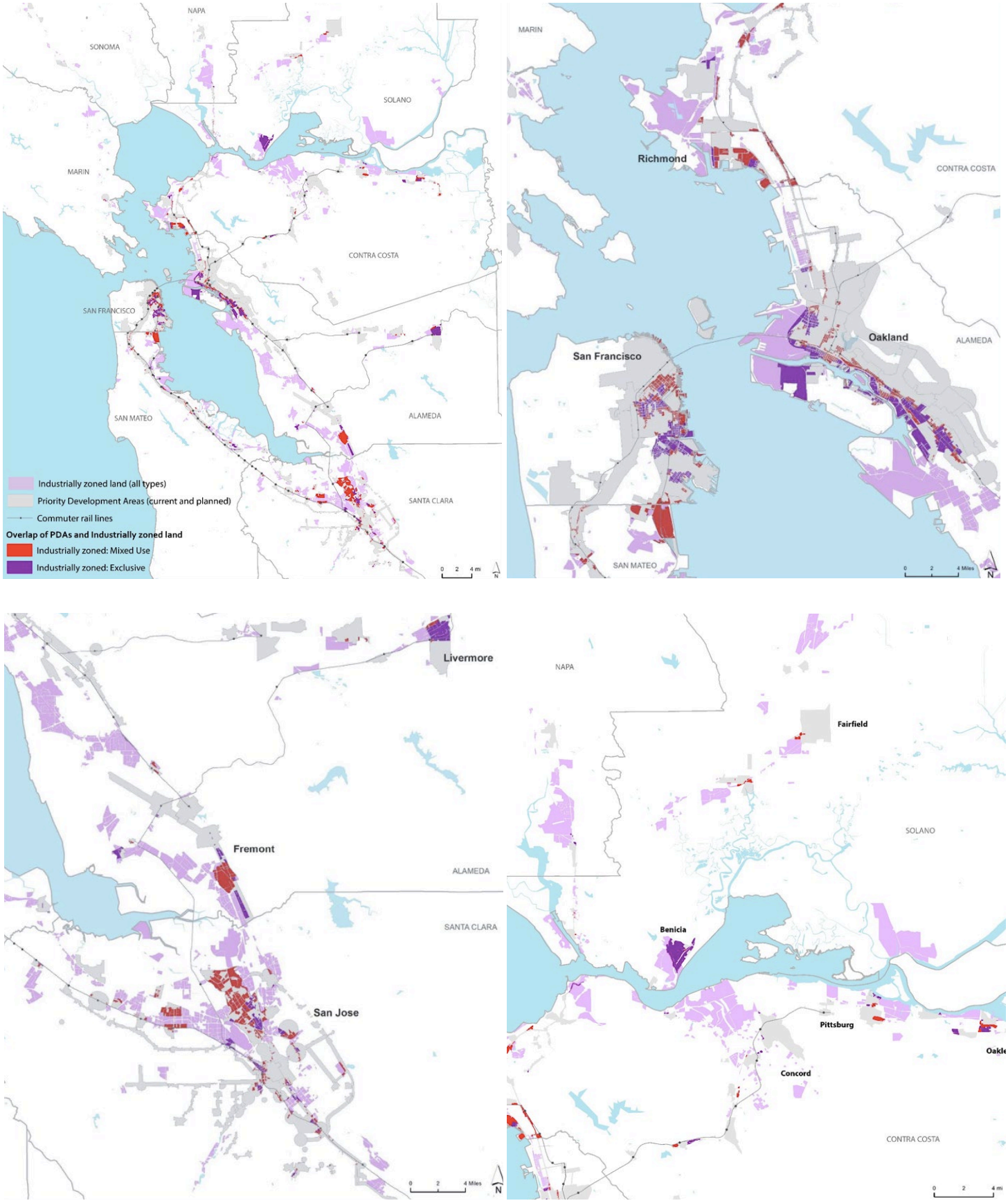
Again, there is extreme variation by county. Most starkly, San Francisco stands out because the near entirety of its IL falls within PDAs. Alameda and Santa Clara are next in terms of highest percentages and acreage of overlap. Both counties have about 22-24% of their industrial land within PDAs. They differ from each other, however, in the breakdown between exclusive and mixed-use industrial land: while a majority of the overlap between industrial land and PDAs in Alameda County is on exclusive industrial land, Santa Clara's overlap is mostly on land that is already zoned mixed-use industrial. This is partly explained by the counties' respective specializations: the South Bay is home to a much larger share of R&D, while the East Bay and Alameda in particular have a larger manufacturing and transportation infrastructure industrial base. Prominent areas of overlap in Alameda County are in Oakland, Fremont, and Livermore, while in Santa Clara County, most of the overlap is in San Jose.

Looking at both percentages and extent of land, the next counties with large amounts of overlap are, in order of acreage, Contra Costa, San Mateo, and Solano. They show between 1,200 and 1,900 acres of IL overlap with PDAs, which represents between 9-12% of all their industrial land. Contra Costa (mostly in Richmond) and San Mateo (in Brisbane) have mostly mixed-use overlap, while Solano has mainly exclusive industrial land overlap. Sonoma County has 15% overlap, the majority of which is on exclusive industrial land.

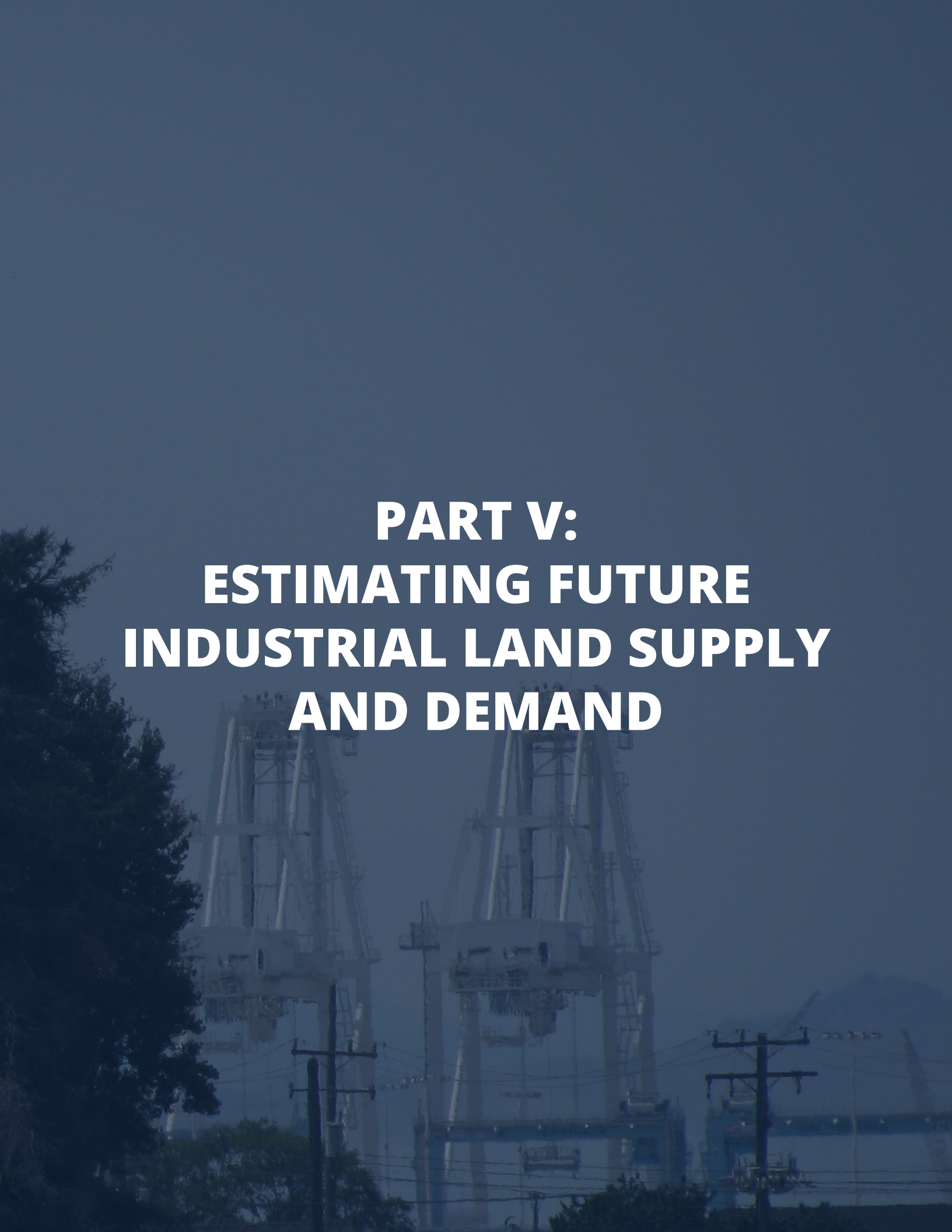
Unsurprisingly, most of the concentrated pockets of PDA/IL overlap are geographically centered on a mass-transit station, such as a BART or other heavy-rail station. This is the case in San Francisco, Oakland, Livermore, San Jose, and Brisbane, as well as Fremont if considering the future BART station. The areas of overlap in Richmond and Benicia are not located on mass-transit, but on a future ferry stop and a future bus hub, respectively.

Many cities do not have any PDA/industrial land overlap. Examples include Berkeley, certain cities along the I-880 such as San Leandro and Hayward, and portions of the Contra Costa Northern Waterfront. In some cases, this explicit lack of overlap is intentional. For instance, the City of Berkeley has had extensive policy debate on the issue of industrial land conversion and retention, and now closely monitors West Berkeley's industrial zoning and uses. Another good example is the Northern Waterfront in Contra Costa County. The county, several jurisdictions, and private partners have coordinated efforts to plan, at a subregional scale, for the preservation of key areas in relation to existing assets and potential growth areas.

Interviews with city officials about the overlap between industrial zones and PDAs revealed mixed perspectives. For some, overlap means heightened conflict between residential development and industrial businesses and jobs, suggesting that PDA designation should be revisited. For others, overlap is intentional, meant to speed the conversion of industrial land. One interviewee pointed out that PDA designation is not necessarily in conflict with industrial uses, if zoning is used to protect industrial.[5]



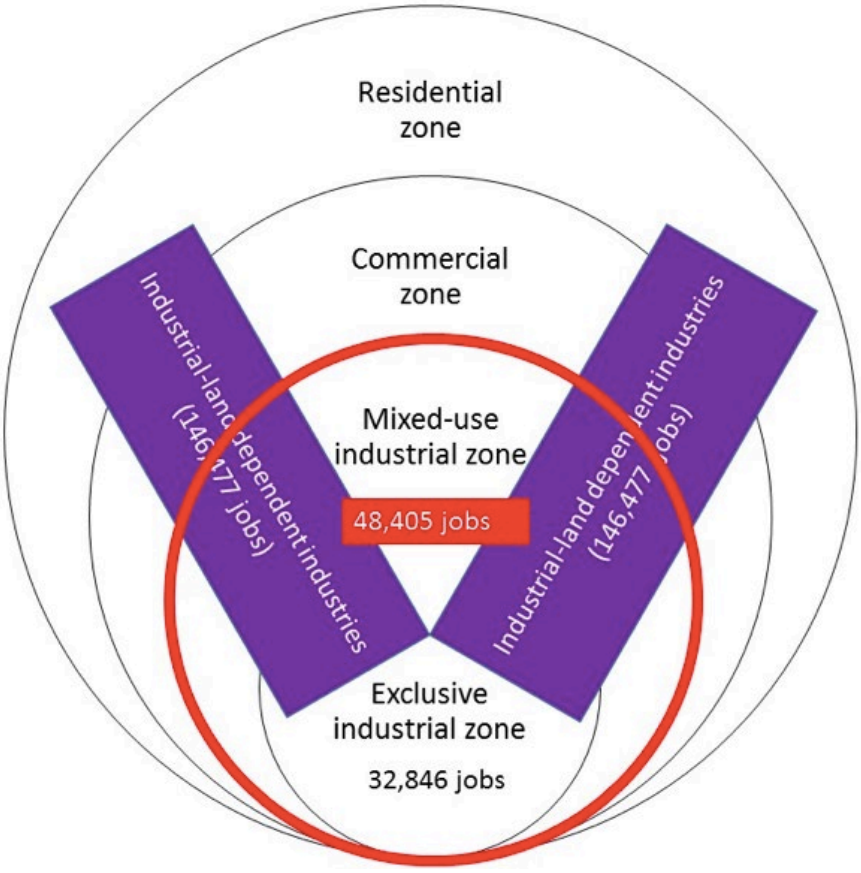

Figures 6-9. Overlap of PDA designation and industrially zoned land



# PART V: ESTIMATING FUTURE INDUSTRIAL LAND SUPPLY AND DEMAND

Based on this analysis, we next estimate the amount of industrially zoned land available in the future, after accounting for land that is already converted and/or overlapping and conflicting with other designations. Comparing the available land to the employment projections for 2040, we can determine whether there is sufficient land to meet future demand.

Calculations rely on estimates of industrial land supply from Technical Memo #1, combined with employment forecasts provided by the Association of Bay Area Governments. Technical Memo #3 describes the methodology for allocating countywide forecasts to block groups. But as noted in Technical Memo #1, block groups include land that is zoned commercial and residential as well as industrial; in other words, the industries that prefer to locate on exclusive industrial land (industrial land-dependent industries), from auto repair shops to storage to maker facilities, are also located in a variety of other zones (Figure 9). Thus, the block group estimates, which predict growth of 146,477 jobs, are a high estimate of demand for industrially zoned land. A medium estimate would look only at jobs in the exclusive and mixed-use zones (48,405 jobs), and a low estimate focuses only on exclusive land (32,846 jobs). Figure 9 describes the projected location of these low, medium, and high scenarios.




Figures 6-9. Overlap of PDA designation and industrially zoned land

In order to translate 2040 net new jobs into acreage of industrial land absorbed, it is necessary to make two intermediate calculations: employment density (number of jobs per 1,000 square feet of building space), and floor area ratio (the ratio of built space to lot area). To calculate average employment density, we link the NETS parcel-level business data to assessor parcel data and analyze how many employees per building square foot are on each parcel. Next, to estimate average floor area ratios, we divide average built square footage by average lot size (from the assessor parcel data). Across the nine counties, the majority of tax assessor records for industrial parcels are missing data on building square footage. Because this limits sample size, the analysis combines data for the nine counties into four subregions: San Francisco, North Bay, East Bay, and South Bay.

The analysis uses average employment densities from 2011 to project needs in 2040. However, the number of employees per square foot is gradually changing in some industries. In high tech, there are two divergent trends. On the one hand, growth in software and web-related businesses means more demand for office, rather than R&D flex space, often in urban areas with higher densities. On the other hand, high-tech manufacturing is increasingly automated, reducing the number of employees and thus density. Warehousing and logistics continue to require relative low employment densities, although there is some indication that the transformation of delivery systems will mean more workers. Other sectors are remaining quite stable in employment (e.g., school bus drivers or apparel manufacturing).

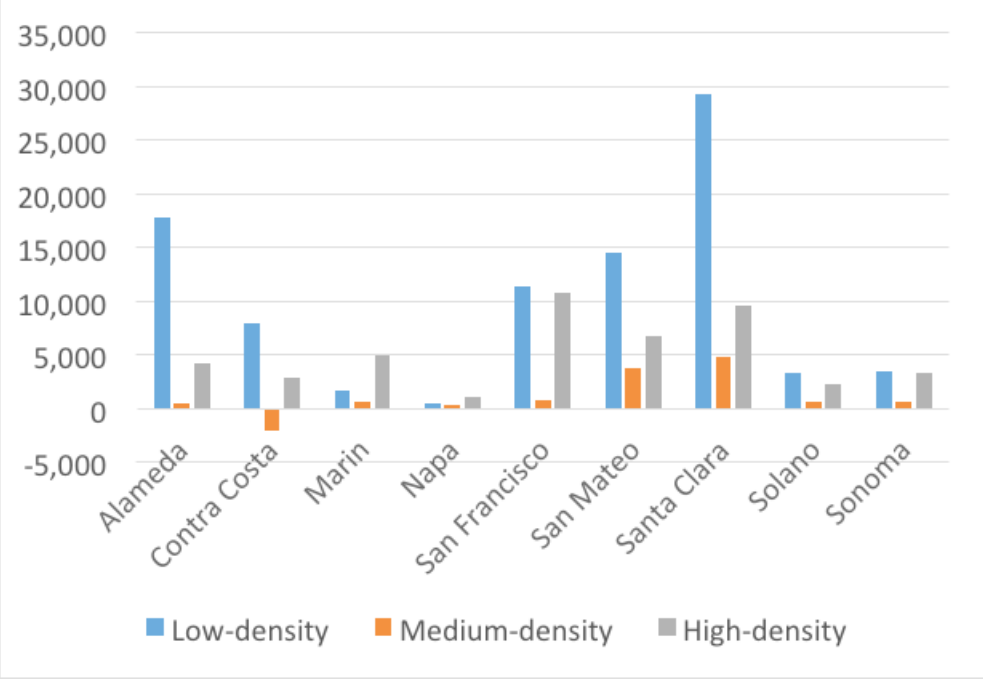



Figure 10. Projected 2011-20140 job growth by employment density

The employment density of businesses located on industrially zoned land varies in each county depending on its mix of industries. To determine whether using average employment densities is more likely to over- or under-estimate densities in the future, we analyzed net job growth in each county to determine whether it was occurring in low-, medium-, or high-density sectors. Low employment density sectors include construction, transportation, utilities, warehousing, and wholesale. Medium density include manufacturing, retail, and waste management/support industries. High density include professional services, arts, education, and health care.

Figure 11 portrays the forecasted employment change by employment density for the nine counties from 2011 to 2040. In most counties, low employment density sectors such as construction or wholesale are projected to add the most jobs, with high density a distant second (in areas adding service sector employment). Growth in medium density industries is relatively stagnant, due to the forecasted decline in manufacturing across the region (but particularly impacting Santa Clara and Alameda counties). This suggests that by using average employment densities, this analysis creates a conservative estimate of the amount of land needed. With fewer employees per square foot, the regional surplus of industrial land will decrease—and with higher employment densities, it will increase. In general, the low-density sectors that are growing in the region will be consuming more square feet per employee, in lots with a relatively lower floor area ratio, than our estimates assume.

As shown in Table 9, the majority of counties—particularly Santa Clara, San Mateo, and Alameda—will experience a significant shortage of industrially zoned land, offset by considerable surpluses in Contra Costa, Napa, and Solano counties. Altogether, a surplus of 1,944 acres of industrially zoned land is anticipated in 2040, but much is located far from the greatest demand for industrial land, in the core. This analysis conservatively assumes that employment densities (square footage per employee) will remain constant in the future.

Below are the calculations and assumptions used to arrive at the estimates.

**Step 1.** Estimates of industrially zoned acreage developed by gathering zoning data from 101 jurisdictions and county unincorporated areas (see Technical Memo #1).
**Step 2.** Estimates of exclusive industrial land created via a standard zoning classification system across the nine counties that separates zoning designations that only allow industrial and transportation uses from designations that allow office or other mixed uses (see Technical Memo #1).
**Step 3.** Fieldwork to check the industrial zoning in Steps 1 and 2 determined that a percentage of the industrially zoned land in each county had already been converted.
**Step 4.** Analysis of tax assessor data revealed the extent of use conversion in each county during a six-year period (2007-13). This estimate was considerably lower than that identified by fieldwork.
**Step 5.** To extend the six-year analysis in Step 4 to the 30-year projection period, the conversion rate was multiplied by 5.
**Step 6.** Multiplies the acreage in Step 2 by the fieldwork estimate in Step 3 to create an estimate based on the high conversion factor.
**Step 7.** Multiplies the acreage in Step 2 by the tax assessor estimate in Step 5 to create an estimate based on the low conversion factor.
**Step 8.** Subtracts the fieldwork conversion factor (Step 5) from exclusive industrial land (Step 2) to create a low estimate of net industrial land.
**Step 9.** Subtracts the assessor conversion factor (Step 6) from exclusive industrial land (Step 2) to create a high estimate of net industrial land.
**Step 10.** Estimates vacant industrial land based on the assessor data use code for vacant industrial use, when located on industrially zoned parcels.
**Step 11.** Calculates occupied industrial land based on the high estimate of industrial land (Step 9) minus the vacant land (Step 10).
**Step 12.** Estimates industrially zoned acreage in conflict with local general plan designation.
**Step 13.** Estimates industrially zoned acreage in conflict with PDA designation.
**Step 14.** Subtracts out acreage that falls into both Step 12 and Step 13 categories (both general plan and PDA conflicts).

Table 9. Estimate of future (2040) demand for and supply of industrial land

| Step | Variable | Alameda | Contra Costa | Marin | Napa | San Francisco | San Mateo | Santa Clara | Solano | Sonoma | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Total industrial land (acres) | 24,192 | 20,206 | 1,750 | 3,931 | 1,971 | 10,845 | 18,501 | 14,432 | 1,996 | 97,824 |
| 2 | Exclusive industrial land (acres) | 20,656 | 16,237 | 646 | 2,395 | 986 | 6,240 | 8,662 | 9,975 | 972 | 66,769 |
| | Likely already converted | | | | | | | | | | - |
| 3 | Estimated via fieldwork | 8.0% | 10.0% | 6.0% | 2.0% | 8.0% | 8.0% | 20.0% | 4.0% | 24.0% | 9.4% |
| 4 | Estimated via use code conversion (6-years) | 1.8% | 1.1% | 0.7% | 0.0% | 0.1% | 0.7% | 1.7% | 0.0% | 1.2% | 1.1% |
| 5 | Estimated use code conversion over 30 years | 9% | 6% | 4% | 0% | 1% | 4% | 9% | 0% | 6% | 6% |
| | Conversion estimate | | | | | | | | | | |
| 6 | Via fieldwork (acres) | 1,652 | 1,624 | 39 | 48 | 79 | 499 | 1,732 | 399 | 233 | 6,306 |
| 7 | Via use code conversion (acres) | 1,859 | 893 | 23 | - | 5 | 218 | 736 | - | 58 | 3,793 |
| | Net exclusive industrial land | | | | | | | | | | |
| 8 | Estimate based on fieldwork conversion factor (acres) | 19,004 | 14,613 | 607 | 2,347 | 907 | 5,741 | 6,930 | 9,576 | 739 | 60,463 |
| 9 | Estimate based on assessor conversion factor (acres) | 18,797 | 15,344 | 623 | 2,395 | 981 | 6,022 | 7,926 | 9,975 | 914 | 62,976 |
| | Available industrial land (exclusive + mixed-use) | | | | | | | | | | |
| 10 | Vacant industrial land (acres) | 578 | 2,012 | 115 | 997 | - | - | 145 | 2,764 | 170 | 6,780 |
| 11 | Occupied industrial land | 18,219 | 13,332 | 509 | 1,398 | 981 | 6,115 | 7,781 | 7,211 | 744 | 56,290 |
| 12 | Exclusive IL conflicting with General Plan designation | 3,135 | 4,207 | 410 | 33 | 957 | 389 | 1,424 | 4,142 | 387 | 15,084 |
| 13 | Exclusive IL conflicting with PDA designation | 4,000 | 616 | 15 | 22 | 976 | 303 | 869 | 1,114 | 214 | 8,129 |
| 14 | *- PDA conflict/general plan conflict overlap* | 1,399 | 227 | 0 | 0 | | 99 | 464 | 774 | 146 | 3,109 |
| 15 | Total industrial land susceptible to conversion | 5,736 | 4,596 | 425 | 55 | 976 | 593 | 1,829 | 4,482 | 455 | 19,147 |
| | Vacant IL conflicting with GP designation | 111 | 256 | 80 | 8 | - | - | 2 | 1,758 | 23 | 2,238 |
| | Vacant IL conflicting with PDA designation | 250 | 128 | 2 | 3 | - | - | 21 | 506 | 38 | 948 |
| 16 | Total occupied industrial land remaining | 13,061 | 10,748 | 199 | 2,340 | 5 | 5,429 | 6,097 | 5,493 | 458 | 43,830 |
| 16 | Total vacant industrial land remaining | 217 | 1,628 | 33 | 986 | - | - | 122 | 500 | 109 | 20% |
| 17 | Current vacancy rate (built stock) | 5% | 5% | 6% | 6% | 3% | 2% | 3% | 6% | 6% | |
| 18a | IL-dependent jobs on exclusive IL in 2011 | 51,244 | 9,976 | 933 | 1,619 | 15,224 | 16,230 | 37,317 | 8,473 | 2,837 | 143,853 |
| 18b | IL-dependent jobs on exclusive + mixed-use IL in 2011 | 58,940 | 16,409 | 3,304 | 2,667 | 20,167 | 26,677 | 62,412 | 10,926 | 4,059 | 205,561 |
| 18c | All IL-dependent jobs in 2011 | 129,465 | 50,046 | 15,610 | 6,158 | 78,151 | 101,197 | 164,686 | 26,534 | 28,977 | 600,824 |
| 19a | Exclusive IL-dependent jobs forecast for 2040 | 60,209 | 11,731 | 1,371 | 2,137 | 19,700 | 20,270 | 47,268 | 10,444 | 3,567 | 176,699 |
| 19b | Exclusive + mixed-use IL-dependent jobs forecast for 2040 | 69,252 | 19,296 | 4,856 | 3,520 | 26,097 | 33,318 | 79,056 | 13,468 | 5,104 | 253,966 |
| 19c | All IL-dependent jobs forecast for 2040 | 152,115 | 58,851 | 22,943 | 8,128 | 101,130 | 126,387 | 208,603 | 32,707 | 36,435 | 747,301 |
| 20a | Anticipated IL-dependent job growth by 2040: low | 8,965 | 1,755 | 438 | 518 | 4,476 | 4,040 | 9,951 | 1,971 | 730 | 32,846 |
| 20b | Anticipated IL-dependent job growth by 2040: medium | 10,312 | 2,887 | 1,552 | 853 | 5,930 | 6,641 | 16,644 | 2,542 | 1,045 | 48,405 |
| 20c | Anticipated IL-dependent job growth by 2040: high | 22,650 | 8,805 | 7,333 | 1,970 | 22,979 | 25,190 | 43,917 | 6,173 | 7,458 | 146,477 |
| 21 | SF per employee on industrially zoned land (current) | 387 | 387 | 410 | 410 | 254 | 331 | 331 | 410 | 410 | 3,330 |
| 22 | Floor area ratio on industrially zoned land | 0.16 | 0.16 | 0.22 | 0.22 | 1.28 | 0.28 | 0.28 | 0.22 | 0.22 | 3 |
| 23a | Total building square footage required for growth (low) | 3,470,725 | 679,495 | 179,559 | 212,186 | 1,138,743 | 1,338,857 | 3,297,738 | 807,563 | 299,123 | 11,423,990 |
| 23b | Total building square footage required for growth (medium) | 3,991,971 | 1,117,666 | 635,865 | 349,537 | 1,508,475 | 2,200,659 | 5,515,782 | 1,041,359 | 427,966 | 16,789,281 |
| 23c | Total building square footage required for growth (high) | 8,768,586 | 3,408,783 | 3,004,192 | 807,068 | 5,845,631 | 8,348,018 | 14,554,112 | 2,528,961 | 3,055,231 | 50,320,583 |
| 24a | Total industrial land required for growth (acres) (low) | 495 | 97 | 19 | 23 | 20 | 110 | 271 | 86 | 32 | 1,152 |
| 24b | Total industrial land required for growth (acres) (medium) | 569 | 159 | 68 | 37 | 27 | 181 | 453 | 111 | 45 | 1,650 |
| 24c | Total industrial land required for growth (acres) (high) | 1251 | 486 | 319 | 86 | 105 | 685 | 1195 | 268 | 324 | 4,720 |
| 25a | 2040 Surplus (deficit) (land required - vacant) (low) | -278 | 1531 | 14 | 963 | -20 | -110 | -149 | 414 | 77 | 2,442 |
| 25b | 2040 Surplus (deficit) (land required - vacant) (medium) | **(352)** | **1,469** | **(35)** | **949** | **(27)** | **(181)** | **(331)** | **389** | **64** | **1,944** |
| 25c | 2040 Surplus (deficit) (land required - vacant) (high) | (1,034) | 1,142 | (286) | 900 | (105) | (685) | (1,073) | 231 | (215) | (1,126) |

**Step 15.** Calculates the total industrial land in conflict: Step 12 (general plan conflict) plus Step 13 (PDA conflict) minus Step 14 (duplicate acreage).
**Step 16.** Subtracts the total industrial land in conflict (Step 15) from the estimate based on the assessor conversion factor (Step 9).
**Step 17.** Provides the current vacancy rate in built industrial space by subregion (North Bay, East Bay, South Bay, San Francisco) (informational only, not used in calculations).
**Steps 18a-c.** Provides the number of jobs currently (2011) on industrial land—including only those that are industrial land-dependent (location quotient over 2 for industrial land—see Technical Memo #1). This includes low (exclusive land only), medium (mixed-use and exclusive land), and high (block groups with industrial land-dependent industries) scenarios.
**Step 19a-c.** Uses the Plan Bay Area jobs forecast (REMI outputs) to forecast industrial land-dependent jobs in 2040 for low, medium, and high scenarios.
**Step 20a-c.** Provides the growth increment (Step 19-Step 18).
**Step 21.** Calculates the average square footage per employee for Bay Area sub-regions (North Bay, East Bay, South Bay, San Francisco) for exclusive industrial land (from tax assessor and REPORT: PART V NETS employment data, as described above).
**Step 22.** Calculates the floor area ratio for exclusive industrial land for Bay Area subregions (North Bay, East Bay, South Bay, San Francisco) from assessor parcel data).
**Step 23a-c.** Estimates total building square footage needed by multiplying Step 20 (the growth increment) by Step 21 (square footage per employee). Note that this assumes that square footage per employee remains constant.
**Step 24a-c.** Estimates exclusive industrial land needed by apply the FAR in Step 22 to the building square footage in Step 23 and converting to acres.
**Step 25a-c.** Subtracts the land needed for growth (Step 24) from the vacant industrial land (Step 10) to determine whether each county has a surplus or a deficit.

***The largest future deficits in industrial land are projected to occur in Alameda and Santa Clara Counties.***

Finally, the analysis of the overlap and conflict of industrially zoned land with general plan and PDA designations suggests that a significant number of jobs are at risk of potential displacement. Displacement will occur gradually, as new uses occupy the land cities have designated for commercial and residential development, and new households and service firms move to the high-density PDA growth areas. Demand from these new uses and growth will elevate land prices, and businesses that do not own their land may experience rent increases and thus involuntary displacement. Even those that own their property may decide to profit from the conversion of their land and move away, in a process of voluntary displacement.

Table 10 calculates the resultant surplus or deficit of industrial land in each county, adding the displacement of jobs from general plan redesignation or PDA designation to the job growth projections presented in Table 9. Looking just at conflicts with general plan designation, the projected surplus of land decreases to 665 acres, with deficits projected particularly in Alameda and Santa Clara counties, and surpluses in Contra Costa and Napa counties. Including PDA conflicts as well, the entire region is in a deficit of 208 acres, again with the largest deficits projected to occur in Alameda and Santa Clara counties.

Table 10. Jobs potential displaced by the conversion of industrial land conflicting with general plan or PDA designation

| Variable | Alameda | Contra Costa | Marin | Napa | San Francisco | San Mateo | Santa Clara | Solano | Sonoma | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| Displaced jobs: PDA | 11,859 | 511 | 105 | - | 1,210 | 3,802 | 6,234 | 4,360 | 1,103 | 29,184 |
| Displaced jobs: GP | 17,928 | 756 | 321 | 89 | | 1,350 | 4,836 | 521 | 873 | 26,674 |
| Total displaced jobs (PDA+GP-overlap) | 23,807 | 1,267 | 426 | 89 | 1,210 | 5,152 | 11,070 | 4,881 | 1,976 | 49,878 |
| Total building square footage required for relocation (GP only) | 6,940,469 | 292,670 | 131,502 | 36,460 | - | 447,387 | 1,602,639 | 213,435 | 357,637 | 10,022,201 |
| Total building square footage required for relocation (PDA+GP) | 9,216,407 | 490,494 | 174,517 | 36,460 | 307,808 | 1,707,361 | 3,668,572 | 1,999,574 | 809,498 | 18,410,692 |
| Total industrial land required for relocation (GP only) | 990 | 42 | 14 | 4 | - | 37 | 132 | 23 | 38 | 1,279 |
| Total industrial land required for relocation (PDA+GP) | 1,315 | 70 | 19 | 4 | 6 | 140 | 301 | 212 | 86 | 2,152 |
| 2040 surplus (deficit) (GP only) | (1,342) | 1,427 | (49) | 945 | (27) | (217) | (463) | 366 | 26 | 665 |
| 2040 surplus (deficit) (PDA+GP) | (1,667) | 1,399 | (53) | 945 | (33) | (321) | (632) | 177 | (22) | (208) |

# PART VI:
# CASE STUDIES

Next we present five brief case studies, based on interviews with local officials complemented by archival research, that illustrate the challenges and opportunities in converting industrially zoned land to other uses. Mission Bay demonstrates a case where the choice to convert from industrial to mixed use made sense for San Francisco. Richmond debatably also illustrates a case where conversion might work, while West Oakland offers a more complicated set of choices. San Jose and the Northern Waterfront in Contra Costa present arguments for industrial land preservation. Detailed case studies of Mission Bay and Oakland can be found in Appendix 2.

## MISSION BAY

Mission Bay illustrates how a neighborhood with significant industrial land can be successfully redeveloped into new uses. Understanding why the redevelopment was successful can help us develop criteria for when redeveloping industrial land makes the most sense.

Mission Bay is located very close to the Financial District. In the 1990s, high tech companies began establishing a niche in the South of Market. Just to the south, Mission Bay was experiencing a decline in productive uses, and began transitioning from wholesale uses to professional services and health care.

The 40-acre Mission Bay site was owned by one entity, allowing the site to be entitled by a single master-developer and then subdivided for individual project build-out. With the bulk of the site dedicated to UCSF for a biomedical campus, there was considerable land leftover for other office, residential, and open space uses. Key to the redevelopment's success was the financial viability of the plan. Not only was significant private investment attracted to the site, the potential earnings were so high that the developer was willing to agree to include a relatively high proportion of affordable housing units—28%—and to provide a very generous public benefits package that included infrastructure, parks, shuttle services, and more.

The success of Mission Bay's redevelopment suggests several criteria for when redeveloping industrial land makes sense:

- The land is not substantially in active use for industrial purposes, and is unlikely to be in the future.
- The site is well-located for non-industrial uses, has adequate connectivity for non-industrial uses, and is in the region's core.
- The site is large and has few land-owners. These features make it easier to create a master plan and utilize the tools of (the former) redevelopment agencies, which facilitate redevelopment.
- The community generally agrees that redevelopment is the right step, even if there is disagreement about the specific details of planned uses.
- Having a large institutional user can help spur investment.
- Finally, the market conditions are such that not only is private capital interested in development, but the developer can afford to offer public benefits, including affordable housing, parks, and other improvements.

# RICHMOND

Richmond provides an example of a city that is encouraging the restructuring of its economic base away from industrial uses, particularly along the waterfront. Due to a long history of heavy manufacturing, dominated by the Chevron oil refinery, and related environmental justice issues, the city is planning for change, not preservation.

Richmond has gone through significant change since the mid-20th century, but to this day, it still is characterized by an important industrial base. As shown in Memo #1, it has long served as a receiving area for the firms that are exiting East Bay cities in search of cheaper land. Yet, though the city would be interested in high-tech manufacturing firms with high job densities, middle-wage jobs, and manageable environmental impacts, these firms have yet to arrive. As one interviewee told us, "Richmond has held its gate wide open for the past 50 years, anticipating a resurgence in manufacturing," but still, nothing high quality has come. Instead, the city is a magnet for businesses such as "automobile dismantling, recycling, industrial storage, mini storage, truck or container storage, construction yards, refuse collection, debris transfer facilities, and other activities that require substantial space, generate significant environmental impacts and pay low wages."

Photo Courtesy of Scott Hess, www.ScottHessPhoto.com

In response to these patterns, the City of Richmond is considering approaches such as: (1) reducing its industrial land through conversion to other uses (residential, commercial, open space) and (2) consolidating key industrial businesses on contiguous pieces of land (e.g., around the Chevron refinery and a BNSF railroad property). These areas might then be designated for industrial preservation.

**In favor of prioritizing industrial:**

- Strategic location for industrial businesses
- Reservoir of cheap industrial land for businesses displaced from the core
- Availability of industrial land, either existing or near Chevron and BNSF

**Against prioritizing industrial:**

- Challenges in attracting high-tech, middle-wage industries
- Environmental justice issues
- Opportunities for conversion to residential

# WEST OAKLAND

Oakland has a long history of efforts to preserve industrial land, and since at least the early 2000s, has tried to develop an industrial land conversion policy. However, increasing housing pressure, urban design issues, and new mixed-use zoning designations are creating new challenges to preserving key industrial areas. Thus, the Oakland case demonstrates the gradual transformation of an industrial district and the challenges of resolving conflicts among stakeholders. (The full case study can be found in Appendix X.)

Following national trends, over the last twenty years many large manufacturing companies have left West Oakland. In their place, small, entrepreneurial business and the arts sector have taken over some of the industrial building stock. Although many block groups saw job growth in both 1990-2000 and 2000-2013, significant job loss occurred adjacent to the port in recent years (over 1,100 jobs) and job loss in industrial land-dependent jobs has recently accelerated in the northeastern part of the neighborhood. The majority of the new businesses are service-oriented, able to locate in mixed-use areas.

Over the last twenty years the City has sponsored 36 different planning proposals in the area. Most recently, the West Oakland Specific Plan introduced a new HBX-4 classification that in effect sets a preference for live/work, work/live, and housing in industrial and commercial areas. New CIX classifications were created, in part, to better control for the preservation of unique architecture in certain areas, but inadvertently create an incentive for property owners to let their buildings fall into disrepair as a way to avoid the design review process.

West Oakland is undergoing a transformation to a more mixed-use district. Over time, residential uses threaten the vitality of the entrepreneurial business district. There are pros and cons of prioritizing industrial land in the area.

**In favor of prioritizing industrial:**

- Businesses are attracted by affordable and large-scale industrial work spaces.
- There is a dearth of space for artists in Oakland who thus gravitate to the lower cost industrial land.
- West Oakland is located at the center of the region adjacent to its major port, providing unparalleled access for businesses.

**Against prioritizing industrial:**

- Land use conflicts are likely to remain, because the demand for land in the neighborhood is from businesses with delivery needs that conflict with residential uses.
- Safety and infrastructure issues discourage businesses from relocating in the neighborhood.
- Overall, production, distribution and repair uses are slowly declining in the area.

## SAN JOSE

Driven by fiscal considerations, the City of San Jose is committed to industrial land preservation, according to the City's Economic Development staff. As a city that has served as the bedroom community for much of Silicon Valley for decades, San Jose is now "hanging onto its employment land with conviction."


Studies have shown that San Jose has enough vacant land for future employment, but this is not likely to be in the area where job growth is likely to happen. This creates a need for the strategic preservation of industrial land. North San Jose is one of the city's main industrial parks and is anticipated to host major growth and development, as it is strategically located along a key light-rail line. To ensure industrial job growth, the city is putting a strict cap on total residential area and on the number of housing units that can be added every year.

San Jose is thus one of the few Silicon Valley/Peninsula cities that are encouraging industrial uses near transit over residential use. At the same time, in order to encourage all types of job growth, San Jose employs some zoning designations, such as industrial park, that are open to every kind of industrial or office user, creating the possibility that higher rent office users will outbid industrial firms.

Thus, in the San Jose context, the focus is more employment preservation than industrial preservation per se. The arguments in San Jose are primarily for preserving industrial land, due to:

- Fiscal issues related to current jobs/housing imbalance
- Location in Silicon Valley
- Anticipated future shortage of industrial land

# NORTHERN WATERFRONT

The northeast Bay Area, encompassing much of Solano and Contra Costa counties, has strong interests in preserving industrial land. Its assets include a large inventory of industrial land and buildings, as well as access to rail and port facilities (in addition to the airport in Byron) and connections to the interstate system. There has been slow but steady rezoning in waterfront communities like Hercules, and there continues to be some pressure to rezone to other uses, particularly in areas with existing encroachment (such as schools). But due to the outflow of jobs over the past 50 years, there is an increasing jobs/housing imbalance that creates pressure to prioritize jobs over housing.

Over time, many of the area's manufacturing industries are transforming, and there is new demand for warehousing space. Not only are the refineries changing, but also traditional manufacturing: for instance, C&H Sugar remains but has replaced much of its labor force with new technology. Growing clusters with potential include advanced transportation fuels, biomedical manufacturing, food processing, and clean technology. Warehousing is another area of growth: there is a significant inventory of warehouse space, but also steady demand for newer building types with higher ceilings and technology.

This area is likely to support preserving its industrially zoned land because of its economic development strategy. Given the potential of its clusters, it would like to use protected areas to attract some of the critical suppliers to existing firms, as well as nurture new start-up companies. Another need is for infrastructure investment, to improve Highway 4 and short-line rail connectors, help industries access recycled water, and adopt clean energy technology. Having designated industrial areas might help the county access funding for such improvements.

Thus, the arguments in Contra Costa's Northern Waterfront are primarily for preserving industrial land, due to:

- Assets for industrial development
- Fiscal issues related to current jobs/housing imbalance
- Demand for industrial space


Altas Courtesy of Contra Costa County: Department of Conservation and Development

# PART VII: POTENTIAL CRITERIA FOR INDUSTRIAL LAND PRESERVATION AND CONVERSION

This analysis suggests that the conversion of industrial land is proceeding at a slow pace, but is likely to accelerate in coming years due to the visions put forward in general plan and PDA designations. To guide city decision-making about where to preserve industrial land and where to convert it, MTC/ABAG should develop criteria. Figure 11 presents potential criteria in terms of transportation, economy, equity, site characteristics, and environment. These may serve as the basis for designating Priority Industrial Areas in the future.

| | *Retain as Industrial* | *Convert to Residential or Mixed-use* |
|---|---|---|
| **Transportation** | • Proximity to freight and/or port facilities<br>• Low VMT for workers on industrial land | • Proximity to transit<br>• High VMT for workers on industrial land |
| **Economy** | • Production or related employment<br>• Proximity to business clusters/suppliers/markets<br>• Critical supplier to local businesses<br>• Industry stable or growing | • High-density non-production employment<br>• Proximity to markets/customers<br>• Limited linkages to local economy<br>• Industry in decline |
| **Equity** | • Offers middle-wage jobs for less-skilled workers | • Potential for affordable housing |
| **Land use/zoning compatibility** | • Surrounded by medium/heavy industrial zoning | • Adjacent to residential |
| **Environment** | • Brownfield site, remediation infeasible | • Environmental health hazard for surrounding communities (especially if historically disadvantaged) |
| **Adequacy of supply** | • In areas with projected deficit of industrial land<br>• Low vacancy rates for industrial buildings | • In areas with projected surplus of industrial land<br>• High vacancy rates for industrial buildings |

Figure 11. Criteria for Industrial Land Preservation and Conversion

Berkeley


# NOTES AND APPENDICES

# NOTES

1. Hausrath Economics Group and Cambridge Systematics, Inc., *MTC goods movement study Phase 2, task 11 working paper: A land use strategy to support regional goods movement in the Bay Area* (Oakland, CA: Hausrath Economics Group, 2004)
2. This represents 20 housing units of a total of 555 constructed from 2005-2015. Due to challenges with data quality and geocoding, this represents a sample of Oakland housing units, not the entire population.
3. Of 4,968 permits for residential new construction from 2001 to 2014, only 47 overlapped with industrial zones
4. Maps of the location of vacant land are provided at www.planningforjobs.org.
5. Evelyne St. Louis, *Priority Development or Priority Industrial?* (Berkeley, CA: University of California, Berkeley, 2016), www.planningforjobs.org.

### *Appendix 1. Calculating industrial land at risk*

Both the maps and the calculations of industrial land at risk were generated through a series of ArcGIS operations. Shapefiles for each jurisdiction's general plan land use designations were obtained from MTC or directly from local planning departments. While not all jurisdictions provided a general plan shapefile, outreach focused on obtaining shapefiles from the top 50 cities with the highest stock of industrial land. These city-level general plan shapefiles were first layered on top of the county-level industrial zoning shapefiles that were generated using assessor parcel data. The Intersect tool was then used to produce a new layer that contained fields for both general plan designation and industrial zoning. Parcels with general plan designations that conflicted with industrial zones were then exported and coded according to the residential, commercial, and other categories described above. Once this step was completed for each individual jurisdiction, the Merge tool was used to compile all city-level shapefiles into a larger county-level shapefile of industrial land at risk. The Calculate Geometry tool was then used in the county-level shapefile to determine the acreage of each industrially zoned parcel with conflicting general plan designations. The attribute table was then exported to Excel to produce all tables and calculate all risk percentages for each county and the bay area at large.

In San Francisco, there are a number of mixed-use zones that allow for industrial uses but promote the increase of alternative land uses that have the potential to increasingly replace industrial activities over time. These mixed-use zones were coded into the same categories created for the general plan designations for the purpose of comparison across counties. In the case of San Francisco, these categories indicate the following:

| | |
|---|---|
| **Residential** | The residential category refers to all single-family and multi-family residential land use designations, as well as mixed-use designations intended to introduce or increase residential uses in particular areas of a jurisdiction. Converting industrial land to residential has become an attractive option for some cities in the face of housing shortages, making this category of special interest to the study. |
| **Commercial** | This category includes all commercial designations that support activities such as restaurants, hotels, and retail businesses, as well as mixed-use designations that promote the intensification of these commercial activities in select districts or corridors. |
| **Other** | The other category encompasses all land use designations other than residential and commercial ones that also move away from industrial activities. This includes general mixed-use districts, parks and open space, and public and institutional centers. It should be noted that areas designated for use by public and quasi-public agencies for their industrial activities, such as airports and water management facilities, are excluded from the other category. |

To obtain a percentage of industrial land at risk of conversion in San Francisco, the acreage for these mixed use industrial zones was divided by the acreage for all main industrial and mixed-use industrial zoning categories outlined in Section 3.

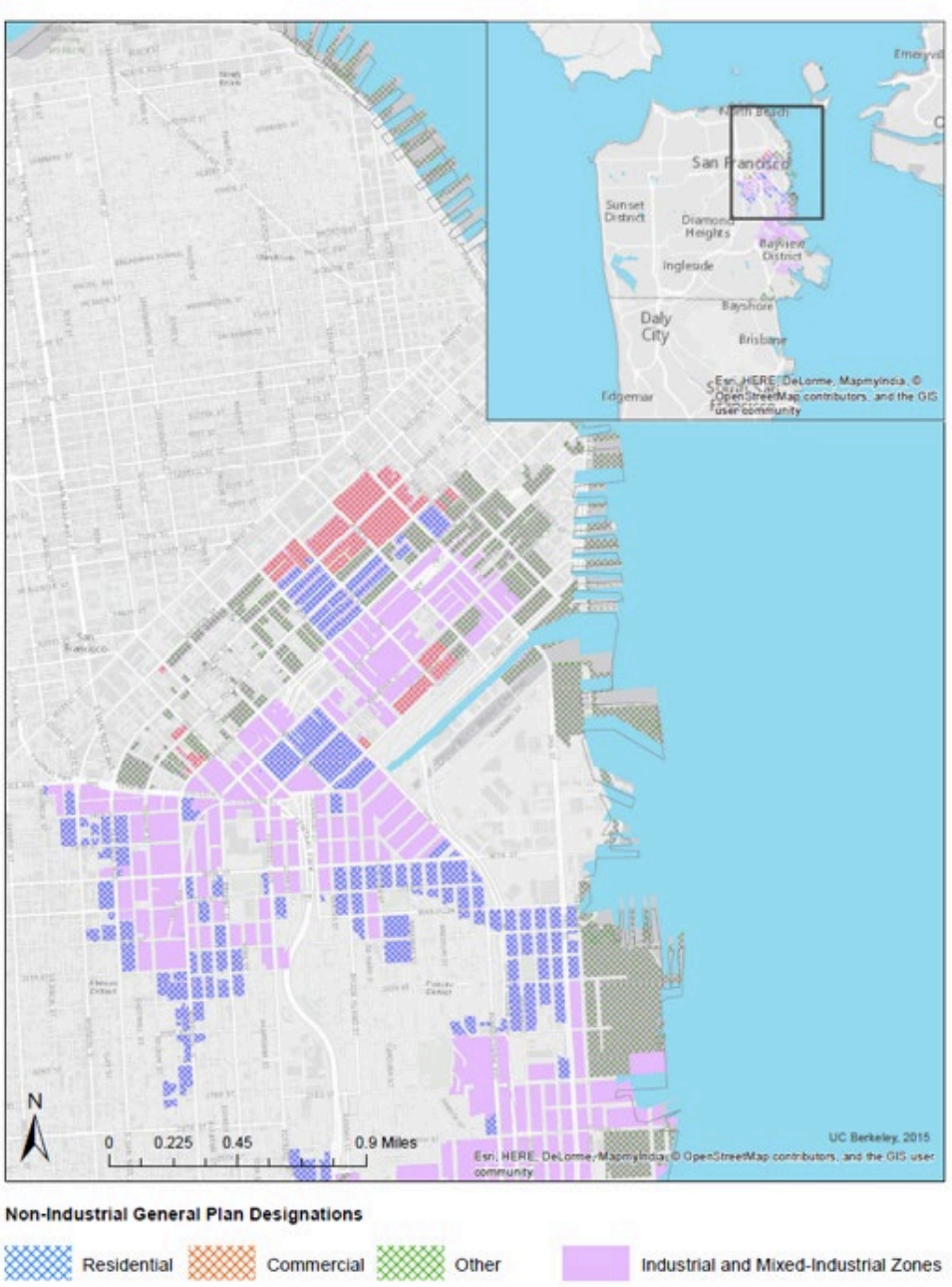
**% of Industrial Land Susceptible to Conversion =**

(Acres of industrially zoned land with nonindustrial general plan category (Residential,Commercial,or Other))

---

(Acres of land with industrial zone category (Heavy,Medium,or Light Industrial or Industrial Office))

**Note: The denominator excludes two industrial zone categories identified in Section 3 – Mixed Use Industrial-Residential and Mixed Use Industrial-Commercial – because these zones are already moving away from traditional industrial activities with the introduction of residential and commercial uses. For industrial-office land, we only consider conversion risk to residential, since most commercial uses are permitted as-of-right.*




Map 1. Map of Industrial Land at Risk of Conversion in San Francisco

**County-Level Analysis**

The following section presents the results of the conversion risk analysis conducted for each of the nine counties in the Bay Area region. Each county's percentage of industrial land at risk is broken down by the general plan designation categories introduced in the previous sections. Each county also includes a table that illustrates which specific industrial zoning categories are conflicting with which general plan designation categories (or mixed-use zones in the case of San Francisco). It should be noted that to ensure conservative estimates, parcels with commercial or other general plan designations overlapping with industrial-office zoning were not considered at risk of conversion, and thus they were not factored into the risk calculation. Finally, each county is accompanied by a set of maps that geographically illustrate where industrial land is at risk of conversion. No maps are presented for Napa County, whose conversion risk percentage is marginal at 1%.

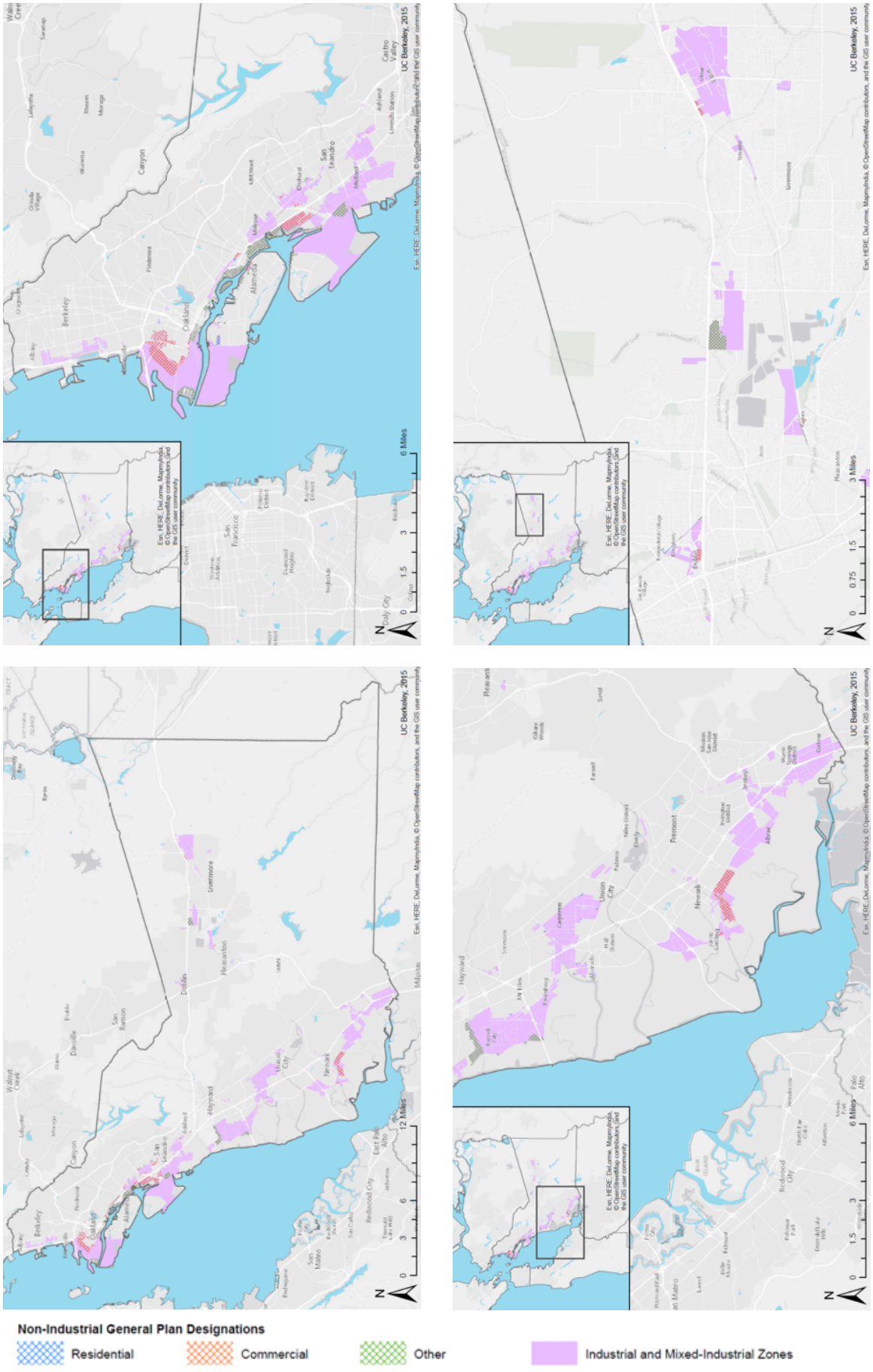
*Alameda County*

| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 90 | 2.9% |
| Commercial | 1,378 | 44.0% |
| Other | 1,667 | 53.2% |
| **Total IL at Risk** | **3,135** | **100%** |
| **Total IL** | **22,127** | |
| **% at Risk** | **14%** | |

Table 3. Alameda County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | heavy-office | light | light-office | medium | transp | Total |
|---|---|---|---|---|---|---|---|
| **commercial** | 1 | | 669 | | 707 | - | **1,378** |
| **other** | 638 | | 75 | | 701 | 253 | **1,667** |
| **residential** | 0.39 | 5 | 26 | 11 | 47 | - | **90** |
| **Total** | **640** | **5** | **771** | **11** | **1,455** | **253** | **3,135** |

Table 4. Alameda County General Plan Designation vs. Industrial Zoning Conflicts

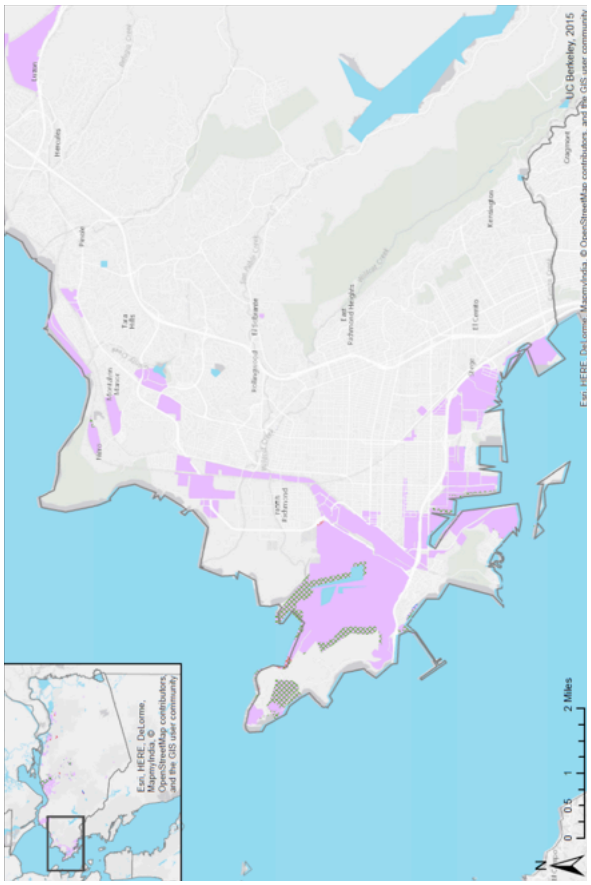

Non-Industrial General Plan Designations
Residential
Commercial
Other
Industrial and Mixed-Industrial Zones

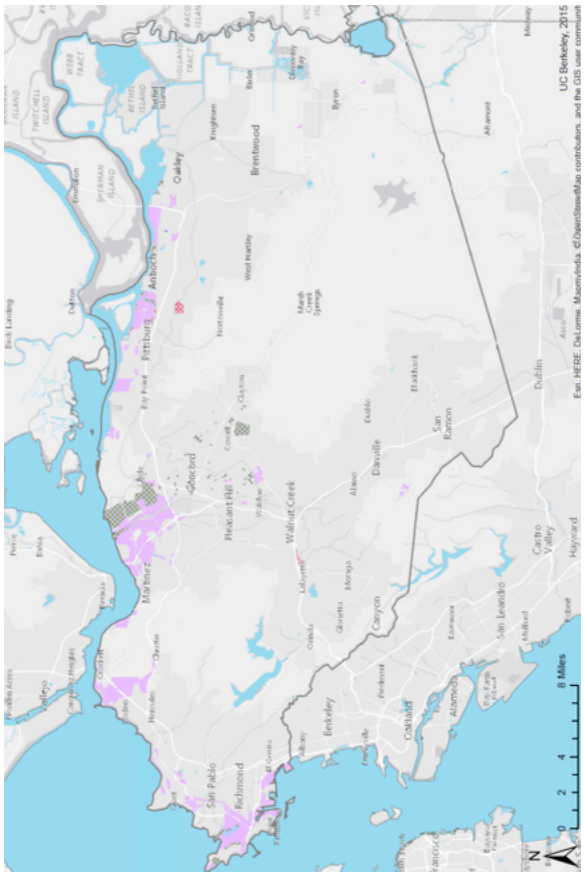
| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 26 | 0.6% |
| Commercial | 395 | 9.4% |
| Other | 3,786 | 90.0% |
| **Total IL at Risk** | **4,207** | **100%** |
| **Total IL** | **18,357** | |
| **% at Risk** | **23%** | |

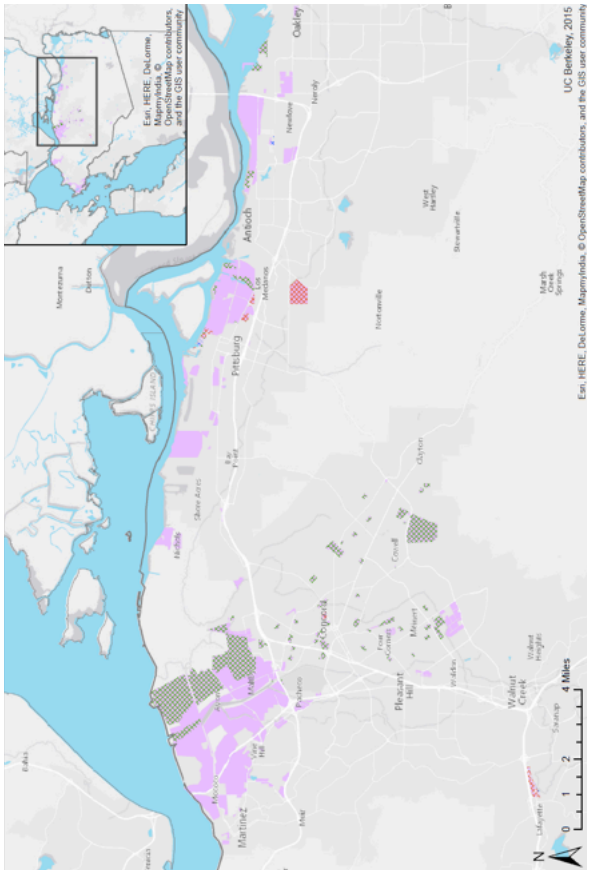
Table 5. Contra Costa County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | transp | Total |
|---|---|---|---|---|---|---|
| **commercial** | 258 | 77 | | 20 | 40 | **395** |
| **other** | 1,961 | 607 | | 101 | 1,118 | **3,786** |
| **residential** | 0.01 | 4 | 10 | 0.48 | 11 | **26** |
| **Total** | **2,219** | **688** | **10** | **121** | **1,169** | **4,207** |

Table 6. Contra Costa County General Plan Designation vs. Industrial Zoning Conflicts




**Non-Industrial General Plan Designations**

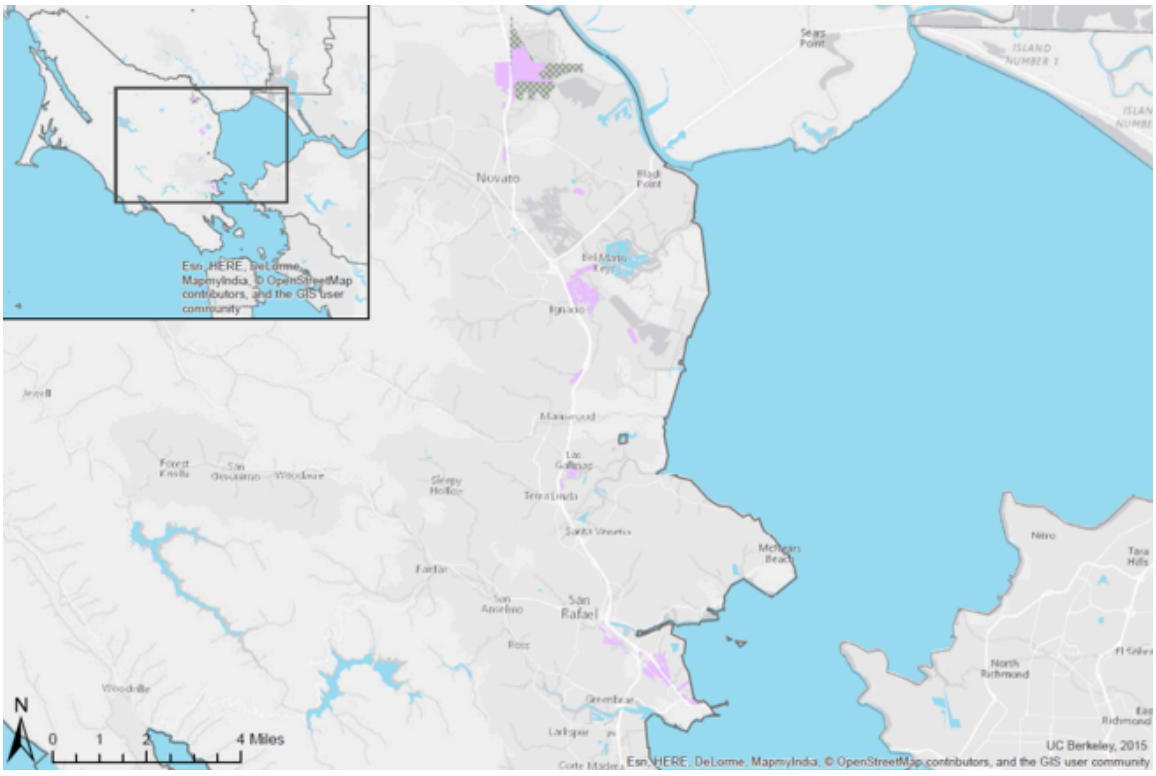
Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 1 | 0.2% |
| Commercial | 9 | 2.3% |
| Other | 400 | 97.5% |
| **Total IL at Risk** | **410** | **100%** |
| **Total IL** | **1,426** | |
| **% at Risk** | **29%** | |

Table 7. Marin County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | transp | Total |
|---|---|---|---|---|---|---|
| **commercial** | - | - | | - | 9 | **9** |
| **other** | 376 | 21 | | - | 3 | **400** |
| **residential** | 0.13 | 0.07 | 0.41 | 0.14 | 0.002 | **1** |
| **Total** | **376** | **21** | **0.41** | **0.14** | **13** | **410** |

Table 8. Marin County General Plan Designation vs. Industrial Zoning Conflicts


**Non-Industrial General Plan Designations**

Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

*Napa County*

| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 1 | 4.1% |
| Commercial | 7 | 21.8% |
| Other | 24 | 74.1% |
| **Total IL at Risk** | **33** | **100%** |
| **Total IL** | **3,809** | |
| **% at Risk** | **1%** | |

Table 9. Napa County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | transp | Total |
|---|---|---|---|---|---|---|
| **commercial** | - | 7 | | - | - | **7** |
| **other** | 17 | 5 | | 0.15 | 2 | **24** |
| **residential** | - | 1 | - | 0.00002 | - | **1** |
| **Total** | **17** | **14** | **-** | **0.15** | **2** | **33** |

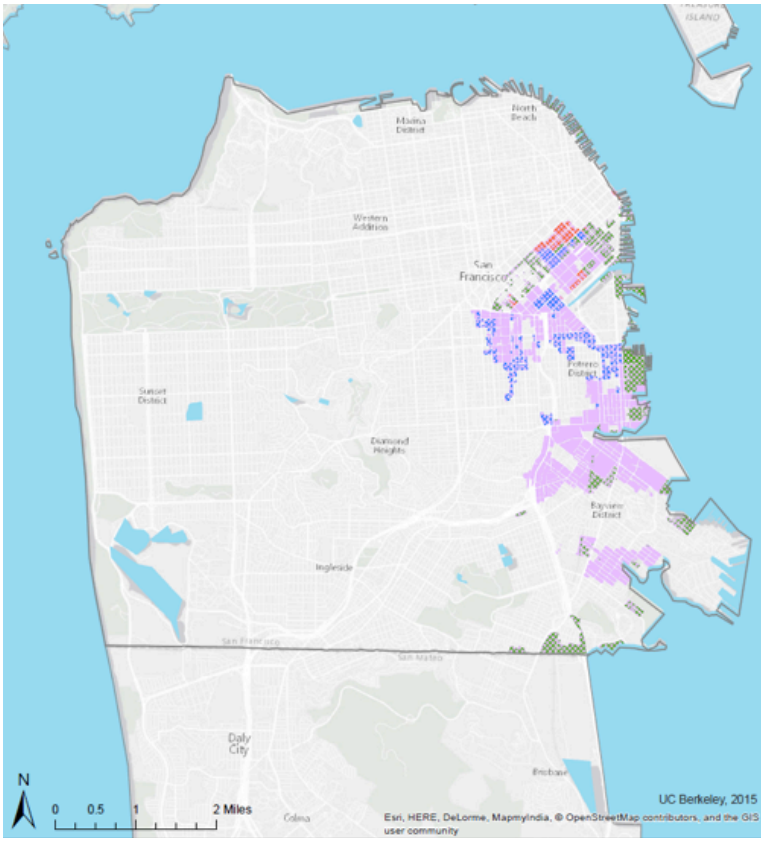
Table 10. Napa County General Plan Designation vs. Industrial Zoning Conflicts

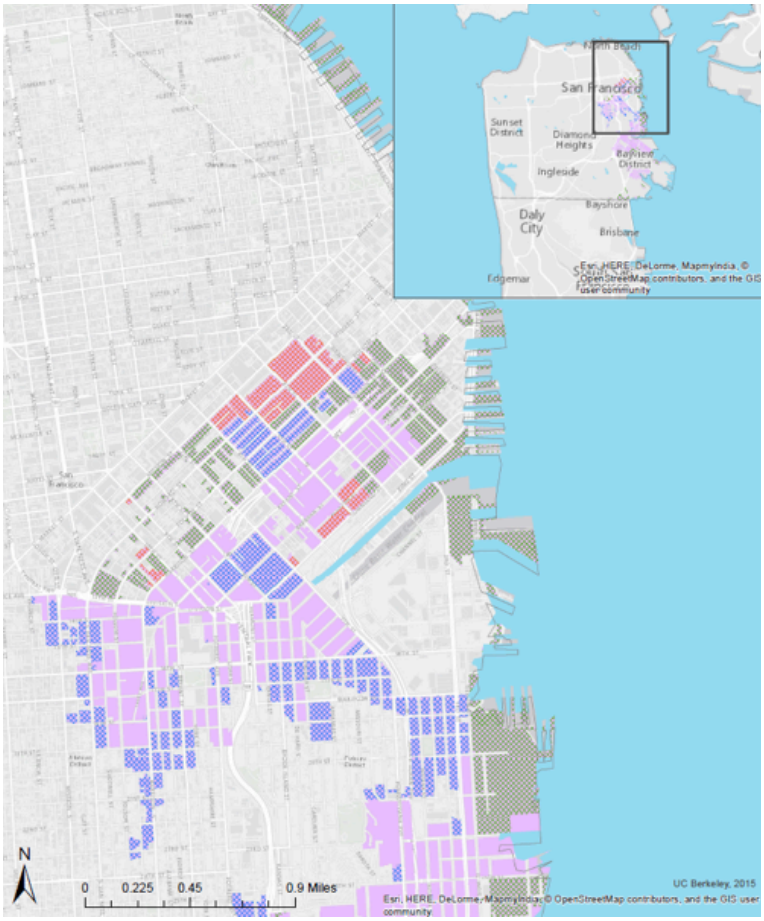
*San Francisco County*

| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 232 | 24.3% |
| Commercial | 66 | 6.9% |
| Other | 659 | 68.8% |
| **Total IL at Risk** | **957** | **100%** |
| **Total IL** | **1,970** | |
| **% at Risk** | **49%** | |

Table 11. San Francisco County Industrial Land (IL) at Risk of Conversion by Mixed-Use Zoning Designation*

*Because the San Francisco General Plan does not include a Land Use Element, risk was calculated using the area of parcels whose zoning has already been converted to residential mixed-use, commercial mixed-use, or general mixed-use designations




**Non-Industrial General Plan Designations**

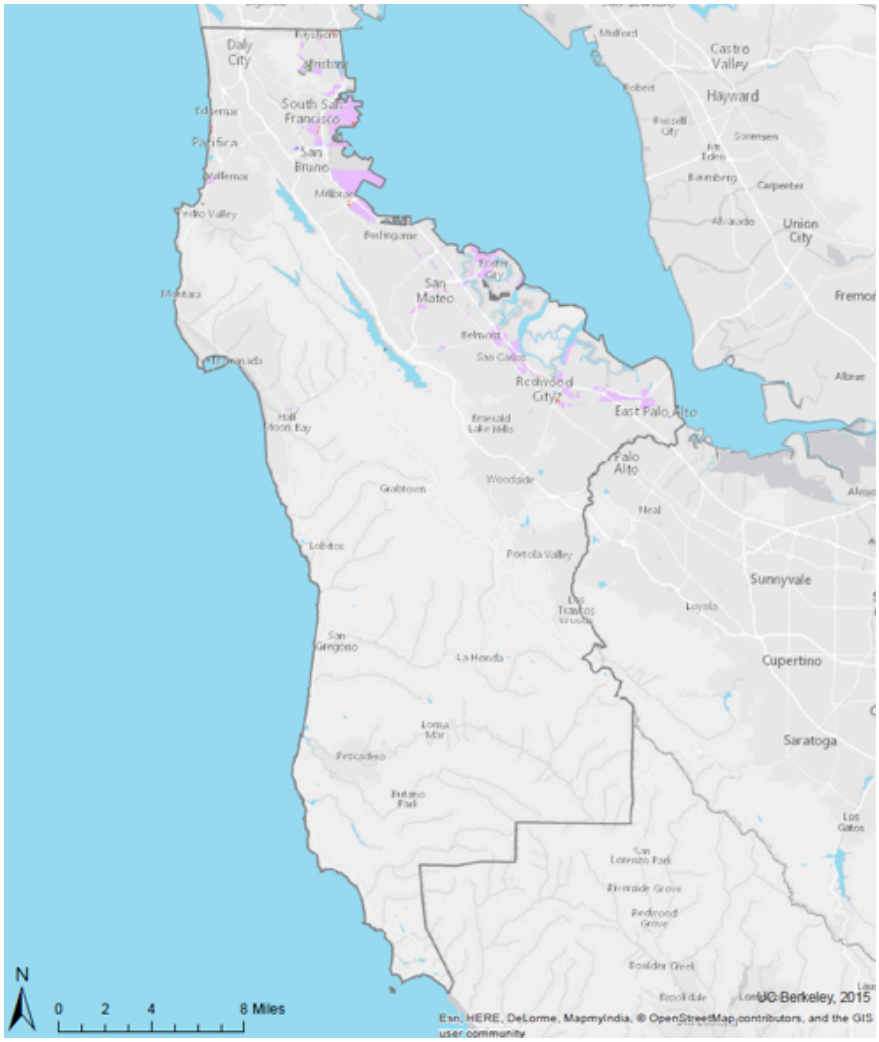
Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

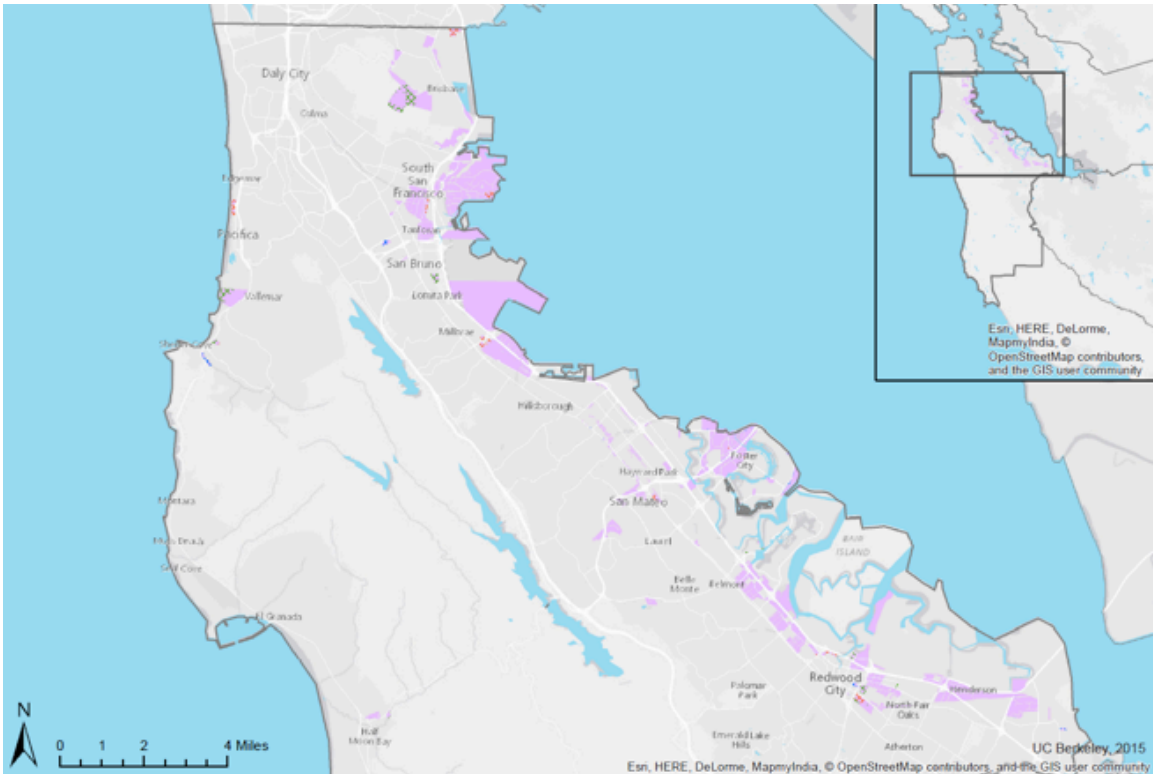
| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 50 | 12.9% |
| Commercial | 133 | 34.2% |
| Other | 206 | 52.9% |
| **Total IL at Risk** | **389** | **100%** |
| **Total** | **8,883** | |
| **% at Risk** | **4%** | |

Table 12. San Mateo County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | **heavy** | **light** | **light-office** | **medium** | **medium-office** | **Total** |
|---|---|---|---|---|---|---|
| commercial | 0.0004 | 107 | | 26 | | **133** |
| other | 91 | 62 | | 52 | | **206** |
| residential | 0.14 | 17 | 27 | 7 | - | **50** |
| **Total** | **92** | **185** | **27** | **85** | **-** | **389** |

Table 13. San Mateo County General Plan Designation vs. Industrial Zoning Conflicts




**Non-Industrial General Plan Designations**

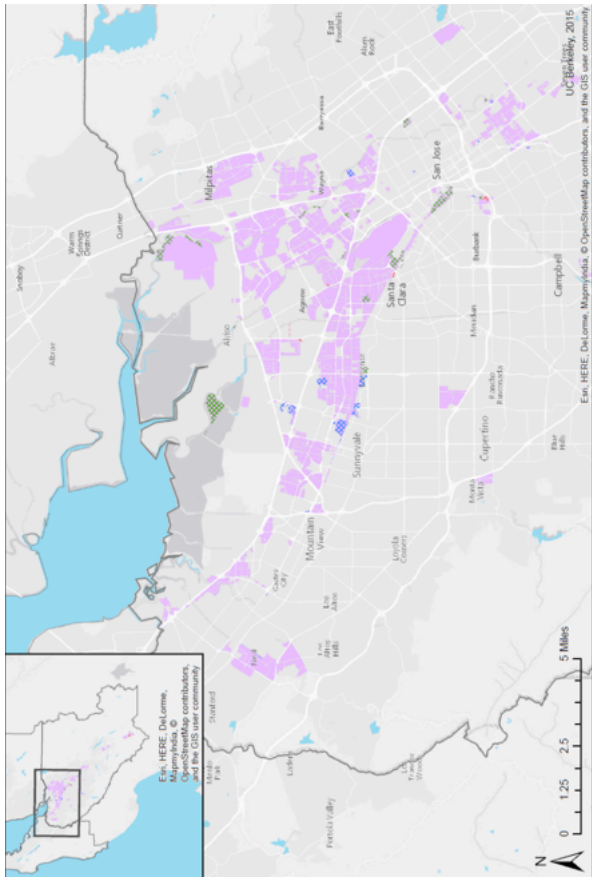
Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

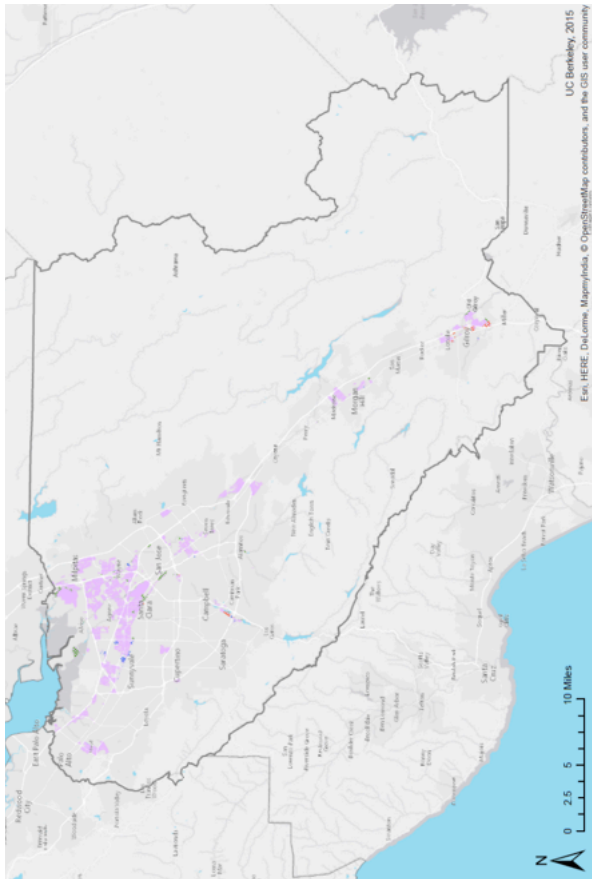
| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 290 | 20.4% |
| Commercial | 320 | 22.5% |
| Other | 814 | 57.1% |
| **Total IL at Risk** | **1,424** | **100%** |
| **Total IL** | **18,501** | |
| **% at Risk** | **8%** | |

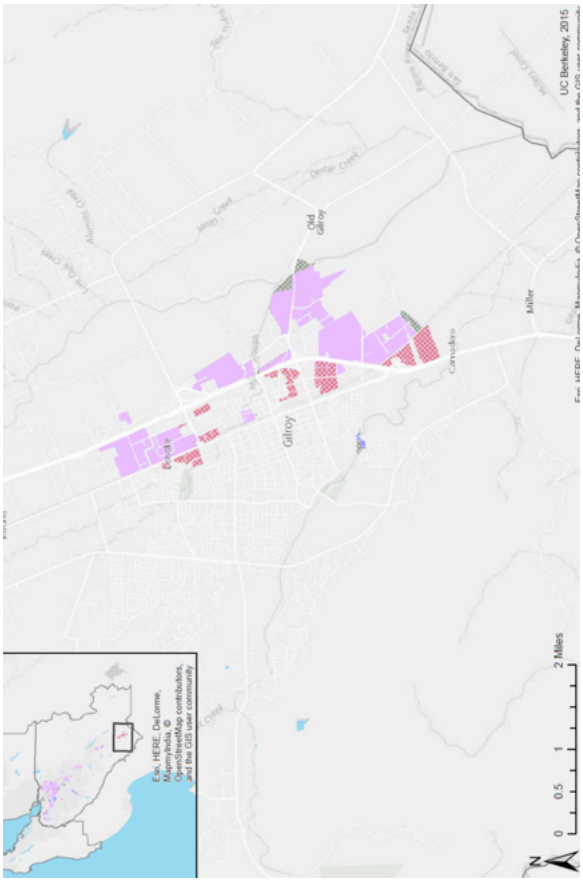
Table 14. Santa Clara County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | medium-office | transp | Total |
|---|---|---|---|---|---|---|---|
| **commercial** | 13 | 306 | | 2 | | - | **320** |
| **other** | 684 | 68 | | 43 | | 19 | **814** |
| **residential** | 32 | 32 | 104 | 4 | 118 | - | **290** |
| **Total** | **729** | **406** | **104** | **49** | **118** | **19** | **1424** |

Table 15. Santa Clara County General Plan Designation vs. Industrial Zoning Conflicts




**Non-Industrial General Plan Designations**

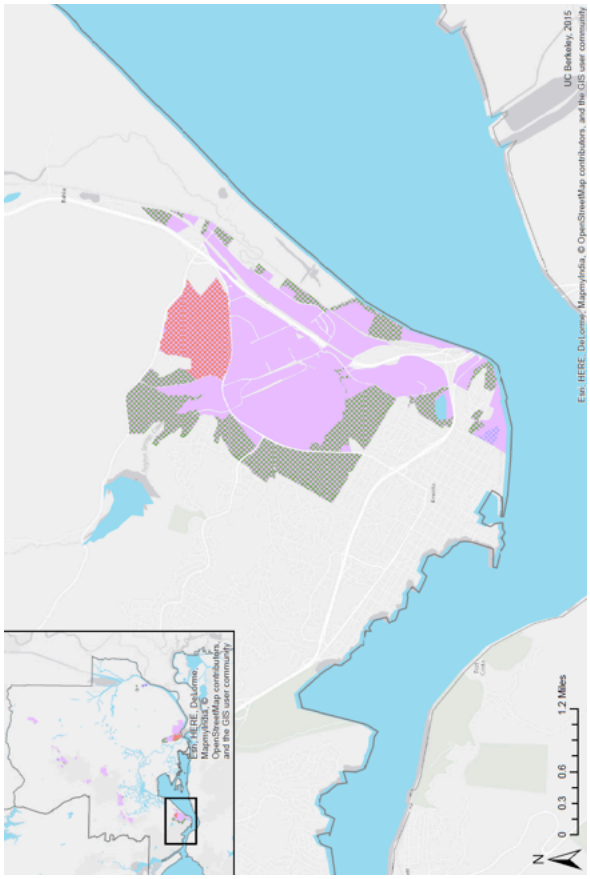
Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

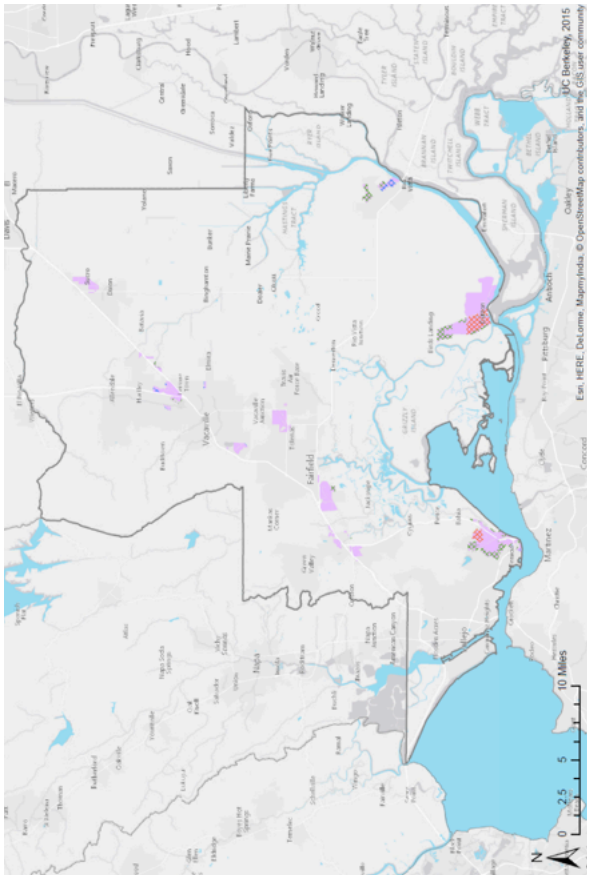
| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 261 | 6.3% |
| Commercial | 1,555 | 37.5% |
| Other | 2,325 | 56.1% |
| **Total IL at Risk** | **4,142** | **100%** |
| **Total IL** | **11,911** | |
| **% at Risk** | **35%** | |

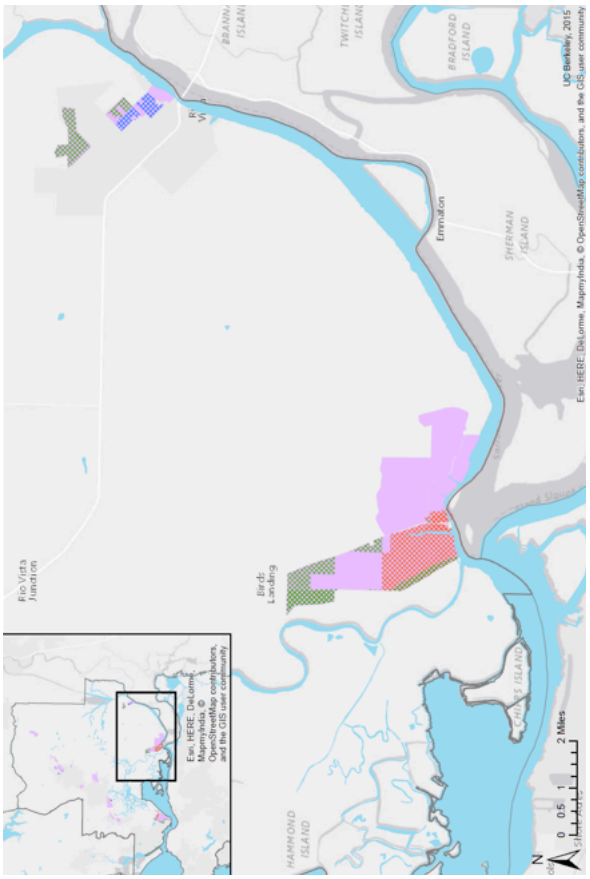
Table 16. Solano County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | transp | Total |
|---|---|---|---|---|---|---|
| **commercial** | - | - | | 314 | 1,241 | **1,555** |
| **other** | 234 | 444 | | 434 | 1,214 | **2,325** |
| **residential** | 0.27 | 35 | 213 | 0.41 | 12 | **261** |
| **Total** | **234** | **479** | **213** | **748** | **2,467** | **4,142** |

Table 17. Solano County General Plan Designation vs. Industrial Zoning Conflicts




**Non-Industrial General Plan Designations**

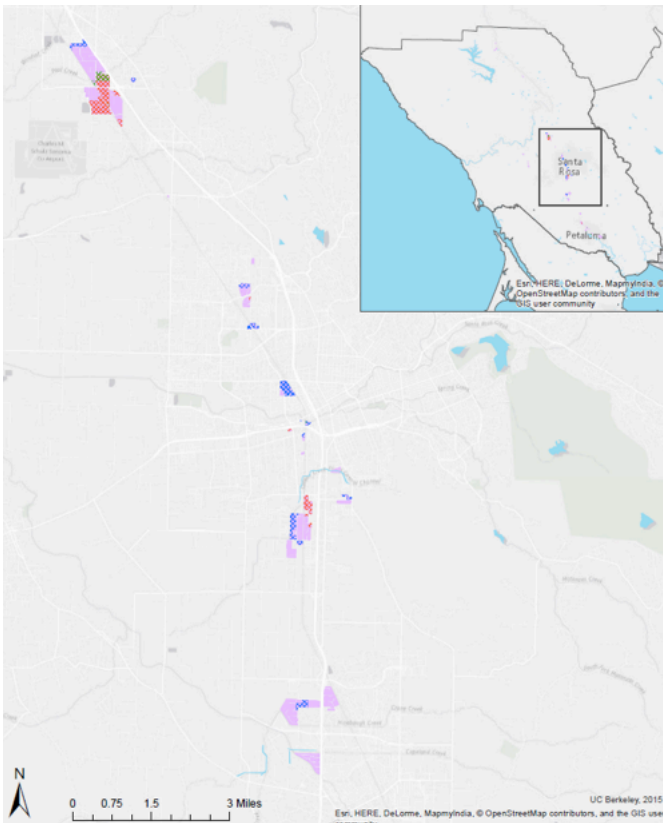
Residential | Commercial | Other | Industrial and Mixed-Industrial Zones

| | *Total (Acres)* | *Percentage* |
|---|---|---|
| Residential | 172 | 44.3% |
| Commercial | 168 | 43.3% |
| Other | 48 | 12.4% |
| **Total IL at Risk** | **387** | **100%** |
| **Total IL** | **1,437** | |
| **% at Risk** | **27%** | |

Table 18. Sonoma County Industrial Land (IL) at Risk of Conversion by General Plan Designation

| | heavy | light | light-office | medium | Total |
|---|---|---|---|---|---|
| **commercial** | 71 | 93 | | 4 | **168** |
| **other** | 3 | 27 | | 18 | **48** |
| **residential** | | 147 | 18 | 7 | **172** |
| **Total** | **74** | **267** | **18** | **29** | **387** |

Table 19. Sonoma County General Plan Designation vs. Industrial Zoning Conflicts



# Mission Bay

In its original form, Mission Bay—a growing neighborhood just south of San Francisco's Financial District and SoMa areas—was a wide shallow bay with surrounding swamp land and a creek leading up to it. Roughly running along the present-day Third Street, a long bridge crossed the middle of the bay. The bay was filled between 1850 and 1900, as decommissioned or shipwrecked ships, dirt from the leveling of nearby hills, and debris from the 1906 earthquake were used to fill it. Once stabilized, the Santa Fe and Southern Pacific Railroads took over the property and began using it as a railroad yard that included industrial use buildings related to shipping (Laura Adler et al. 2011).

However, by the 1990s, the area was no longer in use by the railroad: it was a "tangle of abandoned railyards and warehouses" (Massey and Bodovitz 1990). This was due to several factors:
After World War II, the flight of jobs and housing to the suburbs, the movement of industry to cheaper locations, the replacement of train traffic by truck and air, left San Francisco, and virtually every other North American city, with underutilized railyards (Prowler 2005).

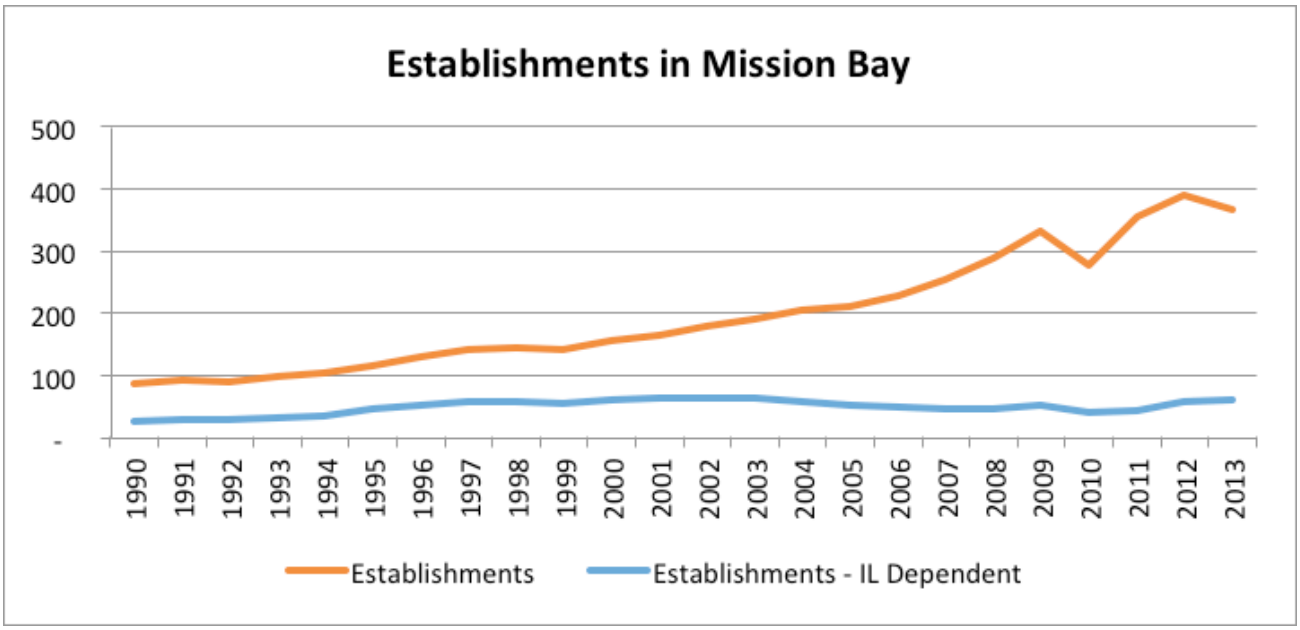
This case study considers the reasons for Mission Bay's redevelopment into the growing residential, office, and educational neighborhood it is now. The story of Mission Bay provides an example of a place with significant industrial land that was successfully redeveloped into new uses. Here, we offer an analysis of why the redevelopment was successful, which leads to an understanding of some basic criteria for when redeveloping industrial land makes the most sense.

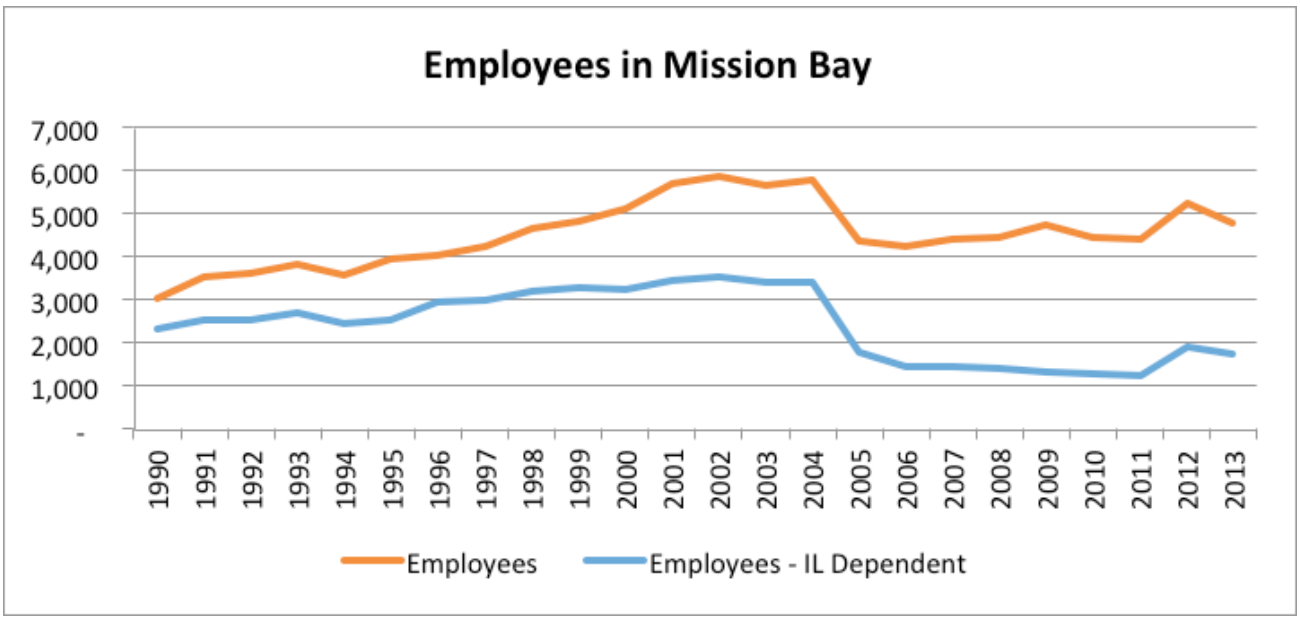
Mission Bay before its redevelopment. Source: (City and County of San Francisco Planning Department and San Francisco Redevelopment Agency 1999)

**Mission Bay Before Redevelopment**

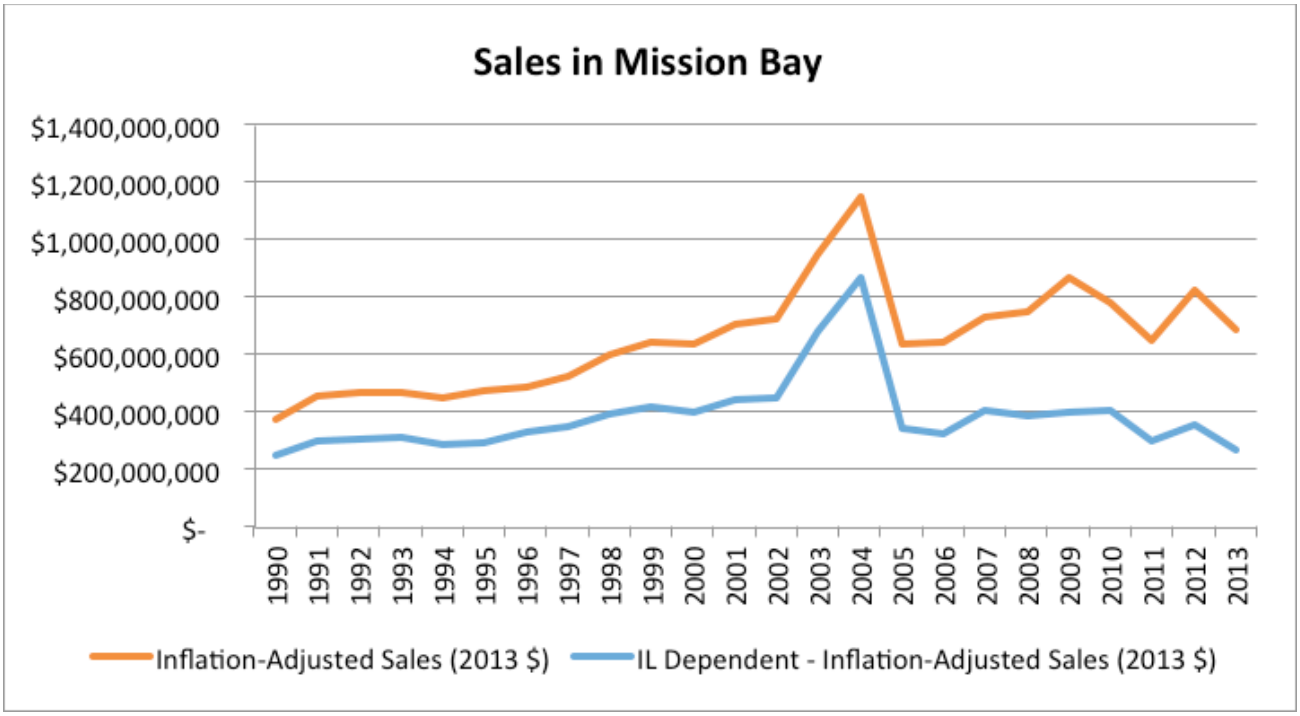
Mission Bay was not engaged in very productive uses in the years leading up to redevelopment. The area hosted "block-long warehouses, concrete and gravel processing facilities, truck terminals, and surface parking;" buildings in the area were used for "distribution and storage facilities for food products, clothing, rental furniture, and personal effects; light manufacturing; and some office use" while "undeveloped areas include[d] maintenance yards, parking areas for container trucks and commercial buses, and storage areas for construction materials" (City and County of San Francisco Planning Department and San Francisco Redevelopment Agency 1999 Page V.B.1). The area was "flat, built on fill of unknown quality, toxic, and surrounded by disused piers and other neighborhoods with industries dead or dying" (Prowler 2005).

As the following charts show, the number of establishments rose dramatically in the 2000s, but industrial land-dependent establishments stayed flat. Employment in the area rose steadily through the late 1990s and at the turn of the century, before taking a dip around 2004. Sales have slowly increased, with a spike in 2004.




Data Source: NETS, for the Mission Bay redevelopment area. "IL Dependent" includes only businesses whose NAICS code is for an industry that is dependent on Industrial Land, as defined by our analysis of industrial land and businesses throughout San Francisco.




Data Source: NETS, for the Mission Bay redevelopment area. "IL Dependent" includes only businesses whose NAICS code is for an industry that is dependent on Industrial Land, as defined by our analysis of industrial land and businesses throughout San Francisco.

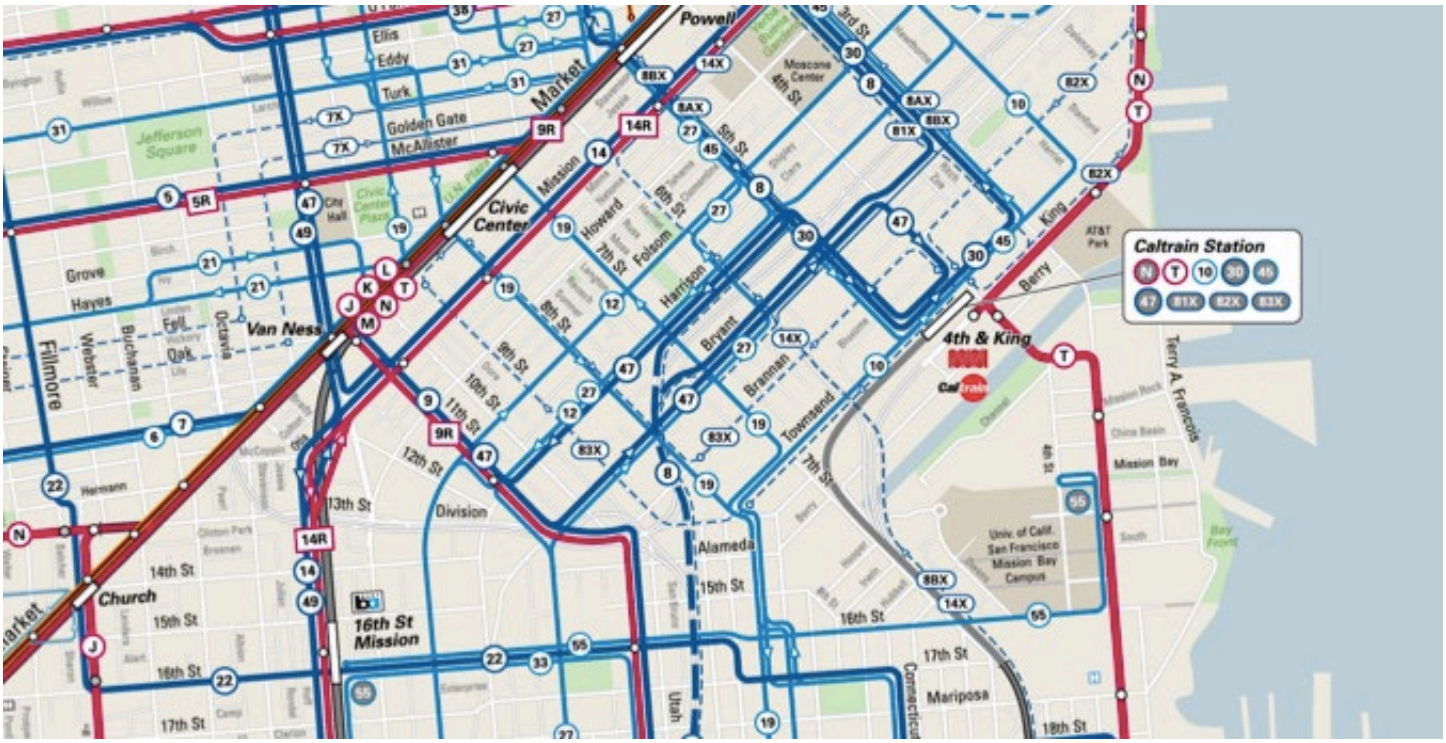
The following chart shows the types of businesses that opened or moved into Mission Bay compared to those that closed or moved out of the area. Most industries had a very similar proportion of businesses open/move in as close/move out. However, some industries experienced a discrepancy of 1.5% or more:

- Greater proportion closed than opened: Wholesale Trade, Information.
- Greater proportion opened than closed: Professional/Scientific/Technical Services, Other Services, Health Care/Social Assistance

Data Source: NETS, for the Mission Bay redevelopment area

**Context: Mission Bay is well-located, well-connected, and in the region's core**

Mission Bay is located very close (1-2 miles) to the Financial District. To the north, the South Beach and South of Market neighborhoods had grown tremendously leading up to Mission Bay's redevelopment (Prowler 2005). These neighborhoods were already part of the City's "downtown" and constituted a thriving business community and increasingly residential sector. In particular, high tech companies were steadily establishing a niche in SOMA and are pushing farther south into the vicinity of Mission Bay. From these neighborhoods, the city "grew to Mission Bay's border, creating the critical mass necessary to jumpstart development," particularly north of Mission Creek (Prowler 2005). Mission Bay has easy access to the 101 and 280 freeways. Caltrain, which provides rail access to the peninsula and Silicon Valley, is located in Mission Bay. In 2007, Muni opened the T-line, which runs down Third Street through the neighborhood and provides connections to the Embarcadero, downtown, and south of Mission Bay to Bayshore. These features—especially the transit access—made the neighborhood well-suited to residential and commercial uses that require access for many people.




Excerpt of Muni system map showing "T" rail line, Caltrain, and numerous bus routes running through Mission Bay. Source: https://www.sfmta.com/sites/default/files/maps/SFMTA-Metro-Sept2015-RTP-Outln.png

**The Redevelopment Process and Community Perspectives**

Catellus, the real estate division of the Santa Fe/Southern Pacific Railroad, initiated Mission Bay's redevelopment process in the 1980s. Plans were submitted in 1981, revised plans were approved in 1984, and the city signed a development agreement in 1991 (Chung 1991). But progress did not begin in earnest until 1998, when the city adopted the Mission Bay Plan, which "projected 30-year build-out, with the rate of development to be determined by market demand"(Prowler 2005).

In Mission Bay, most of the land was owned by one entity. This allowed the site to be entitled by a single master-developer and then subdivided for individual project build-out. The large size of the site and consolidated ownership facilitated an easier master planning process. A lot could be done on the site—a whole 40 acres could be donated for a new UCSF campus (discussed below), and there was s still considerable land leftover for other uses, including parks and open space. The consolidated ownership meant the city could negotiate (mostly) with just one entity.

Another key feature of the redevelopment was the role of a master plan and the Redevelopment Agency. That sort of comprehensive effort, once completed, mitigated the risk to the master developer and individual developers, because they know the city was committed to bringing the surrounding infrastructure up to speed, and the land uses were all designated in advance. Because the Redevelopment Agency was involved, tax increment financing could be used, whereby the extra taxes generated by the new development were put back to use developing infrastructure and subsidized affordable housing (Laura Adler et al. 2011).

The project had its share of community opposition. Conservationists had expressed concern about the plan including too little open space, and not restoring a wetlands area at the mouth of the China Basin (San Francisco Chronicle 1990). Advocates had pushed for more affordable housing at the site through the 1980s, with one ambitious proposal being 70% affordable housing, proposed by Mayor Agnos (San Francisco Chronicle 1988). Others were concerned that the high number of offices planned for the area would end up "adding to the city's housing and traffic woes" (Massey and Bodovitz 1990).


The overall land use plan for Mission bay includes primarily office, residential, and institutional uses. Source: http://sfocii.org/sites/default/files/FileCenter/Documents/783-MB%20Land%20Use%20Plan.pdf

The project's Environmental Impact Report listed several "areas of controversy," including: increased traffic

- "density of development"
- "visual effects from allowable building heights, especially as would be seen from Potrero Hill"
- water quality, fish, wildlife issues from "increased sewer overflows" and "contaminated soils and groundwater"
- "sufficiency of proposed open space, particularly in Mission bay North"
- "availability of long-term rental units versus conversion of rental units to for-sale condominiums"
- (City and County of San Francisco Planning Department and San Francisco Redevelopment Agency 1999 Page II.42)

However, the opposition seemed to be primarily related not to the development as a whole, but to the specific choices of what to put at Mission Bay. That is, there did not seem to be loud voices demanding that the area be kept industrial and not redeveloped at all. Instead, the concerns were with the specifics of the development plans.

A concert at the new public park along Mission Creek, with housing under development across the inlet. Source: http://urbanland.uli.org/wp-content/uploads/sites/5/2014/05/peterson1_800.jpg

**The role of UCSF**

The project area was not always envisioned as the bio-medical campus it is becoming. Proposals over the years were for a variety of ideas including only housing, a sports-entertainment complex, a Home Depot and Expo Design center and other similar regional-serving retail; the bio-medical vision got underway in the mid-1990s (Laura Adler et al. 2011).

In 1996, Willie Brown was elected mayor of San Francisco. It was reported that the first thing he said he would do as mayor was call Catellus to see about moving the Mission Bay project forward (Laura Adler et al. 2011). Willie Brown had a long history with Catellus, having provided it legal counsel for over a decade during the 1980s.

Concurrently, UCSF had outgrown its Parnassus Campus and was actively shopping around for a site for a second campus, with one in Alameda close to finalized. With these elements in play, Willie Brown and Catellus cemented a land deal whereby the City would provide a streamlined process for Catellus to get the Mission Bay project going and, in exchange, Catellus would agree to donate 40 acres to UCSF for a future second campus (Laura Adler et al. 2011).

UCSF's facilities attracted other biomedical companies. Lab tenants have an incentive to locate near UCSF because of the opportunity to build relationships with scientists from similar and larger companies, as well as the University. These two uses, in turn, attracted venture capitalists from the peninsula, whose interest comes from a desire to be close to the labs and to be able to compete with other VCs who might find the good investment before they do (Laura Adler et al. 2011).

A concert at the new public park along Mission Creek, with housing under development across the inlet. Source: http://urbanland.uli.org/wp-content/uploads/sites/5/2014/05/peterson1_800.jpg

**Financial Viability of New Uses**

Key to the redevelopment's success was the financial viability of the plan. A large, mostly undeveloped parcel of land one mile from downtown is an extremely valuable opportunity for development. The city's growth in the last 30 years created a need for—and, more importantly, financially viable market for—new office and residential uses. Therefore, transforming the area into a new mixed-use neighborhood was far from a pipe dream—it was financially feasible given the surrounding market conditions.

In fact, not only was significant private investment attracted to the site, the potential earnings were so high that the developer was willing to agree to include a relatively high proportion of affordable housing units—28%—and to provide a very generous public benefits package that included infrastructure, parks, shuttle services, and more (Prowler 2005).

Instrumental to this viability was having a diversified market in San Francisco. While planners and the developer thought for a time they would create a biotechnology campus, what made the development "go" in the end was attracting technology entrepreneurs and venture capitalists, with interests including, but not exclusively, biology and health care.

**Conclusion: Criteria for Redevelopment of Industrial Land**

The success of Mission Bay's redevelopment suggests several criteria for when redeveloping industrial land makes sense:

- The land is not substantially in active use for industrial purposes, and is unlikely to be in the future.
- The site is well-located for non-industrial uses, has adequate connectivity for non-industrial uses, and is in the region's core.
- The site is large and has few land-owners. These features make it easier to create a master plan and utilize the tools of (the former) redevelopment agencies, which facilitate redevelopment.
- The community generally agrees that redevelopment is the right step, even if there is disagreement about the specific details of planned uses.
- Having a large institutional user can help spur investment.
- Finally, and most importantly, the market conditions are such that not only is private capital interested in development, their money-making potential is so strong that they take on the development of public benefits, including affordable housing, parks, and other improvements.

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# West Oakland

The West Oakland case study is informed by document review and interviews conducted in late 2015 and early 2016. The document review focused on recent plans and publications, and related evaluations and media coverage. A series of four interviews included:

- A retired city planner who worked for the former redevelopment agency in West Oakland
- A current City of Oakland staff member working on economic development in West Oakland
- A group of land and business owners in West Oakland, working together through the West Oakland Commerce Association (WOCA)
- A real estate developer with several projects in West Oakland

**Background: Industrial Development in West Oakland**

West Oakland has a long history of controversial public intervention and investment – including the closing of the army base; planning by the Redevelopment Agency; the construction and collapse of the Cyprus freeway; and the building of BART tracks through the neighborhood. This complex history has been well documented, but many questions remain about how the past should inform the future of West Oakland. Over the last twenty years the City has sponsored 36 different planning proposals in the area. Despite these various plans, West Oakland has struggled to attract investment and adequately address the needs of some of the city's most vulnerable residents.

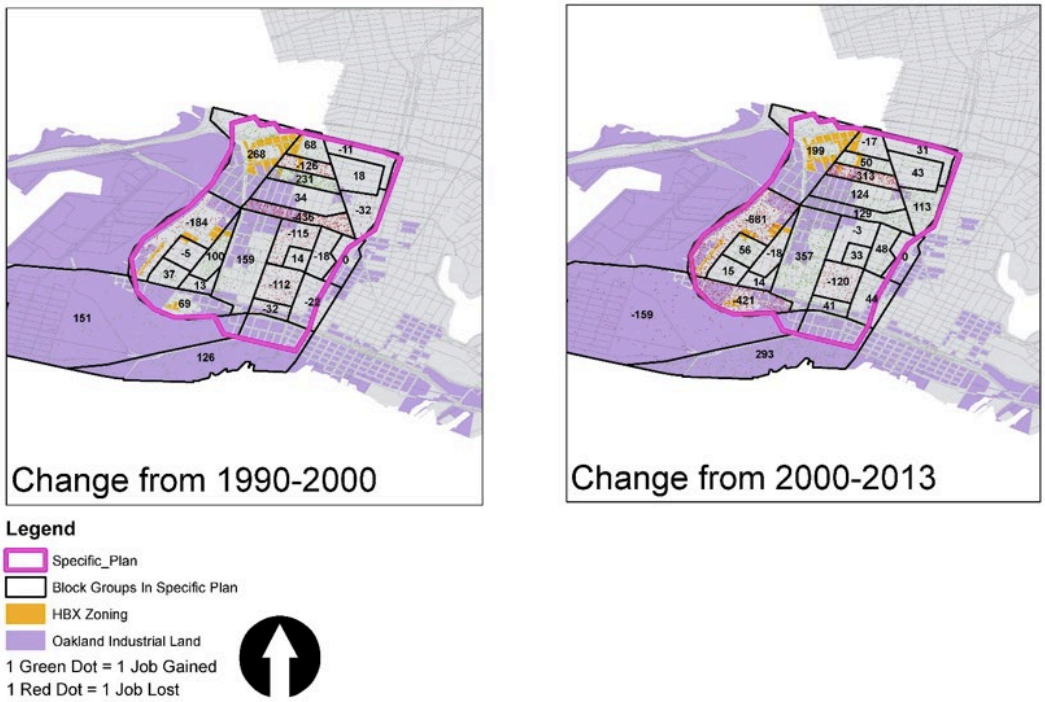
Following national trends in offshoring, over the last twenty years many large companies have left West Oakland. In their place, small, entrepreneurial business and the arts sector have taken over some of the industrial building stock. According to an analysis by Strategic Economics: "in 1992, large businesses accounted for 28 percent of employment in West Oakland, with small businesses (those with under five employees) accounting for just 13 percent. By 2012, small businesses accounted for a much higher share of employment (22 percent) in West Oakland, while large businesses' share of total employment had dropped to 17 percent."

These business trends call for a new approach to economic development in West Oakland. Future development efforts must adapt to a new economy composed of many smaller entrepreneurs instead of a few large employers. An industrial artist/property owner and member of the West Oakland Commerce Association (WOCA) described how previous economic development approaches focused on attracting one large employer like Kaiser Hospital. As a result, the "support for mom and pop entrepreneurs in West Oakland has been overlooked in exchange for trying to attract one game changer."

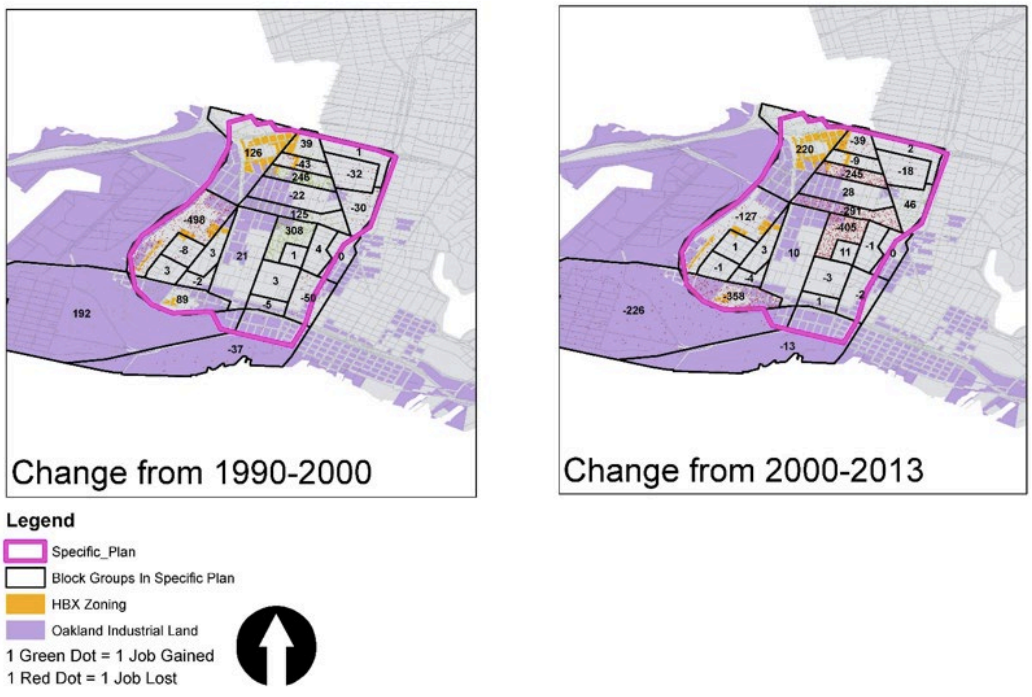
While the large 'game changing' investments have not materialized there has always been a modest flow of business activity in West Oakland given its central location and relatively affordable real estate. Today the area has a variety of commercial and industrial uses occupying approximately 23 percent of land. These industrial businesses include "custom manufacturing, construction, transportation, environmental services and recycling, arts and creative businesses, and professional service and related businesses typically in older industrial buildings."

Our analysis of business dynamics at the block group level over the decades (see figures below) suggests that although many block groups saw job growth in both 1990-2000 and 2000-2013, significant job loss occurred adjacent to the port in recent years (over 1,100 jobs). Looking specifically at industrial land-dependent jobs, job loss in 2000-2013 is even higher, particularly in the northeastern part of the neighborhood. Although there has been job growth in West Oakland, the majority of the new businesses are service-oriented, able to locate in mixed-use areas.

## ALL JOBS




## INDUSTRIAL LAND DEPENDENT JOBS



Another 60 percent of the area is composed of residential neighborhoods that house much of the city's low-income population. West Oakland's household median income is 60% the citywide median and 78% of West Oakland residents are renters, compared to 58% citywide. This mix of different land uses presents a challenging dilemma: how can the city plan for healthy, safe, and affordable residential neighborhoods while also supporting the creation of jobs and a strong economic base?

**The West Oakland Specific Plan (WOSP)**

The most recent planning effort in West Oakland was completed in August of 2014. With the elimination of redevelopment, the City created the new West Oakland Specific Plan (WOSP) to bring together scattered resources and bolster new revitalization efforts. The WOSP's primary focus was not on residential development, but on the industrial areas of West Oakland. As the document explains:

> Some of the fundamental objectives of the West Oakland Specific Plan are to retain businesses that are compatible with surrounding neighborhoods; rehabilitate underutilized, vacant, and neglected properties; create new employment opportunities at living wages; and attract new businesses that contribute to economic and environmental health. These economic development objectives underscore the importance and prominence of retaining and preserving West Oakland's industrial lands and the job base, which it supports. In the interest of growth and change, this Specific Plan acknowledges that new development needs to be compatible with the industrial properties that are so vital to Oakland's economy, yet so scarce and vulnerable to opposing short-term interests.

***WOSP Zoning Changes***

To support this growth the WOSP includes two main components. First, an Environmental Impact Report (EIR) was completed for the area to incentivize and expedite the development process. Second, the Plan amended zoning in order to: "establish more identifiable borders between the established residential neighborhoods and the industrial and intensive commercial business areas; prevent new land use incompatibilities that might adversely affect existing neighborhoods; restore neighborhoods at the residential/ industrial interface; and continue to provide for an ample supply of industrial land within West Oakland to meet existing and projected market demand." Part of this re-zoning involved adding in new areas designated for Housing Business Mix (HBX) and segmenting the Commercial Industrial Mix (CIX) into four, more specific overlay categories (see Figure 1).

**Table 4.8-1: Current and Proposed Zoning, West Oakland Opportunity Areas**

| | |
|---|---|
| **Current Zoning (net acres)** | |
| CIX-1 | 227 |
| IG | 5 |
| M-30 | 38 |
| **Total** | **270** |
| **Proposed Re-Zoning to CIX and HBX Zones** | |
| CIX-1A, Business Enhancement | 133 |
| CIX-1B, Low Intensity | 48 |
| CIX-1C, High Intensity | 66 |
| CIX-1D, Retail Commercial Mix | 7 |
| | 253 |
| HBX, Housing Business Mix | 17 |
| **Total** | **270** |

These zoning changes are part of a history of attempts by the City to integrate residential and industrial uses across Oakland. Previously, conditional use permits controlled many mixed-use developments. To decrease uncertainty caused by the conditional use permits, Oakland introduced the Housing Business Mix (HBX) zoning classification. Historically West Oakland included some parcels with the HBX-2 classification that "intends to provide development standards for areas that have a mix of industrial, certain commercial and medium to high density residential development. This zone recognizes the equal importance of housing and business."

The WOSP introduced a new HBX-4 classification that intends to "provide development standards for live/work, work/live, and housing in areas with a strong presence of industrial and heavy commercial activities." This new HBX-4 refines the City's density and permitted use requirements for live/work and work/live developments, but several stakeholders interviewed felt that the new requirements were not adequate. During the development

of HBX-4, the West Oakland Commerce Association advocated for the zoning to require a 50/50 mix of residential and commercial/industrial uses. Ultimately, however, this 50/50 mix was not included in the new classification by the City planning staff.

New CIX classifications were created, in part, to better control for the preservation of unique architecture in certain areas and the demolition of less attractive buildings in others. The four classifications were also intended to concentrate heavier industries within certain areas. New CIX zoning was proposed along with a "T" Combining Zone Overlay for areas with heavy truck uses near the Port. This overlay was applied primarily to one area under the I-880 freeway, and was advocated for by those working on the attraction and retention of industrial businesses in West Oakland.

***Projected Zoning Impacts***

The WOSP anticipates that the EIR and new zoning guidelines would catalyze the development of enough commercial and industrial space to accommodate as many as 22,000 new jobs. By providing opportunity for residential infill in certain areas the plan also projected the construction of up to 4,980 new housing units.

Yet some groups are concerned about negative impacts of these zoning changes. For example, the WOSP changes potentially exacerbate the tensions between residential and industrial development. The Housing Business Mix (HBX-2 and HBX-4) zoning was introduced in several areas that were previously zoned for only commercial uses under CIX. While the new HBX-4 regulations applied to many of these areas attempt to better define mixed-use requirements, it does not require a 50/50 mix of residential and commercial uses for which WOCA was advocating. Given the higher financial returns for residential development, it is probable that the majority of these newly zoned parcels will be put to residential uses, further restricting the available industrial land in West Oakland.

In addition to the HBX zoning issues, others have expressed concern about the highly prescriptive zoning under CIX. For example, the new CIX-A classification requires a full design review and demolition permit criteria to preserve historic character except if the building is considered condemnable. This creates a perverse incentive for property owners to let their buildings fall into disrepair as a way to avoid the design review process. An industrial business owner and board member of WOCA explained: "In the Specific Plan zoning the City tried to control the economics, which just can't be done at that micro scale."

**WOSP Implementation Challenges**

The WOSP describes ambitious goals of growing industrial business and improving the conditions for West Oakland residents. While its long-term impacts are still unknown, recent developments demonstrate the complex challenges and conflicts that arise when trying to plan for a viable mix of residential and industrial uses.

***Economic Conflicts: Residential v. Industrial Development***

The WOSP proclaimed itself to be focused on industrial and commercial activity, but heated debate during the planning process focused on residential displacement. One local website summarized some of the community concerns about WOSP stating "rather than focusing on the needs of long-term and working class residents, WOSP is re-writing the rules for developers and financial capital to ease their access to the city by re-writing the zoning regulations and providing them with a pre-packaged Environmental Impact Report." For many, the WOSP is simply continuing decades of government policies – from urban renewal to federal disinvestment – that have failed to address the actual issues facing minority and low-income residents of West Oakland.

Both developers and business owners interviewed agree that there is clear need for more services and affordable housing in West Oakland, and that the community must be organized to ensure these priorities are incorporated. In an interview, a West Oakland real estate developer reiterated this sen-

timent stating: “given the influx of capital that’s coming to the area, neighbors will get steamrolled if there isn’t a strategy.” Members of the West Oakland Commerce Association (WOCA) also underscored the need for affordable housing, but added “there is no affordable housing if you don’t have a job.” They expressed frustration that the planning process for the WOSP was entirely dominated by the debate about gentrification and residential displacement, leaving no room to develop real strategies to grow jobs and business in the area.

Given the increasing demand for real estate across the region, members of the West Oakland Commerce Association noted that many industrial property owners in the area are waiting for an opportunity to sell for higher, residential prices. This, in combination with some of the stricter design review requirements under CIX zoning, has incentivized some property owners to avoid upkeep of their existing industrial buildings. To address this issue of abandoned buildings, WOCA created the Business Alert group that works with the City to identify problematic properties. Many of these problematic owners are holding on to their property in hopes of selling for a higher future return. The Business Alert group has had some initial success: four owners have moved towards selling their properties after threats from the City to enforce codes and levy fines. Yet at the same time WOCA members expressed a fear that identifying these blighted properties may give the city another reason that the area should be ‘scrubbed’ and used for residential purposes.

Lastly, for the new CIX and HBX zoning there is still tension over how to define and monitor ‘work/live’ and ‘live/work’ developments. The requirements for these developments are very loose and not strongly enforced. For example, one developer recently proposed a ‘work/live’ development in an area zoned for CIX, requiring a variance because residential is not permitted in the original zoning. The development proposed 42 units on a one-acre site, creating a density and unit size that would preclude many businesses from being able to use the space. In this case WOCA worked with the City and the developer to increase the unit sizes (consequently lowering the financial returns of the project).

While the WOSP set out to create clear development guidelines, in practice the City has not adequately defined and enforced zoning and code requirements. Further, because the 50/50 requirement for industrial/residential use proposed by WOCA was not included in the new HBX zoning, the City has limited power to ensure there is a mix of uses in those areas. This creates development loopholes that allow more lucrative residential development to take over land previously designated for industrial uses.

***Land Use Conflicts: Residential v. Industrial Logistics***

Beyond the economic conflicts between residential and industrial zoning, the WOSP implementation also highlights land use conflicts encountered when attempting to blend residential and industrial activity. The plan attempts to address the issue of residential/industrial buffers through the introduction of Housing Business Mix (HBX) zoning. The WOSP explains that the HBX zone “recognizes the equal importance of housing and business, allows residential and business activities to compatibly co-exist, provides a transition between industrial areas and residential neighborhoods, encourages development that respects environmental quality and historic patterns of development, and fosters a variety of small, entrepreneurial, and flexible home- based businesses”

Given the economic preference for residential development in the HBX areas discussed above, many industrial business owners fear that this new zoning will not create buffers, but simply eat away at more industrial land. A West Oakland business owner and member of WOCA noted that this encroachment has been happening for a while, stating: “when I started working in West Oakland, the industrial-residential buffer line was San Pablo, now it has grown to Adeline.”

A related encroachment on industrial land has taken the form of road diets proposed through the

WOSP. The stated goal was to improve the pedestrian experience by reducing the number of lanes and incorporating new protected bike lane on Adeline Street. Currently the segment of Adeline that runs through West Oakland includes primarily residential uses on the east side and industrial uses on the west; a segment of the road was rezoned HBX to reflect that mix. One City staffer observed that the road diet plan is partially motivated by urban designers who believe both sides of the street should “match.” While these urban design interventions would be a valuable new amenity for residents, the proposed design conflicts with the truck parking and loading areas used by many industrial businesses located along Adeline. One industrial business owner on Adeline Street explained this tension, stating: “I’m in favor in having bike lines — but to throw the term back to them – it has to be mixed-use." The business owner also identified other, better-suited bicycle corridors in West Oakland, noting that the Adeline road diet is representative of an attitude held by some City staffers who believe bicycles and pedestrians should be prioritized everywhere. Despite requests from industrial businesses to reconsider the road diet, the City has indicated that it will move forward with the plan. However, construction has not yet begun on the bike lanes, so the ultimate impact on Adeline businesses is still to be determined.

The proposed road diet, in combination with the new HBX zoning along Adeline, may also lead to further encroachment of residential uses into industrial areas. For example, a purely residential development was recently proposed on Adeline Street, in between several industrial businesses. One business owner anticipated that this development would further limit the surrounding industrial uses when new residents complain about the businesses’ noise and logistics. Another WOCA member noted that the businesses along Adeline represent the kind of light industrial uses (e.g. makers, specialty food and custom manufacturing) that could be integrated with other uses if approached with appropriate planning and design. Many of these businesses also provide good paying jobs for low-skilled workers. Instead, with the current plans, the business owner worries that “the City is going to choke off exactly the kind businesses they want to have."

While the WOSP’s proposed pedestrian/bicycle improvements and HBX zoning threatens industrial land in many parts of West Oakland, the Plan may provided one bright spot for the preservation of industrial uses. The “T” Combining Zone Overlay included on a section of CIX-zoned parcels near the Port of Oakland prioritizes businesses requiring heavy truck use. This Overlay has already helped to encourage one new industrial development in that area.
If serious about creating separation between industrial and residential activities, the City will have to refine and strengthen the requirements of development along shared corridors and in buffer areas – in CIX and HBX areas. For example, the current requirements place the entire burden of creating buffers on industrial buildings. As a West Oakland residential real estate developer explained: “I’m the person that’s going to challenge the cushion.” Only requiring industrial development to accommodate buffers creates another mechanism where industrial land is encroached on by residential uses.
Across West Oakland these ‘soft buffer areas’ created through weak HBX zoning requirements and residential-oriented infrastructure improvements have also led to rising land prices. No matter the current zoning, many landowners are waiting to sell their land at higher rates. Observing the encroachment in these buffer areas, landowners anticipate that residential uses will eventually be viable on their industrially zoned land. This further constricts the amount of available industrial land, as many businesses cannot pay the higher rates that the landowners are anticipating.

***Funding Conflicts: Public v Private Investment***
The challenges faced by industrial land are exacerbated by the lack of funding available to support business attraction and retention. The implementation section of the WOSP describes how growth in West Oakland will initially need to be catalyzed by public investment. Yet the document also acknowledges, “in the nearer term, there are uncertainties as to the availability of public funding to implement this strategy.”

Without public funding it is difficult to support the development of a robust cluster of industrial businesses in West Oakland. Yet there are still other ways that the City could drive the WOSP's vision by partnering with businesses and landowners. Members of WOCA expressed frustration in the City's limited support and resistance to partnership.

Further, the WOSP identifies key challenges to growing the number of businesses in West Oakland, including inadequate infrastructure, environmental contamination, and crime. According to WOCA business owners the City has provided little support in addressing theses issues. Instead the City has often "thrown the book" at new businesses moving to the area, requiring them to upgrade facilities to incredibly high and unnecessary standards.

A final public funding challenge is the low prioritization given to grant applications for industrial attraction and retention activities under the current 'Priority Development Areas' (PDA) system. Given the tendency of PDAs to favor residential, mixed-use development, a supplemental 'Priority Industrial Area' could provide an important new stream of resources for industrial businesses.

**Future of Industrial Land in West Oakland**

As described above, the WOSP provides important examples of the conflicts involved in determining where and how to prioritize industrial land. This case study concludes by outlining the arguments for and against continued industrial development in West Oakland. These arguments may also be useful in developing regional criteria for future 'Priority Industrial Areas.'

***Against Prioritizing Industrial Land in West Oakland***

*Challenges of Residential-Industrial Buffers*

Issues of environmental justice are clear in West Oakland. For many years low income and minority communities have been exposed to pollution and health-hazards from the adjacent industrial activities. While the WOSP attempts to create new industrial-residential buffers, they are difficult to create through zoning alone. For example, the freeway provides an effective buffer between West Oakland and the industrial activity at the Port, however similar physical infrastructure does not exist within the neighborhoods. A retired city planner who worked in West Oakland, underscored this challenge by saying "buffers are kind of like diet butter, it's really difficult to have it all." As seen with the Adeline road diet, residential and industrial tenants also have very different transportation and public realm needs that are not easily mixed along shared thoroughfares. Understanding these land use conflicts, what industries/sectors identified could the City prioritize that would also promote the wellbeing of West Oakland residents? The information sector is likely more compatible with residential uses than construction or urban manufacturing, yet the current demand is for the latter not the former given the low quality of infrastructure in West Oakland.

*Significant Investment Required in Public Safety and Industrial Infrastructure*

The WOSP includes a section that identifies obstacles to community and economic development. The section found: "the leading indicators of blight in West Oakland include underutilized and vacant land, deteriorated and dilapidated buildings, high rates of vandalism and crime [...], inadequate public improvements and lack of private investment." Each of these obstacles make the attraction of new businesses very difficult. WOCA members note that many business owners are hesitant to locate in West Oakland because of these safety and infrastructure issues. Business owners are worried about the safety of their employees coming to work, and are deterred by the significant upfront cost required to improve the infrastructure in and around their building. The Implementation section of the WOSP details the needed infrastructure investment and identifies potential budget sources. However, this documentation has not translated into actual investment. Business owners in West Oakland observe very little investment or construction activity 'on-the-ground'. While there may be a patchwork of public investment slowly addressing the needs identified in the WOSP (e.g. measure BB

funds for street repaving ), these plans and their connection with the larger redevelopment strategy are not well articulated. In the absence of significant public investment to address these obstacles, developing a thriving and sustainable cluster of industrial businesses in West Oakland will be extremely difficult. Alternative cities (e.g. Stockton) many have less challenges, requiring less public investment to preserve industrial land in the region.

*Actual Demand and Job-Creation Potential*
A second reason against prioritizing industrial land in West Oakland comes from skepticism that the actual demand for industrial space in West Oakland is as high as projected. The WOSP projected that "industrial space and the availability of industrially designated land is a declining resource within the central Bay Area, while business demand for such land and space continues to grow. This disparity between business demand and available space supply will increase business interest in West Oakland over time." Yet at the same time many industrial businesses are moving further out to areas like Stockton where real estate prices are lower, and some see this as a natural progression. A West Oakland real estate developer noted that he is not seeing a shortage of industrial spaces in West Oakland. Instead he believes the problem may be that there are not enough companies with the right business models to afford the comparatively higher rents. He described his experience working in San Francisco's SOMA neighborhood in the 1990s when similar industrial-residential conflicts were occurring. Many thought that preserving industrial buildings would bring jobs, but that was not the reality. Based on these experiences, he posed the question: "if we are going to protect the industrial buildings in West Oakland who will move in?" Yet, very low vacancy rates and the steady employment growth in the neighborhood suggest that the demand exists.

***For Prioritizing Industrial Land in West Oakland***
*Existing Building Stock*
Previous analysis of industrial businesses in West Oakland found that the many businesses are attracted to the area "due to the availability of affordable large-scale industrial work spaces." In the WOSP the City also identified the Opportunity Sites as "among the few large commercial/industrial properties remaining in the central Bay Area." Given this existing building footprint in West Oakland an opportunity exists to attract and retain businesses that are moving further out to areas like Stockton. This will require creatively adapting and retrofitting the building stock to meet the evolving needs of industrial businesses – for example: finding ways to incubate small businesses while also providing larger spaces for growing businesses.

*Unique Industrial Artist Sector*
An asset for businesses in West Oakland is the industrial artist community. The WOSP notes that many of the businesses moving to the area "benefit and draw inspiration from their close proximity to what some regard as the foremost industrial arts community in the nation." This combination of more traditional industrial activities like manufacturing and construction with the creativity of the arts sector presents an exciting opportunity for new ideas and products. Many are particularly worried, however, about the vulnerability to displacement faced by industrial artists. Recognizing this problem, the Mayor is convening a task force to determine how to keep artists in Oakland. Initial recommendations from the task force focused on real estate acquisition strategies, financial assistance, and technical assistance strategies to help preserve artist housing and workspaces. The task force has not yet addressed industrial land policies, but intends to discuss them in a future white paper. Aligning this work of the Artist taskforce with a larger push to prioritize and protect other industrial activity, could lay the groundwork for exciting new innovations.

*Regional Location*
The most cited reason to maintain industrial land in West Oakland is its location within the region. The area is directly in the center of the Bay Area, providing ideal access to employees and markets. Many of the business owners and employees live close by, reducing commuting distances and con-

gestion. In a recent profile, the owner of a small food manufacturing business in West Oakland described how: “we have people who ride their bikes or walk to work,” adding “there is a halfway house nearby for ex-convicts going through transition. They’re some of our best workers.” In terms of market access, an industrial property owner and member of WOCA, described a subset of industrial businesses whose logistics require close access to markets in core areas like Oakland, Berkeley, and San Francisco. Often, the business owners live nearby, in the Oakland hills or the suburbs beyond, and it is well established that the CEO’s residential location will drive firm location. Thus, these businesses typically prefer to locate in between Albany and San Leandro and George believed that West Oakland should better position itself to absorb more of that activity.

The final, and perhaps most critical characteristic of West Oakland’s location is its connection with the Port. While the WOSP does reference opportunities to develop industrial activity alongside the Port, many observed that there is little actual alignment between the two areas. The Port provides unmatched transportation access that cannot be replicated in other areas in the region. Coordinated infrastructure investments in West Oakland and at the Port could support, for example, the development of a regional cluster of food processing and custom manufacturing businesses. If done strategically these infrastructure investments could also help to create better buffers between industrial and residential uses and reduce vehicle miles traveled by providing businesses with direct connections to rail and shipping transport.

Interviews

- 12/2/15 – Wendy Simon: former planner for the City of Oakland Redevelopment Agency
- 12/4/15 – West Oakland Commerce Association members and City of Oakland Economic Development Office
- George Burtt: Secretary and one of the founders of WOCA; industrial property owner.
- Jon Sariugarte: Member of WOCA; industrial artist and business owner; industrial property owner
- Lauren Westrich: WOCA board member; industrial land and business owner
- Margot Prado: City of Oakland, Senior Economic Development Specialist
- 12/10/15 – Rick Holliday: West Oakland developer
- 2/22/16 -- Margot Prado: City of Oakland, Senior Economic Development Specialist

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**Potential Criteria for Industrial Land Preservation and Conversion**

This analysis suggests that the conversion of industrial land is proceeding at a slow pace, but is likely to accelerate in coming years due to the visions put forward in general plan and PDA designations. To guide city decision-making about where to preserve industrial land and where to convert it, MTC/ABAG should develop criteria. Figure 10 presents potential criteria in terms of transportation, economy, equity, site characteristics, and environment. These may serve as the basis for designating Priority Industrial Areas in the future.


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|---|---|---|
| **Transportation** | • Proximity to freight and/or port facilities<br>• Low VMT for workers on industrial land | • Proximity to transit<br>• High VMT for workers on industrial land |
| **Economy** | • Production or related employment<br>• Proximity to business clusters/suppliers/markets<br>• Critical supplier to local businesses<br>• Industry stable or growing | • High-density non-production employment<br>• Proximity to markets/customers<br>• Limited linkages to local economy<br>• Industry in decline |
| **Equity** | • Offers middle-wage jobs for less-skilled workers | • Potential for affordable housing |
| **Land use/zoning compatibility** | • Surrounded by medium/heavy industrial zoning | • Adjacent to residential |
| **Environment** | • Brownfield site, remediation infeasible | • Environmental health hazard for surrounding communities (especially if historically disadvantaged) |
| **Adequacy of supply** | • In areas with projected deficit of industrial land<br>• Low vacancy rates for industrial buildings | • In areas with projected surplus of industrial land<br>• High vacancy rates for industrial buildings |

Figure 10. Criteria for Industrial Land Preservation and Conversion