East Bay Economic OUTLOOK 2017-18







EAST BAY ECONOMIC OUTLOOK 2017-18

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ABOUT THIS REPORT

The **East Bay Economic Development Alliance** (East Bay EDA) is a public/private partnership serving the San Francisco Bay Area's East Bay (Alameda and Contra Costa Counties). East Bay EDA's mission is to be the regional voice and networking resource for strengthening the economy, building the workforce and enhancing the quality of life in the East Bay.

One of East Bay EDA's core strategies is to provide valuable information about the trends impacting the East Bay economy. Each year we produce an annual East Bay Economic Outlook report, which is both a forecast and a summary of key economic indicators for the East Bay as it compares to the Bay Area region, the state of California and the nation as a whole.

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East Bay Economic Development Alliance

1221 Oak Street, Suite 555, Oakland CA 94612 (510) 272-6746 | info@EastBayEDA.org HE EAST BAY ECONOMY had a strong 2016 and is expected to continue on a stable course throughout 2017. From February 2016 to February 2017, nonfarm employment in the East Bay grew by 1.9% (21,200 jobs), outpacing the nation's 1.6% growth. The East Bay labor market growth outpaced many other urban economies including Denver, Los Angeles, New York City, Chicago and Boston, among others. These job gains will drive the region's unemployment rate below 4% by the end of 2017. During this period, the growing labor force participation will start to outpace job growth, beginning a gradual process of loosening conditions in the labor market.

East Bay home prices remain considerably more affordable, in absolute terms, than prices in the neighboring communities of San Francisco and the South Bay. The supply constraints that have hindered the East Bay housing market in recent years took deeper root in 2016, as homebuyer demand continued to be fueled by the region's affordability advantage, sustained income and population growth. Although median household income (\$82,410 in 2015) grew by nearly 17% from 2010 to 2015, housing costs have appreciated at a faster rate.

With the East Bay economy on track for continued economic expansion in the year ahead, Beacon Economics is projecting another strong year for consumer spending activity in the region. This is welcome news as one of the primary components of the East Bay's economic growth over the last five years has been strong consumer spending activity.

The report that follows examines the recent performance of the East Bay economy and looks at trends in the region and how they compare to San Francisco, the South Bay and the state overall.

Key highlights from the analysis include:

- The East Bay labor market moved forward at a healthy pace in 2016, matching statewide job growth rates and surpassing average job growth rates in the nation. The region also boasted a lower unemployment rate in 2016, compared to the state and nation.
- Since 2010, the proportion of East Bay residents who commute outside of the East Bay for work has steadily increased.
 From 2010 to 2015, the share of East Bay residents commuting to San Francisco County has increased by nearly 4 percentage points.
- As local incomes continued to rise, the East Bay economy has benefited from higher spending. From 2015 to 2016, consumer and business spending in the East Bay continued to increase at a vigorous pace. The region's taxable sales grew 5.0% from 2015 to 2016, moving from \$45.4 million to \$47.7 million, placing the East Bay ahead of San Francisco, the South Bay, and the state as a whole in terms of percentage growth.
- Venture capital funding was a very bright spot for the East Bay, as total funding increased significantly from 2015 to 2016, driven in large part by strong movement in Biotechnology, Financial Services and Software.
- There was sustained demand for East Bay commercial real estate due to tightening of vacancy rates across all the key
 categories in 2016 even as developers added new projects at a robust pace. Despite rapidly rising rents for commercial
 properties, the East Bay is still more affordable than the South Bay and San Francisco, and thus continues to entice
 businesses to the region.
- Residential construction activity picked up somewhat over 2016, particularly in the single-family segment of the market.
 However, new housing construction remains well below its historical pace and has done little to curb the extremely low inventory of homes for sale.
- With the cost of living gap growing in the East Bay, the ability for median income earners to stay and afford housing becomes an increasing challenge due to higher income earners relocating to the area. These conditions may amplify the displacement of small businesses and residents, unless comprehensive retention strategies are in place.

Building on the gains achieved in 2016, economic growth in the East Bay is expected to remain strong in 2017. Affordability remains a vital asset for the East Bay, and the region is projected to see continuing gains from this advantage for the foreseeable future.





OVERVIEW

HE EAST BAY'S LABOR MARKET continues to post steady gains and is poised for further growth in 2017 and 2018. Recent revised estimates show that its growth in 2016 was much better than

previously reported. Nonfarm jobs from December 2015 to December 2016 grew by 3.1%, rather than by the 2.7% originally estimated by the State's Employment Development Department (EDD). East Bay nonfarm employment grew by 1.9% (21,200 jobs) from February 2016 to February 2017, outpacing the 1.6% growth in the nation during the same period. Although this is slightly behind the continued extraordinary growth in the San Francisco Metropolitan Division (MD) (2.7%), the East Bay surpassed the San Jose Metropolitan Statistical Area (MSA) and the state as a whole.

33.1% workers commute out

33.1% of workers in the East Bay commute out of the East Bay each day.

45% of workers

work at firms with less than 50 employees.

Largest Sectors

(by number of workers)



21,200 more jobs

East Bay added 21,200 jobs from 2016-2017.

The East Bay's unemployment rate fell to 4.0% in February 2017, compared with 5.0% in the state of California. Over the last year, the Health Care sector (5,600 jobs) led in absolute job gains, and the Professional, Scientific, and Technical Services sector (5.5%) was one of the job growth leaders in percentage terms. From a longer-term perspective, the East Bay's Construction sector has led in percentage gains, increasing payrolls by 12.9% from February 2015 to February 2017 and outpacing every other major industry. This indicates that cities are recognizing the pressing need for more office space and housing, and that developers are continuing to take notice of the immense opportunities in the East Bay for residential and commercial developments. This is a welcome sign for the region, as costs for both owner-occupied and rental units have increased steadily. New housing stock will be necessary to offset high housing costs if the East Bay is to grow and attract new residents in the years to come.

Outbound commuting among East Bay residents remained most common in high-skill industries—Professional, Scientific, and Technical Services and Information—which means that these workers are bringing home relatively higher wages. Many of these workers moved to the East Bay for more affordable housing and improved quality of life while working in San Francisco or San Jose. They represent a local talent asset that can be leveraged to attract businesses to the East Bay and to foster growth at existing firms.

Overall, the East Bay is poised for steady growth, and Beacon Economics forecasts a payroll employment increase of at least 1.5% during 2017.

LABOR MARKETS

Employment in the East Bay increased at a faster pace than in the nation as a whole and in many other urban economies. The East Bay outpaced Denver, Los Angeles, New York City, Chicago, and Boston among others. From February 2016 to February 2017, nonfarm employment in the East Bay grew by 1.9% (21,200 jobs), outpacing the 1.6% growth in the nation over the same period. During this time, job growth in the East Bay only matched the state's (1.9%), however, and fell short of San Francisco's (2.7%). Local business growth is about average for California, but the East Bay's employment growth benefits greatly from its proximity to fast growth in other parts of the Bay Area.

As noted above, growth in the East Bay from December 2015 to December 2016 went from an estimated 2.7% to 3.1%. That translates into an additional 4,700 new jobs across nonfarm employment sectors and puts the East Bay well ahead of the 2.2% growth in the nation overall over the same period.

The East Bay's 4.0% unemployment rate in February 2017 is well below the rate in the nation (4.7%) and the state overall (5.0%), but higher than in the tight labor markets in San Francisco (2.9%) and San Jose (3.6%). As unemployment fell in the East Bay, the labor force continued to expand over the past year, growing by 3.100.



Delta Pacific Products in Union City photo by: Don Feria Photography

The East Bay region has transformed into a higherskilled labor market more quickly than the rest of the state, while losing fewer of its mid-skilled jobs.

EAST BAY EMPLOYMENT

Growth in the East
Bay created 4,700 new
jobs across nonfarm
employment sectors and
puts the East Bay well
ahead of the 2.2% growth
in the nation overall over
the same period.

After increasing early in the recovery from the Great Recession, average hours worked in the East Bay reached a plateau of approximately 35.5 for three years before edging down in recent months. The average work week in the East Bay was 33.7 hours in February 2017 on a seasonally adjusted basis, down from 35.0 in February 2016 but up from 33.5 hours in February 2012. The decrease in hours does not seem to be a result of workers moving into parttime positions because of a sluggish economy. The number of those employed part time for economic reasons has steadily declined across the state, falling by 6.4% from February 2016 to February 2017.

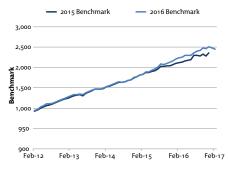
Employment gains have been seen across a broad range of sectors in the East Bay in recent years, and the region is creating jobs on both ends of the wage spectrum. Some of the fastest-growing sectors over the last year have been Wholesale Trade (6.2%), Financial Activities (5.4%), and Educational Services (5.1%). Such high-skilled sectors as Professional, Scientific, and Technical Services (5.5%) and Information (2.5%) also posted significant growth. The East Bay's largest sector, Government, grew by 2.6%.

Health Care led in absolute job gains, increasing payrolls by 5,600 from February 2016 to February 2017. Local Government (5,300 jobs) and Professional, Scientific, and Technical Services (5,100 jobs) followed.

Construction also remains a bright spot, with payrolls expanding by 2.3% from February 2016 to February 2017. Construction sector payrolls have expanded by 12.9%

East Bay Payroll Employment

Benchmark, Feb-12 to Feb-17



Source: CA Employment Development Department

East Bay Payroll Employment Growth by Industry

	Feb 2017	% Ch	ange
	(thousands)	1 yr.	2 yr.
Total Nonfarm	1,145.3	1.9	5.8
Total Private	968.4	1.8	5.9
Wholesale Trade	51.2	6.2	8.8
Prof Sci and Tech	98.8	5.5	9.7
Financial Activities	59.6	5.4	8.3
Educational Services	23.9	5.1	8.8
Health Care	165.4	3.5	7.8
Government	176.9	2.6	5.4
Information	26.8	2.5	11.0
Construction	68.3	2.3	12.9
Leisure and Hospitality	112.8	2.3	8.4
Other Services	39.4	1.2	4.7
Transport, Warehouse, Util.	38.5	0.7	4.5
Natural Resources/Mining	0.8	-0.1	-11.1
Manufacturing	88.7	-1.3	3.9
Management	22.1	-2.4	-13.7
Admin Support	60.5	-2.8	1.5
Retail Trade	111.6	-2.8	-0.7

Source: CA Employment Development Department

since February 2015, making it the fastest growing sector over this period and reaffirming the observation that developers are capitalizing on residential and commercial development opportunities in the area.

A few major sectors saw declining employment over the last year: Retail Trade (-2.8%), Administrative Support (-2.8%), Management (-2.4%) and Manufacturing (-1.3%). Although job losses are always a concern, these sectors lost only 6,600 jobs, 0.6% of total jobs in the region. As advanced manufacturing continues to affect jobs in the manufacturing sector through technological advancements and automation, improved efficiencies and safety standards will also contribute to economic gains.

High-tech jobs are a strong presence in the East Bay. The Computer Systems Design and Related Services sector was a significant source of new jobs, generating 1,200 new positions from February 2016 to February 2017. And demand for skilled workers extends well beyond tech jobs.

Architectural/Engineering Services and Information Services combined to create 2,000 jobs in the East Bay last year as well.

INDUSTRY CONCENTRATION AND FIRM SIZE

In assessing job numbers, it is helpful to note that the industrial composition of the economy in the East Bay is noticeably different from San Jose's and San Francisco's. The latter has a higher share of payroll jobs in Professional, Scientific, and Technical Services and Tourism/



John Muir Hospital in Pleasanton photo by: John Muir Health

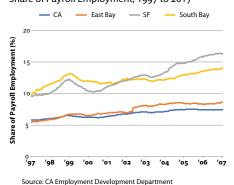
Share of Total Payroll Employment by Industry

	East Bay		San Fra	San Francisco		San Jose		California	
	2017	1997	2017	1997	2017	1997	2017	1997	
Government	15.4	17.8	11.6	12.5	8.8	10.0	15.2	16.4	
Health Care	14.4	9.9	9.6	8.2	11.0	6.4	13.3	8.9	
Leisure and Hospitality	9.9	7.6	12.8	11.4	9.6	7.2	11.6	9.4	
Retail Trade	9.7	11.1	7.3	8.7	8.0	9.0	10.1	11.0	
Prof, Sci, and Tech	8.6	5.4	16.2	9.6	14.0	9.8	7.4	5.7	
Manufacturing	7.7	11.6	3.4	6.8	15.2	26.5	7.8	13.8	
Construction	6.0	5.3	3.6	3.4	4.4	4.0	4.7	4.2	
Admin Support	5.3	6.5	5.7	6.5	5.8	7.3	6.5	6.2	
Financial Activities	5.2	4.9	7.2	9.8	3.3	3.4	5.0	5.6	
Wholesale Trade	4.5	4.9	2.6	3.7	3.4	4.5	4.4	4.5	
Other Services	3.4	3.2	3.7	4.0	2.6	2.8	3.4	3.4	
Transport, Warehouse, Util.	3.4	4.2	4.4	6.5	1.5	1.8	3.6	3.6	
Information	2.3	3.3	6.4	3.7	7.0	3.0	3.2	3.5	
Educational Services	2.1	1.4	2.6	1.7	4.1	2.5	2.2	1.5	
Management	1.9	2.7	2.8	3.4	1.2	1.7	1.4	2.0	
Natural Resources/Mining	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.2	

The East Bay is more concentrated in Retail Trade, Health Care, Government, and Construction, largely inward-facing industries serving the local population.

EAST BAY EMPLOYMENT

Professional, Scientific, & Technical Share of Payroll Employment, 1997 to 2017



Manufacturing Employment Share of Payroll Employment, 1997 to 2017

Source: CA Employment Development Department

Leisure and Hospitality, while San Jose's is more concentrated in Professional, Scientific, and Technical Services and Manufacturing. The East Bay is more concentrated in Retail Trade, Health Care, Government, and Construction, largely inwardfacing industries serving the local population.

The East Bay's job structure has been changing, however. Over the last 20 years, encompassing the dot-com collapse and the Great Recession, the East Bay region has seen growth in Professional, Scientific, and Technical Services jobs, with 3.2 percentage points more of those jobs in the East Bay today than 20 years ago. This outpaces California as a whole, which saw shares rise by 1.7 percentage points over the same period.

The East Bay's Manufacturing sector has also been somewhat more resilient over the last 20 years, with its share of total employment falling by 3.9 percentage points relative to California's -6.0 percentage points, San Francisco's -3.4 percentage points, and San Jose's -11.3 percentage points. As a result, the region has become a higher-skilled labor market more quickly than the rest of the state, while losing fewer of its mid-skilled jobs.

The East Bay has a large small business community, with a higher concentration of small firms than San Francisco and San Jose. Moreover, 85% of East Bay workers are employed at businesses with fewer than 500 employees. Firms with fewer than 50 employees made up 45.1% of employment in the region, compared with 40.7% in San Francisco and 34.5% in San Jose. These small businesses have been a huge asset to

the region during the recovery and expansion, with businesses with fewer than 500 employees adding more than 100,000 jobs from 2010 to 2015. The distribution of employment by size of business in the East Bay indicates that the region is well equipped to support small businesses. The region contains a number of government and nonprofit accelerators, incubators, business assistance centers, business resources and business incentive programs. It has successfully grown large businesses as well, although it is home to fewer large businesses and corporate headquarters than its neighbors.

Employment Shares % by Size of Business, 2015

	Number of Employees						
	0- 50- 100- 49 99 499 500						
East Bay	45.1	14.4	26.0	14.5			
San Francisco	40.7	12.6	24.6	22.1			
San Jose	34.5	12.0	22.3	31.1			
California	40.7	14.0	24.6	20.7			

Source: CA Employment Development Department

COMMUTING

Information about where East Bay residents work reveals that the region has a significant share of outbound commuters. In 2015, roughly 33.1% of workers in the East Bay commuted out of the area each day, with San Francisco County and Santa Clara County as the most popular destinations.

Place of Work for East Bay Residents

County of Work	Employed Residents 2015	2015 Share %
East Bay	923,784	66.9
Other	177,478	12.9
San Francisco	141,795	10.3
Santa Clara	92,102	6.7
San Mateo	45,396	3.3
Total	1,380,555	100.0

Source: U.S. Census Bureau, American Community Survey

Since 2010, the share of East Bay residents who commute outside the East Bay for work has steadily increased. This trend is most pronounced among those commuting to San Francisco County. From 2010 to 2015, the share of East Bay residents commuting to San Francisco County has increased by more than 3 percentage points. In order to keep up with demand to both San Francisco and the South Bay, the Bay Area Rapid Transit (BART) continues to expand services. Their Warm Springs station began service in late March 2017 and is expected to serve between 4,700 and 7,200

riders per day. Completion of the Berryessa extension to Silicon Valley is anticipated by the end of the year.

Outbound commuters tend to be some of the highest-skilled residents of the East Bay, working in Utilities (46.5%), Professional, Scientific, and Technical Services (45.5%), and Information (45.1%). Clearly, many Bay Area residents are taking advantage of more affordable housing and the high quality of life in the East Bay, while commuting to nearby counties for jobs. Although this puts strain on the region's infrastructure, the East Bay benefits from these commuters over the short run through increased demand for housing and more spending in the local economy. Over the longer term, these outbound commuters represent a significant local talent asset that can be leveraged for a variety of economic development efforts.

Because of employment opportunities across the Bay Area and the relative affordability of the East Bay, Alameda and Contra Costa counties saw significant population inflows from 2015 to 2016. In fact, they received the third and fourth-highest number



El Cerrito Del Norte Bart Station photo by: Robert Couse-Baker

Many Bay Area residents are taking advantage of more affordable housing and the high quality of life in the East Bay, while commuting to nearby counties for jobs.

East Bay Residents Commute Pattern Shares (2010-2015)

	Share (%)						
County of Work	2010	2011	2012	2013	2014	2015	
East Bay	72.9	70.6	69.5	68.2	68.2	66.9	
San Francisco	9.8	10.5	11.0	11.5	12.3	12.9	
Other	6.7	9.3	8.8	9.9	9.7	10.3	
Santa Clara	6.6	6.4	7.2	6.8	6.0	6.7	
San Mateo	3.9	3.2	3.5	3.6	3.8	3.3	

Source: CA Employment Development Department

¹ http://www.eastbaytimes.com/2017/03/22/bart-riders-fremont-residents-hope-relief-is-on-the-way-with-warm-springs-station-opening/

² http://www.sfchronicle.com/bayarea/article/BART-extension-to-San-Jose-on-track-but-new-cars-11047689.php

EAST BAY EMPLOYMENT

Place of Work for East Bay Residents by Industry (2015)

	East	Bay	San Fra	ncisco	San M	ateo	Santa	Clara	Oth	ner
	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number
Health Care	75.7	122,510	7.5	12,179	3.9	6,260	1.4	2,323	11.5	18,571
Other Services	75.3	53,888	11.5	8,201	3.4	2,444	0.9	665	8.9	6,401
Accommodations	75.2	68,770	11.4	10,457	2.4	2,235	2.2	2,002	8.7	7,929
Retail Trade	75.2	100,986	9.6	12,911	4.0	5,406	2.7	3,636	8.5	11,434
Wholesale Trade	74.8	26,891	9.1	3,285	6.7	2,402	3.5	1,259	5.9	2,114
Real Estate	74.0	21,431	9.0	2,597	4.9	1,410	2.8	820	9.4	2,721
Government	72.0	129,549	11.7	21,033	3.3	5,951	2.8	5,128	10.2	18,282
Natural Resources/Mining	71.5	5,589	10.0	779	1.4	111	1.1	85	16.0	1,249
Educational Services	71.2	33,752	10.1	4,777	4.0	1,891	3.4	1,617	11.4	5,393
Art & Entertainment	67.6	19,945	15.6	4,619	5.1	1,520	1.8	536	9.8	2,901
Admin Support	63.2	42,373	19.0	12,755	5.2	3,476	1.5	1,034	11.1	7,434
Transport/Warehousing	60.6	29,438	16.2	7,885	2.3	1,107	7.8	3,786	13.1	6,368
Construction	60.0	49,676	13.5	11,150	8.4	6,980	4.2	3,458	13.9	11,498
Manufacturing	58.3	66,822	4.7	5,351	19.9	22,779	5.6	6,416	11.5	13,177
Finance & Insurance	55.5	33,862	25.9	15,770	4.3	2,599	5.2	3,196	9.1	5,556
Information	54.9	22,773	23.1	9,587	13.3	5,531	3.1	1,281	5.6	2,339
Prof, Sci, and Tech	54.5	91,294	18.8	31,575	11.4	19,075	4.8	7,976	10.6	17,708
Utilities	53.5	4,028	31.7	2,381	4.1	307	2.4	178	8.3	628
Management	18.8	207	16.9	186	56.0	618	0.0	0.0	8.3	92
Total	66.9	923,784	12.9	177,478	3.3	45,396	6.7	92,102	10.3	141,795

Source: U.S. Census Bureau, American Community Survey

56% of East Bay residents who are in Management industries commute to San Mateo County for work. of new residents in the state over this period, signaling the attractiveness of the region and indicating the promise of benefits from the population increase.

Although numerous residents commute each day, the region has many home-grown industries, as well. For example, 75.7% of East Bay residents employed in Health Care work primarily in the East Bay. Residents account for 75.3% of workers in Other Services, 75.2% of those working in Accommodations and 71.5% of those with local jobs in Petroleum and Coal Manufacturing Products.

DEMOGRAPHICS AND UNEMPLOYMENT

The unemployment rate for East Bay residents with bachelor's or higher degrees was 3.5% in 2015, compared with 6.3% for residents with only a high school diploma.³ These unemployment rates are lower than the statewide average across the majority of education levels. Millions of federal and state dollars have been invested in the East Bay for workforce development through the local community colleges, regional occupation centers, adult schools, workforce development boards and

training programs. Compared to other regions, these activities appear to have been effective in creating job opportunities for both higher and lower-skilled workers. Furthermore, recent numbers from California's EDD suggest that the region's unemployment rates are continuing to decline.

East Bay Residents (2015)

Age	Unemployment Rate
Under 25	14.0%
25 to 34	8.5%
35 to 44	5.2%
45 to 54	5.3%
55 to 64	5.8%
Over 65	6.0%

Source: U.S. Census Bureau, American Community Survey

East Bay Residents 25 and Older (2015)

Educational Attainment	Unemployment Rate
Less Than High School	9.6%
High School Graduate	8.1%
Some College	7.7%
Bachelor's Degree +	4.1%

Source: U.S. Census Bureau, American Community Survey

In 2015, the unemployment rate for East Bay residents younger than 25 remained elevated (13.5%), but it was lower than the unemployment rate for the same age range in the state overall (16.8%). Members of the workforce ages 25-24 are also ahead of their peers in other parts of the state, with the unemployment rate at 5.9% in the East Bay, compared with 7.3% in the state overall.

POTENTIAL HEADWINDS AND OPPORTUNITIES

Along with the rest of the nation, the East Bay will have to tackle the growth of e-commerce and its impact on employment levels and local tax revenues. This could have a larger impact on the East Bay than on other parts of the Bay Area as the Retail sector accounts for roughly 9.7% of the region's nonfarm employment, compared to 7.3% in the San Francisco MD and 8.0% in San Jose MSA. Nationally, e-commerce made up roughly 8.3% of retail sales in the fourth quarter of 2016, up 3.2 percentage points from five years earlier and up 5.2 percentage points from a decade ago.4 This shift from traditional brick and mortar stores to online establishments will weaken demand for goods at local retail establishments and increase activity at warehouse and distribution centers. Some examples of this shift can be seen with the recent closings of Sears, Kmart, Barnes & Noble and other brick and mortar stores including the JCPenny at Hilltop Mall in Richmond, one of the 138 stores the company will close nationwide while demand is increasing for warehouse fulfillment centers. The overall effect on jobs numbers should be minimal. But closure of more flagship and "big box" stores in the region could harm the balance sheets for local governments, causing cities to look at new ways to generate the sales tax revenues they need for operations.

Food trucks, pop-up stores, restaurant automation, and home delivery of



San Leandro Tech Campus photo by: City of San Leandro

This shift from traditional brick and mortar stores to online establishments will weaken demand for goods at local retail establishments and increase activity at warehouse and distribution centers.

EAST BAY EMPLOYMENT



Downtown Pleasanton photo by: Bella Luna Studios

Scott McKibben, executive director of the Oakland Alameda County Coliseum Authority, estimates local taxpayers have been losing about \$1 million a year on the Raider's lease agreement, and the city of Oakland also covers security costs for games.

semi-prepared and fully prepared meals directly and from third-parties are changing the food and beverage service industry, as well. Thirdparty delivery services, in particular, provide a potentially significant benefit to local restaurants. These businesses allow restaurants to tap into markets that were previously inaccessible because they can now reach residences and offices within a third-party's delivery service area. Smaller food outlets also may benefit from these services. In major cities, food delivery start-ups may not be able to afford prime operating locations, but might do well in other locations with less expensive overhead because of the potential for a high number of delivered meals.5

Two professional sports teams plan to leave the East Bay in coming years, with the Golden State Warriors moving to San Francisco in 2019 and the Raiders moving to Las Vegas in 2019 or 2020. These moves are not expected to have a significant effect on the East Bay's economy, although they impact the region's branding and entertainment options. Scott McKibben, executive director of the Oakland Alameda County Coliseum Authority, estimates local taxpayers have been losing about \$1 million a year on the Raider's lease agreement, and the city of Oakland also covers security costs for games. The Raiders' move will enable local officials to divert some funds to other parts of the economy, such as infrastructure improvements to support mixed-use developments near BART stations which would have multiplying effects on the East Bay economy.

Although the departure of the teams will affect full and part-time employees who work at Raiders' games, the infrequency of football games will limit the overall effect.6 Also, while the Golden State Warriors are moving across the bay, the team has promised to employ current workers at the new arena. As a result, a significant portion of the wages paid to stadium employees will not be leaving the East Bay economy.⁷

Other potential headwinds include the scaling back of Uber's Oakland expansion plans. Uber initially planned to move up to 3,000 employees into the former Sears Building on Broadway in Oakland's Uptown neighborhood. Now the plan calls for just a few hundred. The economic effect of this change will probably be minimal because the company plans to lease the rest of the roughly 380,000 square feet to tenants, which will draw new companies and workers to the region.

A longer-term concern for the East Bay is a potential slow-down in tech in the Bay Area. Growth in Professional, Scientific, and Technical Services and Information has slowed in recent years, although these sectors are still rising by healthy margins across the Bay Area. From February 2016 to February 2017, payrolls in the Professional, Scientific, and Technical Services sector grew by 2.7% in the San Francisco MD, 3.2% in the San Jose MSA, and 5.5% in the East Bay.

⁵ http://www.jllrealviews.com/industries/food-demand-delivery-services-reshaping-restaurant-industry/

⁶ https://www.wsj.com/articles/raiders-exit-a-loss-for-oakland-workers-touchdown-for-taxpayers-1491044403

⁷ http://fox6now.com/2017/03/31/heres-what-else-oakland-is-losing-along-with-the-raiders/

LABOR MARKET FORECAST

Beacon Economics forecasts that East Bay payroll employment will continue to grow at more than 1.5% in 2017. With these gains, the unemployment rate in the East Bay is expected to remain near 4.0%, which is in line with historical norms.

In addition, payrolls are expected to grow by 6.4% (74,200 jobs) from current levels to 2021. Perhaps more importantly, high-wage sectors are expected to be at the forefront of this growth, with Management and Professional Services expected to grow by 13.3% (16,100 jobs) during the same period.

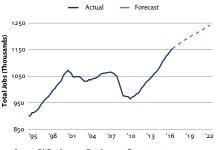
East Bay Employment Forecast, Q1-17 to Q4-21 by Industry

	Q1-17	Q1-18	Q1-19	Q4-21	Q1-17 to Q4-21 Change (%)
Total Nonfarm	1152.8	1171.2	1187.4	1227.0	6.4
Unemployment Rate	4.0	4.0	4.3	4.5	N/A
Government	176.9	179.1	181.0	184.6	4.4
Education/Health	187.9	191.8	195.5	205.7	9.5
Management/Professional	121.1	124.9	128.3	137.2	13.3
Retail Trade	115.6	115.8	116.1	117.0	1.2
Leisure/Hospitality	112.9	114.1	115.5	120.3	6.6
Manufacturing	90.3	91.0	91.4	92.1	2.0
Construction	68.8	70.9	73.0	77.4	12.5
Admin Support	63.8	64.5	64.7	65.1	2.0
Financial Activities	58.5	59.0	59.6	60.3	3.1
Wholesale Trade	50.2	50.8	51.3	52.6	4.8
Other Services	39.6	40.1	40.6	42.2	6.6
Trans/Warehouse/Utilities	39.6	40.3	40.6	41.1	3.8
Information	26.8	27.8	28.8	30.6	14.2
Natural Resources/Mining	0.9	0.9	0.9	0.9	0.0

Source: CA Employment Development Department

Payroll Employment Forecast

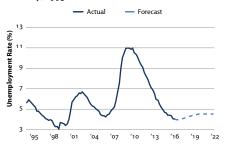
East Bay, 1995 to 2022



Source: CA Employment Development Department Forecast by Beacon Economics

Unemployment Rate Forecast

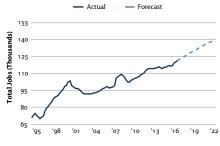
East Bay, 1995 to 2022



Source: CA Employment Development Department Forecast by Beacon Economics

Mgmt & Prof. Employment Forecast

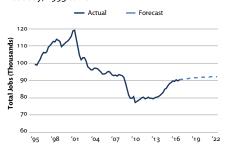
East Bay, 1995 to 2022



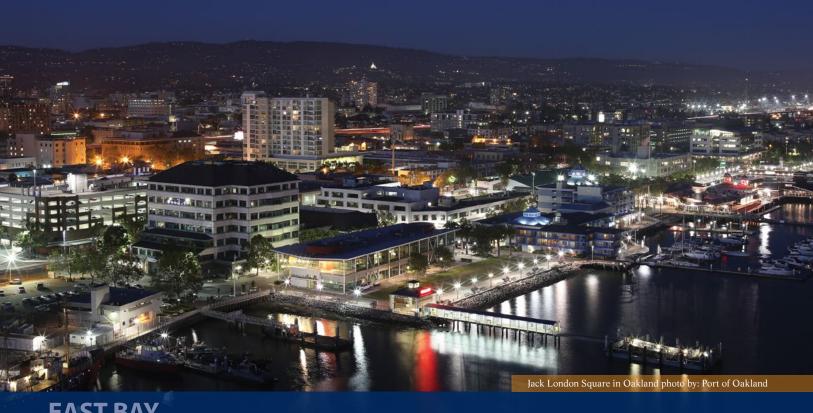
Source: CA Employment Development Department Forecast by Beacon Economics

Manufacturing Employment Forecast

East Bay, 1995 to 2022



Source: CA Employment Development Department Forecast by Beacon Economics



EAST BAY BUSINESS ACTIVITY



OVERVIEW

EARLY ALL BUSINESS ACTIVITY indicators in the East Bay showed strength from 2015 to 2016. Consumers and businesses increased their spending considerably, with the exception of fuel services which can be traced to low prices

during this time period. With personal income continuing to rise, residents in most East Bay cities increased their overall spending.

The tourism and travel industry in the East Bay continued to thrive as the Oakland International Airport posted a record year. Moreover, local hotels benefitted from this boom, as room and occupancy rates continued to rise. As the East Bay becomes recognized as a more desirable and centralized site to reach other parts of the Bay Area, spending from tourists should continue to increase.

27.5% more venture capital



Venture capital funding in the East Bay increases by 27.5% from 2015 to 2016.

48% increase in income

Personal income in the East Bay growth from 2005 to 2015.

taxable sales increased 30%

Taxable sales increasing more than 30% in the past 5 years, more than SF, South Bay, and State of California.

over 12 million passengers

In 2016, well over 12 million passengers passed through OAK, representing an increase of 7.4% from 2015 when traffic was around 11.2 million.

Similar to the year before, international trade in the East Bay was somewhat sluggish — a problem experienced by most ports around the country. The U.S. dollar remained very strong relative to other currencies, while other economies, like China, were still recovering from a recent slump. After considering price changes, however, the trade picture was actually better than it initially appeared. Furthermore, when compared to other major ports in the nation, Oakland, but less so Richmond, did quite well.

Venture capital funding was a very bright spot for the East Bay, as total funding increased significantly from 2015 to 2016. Biotechnology, Financial Services, and Software together claimed most of the cash, while other industries like Industrial Energy and Computers and Peripherals saw major drop-offs in funding.

Altogether, the East Bay continues to flourish in terms of business activity. Offering close proximity to all that the Bay Area has to offer, yet more affordable than other regions, East Bay growth will continue to stay the course during 2017.

LOCAL SPENDING

From 2015 to 2016, spending in the East Bay continued to grow at a vigorous pace. The region's taxable sales grew 5.0% from 2015 to 2016, moving from \$45.4 million to \$47.7 million. This put the East Bay ahead of San Francisco, the South Bay and California, which respectively grew 2.5%, 3.2% and 3.9% during the same period.

Much of the growth in spending for the East Bay came from the Autos and Transportation, Building and Construction, and Restaurants and Hotels categories, which grew 6.3%, 6.0% and 5.2%, respectively. While not as strong as in 2015, consumer spending on big-ticket items like cars held steady as personal incomes continued to climb and the population continued to expand. Having more disposable income also prompted consumers to spend more on leisure activities like dining out and entertainment. Meanwhile, businesses invested in themselves to keep up with demand, as evidenced by the 6.0% increase in the Building and Construction category.

Some shopping centers in the East Bay saw large increases in consumer activity as a result of serious



Downtown Berkeley photo by: City of Berkeley

Taxable Sales Comparison

Q4-11 to Q4-16

— CA — East Bay — SF — South Bay

130

Q4-11 Q4-12 Q4-13 Q4-14 Q4-15 Q4
Source: California Board of Equalization

East Bay Tax Receipts, 2015 to 2016

Category	2015	2016	Change (%)
Autos and Transportation	77,040,970	81,896,675	6.3%
Building and Construction	38,091,638	40,383,876	6.0%
Restaurants and Hotels	49,994,170	52,592,310	5.2%
Food and Drugs	25,096,369	25,805,724	2.8%
Business and Industry	75,760,951	77,018,619	1.7%
General Consumer Goods	93,028,844	94,461,446	1.5%
Fuel and Service Stations	35,031,394	31,904,952	-8.9%
Total	457,589,098	473,728,390	3.5%

Source: HdL Companies

EAST BAY BUSINESS ACTIVITY



Downtown Danville photo by: Paige Green

The East Bay serves as the health care hub for the Bay Area, making up 7.4% of all health care jobs in the state, compared to the South Bay (5.4%) and San Francisco (4.8%). redesign efforts. The Broadway Plaza in Walnut Creek, for example, completed a \$250 million renovation plan, adding new shops and restaurants to attract Millennials and stay competitive in the age of online retailing. Other large developments in the region that are well positioned to benefit from increased spending activity include a new 340,000 square foot Ikea store in Dublin² and a new IMAX theater at The Veranda in Concord³.

Following the East Bay trend of innovation in the food industry, Impossible Foods recently announced plans to establish a production facility in East Oakland ⁴. From there, it will supply its meatless 'beef' to 1,000 restaurants, helping to increase spending by health-conscious residents.

Additionally, Blue Shield recently announced the signing of a 200,000 square-foot lease in downtown Oakland as it moves its headquarters from its more expensive San Francisco site⁵. This marks the largest office transaction in Oakland's history and is sure to increase spending as more employees will invest in and possibly move to the region. Indeed, the East Bay serves as the health care hub for the Bay Area, making up 7.4% of all health care jobs in the state, compared to the South Bay (5.4%) and San Francisco (4.8%).

In contrast, some national stores around the East Bay have been closing recently due to competition from online shopping and services. Still, according to data from the Bureau of Labor Statistics, the total number of establishments has been increasing in both Alameda and Contra Costa counties. From the third quarter of 2015 to the third quarter of 2016, establishments grew by 4.2% in Alameda County and 3.9% in Contra Costa County⁶.

The only category to post a decrease in spending was Fuel and Service Stations, which dropped 8.9% during the year. As with last year, low global fuel prices have allowed consumers to spend less at the pump.⁷ The promotion of alternative fuel vehicles and build out of more charging stations has also contributed to lower gas sales. Gas prices may increase later this year, as state lawmakers passed Senate Bill SB1, which will increase the fuel tax by 12 cents per gallon in order to raise revenue for infrastructure and road repairs⁸.

At the city level, top performers included Hayward and Livermore, with 11.8% and 10.2% growth rates, respectively. Hayward is among the cities in California with the highest combined sales tax rate of 9.75%. It hosts a high performing shopping mall, Costco business center and a new major sports-related retail store.

- 1 http://www.eastbaytimes.com/2016/05/23/with-big-renovation-broadway-plaza-helps-walnut-creek-shopping-scene-thrive/
- 2 http://proposeddublinca.com/
- 3 http://www.eastbaytimes.com/2017/03/10/imax-theater-coming-soon-to-new-concord-shopping-center/
- 4 http://www.eastbaytimes.com/2017/03/23/oakland-impossible-meatless-burgers-ramp-up-production-at-new-facility/
- 5 http://www.bizjournals.com/sanfrancisco/news/2017/03/08/blue-shield-oakland-lease-shorenstein-office-tower.html
- 6 https://data.bls.gov/cgi-bin/dsrv. It is important to note that data for the third quarter of 2016, for both Alameda County and Contra Costa County, are preliminary and thus are subject to change, albeit by a relatively small margin.
- $7\ https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_sca_a.htm$
- 8 http://www.latimes.com/politics/essential/la-pol-ca-essential-politics-updates-legislative-panel-sends-gas-tax-1491249099-htmlstorv.html

Hayward also saw strong auto sales and increased business to business sales. The increase in Livermore sales tax can be attributed to robust sales at the San Francisco Premium Outlets in Livermore, a high-end retail complex attracting international visitors, and the wineries in the Livermore Valley, an alternative to Napa Valley as a destination point. Fremont (9.7%),

San Ramon (9.1%) and Danville (8.2%) also experienced remarkable growth from 2015 to 2016, as well.

At the other end, Alameda (-4.3%), Clayton (-4.7%), (Pittsburg -4.9%), and El Cerrito (-17.7%) all experienced substantial drop-offs in taxable sales across this same period. The appearance of a significant drop-

Dining in the City of Alameda photo by: Lori

Still, according to data from the Bureau of Labor Statistics, the total number of business establishments has been increasing in both Alameda and Contra Costa

counties.

East Bay Taxable Sales by City, 2015 to 2016

City	2015	2016	Change (%)
Hayward	2,710,530	3,029,971	11.8
Livermore	2,358,743	2,599,124	10.2
Fremont	3,784,244	4,152,735	9.7
San Ramon	834,099	909,710	9.1
Danville	428,317	463,608	8.2
Antioch	998,801	1,058,917	6.0
Richmond	1,272,490	1,345,454	5.7
Albany	211,704	223,519	5.6
Dublin	1,683,546	1,776,984	5.6
Concord	2,741,308	2,866,151	4.6
Brentwood	643,643	671,149	4.3
San Leandro	2,438,671	2,542,762	4.3
Newark	1,015,757	1,058,815	4.2
Lafayette	263,784	272,857	3.4
San Pablo	180,571	185,323	2.6
Oakley	144,385	147,975	2.5
Pleasant Hill	723,612	740,096	2.3
Berkeley	1,604,817	1,641,078	2.3
Union City	835,968	854,632	2.2
Walnut Creek	1,996,597	2,039,580	2.2
Pinole	314,441	319,570	1.6
Orinda	90,968	91,067	0.1
Oakland	4,455,627	4,445,989	-0.2
Hercules	178,896	178,195	-0.4
Pleasanton	2,078,459	2,035,969	-2.0
Martinez	424,581	411,901	-3.0
Piedmont	16,344	15,817	-3.2
Emeryville	778,586	752,770	-3.3
Moraga	90,282	87,173	-3.4
Alameda	853,540	816,630	-4.3
Clayton	38,965	37,141	-4.7
Pittsburg	741,445	705,200	-4.9
El Cerrito	320,123	263,403	-17.7

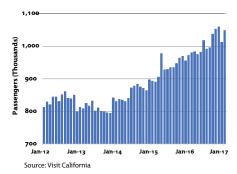
Source: CA Board of Equalization

EAST BAY BUSINESS ACTIVITY



Oakland International Airport photo by: Jim Maurer

OAK Airport Traffic Jan-12 to Jan-17



off in taxable sales in El Cerrito was due to an exceptional performance in 2015. With the exception of 2015, spending in El Cerrito has remained relatively stable across the past few years. With planned retail and housing development along its San Pablo corridor, there should be an increase in this city's taxable sales in the future.

TOURISM AND BUSINESS TRAVEL

Growth in consumer and business spending depends in part on the East Bay's tourism and travel industries. One way to gauge the performance of these industries is through airport traffic, according to which the East Bay is doing very well. From 2015 to 2016, total airline passengers at the Oakland International Airport increased by more than 830,000 passengers — a 7.4% growth rate. This marks a record year for the airport, and serves as a testament to the advantage it holds over busier airports like the San Francisco International Airport. And although Oakland grew less than the San Jose International Airport (11.0%) during this period, it surpassed the annual increases of San Francisco International Airport (6.1%) and California overall (7.2%).

Increasingly, the East Bay is becoming a much more desirable flight destination for visitors to the Bay Area who might otherwise use San Francisco International Airport. The Mediterranean climate of the East Bay avoids the fog delays experienced by the San Francisco International Airport, and the Oakland International Airport is actually closer to downtown San Francisco than any other major airport. This has and will continue to provide a boost to local spending activity. Part of this growth and desirability is due to a large increase in Oakland's flight offerings from low-cost carriers like Southwest, British Airways, Norwegian and Spirit Airlines⁹. Recently, these airlines added dozens of routes to places like Mexico, Denmark and the United Kingdom. Moreover, new domestic and international routes planned for 2017 will be sure to add to this tremendous growth at the Oakland International Airport.

Smaller general aviation airports supporting private aircraft or private charter lines, such as JetSuiteX in Concord, also provide convenient air travel alternatives in East Bay cities that are not subject to frequent adverse weather conditions.

Going hand-in-hand with growing airport traffic is better hotel performance. From 2015 to 2016,

Bay Area Hotel Data

	Occupancy Rate (%)			Occupancy Rate (%) Average Daily Room Rate (\$)				venue P able Roo	
Region	2015	2016	Chg (pp)	2015	2016	Chg (%)	2015	2016	Chg (%)
East Bay	68.8	69.3	0.5	127.18	134.41	5.7	87.47	93.18	6.5
San Francisco	79.3	80.1	0.8	211.48	223.37	5.6	167.63	178.98	6.8
South Bay	62.1	64.6	2.5	178.4	176.43	-1.1	110.83	114.01	2.9

Source: PKF Consulting

hotels in the East Bay saw average daily room rates increase by 5.7%, or about \$134 per night, while occupancy rates hovered around 69%, a 0.5 percentage point increase. Compared to the South Bay (-1.1%) and San Francisco (5.6%), the East Bay experienced the most growth in daily rates, indicating increased traveler preference for staying in the East Bay. Additionally, this led to an increase of 6.5% in revenue per available room for the East Bay.

With over 20 BART stations within the region, connectivity to San Francisco is excellent, enabling tourists to benefit from the better weather, different attractions and lower costs in the East Bay.

PERSONAL INCOME

Increased spending activity in the East Bay has been further driven by local residents' increased earnings. During 2015, the latest data available, personal income in Alameda County reached \$61,900 while in Contra Costa County it hit \$66,400, placing these as the 7th and 6th highest ranked counties in the state, right behind Santa Clara (4th) and San Francisco (2nd). This equates to an increase of 6.6% in the East Bay from 2014 to 2015, on par with the South Bay (6.6%), while outpacing San Francisco (6.2%) and the state overall (5.4%).

An expanding job market, especially for well-paying, highly-skilled professional jobs, has greatly contributed to this growth in income for the East Bay. As more companies choose to establish themselves in the East Bay and attract talented workers, incomes and spending should continue to move upward.

It is important to note that while the East Bay certainly has an affordability advantage compared to other parts of the Bay Area, the cost of living is still high relative to the rest of the state. As such, income growth does not always have a proportional effect on spending activity, as much of this will only offsets the higher cost of living.

INTERNATIONAL TRADE

In a slight contrast to other business activity indicators, international trade saw mixed results, not unlike its performance in 2015. On one hand, the Port of Oakland experienced significant improvement, while on the other hand, the Port of Richmond continued to decline in both imports and exports. Things appear to be stabilizing for both ports, however, as commodity prices begin to recover for many of the state's exports.

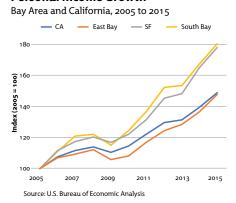
From 2015 to 2016, imports for the Port of Oakland increased by 9.0%, for a total value of \$30.2 billion. During this time, imports at the Port of Richmond declined by 11.7%, falling from a total value of \$7.1 billion to \$6.2 billion. For Oakland, this marks an improvement from the 4.8% decline during the previous year, while for Richmond it adds to the 33% decline it saw during that same time.

In terms of exports, during the last year, the Port of Oakland grew by 4.7% to a total value of \$18.8 billion, while the Port of Richmond fell to \$1.1 billion — a decrease of 33%. From 2014 to 2015, Oakland exports declined by 15%, while in Richmond exports declined by 30%. Although



Park Street Bridge in Alameda photo by: Maurice Ramirez

Personal Income Growth



EAST BAY BUSINESS ACTIVITY

Maritime Trade Activity, East Bay Ports, 2015-2016

	Tota	al Export Values	Total Import Values			
Port	2015	2016	Chg (%)	2015	2016	Chg (%)
Port of Oakland	17,915,965,636	18,763,984,186	4.7	27,716,634,446	30,218,532,888	9.0
Port of Richmond	1,664,655,829	1,114,235,010	-33.1	7,074,809,692	6,245,118,100	-11.7

Source: WISERTrade

Port of Oakland Top Exports by Commodity

Commodity	2014 (\$000s)	2015 (\$000s)	Chg (%)	% of All Oakland Exports	% of All CA Exports	Difference, Oak vs. CA (pp)
Edible Fruit/Nuts/Citrus Fruit/Melon Peel	5,635,344	5,413,311	-3.9	28.8	2.8	26.1
Meat/Edible Meat Offal	2,082,371	2,956,603	42.0	15.8	1.5	14.2
Beverages/Spirits/Vinegar	968,903	1,096,366	13.2	5.8	0.6	5.3
Industrial Machinery, Incl Computers	808,795	970,397	20.0	5.2	0.5	4.7
Optic/Photo/Medical/Surgical Instruments	516,654	663,702	28.5	3.5	0.3	3.2
Vehicles/Parts	719,877	544,979	-24.3	2.9	0.3	2.6
Dairy/Eggs/Honey/Animal Products	643,473	483,311	-24.9	2.6	0.2	2.4
Electric Machinery/Sound Equip/TV Equip	480,067	489,996	2.1	2.6	0.3	2.3
Prep Veg/Fruit/Nuts/Other Plant Parts	664,213	471,838	-29.0	2.5	0.2	2.3
Cereals	441,991	462,560	4.7	2.5	0.2	2.2

Source: WISERTrade

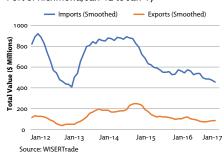
Imports & Exports

Port of Oakland, Jan-12 to Jan-17



Imports & Exports

Port of Richmond, Jan-12 to Jan-17



Richmond has experienced another year of decline, it is important to keep in mind that the drop in export value does not take commodity price changes into consideration. For instance, export vessel weights from Richmond were down by just 14.8% during this time, indicating a less severe decrease than the export values suggest.

Compared to other ports in the state and the country, the Port of Oakland has done very well. From 2015 to 2016, the Port of Los Angeles saw exports increase by 3.1% while imports increased by only 0.8%. At the same time, the Port of Long Beach saw exports grow by 4.5% and imports shrink by 6%. The average change for all ports in the U.S. was a decrease of 3.3% for exports and a decrease of 2.6% for imports.

The top exported commodities for the Port of Oakland were Edible Fruits and Nuts (-3.9% in value), Meats (+42.0%) and Beverages (+13.2%), which together made up half of all exports for the port. A major decrease came from Vehicles, which were more expensive to trading partners as a result of the U.S. dollar's strength. Other large decreases came from Dairy Products and Prepared Vegetables and Fruits, which both suffered from major declines in price.

For the Port of Richmond, the Mineral Fuel and Oil category made up 84.6% of all exports, for a total value of \$942 million. This represents a significant drop in value from 2015 when the value of this export category was \$1.6 billion. Weak performance from export trading partners, especially in Central and South America, mainly caused

this drop. However, export vessel weights for this category showed only a 16.8% drop, which indicates much of this weak performance was caused by falling prices.

In June of 2016, the City of Oakland passed a law banning the handling and storage of coal in the city in an effort to fight climate change and address health issues¹⁰. This is not a major commodity for the port, however, and the ban should have only a marginal effect on total values moving forward. More noteworthy was Oakland's loaded container volume, which set a record in 2016¹¹. Close proximity to the state's agriculture industry has helped boost the port's exports to Asian countries demanding American food products.

There was also some disruption in service to container ships when Outer Harbor Terminal, a joint venture between Ports American and Terminal Investment Ltd., ended its 50-year lease for terminal operations with the Port of Oakland. As the operator filed for Chapter 11 bankruptcy protection, the Port of Oakland was forced to find new operators to accommodate their unserved shipping lines.

While domestic demand was strong during this period, a strong U.S. dollar and low demand from still recovering international markets explains much of the lackluster performance in trade. Furthermore, when taking prices into consideration, it is clear that the situation is not as bad as it would seem.

VENTURE CAPITAL

While international trade in the East Bay was sluggish, venture capital funding offered a nice contrast. From the first three quarters of 2015 to the first three quarters of 2016, venture capital funding increased by 27.5% for a total of nearly \$1.3 billion. This marks a significant improvement from the same 2014 to 2015 period, when funding slumped by about \$150 million, or 12.5%. Moreover, compared to Silicon Valley (-23%) and the country as a whole (-19%), the East Bay did exceptionally well.

Leading the pack in terms of absolute funding were the Biotechnology and Financial Services industries. which combined to receive about half of the total funding. Gritstone Oncology in Emeryville, a cancer immunotherapy company, received \$102 million in funding in October 2015¹². This money will go toward the development of tumor-specific neo-antigen (TSNA) based immunotherapies focused on combating lung cancer. Another biotech firm, 4D Molecular Therapeutics, also in Emeryville, received \$7 million in funding in August 2015 to further develop new gene therapy technology¹³. In the financial tech world, Margeta in Oakland received \$25 million to support its innovative payment processing technology¹⁴.

Other industries that saw a healthy amount of funding were Software and Medical Devices and Equipment which together received \$308 From the first three quarters of 2015 to the first three quarters of 2016, venture capital funding increased by 27.5% for a total of nearly \$1.3 billion.

Moreover, compared to Silicon Valley (-23%) and the country as a whole (-19%), the East Bay did quite well.

¹⁰ http://www.ktvu.com/news/ktvu-local-news/222835282-story

¹¹ http://www.mercurynews.com/2017/01/09/port-of-oakland-sees-record-growth-in-2016/

¹² http://www.prnewswire.com/news-releases/gritstone-oncology-announces-102-million-series-a-financing-to-support-discovery-and-development-of-personalized-cancer-immunotherapies-300161742.html

¹³ https://www.crunchbase.com/organization/4d-molecular-therapeutics#/entity

¹⁴ https://techcrunch.com/2015/10/27/payment-services-firm-marqeta-adds-25-million-for-u-s-global-expansion/

EAST BAY BUSINESS ACTIVITY



Lam Research Facility in Fremont photo by: Lam Research

East Bay Venture Capital Funding by Industry

Industry	2015 (\$ millions)	2016 (\$ millions)	Chg (%)	Share of Total VC Funding, 2015 (%)	Share of Total VC Funding, 2016 (%)
Biotechnology	216.6	382.2	76.4	21.5	29.7
Computers and Peripherals	70.0	0.0	-100.0	6.9	-
Consumer Products and Services	76.3	52.4	-31.3	7.6	4.1
Electronics Instrumentation	10.1	88.0	771.3	1.0	6.8
Financial Services	0.0	241.8	-	-	18.8
IT Services	0.0	19.6	-	-	1.5
Industrial Energy	207.7	74.1	-64.3	20.6	5.8
Media and Entertainment	12.1	4.0	-66.5	1.2	0.3
Medical Devices and Equipment	109.0	112.6	3.2	10.8	8.8
Retailing Distribution	12.9	17.8	38.0	1.3	1.4
Semiconductors	17.2	99.0	474.3	1.7	7.7
Software	272.3	195.0	-28.4	27.0	15.2
Telecommunications	5.0	0.0	-100.0	0.5	-
Total	1,009.3	1,286.6	27.5	100.0	100.0
Total	1191.8	1042.4	-12.5	100.0	100.0

Source: MoneyTree

East Bay Venture Capital Funding by Stage

Stage	2015 (\$ millions)	2016 (\$ millions)	Chg (%)	Share of Total VC Funding, 2015 (%)	Share of Total VC Funding, 2016 (%)
Early Stage	283.2	334.4	18.1	28.1	26.0
Expansion	310.2	480.4	54.9	30.7	37.3
Later Stage	415.9	398.8	-4.1	41.2	31.0
Startup Seed	0.0	73.0	-	0.0	5.7
Total	1,009.3	1,286.6	27.5	100.0	100.0

Source: MoneyTree

million, or 24% of total funding. Semiconductors grew 474% during this period and received \$99 million in funding.

Industries that saw significant decreases in funding were Consumer Products (-31.3%), Industrial Energy (-64.3%), and Media and Entertainment (-66.5%). While Software pulled in a large amount of funding, this still represented a decrease from the year before, when it received well over \$270 million in funding. Still, venture capital funding in the East Bay as a region compares favorably to entire states, such as Texas.

During this period, most funding went to middle-expansion stage companies, which received 37% of funding, followed closely by later stage companies with 31% of funding. Early stage companies received roughly the same amount of funding as in 2015, 28% compared to 26% in 2016, while startups received almost 6% of total funding — up from 0% in 2015.



COMMERCIAL REAL ESTATE



OVERVIEW

USTAINED DEMAND FOR commercial real estate in the East Bay was evidenced by tightening vacancy rates across all major categories as developers added new projects at a robust pace. Despite rapidly rising rents for commercial properties, the East Bay is still relatively more affordable than the South Bay and San Francisco, and thus continues to entice employers to the region.

Although planned construction for 2016 dipped slightly below record high postrecession investment in 2015, this was largely the result of a drop in permitting of industrial properties, as every other major category gained ground. Much of the drop in industrial permitting was offset by strengthened interest in office properties, which accounted for 7.7% of nonresidential construction spending in 2016, up from 2.4% the year prior.

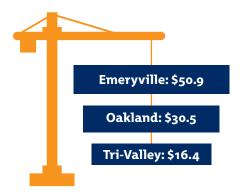
+210% in office +21.3% construction

210% increase over 2015 in office construction permitting in East Bay.

commercial rents

More affordable than San Francisco (+62.0%) and the South Bay (+31.9%) since 2010.

East Bay Office Construction (in millions)



13.6% office vacancies

13.6% vacancy rates in the East Bay office rental market are at a seven-year low.

Source: REIS

OFFICE RENTAL MARKET

The East Bay's office market is catching up to the rest of the Bay Area because of a pronounced affordability advantage. In 2016, demand for office space grew alongside employment increases in the professional, technology, and business sectors. The rate at which office space has been absorbed continued to push vacancy rates down, and a quickly tightening market triggered marked gains in rental rates.

In the fourth quarter of 2016, average asking rates accelerated to \$31.59 per square foot, representing year-over-year growth of 8.1%. The East Bay has lagged behind San Francisco and

San Jose in rental rate gains. While office rents are 59.3% higher in San Francisco and 42.4% higher in San Jose than they were in early 2010, rental costs rose only 21.3% in the East Bay in that same period.

To further illustrate the difference, in the fourth quarter of 2015, the rent per square foot in the East Bay was 21.6% lower than in the South Bay and 42.4% lower than in San Francisco. In contrast, in the fourth quarter of 2014, East Bay rents were 23.5% and 45.8% lower, respectively. Even though East Bay rent growth was stellar in the last year, the South Bay and San Francisco saw even stronger rent growth, enabling the East Bay to retain its cost advantage for Bay Area office space.

Rent Discounts in the East Bay Relative to San Francisco and the South Bay

Property Type	Property Class	East Bay Avg. Rent in Q4-2016 (\$ per sq. ft. per year)	Discount from San Francisco (%)	Discount from the South Bay (%)
Office	Total	31.59	45.8	23.5
Office	Α	35.56	44.9	23.4
Office	B, C	27.44	43.0	24.3
Retail	Total	29.66	18.4	15.3
Warehouse/Distribution	Total	5.55	38.3	24.2
Flex/R&D	Total	9.59	35.4	35.3

Source: REIS

Nonresidential Building Permit Values, in Millions (\$)

								201	5 - 2016 Change	: (%)
Type of Property	2010	2011	2012	2013	2014	2014	2015	East Bay	San Francisco	South Bay
Office	3.50	67.50	13.50	8.10	76.90	37.90	117.40	210.1	-54.4	89.2
Retail	43.00	102.80	33.30	66.90	171.10	180.30	212.40	17.8	83.0	12.9
Industrial	112.10	24.70	35.00	149.00	124.10	107.50	19.40	-81.9	n/a	-54.0
Renovations/Alter.	568.60	606.70	477.10	695.20	895.50	868.90	924.30	6.4	-27.8	27.9
Total	850.10	1,029.80	622.90	1,025.30	1,461.80	1,540.10	1,515.50	-1.6	-14.2	35.8

Source: Construction Industry Research Board

Not surprisingly, vacancy rates in the East Bay office rental market are at a seven-year low, and the gap between vacancy rates in the East Bay and South Bay continues to widen. At a current vacancy rate of 13.6%, the overall East Bay office market tightened by 1.7 percentage points between the fourth quarter of 2015 and the fourth quarter of 2016. This decrease is similar to the declines experienced last year. However, over 7.1 million square feet remains available on the market. More than half of available space is comprised of lower quality, or "Class B" and "Class C" space – pointing to a much tighter market for high quality office space.

OFFICE SUBMARKETS

Although the most notable gains in office rents have been concentrated in northwest Alameda County, they were also robust in outlying areas. Virtually every submarket saw average asking rents rise in 2016 as occupancy increased. Rental rate appreciation was the strongest in North Alameda¹ and the Central Business District² submarkets, where asking rates rose 10.3% and 14.4%, respectively. These are also the East Bay's priciest submarkets, with average asking rates of \$33.51 and \$42.89 per square foot. The North Alameda submarket saw particularly heated absorption over the year, and the average vacancy rate fell to 5%, down from 9% the year prior. Contra Costa County also saw healthy gains over the previous year. Rental rate appreciation was particularly strong in the North Contra Costa submarket,3 where average asking rents rose to \$30.71 per square foot. This marked a 7.2% year over year increase in the fourth quarter of 2016. According to Transwestern, 2016 - 2017 to date has seen office vacancy rates decline by as much as 18% in the non-core submarkets of Concord, Walnut Creek, Fremont and the area near the Oakland International Airport.



Rosewood Commons in Pleasanton photo by: Rosewood Commons

Rosewood Commons

Office Submarket Snapshot: Q4-15

Submarket	Rent (\$ per sq. ft. per year)	Vacancy Rate (%)	Vacant Square Feet (ooos)
North Alameda	33.51	5.0	270
North I-680	29.03	8.6	648
Central Business District	42.89	9.0	948
North Contra Costa	30.71	13.2	1,481
West Contra Costa	30.09	14.4	278
Airport/San Leandro/Hayward	23.33	19.5	832
Fremont/Newark	22.31	21.6	684
South I-680	27.61	23.7	1,998

Source: REIS

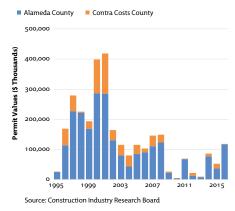
In the fourth quarter of 2015, the rent per square foot in the East Bay was 21.6% lower than in the South Bay and 42.4% lower than in San Francisco.

¹ Reis, Inc. includes parts of the cities of Emeryville, Berkeley, Piedmont, Alameda, and outlying areas of Oakland City within the North Alameda submarket.

² As defined by Reis, Inc., the Central Business District includes Downtown Oakland, and is bounded by Interstate 980/State Route 24, the I-580, Fruitvale Avenue, and the Brooklyn Basin.

³ The North Contra Costa submarket includes the cities of Concord, Pittsburg, Pleasant Hill, Martinez, and Walnut Creek.

Office Construction Permits



Still, planned office construction remains centered in Alameda County, accounting for 99% of the region's annual investment.

The Central Business District continued to command the highest asking rates in the East Bay, with average submarket rents rising to an annual rate of \$42.89 per square foot in the fourth quarter of 2016, up from \$37.50 per square foot the year prior. Despite relatively tepid absorption in the Central Business District, renovations and alterations of existing buildings probably contributed to the rising rates. It is also likely that gains were related to the expectation that Uber's entrance would quickly encourage growth in the technology sector. Uber recently announced that their new Oakland headquarters will employ a few hundred, rather than a few thousand, workers by early 2018,4 so there may be some deceleration in expected growth. However, Uber still maintains an office-space landlord role and intends to lease their office-space to other tenants in an attractive market.

OFFICE CONSTRUCTION

Office construction permitting spiked in 2016 after dipping in the prior year. Based on data from the

Construction Industry Research Board, the total value of new office projects was \$117.4 million. Overall, planned office construction increased 210% over the prior year and reached a post-recession high for the East Bay.

Still, planned office construction remains centered in Alameda County, accounting for more than 99% of the region's annual investment. Office developers' preference for Alameda County has been particularly strong coming out of the recession.

The reason for this is simple. Professional jobs that left Contra Costa County during the recession have been slow to return, prompting more members of the highly skilled local workforce to commute to better opportunities in the Bay Area. The county has therefore attracted a smaller share of office projects since the recession. In the 10 years leading up to the recession, from 1997 to 2006, the county accounted for 29.4% of regional development, but from 2007 to 2016 it accounted for only 17.9%.

With more land available for development, the Tri-Valley area of the East Bay continued to attract a

Retail Submarket Snapshot: Q4-15

Submarket	Rent (\$ per sq. ft. per year)	Vacancy Rate (%)	Vacant Square Feet (ooos)
Central Contra Costa	32.18	4.6	352
Central/North Alameda	30.68	4.9	287
North Alameda/West Contra Costa	33.93	5.3	124
East Alameda	28.09	7.2	329
South Alameda	25.51	7.2	339
East Contra Costa	23.62	10.0	307
Santa Clara/Sunnyvale	33.70	4.3	910
San Francisco (MD)	35.54	3.1	307

Source: REIS

large share of planned office projects in 2016. However, developers are increasingly turning to Oakland and Emeryville, where rent appreciation has been particularly heated.

Several high-profile projects are cropping up where local professionals can find urban amenities and public transit. These projects include those in Oakland at 1100 Broadway, Oakland City Center and Jack London Square, and EmeryStation West in Emeryville. Because professionals represent a majority of Alameda County workers who use public transit,⁵ it is likely that office space near well-developed public transportation lines will continue to carry a high premium.

Office Construction by Submarket

City/Submarket	2016	Change (%)
East Contra Costa	320,111	3,101.1
Other	7,000,000	2,101.0
Oakland	1,393,849	2,091.1
Alameda	6,134,000	33.3
Tri-Valley	16,379,897	16.9
I-8o/I-88o	2,789,906	-70.3
Emeryville	50,906,178	n/a
East Bay Total	117,410,483	210.1

Source: CIRB

RETAIL RENTAL MARKET

With comparatively low rents and a comparatively high vacancy rate, the East Bay retail market remains the most accessible of the major Bay Area markets. As more retail space became available in the last year, vacancy rates rose 0.5 percentage points to 6.6% in the fourth quarter of 2016. Rental rate appreciation has shown signs of winding down, however, with 1.0% year-over-year growth in the fourth quarter of 2016. Carried by high incomes and increased visitations, the East Bay retail sector has seen substantial growth since pre-recession highs, but recent trends indicate that the region has not been immune to changes in consumer behavior.

Tech-savvy consumers are increasingly looking for the most price-competitive and convenient options online, which has been particularly hard on larger retailers as evidenced by recent closures. According to Moody's Investor's Service, the number of distressed U.S. retailers has tripled since the Great Recession.6 Renovation in East Bay malls, however, reflects ongoing adaptation. Local malls, for example, are migrating away from heavy emphasis on apparel and are adding open space, restaurants with amusement options and entertainment choices.7

Another trend that could have some impact on retail is growth in the third-party food delivery industry. Globally, McKinsey & Company estimates that online food delivery represented up to 36% of the total food delivery market in 2016, up from 8% in 2011.8 More locally,

In the 10 years leading up to the recession, from 1997 to 2006, Contra Costa County accounted for 29.4% of regional development, but from 2007 to 2016 it accounted for only 17.9%.

⁵ In the County of Contra Costa, workers in "management, business, science, and arts occupations" made up 53% of county residents who reported using public transit on their workday commutes in 2015. For Alameda County, workers in this category made up 53.8% of county workers who used public transit.

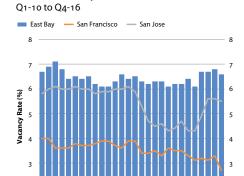
⁶ https://www.moodys.com/research/Moodys-Number-of-distressed-US-retailers-triples-since-the-Great-PR 362722

⁷ http://www.eastbaytimes.com/2017/03/07/newark-mall-gets-massive-entertainment-complex/

⁸ http://www.mckinsey.com/industries/high-tech/our-insights/the-changing-market-for-food-delivery

Retail Vacancy Rates

Q3-11



Amazon recently rolled out a free delivery service for 40 Oakland restaurants.⁹ As traditional dinein restaurants adapt their business models to account for new modes of consumption, their priorities for real estate may shift as well.

While there is little evidence currently to indicate that this trend is having a significant impact on the East Bay, it is worth noting that some restauranteurs in urban centers have been experimenting with delivery-only models. Delivery-only restaurants have begun to crop up in New York¹⁰ and San Francisco¹¹ as a way for owners to access potential markets despite high rental costs and little available space. For the moment, however, delivery-dependent models will probably remain limited to the costliest areas.

retail market. Submarkets in West and Central Contra Costa retained the highest average asking rents in the region, per Reis, Inc. estimates.

The last year saw some occupants of higher-cost submarkets leave as rents rose. This was particularly notable in Central/North Alameda, where the level of occupied stock fell 1.7% over the last year as some tenants were priced out of the market. Vacancy rates accordingly increased 2.2 percentage points to a current 7.4%.

Demand appears to be moving toward the lower end of the market, with the most affordable submarkets posting the strongest gains over the last year. Rental properties in East Contra Costa and South Alameda saw stronger momentum than those in any other East Bay submarket in terms of absorption and rental rate appreciation. In East Contra Costa, rental rates increased 2.7%, the strongest pace over the last year, and vacancies decreased 1.4 percentage points. South Alameda saw gains in average asking rates, which rose 1.8% between the fourth quarter of 2015 and the fourth quarter of 2016. Nevertheless, the two submarkets retain a strong affordability advantage over the rest of the region.

Retail Cost of Rent



RETAIL SUBMARKETS

In contrast to the office market, since the recession, the Retail and the Leisure and Hospitality sectors have increased their presence in Contra Costa County, as reflected by strong performance in the local

Retail Submarket Snapshot: Q4-16

Submarket	Rent (\$ per sq. ft. per year)	Vacancy Rate (%)	Vacant Square Feet (ooos)
West Contra Costa	34.39	5.3	124
Central Contra Costa	32.46	5.5	414
South Alameda	25.96	6.2	291
East Alameda	28.4	7.3	335
Central/North Alameda	30.86	7.4	449
East Contra Costa	24.25	8.6	263

Source: REIS

- 9 http://www.bizjournals.com/sanfrancisco/news/2016/11/03/amazon-prime-restaurant-delivery-oakland.html 10 http://ny.eater.com/2016/9/26/12717518/delivery-only-restaurants-nyc
- 11 http://www.eater.com/2016/9/28/13023076/munchery-sf-menu-delivery-how-it-works-photos#6664185

RETAIL CONSTRUCTION

In 2016, the East Bay saw planned retail investment reach \$212.4 million, the region's highest level in twenty years. Based on statistics provided in a recent Cushman & Wakefield report, in the fourth quarter of 2016, "lifestyle" or mixed-use shopping centers had the strongest rate of construction in the East Bay accounting for 42.7% of retail space under construction.¹² More is expected, with several major mixed-use projects planned. For example, the Brooklyn Basin project in Oakland recently broke ground, and is anticipated to add 200,000 square feet of mixed-use retail space.¹³ Another mega project in the works, the Richmond Bay Specific Plan, could add 720,000 square feet of retail space.¹⁴ However, the University of California, Berkeley recently announced an indefinite suspension of plans to develop two parcels of the plan region, which could stall the development as a whole.15

Although malls accounted for significantly less construction activity, they are by no means dormant. Cushman & Wakefield reported that 74,170 square feet of power and regional shopping centers were under construction in late 2016. Renovations and alterations to existing malls, such as the recent addition of John's Incredible Pizza, a chain establishment featuring

Retail Construction by Submarket

City	2016	Change (%)
I-8o/I-88o	26,706,736	782.8
Emeryville	4,114,435	644.0
Other	8,013,270	487.1
Fremont	30,747,190	161.0
Richmond	24,252,802	129.5
East Contra Costa	3,315,341	126.9
Tri-Valley	54,509,350	-6.1
North I-680	47,110,197	-23.0
Oakland	5,780,000	-48.5
Berkeley	220,000	-98.9
Alameda	6,267,437	N/A
East Bay Total	212,374,989	17.8

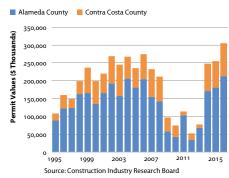
Source: CIRB

food, arcade games and park rides to the NewPark Mall in Newark, probably account for much of this. ¹⁶ Both trends point to retail property developers adapting to changing consumer habits, and focusing on providing entertainment and leisure experiences that online shopping cannot.

Planned retail construction has been heavily concentrated in the Tri-Valley and North I-680 submarkets in recent years. Although retail development is spreading to outlying areas, the two submarkets accounted for almost half of retail permitting activity in 2016. Retail development appears to be picking up in the I-80/I-880 and Fremont submarkets as well.

"Lifestyle" or mixeduse shopping centers had thestrongest rate of construction in the East Bay accounting for 42.7% of retail space under construction.

Retail Construction Permits



 $^{12\} http://www.cushmanwakefield.com/en/research-and-insight/united states/east-bay-retail-snapshot/specification and the complex of the com$

¹³ http://www.bizjournals.com/sanfrancisco/blog/real-estate/2016/05/oakland-brooklyn-basin-housing-signature.html

¹⁴ http://www.ci.richmond.ca.us/2647/Richmond-Bay-Specific-Plan

 $^{15\} http://www.mercurynews.com/2016/08/26/richmond-residents-stunned-by-cals-cancellation-of-global-campus-project/$

¹⁶ http://www.eastbaytimes.com/2017/03/07/newark-mall-gets-massive-entertainment-complex/

Warehouse Vacancy Rates Q1-10 to Q4-16

Planned retail construction has been heavily concentrated in the Tri-Valley and North I-680 submarkets in recent years.

WAREHOUSE RENTAL MARKET

Warehouse properties in the East Bay continued to be in high demand through 2016. Vacancy rates fell 0.7 percentage points, reaching 8.6% in the fourth quarter of 2016. This is the tightest market the region has seen during the current expansion, with 10.9 million square feet on the market. The region's comparative affordability advantage has continued to help draw high-tech manufacturers from other parts of the Bay Area. Notably, San Francisco vacancy rates barely budged in the same time frame. The metro vacancy rate fell 0.4% to 7.0% over the course of the last year. Rents are rising as well due to the tightening availability. As of the fourth quarter of 2016, the average asking rate stood at \$5.55 per square foot. Year to year, warehouse properties posted a 3.2% increase in the fourth quarter of 2016, up from 2.6% during the previous annual period. Still, the East Bay rate is substantially lower than San Francisco's (-62.0%) and the South Bay's (-31.9%).

The relative affordability of East Bay warehousing properties has also attracted non-traditional renters. These have run the gamut from local artists in need of lower cost housing to illegal marijuana operations.¹⁷ The recent Ghost Ship fire alerted the nation to the prevalence of unpermitted warehouse conversions to "live/work" centers in Oakland artist enclaves, which highlighted the problem of low apartment vacancies and high costs of rent. In response to the recent tragedy, Oakland officials are looking to create legal pathways for such conversions that would bring properties out of unregulated territory.¹⁸ While the required updates to bring such properties to code could result in costs that some landlords will find prohibitive, legalizing the process could bring larger players into what is a tight and swiftly gentrifying residential market.

WAREHOUSE SUBMARKETS

All East Bay submarkets posted gains. The Oakland/San Leandro submarket continued to lead in rental

Warehouse and Distribution Center Submarket Snapshot: Q4-16

Submarket	Rent (\$ per sq. ft. per year)	Vacancy Rate (%)	Vacant Square Feet (ooos)
Oakland/San Leandro	5.02	7.1	1,968
Union City	5.64	7.5	1,132
North Alameda/West Contra Costa	5.55	8.1	1,409
Concord/Pittsburg	5.22	8.7	884
Pleasanton/Livermore	5.82	9.7	1,342
Hayward	5.99	9.8	1,974
Newark/Fremont	5.72	9.8	2,190

Source: REIS

¹⁷ http://www.eastbaytimes.com/2016/10/06/oakland-marijuana-grow-discovered-in-warehouse-fire/

¹⁸ http://www.eastbaytimes.com/2017/01/28/what-oakland-can-learn-from-new-york-la-and-colorado-when-it-comes-to-warehouse-conversions/

rate appreciation, and vacancy rates fell significantly as well. Demand has probably picked up in the area because of stronger logistics activity. The Port of Oakland reported a 4% increase in handled TEUs (twenty-foot equivalent units) during 2016.

Tesla, Inc. has also continued to make its mark on the East Bay warehouse market, and signed a lease for three warehouses, or 1.3-million-squarefeet in Livermore in March 2017.19 The project build-out singlehandedly increased total stock in the Pleasanton/ Livermore submarket by 10.3% over 2016 and will likely spur further interest in the locale. Vacancy rates stood at 9.7% in the fourth quarter of 2016, posting a 1.7 percentage point decrease since the year prior. At \$5.82 per square foot, average rental rates for the submarket increased 3.2% year over year by the fourth quarter of 2016.

FLEX/R&D RENTAL MARKET

As the East Bay continues to evolve into a center of innovation, the flex/R&D market showed strength through 2016. Robust expansion in the local technology sector over the last year led to a strong uptick in occupancy. As of the fourth quarter of 2016, the vacancy rate stood at 12%, down 1.2 percentage points from the fourth quarter of 2015. This represents a slight deceleration from the previous year, when vacancy rates fell 1.9 percentage points. At 12%, current vacancies are at a post-

recession low, and it is likely that as the market tightens the deceleration will continue.

The East Bay performed well compared to the broader Bay Area. Although average asking rates are increasing across Bay Area markets, in the fourth quarter of 2016, the East Bay achieved the highest rental rate growth at 2.8% year over.

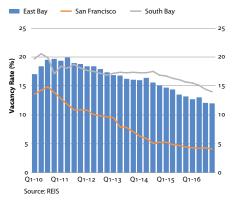
In general, the addition of new flex/R&D space since the start of the decade has been fairly sluggish, at 174,000 square feet. This could change when new developments will bring more space online. One of the largest proposed projects is the Coliseum City development in Oakland, which could add 4.7 million square feet of flex/R&D.

FLEX/R&D SUBMARKETS

Vacancies tightened substantially across most submarkets, with the greatest uptick in occupancy and rents in Union City, the smallest and most affordable East Bay submarket. Rents appreciated in burgeoning industrial hotbeds, including Union City, Hayward, and Newark/ Fremont. These submarkets remained substantially cheaper than in the North Alameda/West Contra Costa²⁰ and Concord/Pittsburgh submarkets. Even the Oakland/San Leandro submarket, by far the tightest of the East Bay, saw vacancy rates continue to fall, reaching 3.2% in the fourth quarter of 2016.

Flex/R&D Vacancy Rates

Q1-10 to Q4-16



Residential Construction Permits

Q4-07 to Q4-16



¹⁹ http://www.bizjournals.com/sanfrancisco/news/2017/03/23/real-deals-industrial-tesla-at-oaks-logistics.html

Planned development in the East Bay appears to be losing steam overall, with an 81.9% fall in the value of industrial permits granted in 2016, compared to the year prior.

Industrial Construction by Submarket

City/ Submarket	2016	Change (%)
North I-680	245,000	188.2
Richmond	8,928,000	-31.7
Other	64,280	-96.5
I-8o/I-88o	10,165,662	N/A
East Bay Total	19,402,942	-81.9

Source: CIRB

Flex and Research and Development Submarket Snapshot: Q4-16

Submarket	Rent (\$ per sq. ft. per year)	Vacancy Rate (%)	Vacant Square Feet (ooos)
Oakland/San Leandro	9.47	3.2	70
Pleasanton/Livermore	10.31	7.6	293
Concord/Pittsburg	10.19	8.9	195
North Alameda/West Contra Costa	19.14	12	153
Union City	5.61	12.2	119
Hayward	8.91	12.9	527
Newark/Fremont	8.7	15.7	1,668

Source: REIS

INDUSTRIAL RENTAL MARKET

The East Bay industrial market is playing an increasingly prominent role in the Bay Area tech ecosystem as space becomes scarce and costly in San Francisco and the South Bay. Already, some of Tesla's 300 suppliers have moved into the East Bay, which has led some to speculate that the region could become the manufacturing center for electric vehicles.21 These include SAS Automotive Systems, a vendor based in Germany that recently pre-leased a Newark industrial building.²² As Tesla moves toward their stated production goal of 500,000 units annually by 2018, Tesla's ability to meet this mark will depend on a rapid expansion in production and supply chain capacities. The recently signed warehouse lease represents a step in this direction and will expedite the movement of intermediate and finished goods to the Fremont factory.23

Despite Tesla, planned development in the East Bay appears to be losing steam overall, with an 81.9% fall in the value of industrial permits granted in 2016, compared to the year prior. Still, this follows three years of exceptionally high investment levels in the region. It also bears mentioning that 73.2% of new industrial construction has been fueled by five firms in the region—Tesla, Amazon, FedEx, and UPS, and Apple—over the last two years, according to Collier's International.²⁴ Therefore, falling investment in the region is likely due to slowing expansion of these firms, but there will likely be another wave of construction as ancillary firms, as in the case of Tesla's suppliers, follow these major players into the region. The East Bay industrial market is well placed within an existing logistics and distribution network and offers substantial rent discounts and more available space compared to its neighbors. These advantages will continue to serve the East Bay region well.

²¹ http://www.bizjournals.com/sanfrancisco/news/2016/08/04/how-tesla-drives-manufacturing-bay-are-elon-musk.html

²² http://www.bizjournals.com/sanfrancisco/news/2016/11/11/tesla-sas-eureka-landing.html

²³ http://www.bizjournals.com/sanfrancisco/news/2017/03/23/real-deals-industrial-tesla-at-oaks-logistics.html

²⁴ https://www.bisnow.com/san-francisco/news/industrial/east-bay-industrial-is-thriving-69811



RESIDENTIAL REAL ESTATE



OVERVIEW

HE SUPPLY CONSTRAINTS that have hindered the East Bay housing market in recent years took deeper root in 2016, as homebuyer demand continued to be driven by the East Bay region's relative affordability advantage, sustained income and population

growth. Though overall residential construction activity picked up over the last year, particularly in the single-family segment of the market, new housing construction remains well below its historical pace. This activity has done little to remedy the extremely low inventory of homes for sale in the East Bay. The combination of strong homebuyer demand fueled by a population of homebuyers with greater spending capacity coming from high-cost counties elsewhere in the Bay Area, limited inventory, and a recovery defined by subpar construction activity has the East Bay housing market headed toward a critical inflection point. Will supply pick up and preserve the region's long-held affordability advantage, or will long-term supply constraints yield something similar to the sky-high prices and diminished home sales observed just across San Francisco Bay?

\$719K median home price

Median home price in Alameda County: \$719k, Contra Costa County \$543k

3.9% increase in rents

East Bay rents rise 3.9% from 2015 to 2016

Housing price forecast



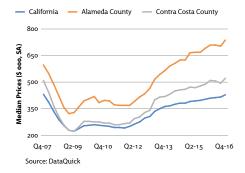
only 4.1% vacant units

Only 4.1% of housing units in the East Bay were vacant in 2015, well below the statewide average of 7.8%

EAST BAY RESIDENTIAL REAL ESTATE

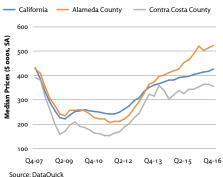
Existing Single-Family Home Prices

Q4-07 to Q4-16



Existing Condominium Prices

Q4-07 to Q4-16



Home Affordability Index Bay Area

Q4-00 to Q4-16



HOME PRICES

The relative affordability of housing in the East Bay, coupled with growing household incomes, propelled price appreciation in the region last year, albeit at a far more moderate pace than in recent years. Price appreciation in Alameda County (6.7%) and Contra Costa County (6.2%) lagged growth in San Francisco (13.1%) in 2016, though early figures for the first quarter of 2017 indicate that a reversal of this year-long trend is on the horizon.1 Home prices in San Francisco may be reaching a tipping point, though they would have to fall by a considerable margin across the Bay Area before making a sizable dent in the East Bay's cost advantage. Falling home prices elsewhere in the Bay Area will do little to influence short-term trends in the East Bay.

CONDOMINIUM **PRICES**

With more buyers priced out of nearby San Francisco and Santa Clara counties, the market for existing condominiums held steady in the East Bay over the last year. At 7.5% price appreciation over the year, Alameda County logged the fastest growth among Bay Area regions and outpaced the state overall. Existing condo prices in Contra Costa County grew at a

more modest 4.1% between the fourth quarter of 2015 and the fourth quarter of 2016, recovering from a brief dip in the first half of 2015

HOUSING AFFORDABILITY

Persistently low inventories of homes for sale across the Bay Area have resulted in red-hot competition for the limited number of homes on the market.² As a result of this long-term supply constraint, the average household in the East Bay would have to spend \$35,300, or 51.9%, of its income each year to afford the mortgage payment for the median-priced (\$629,633) home in the region. Moreover, potential homebuyers would also be on the hook for a \$125,900 down payment³ on the median-priced home in the East Bay. Nonetheless, East Bay home prices remain considerably more affordable than prices in neighboring communities in San Francisco4 and Santa Clara counties.

DEFAULTS AND FORECLOSURES

Sustained increases in local incomes in recent years have dramatically improved household finances in the East Bay, which has further reduced

- 1 Riley McDermid, "S.F. home sales hit 5-year low, and prices are falling." San Francisco Business Times. March 27, 2017. Available at http://www.bizjournals.com/sanfrancisco/news/2017/03/27/san-francisco-house-pricessales-falling.html.
- 2 Richard Scheinin, "Seller's market? Bay Area home sales slip, but prices soar." East Bay Times. March 24, 2017. Available at http://www.eastbaytimes.com/2017/03/23/sjm-housing-0324/.
- 3 Assuming 20% down.
- 4 The historical Home Affordable Index for San Francisco (MD) has changed significantly since last year's report. The Bureau of Economic Analysis significantly revised local personal income in many regions as part of their revised statistics for the 1998 to 2014 period. As such, the affordability index for San Francisco (MD) was overstated for the time period in question. More information about these revisions can be found at https://www. bea.gov/newsreleases/regional/lapi/lapi_newsrelease.htm.

Foreclosures in Select Cities in the East Bay

				Change (%)	
City	1998-2006 Average	Q4 2015	Q4 2016	Q4-2015 to Q4-2016	1998-2006 Average to Q4-2016
Oakland	37	39	25	-35.9	-32.4
Concord	9	14	7	-50.0	-22.2
Fremont	6	10	5	-50.0	-16.7
Berkeley	2	5	2	-60.0	0.0
Hayward	10	14	11	-21.4	10.0
Richmond	12	14	16	14.3	33.3
Antioch	15	55	26	-52.7	73.3
Alameda	1	0	2	NA	100.0
Brentwood	3	8	6	-25.0	100.0

Source: DataQuick

the number of default notices in Alameda and Contra Costa counties in 2016. Parts of Contra Costa County were previously hit with high foreclosure rates, partially due to the use of predatory lending products. With 1.3 and 2.2 defaults per 1,000 mortgaged housing units in Alameda County and Contra Costa County, respectively, few distressed properties will be on the market in the months ahead.

Mirroring the downward trend in defaults, foreclosures fell throughout the East Bay in 2016. After years of significant declines from ultra-high levels during the Great Recession, foreclosures in Oakland, Berkeley, Concord, Fremont and other area cities have fallen below the prerecession average. And although foreclosures remain higher than their pre-recession averages in several East Bay cities, the number of foreclosures in many of these cities fell significantly between the fourth quarter of 2015 and the fourth quarter of 2016. The decrease in foreclosures will continue as new

home mortgage products are now

being utilized.

SUPPLY

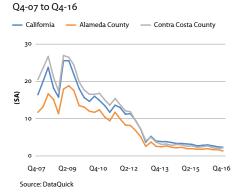
With strong demand for housing and below-average residential construction activity during the recent recovery, the supply of available housing in the East Bay continues to tighten.⁵ Only 4.1% of housing units in the East Bay

Housing Vacancy Rate (%)

Year	Alameda	Contra Costa	East Bay	CA
2007	8.0	6.7	7.4	8.3
2008	8.6	7.0	7.9	9.1
2009	8.7	8.1	8.5	9.1
2010	7.8	8.1	7.9	9.3
2011	6.7	6.2	6.5	9.1
2012	6.1	5.2	5.7	8.4
2013	5.4	5.4	5.4	8.3
2014	4.9	4.6	4.8	8.2
2015	4.0	4.1	4.1	7.8

Source: U.S. Census American Community

Defaults per 1,000 Mortgaged **Housing Units**



As a result of this longterm supply constraint, the average household in the East Bay would have to spend \$35,300, or 51.9%, of its income each year to afford the mortgage payment for the medianpriced (\$629,633) home in the region.

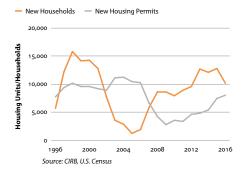
⁵ Richard Scheinin, "Once red hot, Bay Area housing market still simmers." The Mercury News. March 1, 2017. Available at http://www.mercurynews.com/2017/01/31/bay-area-real-estate-home-sales-dip-prices-rise/.

were vacant in 2015, well below the statewide average of 7.8% despite a modest increase in new housing construction in the last three years, indicating that demand for housing in the region continues to dwarf the supply.

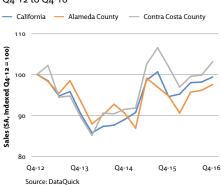
Years of price appreciation have started to slow the pace of households entering the East Bay, as a growing number of households are priced out of even the Bay Area's most affordable locales. In 2016, 10,133 new households entered the East Bay, well below the average of 12,500 during the previous three years. The pace of housing construction continues to lag behind household formation in the East Bay, however, despite sizable increases in the numbers of housing units permitted over the last three years. Indeed, roughly 141,600 new households have entered the East Bay since 2000, compared to 121,700 new housing units permitted for construction. This gap has become more severe in recent years, with nearly twice as many households moving into the East Bay since 2012 (57,277) than housing units permitted for construction during that time period (30,295). This persistent gap between household formation and housing construction will continue to constrain the supply of housing in the East Bay, barring a sizable uptick in construction activity or drop in demand.

culmination of five straight years of considerable price appreciation has eliminated a growing number of potential homebuyers. The East Bay has been no different, with home and condominium sales growing 0.6% in Alameda County and falling 0.8% in Contra Costa County between 2015 and 2016. However, even this lackluster sales activity in the East Bay is better than declining sales in San Francisco (-2.4%) and Santa Clara counties (-5.7%). Clearly, the East Bay's affordability advantage made the region's housing market relatively more resilient to the significant supply concerns rooted deep in the broader Bay Area.

Housing Permits and New Households East Bay, 1996 to 2016



Single-Family and Condominium Sales Q4-12 to Q4-16



HOME AND CONDOMINIUM SALES

Sales volume has started to decline throughout the Bay Area. The

HOME AND CONDOMINIUM PRICES AND SALES

With supply failing to keep pace with homebuyer demand again in 2016, home prices grew at a strong clip throughout the year. However, price appreciation was spread more evenly between Alameda and Contra Costa counties than it was a year earlier. Potential homebuyers responded quickly to the more severe shortage of housing in Alameda County, with many households looking instead to housing options in Contra Costa County in 2016. Nonetheless, the fastest-growing markets in the East Bay over the last year were again concentrated in Alameda County, led by the City of Oakland, home to some of the hottest neighborhoods for home appreciation in the broader Bay Area.⁶ The higher demand for housing

6 Kevin Truong and Riley McDermid, "The five hottest Bay Area neighborhoods for home appreciation are all in Oakland." San Francisco Business Times. January 5, 2017. Available at http://www.bizjournals.com/sanfrancisco/news/2017/01/05/zillow-housing-market-oakland-price-growth.html.

Home and Condominium Sales and Median Prices in East Bay Areas with the Fastest-Growing Prices in 2016

City or Town/County	Annual Sales	Median Prices (\$000s)	Year-over-Year Change in Price (%)
Alameda County	12,867	719	7.8
San Lorenzo	193	536	12.6
Oakland	3,064	662	11.2
San Leandro	723	552	10.7
Berkeley	607	1,067	9.8
Union City	498	687	9.4
Contra Costa County	12,816	543	6.8
Pleasant Hill	399	658	11.1
Walnut Creek	1,495	680	9.8
Oakley	602	405	9.5
Concord	1,380	492	8.6
Martinez	581	533	8.2

Source: California Association of Realtors

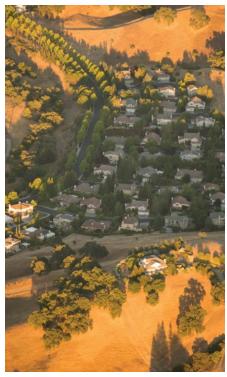
Home and Condominium Sales and Median Prices in East Bay Areas with the Slowest-Growing Prices in 2016

City or Town/County	Annual Sales	Median Prices (\$000s)	Year-over-Year Change in Price (%)
Alameda County	12,867	719	7.8
Newark	381	663	3.7
Emeryville	158	480	3.9
Livermore	1,213	682	5.2
Pleasanton	809	935	6.3
Dublin	800	810	6.5
Contra Costa County	12,816	543	6.8
Lafayette	268	1,327	-1.5
Moraga	178	1,026	3.2
San Ramon	990	886	3.3
Clayton	161	720	4.0
El Cerrito	225	772	5.3

Source: California Association of Realtors

adjacent to BART and other transit lines, entertainment and dining, especially among younger residents, added to the popularity of housing in Oakland. This has contributed to the acute housing shortage that remains concentrated in the East Bay's urban cores. Prices in these more densely populated areas should continue to rise.

Although the pace of price appreciation picked up in Contra Costa County in 2016, after a subpar showing in 2015, many of the slowest-growing housing markets in the East Bay are in the county's more expensive locales. For example, prices fell 1.5% in Lafayette, where the median-priced home sold for more than \$1.3 million, while price



Homes in Town of Danville photo by: Karl Nielsen

Roughly 141,600 new households have entered the East Bay since 2000, compared to 121,700 new housing units permitted for construction.



Family plays in playground photo by: Paige Green

A large portion of recent
East Bay single-family
construction has been
concentrated in East
Contra Costa County,
where there is more
developable land than in
the region's urban cores. A
disproportionate amount of
single-family construction
over the last three years
has occurred in Brentwood,
Oakley and Pittsburg.

Home and Condominium Median Prices and Sales in Higher Cost East Bay Areas in 2016

City/County	Median Prices (\$000s)	Year-over-Year Change in Price (%)	Annual Sales	Year-over-Year Change in Sales (%)
Alamo	1,613	7.3	202	1.5
Orinda	1,443	7.6	233	-10.7
Lafayette	1,327	-1.5	268	-22.5
Danville	1,116	6.3	869	-2.0
Berkeley	1,067	9.8	607	-3.8
Moraga	1,026	3.2	178	-17.2
Pleasanton	935	6.3	809	-3.9
San Ramon	886	3.3	990	-9.1
Total	1,071	5⋅3	4,156	-7.0

Source: California Association of Realtors

Home and Condominium Median Prices and Sales in Affordable East Bay Areas in 2016

City/County	Median Prices (\$000s)	Year-over-Year Change in Price (%)	Annual Sales	Year-over-Year Change in Sales (%)
Oakland	662	11.2	3,064	-6.8
San Leandro	552	10.7	723	-3.6
San Lorenzo	536	12.6	193	-17.2
Martinez	533	8.2	581	3.4
Hayward	524	9.0	1,315	-1.4
Concord	492	8.6	1,380	-4.3
Emeryville	480	3.9	158	-15.1
Oakley	405	9.5	602	10.9
Total	565	9.5	8,016	-3.8

Source: California Association of Realtors

appreciation in Moraga cooled to just 3.2% between 2015 and 2016.

The choppy trends in the upper end of the East Bay housing market in 2015 carried into 2016. In fact, the relatively slow price appreciation and declining sales activity in these high-cost areas were more pronounced over the last year, with home and condominium sales falling in most areas in the East Bay. Moreover, the pace of price appreciation in these high-cost areas between

2015 and 2016 (5.3%) was more subdued than it had been in previous years, implying that more homes in high-priced parts of the East Bay are beyond the reach of a large proportion of would-be homebuyers.

With many households priced out of higher-cost areas in the East Bay again in 2016, most residential market activity remains concentrated in the East Bay's more affordable regions. Unlike last year, however, home sale volumes also fell in many

of these areas, providing some idea of the extent to which housing supply constraints have pervaded the East Bay market. Home and condominium sales in affordable East Bay areas fell 3.8% from 2015 to 2016. At the same time, these major supply concerns resulted in strong price appreciation, particularly in the City of Oakland and its outlying areas.

APARTMENT VACANCIES AND RENTS

Trends in the homebuyers' market have continued to push many potential homeowners into the East Bay rental market, with rental costs rising at a steady 3.9% from the fourth quarter of 2015 to the fourth quarter of 2016. The most significant rental cost increase, led by a 71% increase over a 3.5 year period, was in Oakland⁷.

The apartment vacancy rate in the East Bay has started to tick up slightly, though at 3.2%, it is the lowest in the broader Bay Area. The small increase in vacancies stems from a modest increase in residential housing construction that began at the start of 2015, though persistent demand for rentals has kept conditions in the market at ultra-tight levels. Clearly, it will take a sizable increase in residential construction activity to remedy the structural issues in the homebuyer market that have spilled over into the rental market.

RESIDENTIAL CONSTRUCTION

Despite significant supply concerns, the East Bay housing market stands on firmer footing than markets in neighboring San Francisco and the South Bay, if only for the elevated pace of residential construction over the last several years. Nearly 15,500 new residential housing units have been permitted in the East Bay since the first quarter of 2015, compared to 11,253 units in San Francisco and 11,492 in the South Bay. One major factor underpinning the resurgence of construction has been a flurry of activity in downtown Oakland, where more than 2.000 units are in the development pipeline.8

Residential construction activity in the East Bay for 2016 exhibited a growing balance between single-family and multi-family construction, as multi-family housing plateaued in 2015 and 2016 after a major surge during the prior two years. And while the multi-family explosion has lost momentum, single-family construction has increased. The number of single-family permits issued in the East Bay grew 14.8% to 3,890 units in 2016, while multi-family permits grew at 1.9% to 4,134 units.

A large portion of recent East Bay single-family construction has been concentrated in East Contra Costa County, where there is more developable land than in the region's urban cores. A disproportionate amount of single-family construction over the last three years has occurred in Brentwood, Oakley and Pittsburg,

Apartment Vacancy Rates and Rents in the East Bay



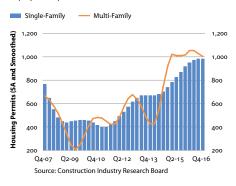
Residential Construction Permits

Q4-07 to Q4-16



Single-Family and Multi-Family Construction Permits

Q4-07 to Q4-16



 $^{7\} http://www.bizjournals.com/sanfrancisco/blog/real-estate/2016/10/oakland-3000-average-rent-zillow.html$

⁸ David Debolt, "Oakland: Downtown grows up with new residential towers, but who will afford them?" *The Mercury News*. March 17, 2017. http://www.mercurynews.com/2017/03/16/oakland-downtown-grows-with-residential-towers/.

Overall, Beacon Economics projects home sales in the East Bay to grow roughly 7% in the year ahead.

where a relatively large amount of developable land remains. The City of Brentwood, for instance, has identified roughly 2,333 acres for development and is working on a growth plan. The City of Oakley has plans for 47 projects that are slated to include 5,452 single-family homes and 195 apartments in the periphery of the East Bay. 10

Cities in the East Bay Developing the Most Single-Family Units Relative to their Current Single-Family Housing Stock

City	Permits 2014 to 2016	Permits as a Share of Housing Stock (%)
Dublin	1,392	13.4
Brentwood	1,486	9.1
Oakley	595	5.8
Pittsburg	589	3.7
Hayward	1,032	3.6
Orinda	159	2.5
Livermore	591	2.4

Source: Construction Industry Research Board

Median Home Price and Sales Forecast

In the Tri-Valley, the neighboring cities of Pleasanton and Dublin are poised to become major multi-family housing hubs in the East Bay, with almost 2,650 units permitted. These projects will significantly boost the multi-family housing stock in these areas and will help alleviate the region's housing shortage. However, these new housing units and the associated increase in population density remain a challenge for cities in their efforts to provide services proportional to the number of new residents moving in.

Cities in the East Bay Developing the Most Multi-Family Units Relative to their Current Multi-Family Housing Stock

City	Permits 2013 to 2015	Permits as a Share of Housing Stock (%)
Pleasanton	1,353	21.9
Dublin	1,297	21.6
Lafayette	127	7.9
Livermore	475	7.9
El Cerrito	188	7.5
Pittsburg	300	6.6
Albany	175	4.9
Piedmont	7	4.4

Source: Construction Industry Research Board

FORECAST OF EXISTING SINGLE-FAMILY HOME PRICES AND SALES

The effects of the regional housing shortage will continue to dictate trends in the East Bay housing market in the year ahead. Beacon Economics predicts that price appreciation will increase through the third quarter of 2017, with year-over-year growth peaking at 11.9% as the housing market strains under persistently low inventories. As developers respond to rising prices with new construction projects, prices will cool into the 4% to 6% range for the duration of the forecast. Meanwhile, home sales will stall in the East Bay during the first half of 2017 before coming back to life to close out the year. Overall,

Source: DataQuck

Forecasts by Beacon Economics

⁹ Rowena Coetsee, "Environmental group monitoring East Contra Costa's disappearing open space," East Bay Times. March 27, 2017. Available at http://www.eastbaytimes.com/2017/03/27/environmental-group-monitoring-east-contra-costas-disappearing-open-space/.



Residential construction photo by: City of Hayward

Beacon Economics projects home sales in the East Bay to grow roughly 7% in the year ahead.

FORECAST OF CONSTRUCTION ACTIVITY

Beacon Economics expects construction permits to hold steady in the year ahead as single-family housing construction continues its upward march and multifamily construction is reined in a bit. Looking further out, overall residential construction activity is expected to pick up again, with single-family construction permits forecast to grow by as much as 8.4% on a year-over-year basis and multifamily construction projected to grow

by as much as 9.0% by the middle of 2018.

Although it may take longer than expected, increased housing construction in the East Bay will mitigate some of the more severe effects of the housing shortage that have been observed elsewhere in the Bay Area and will play a major role in protecting the region's affordability advantage. Nonetheless, supply constraints in the East Bay will linger and will influence residential real estate trends in the year ahead. Ultimately, a near-term increase in residential construction would go a long way toward alleviating the supply constraints in the East Bay over the last year, but another year of strong price appreciation and diminished sales may be necessary before that happens.

Residential Construction Permits Forecast

East Bay, Q4-02 to Q4-20







The Demographic composition of the East Bay has changed significantly over the last five years. Population growth has been faster than in some other Bay Area counties and in the state as a whole. In 2016, the East Bay added 31,405 individuals, mostly coming from San Francisco, San Mateo and Santa Clara counties. The share of high-income households has increased while the share of low-income households has decreased. Steady gains have been made in educational attainment. Because of the regional labor demand for highly skilled workers, human capital accumulation will continue to be a priority in the East Bay in the years to come.

Average income of individuals who have less than a high school education (no diploma).

\$24,369 - East Bay

\$23,564 - San Mateo

\$22,419 - Santa Clara

\$21,223 - San Francisco

\$20,880 - California

11% more millenials

The "millennial" population (aged 20-34) has grown by 11.1% from from 2010 to 2015, in the East Bay.

40% earn over \$100,000

About 40% of households had an income of more than \$100,000 in 2015.

~8,000 new individuals

From 2010 to 2015 net migration from San Francisco, San Mateo, and Santa Clara County to the East Bay was nearly 8,000 individuals.

POPULATION GROWTH

The East Bay has continued to lead Bay Area population growth over the last year. From 2015 to 2016, its population grew by 1.1%, outpacing California (0.75%) and Santa Clara County (0.78%). In absolute terms, the East Bay added 31,045 individuals in the last year, a larger gain than San Francisco, San Mateo, and Santa Clara counties combined. From 2006 to 2016, the East Bay's population grew by 11.8%, an increase of nearly 290,000 people. The natural increase—births minus deaths—has been decreasing steadily over the last 10 years, reaching a 10-year low of 14,148 in 2016. Although domestic migration was negative for the first time in five years, that decrease was offset by a 10-year high in foreign immigration (18,240 individuals).

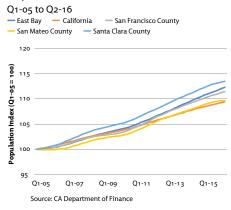
With uncertainty about U.S. immigration policies, the East Bay is starting to show signs of faltering visitation and immigration rates. The University of California, Berkeley reported the first decrease in international applications in more than a decade, a 1.2% drop¹. There was a 30% decrease in student

applicants from Mexico and a 10% decrease from countries with large Muslim populations².

H-1B visas, which are used to bring in foreign workers with specialized skills to fill U.S. job vacancies, reached their annual limit for the year in less than a week. After the application period opened on April 3, 2017, 65,000 H-1B applications were submitted for the fiscal year 2018. However, the overall number of applications was down from last year. Announced review changes from the U.S. Citizenship and Immigration Services agency and uncertainty about future guidelines for assessing fraud and abuse in the program's use may affect the future of the H-1B visas.

The Bay Area's booming economy has attracted many individuals to the region, which has led to a tight housing market and exorbitant rents in some areas, including San Francisco and Santa Clara counties. This has caused a significant increase in the number of Bay Area residents choosing to live in the more affordable East Bay region. From 2010 to 2015, net migration from San Francisco, San Mateo and Santa Clara counties to the East Bay was nearly 41,200.

Population Growth Bay Area & California

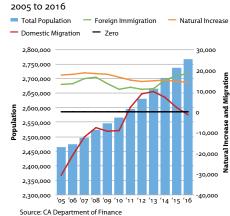


East Bay Inbound and Outbound Migration Patterns (2010-2015)

County	Inbound	Inbound Share	Outbound	Outbound Share	Net Migration
Marin	4,735	2.0%	6,347	3.4%	-1,612
Other California	112,454	47.6%	105,373	55.6%	7,081
San Francisco	55,106	23.3%	30,063	15.9%	25,043
San Mateo	23,029	9.8%	15,590	8.2%	7,439
Santa Clara	40,686	17.2%	31,981	16.9%	8,705
Total	236,010	100.0%	189,354	100.0%	46,656

Source: American Community Survey

East Bay Population



¹ http://www.dailycal.org/2017/04/03/number-uc-berkeley-international-applicants-decreases-1st-time-decade/ 2 http://www.sfchronicle.com/bayarea/article/UC-sees-1st-drop-in-international-applicants-in-11043891.php



Jupiter Restaurant in Berkeley photo by: City of Berkeley

From 2015 to 2016, Contra Costa County and Alameda County saw significant inflows of new residents, receiving the third and fourth-highest number of inbound migrants in the state during this period. Although people are continuing to migrate to the East Bay, many residents are concerned about the high cost of housing. According to a poll conducted by the Bay Area Housing Council, 40% of Bay Area residents report that they are likely to leave the Bay Area in a few years because of high housing costs, transportation gridlock as well as the cost of living.3 If that should eventually happen, the exodus of people from the Bay Area could be extremely detrimental to the regional economy. To avoid this, measures should be taken quickly to improve housing affordability in the region.

Because of the flourishing regional economy and strong housing demand for the immediate future, Beacon Economics is forecasting that the

East Bay's population will continue to increase as people migrate from surrounding Bay Area counties, with the region's population expected to reach nearly 2,950,000 by the end of 2022.

POPULATION COMPOSITION (AGE AND RACE)

Workers, ages 20 to 34, continue to view the East Bay as an attractive place in which to establish residences because of a diversity in living environments ranging from dense urban centers to suburban housing. The population of these young workers has grown by 11.1% from 2010 to 2015.

The senior population in the East Bay has continued to grow dramatically because of the nation's aging baby boomers. The population of residents

Population Forecast East Bay, Q1-90 to Q4-22

Forecast Actual Total Population(000s, SA) Q1-90 Q1-94 Q1-98 Q1-02 Q1-06 Q1-10 Q1-14 Q1-18 Q1-22

Source: CA Department of Finance

East Bay Population Distribution by Age

Age	2010	2015	2010-2015 Change (%)
Under 5 Years	164,391	164,228	-0.1
5 to 9 Years	169,708	171,616	1.1
10 to 14 Years	164,330	171,259	4.2
15 to 19 Years	173,873	166,034	-4.5
20 to 24 Years	167,292	176,170	5.3
25 to 34 Years	359,171	408,786	13.8
35 to 44 Years	376,631	394,056	4.6
45 to 54 Years	386,609	394,090	1.9
55 to 59 Years	159,519	189,779	19.0
60 to 64 Years	145,421	156,001	7.3
65 to 74 Years	162,622	218,098	34.1
75 to 84 Years	91,795	103,462	12.7
85 Years and Older	45,417	51,381	13.1
Total	2,566,779	2,764,960	7.7

Source: American Community Survey

³ http://www.biziournals.com/sanfrancisco/news/2017/03/30/bay-area-council-millennials-bay-area-housing.html

East Bay Population by Race/Ethnicity

Race/Ethnicity	Share 2010 (%)	Share 2015 (%)	Change (p.p.)
Asian	21.5	23.6	2.1
Other	4.8	5.4	0.6
Hispanic	23.3	23.7	0.4
Black	10.8	9.9	-0.9
White	39.6	37.4	-2.2

Source: American Community Survey

65 years or older grew by 24.4% from 2010 to 2015. The 65 to 74-year old bracket alone grew by 34.1% in the same period.

This supports the idea that the East Bay's affordability is attractive to older residents who are homeowners, who tend to have fixed incomes, and who may feel they are getting more housing value in the East Bay than in any other part of the Bay Area.

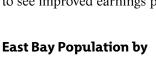
The ethnic composition in the East Bay has been changing gradually in recent years. There was a 2 percentage point decrease in the number of White residents in the region from 2010 to 2015. Still, the White population remains the largest racial category in the East Bay, accounting for 37% of the population. The Asian population has increased from 21% to 23% of the total population over the same five-year period.

INCOME AND EDUCATION

From 2010 to 2015, the share of households earning less than \$75,000 decreased by about 7 percentage points to about 46%. The share

of households earning \$75,000 to \$99,999 remained nearly constant.

In contrast, the share of households earning more than \$100,000 has increased significantly. About 42% of East Bay households had incomes of more than \$100,000 in 2015 compared to 35% in 2010. This is in part because of the influx of higherincome earners to the East Bay⁴ and residents benefitting from the economic recovery. Individuals with college degrees are particularly likely to see improved earnings potential.



Household Income

Income Category	Share 2010 (%)	Share 2015 (%)
Less than \$10,000	5.1	4.4
\$10,000 to \$14,999	4.5	3.8
\$15,000 to \$24,999	8.1	6.8
\$25,000 to \$34,999	7.3	6.3
\$35,000 to \$49,999	11.5	9.5
\$50,000 to \$74,999	16.8	14.8
\$75,000 to \$99,999	12.3	12.4
\$100,000 to \$149,999	16.7	17.9
\$150,000 to \$199,999	8.6	10.6
\$200,000 or More	9.2	13.6

Source: American Community Survey



Cycling in Emeryville photo by: City of Emeryville

Workers, ages 20 to 34, continue to view the East Bay as an attractive place in which to establish residences because of diversity in living environments ranging from dense urban centers to suburban housing.

⁴ http://www.mercurynews.com/2016/10/03/silicon-valley-east-bay-gain-wealthy-households-while-middle-income-dwindles/



Songran Festival in Fremont photo by: Howard Stateman

East Bay residents without high school diplomas had higher annual median earnings than those in other Bay Area counties and in the state overall. This group has seen median earnings increase by an astounding 20% from 2010 to 2015, in part because of progressive minimum wage ordinances.

Educational attainment seems to be highly correlated with East Bay income levels, as the difference between college graduates and those who did not graduate from college is significant. In 2015, bachelor's degree holders had annual median earnings nearly two times higher than high school graduates. Annual median earnings of associate degree holders were nearly \$23,000 less than the median earnings of individuals with bachelor's degrees. Individuals with graduate or professional degrees earned even more. However, median earnings for college graduates in the East Bay in 2015 tended to be lower than in other parts of the Bay Area, even though bachelor's degree holders in the East Bay saw their median earnings increase by 9.5% from 2010 to 2015.

Programs were also created in community colleges, providing certificate and apprenticeship opportunities in which mastery of specific skills supporting jobs in growing industries can be obtained without associate degrees. These programs are linked to local hiring needs and often enable students to secure well-paying jobs. This may also account for some East Bay residents with high school diplomas or less formal education having higher median

earnings in 2015 than residents of other Bay Area counties. It is also worth noting that East Bay residents without high school diplomas had higher annual median earnings than those in other Bay Area counties and in the state overall. This group has seen median earnings increase by an astounding 20% from 2010 to 2015, in part because of progressive minimum wage ordinances specific to certain cities in the East Bay, where current and future minimum wage rates exceed the state rates. Although this is good news for the employees, there is still a great need for balance between the educational requirements of jobs in the region and the educational attainment of its residents, especially as computer aptitude and advanced technology continue to affect an increasing number of jobs.

It is fortunate that educational attainment has been moving in the right direction in the East Bay. From 2010 to 2015, the share of the population ages 25 and older with bachelor's or higher degrees increased by 3.5 percentage points to 43.2%. The Bay Area labor market continues to demand employees with college degrees, creating a need for higher educated residents as well as increasing numbers of college-educated individuals from outside the region.

Annual Earning Rates by Educational Attainment, 2015 (\$)

Educational Attainment	California	East Bay	San Francisco	San Mateo	Santa Clara
Less than High School Graduate	20,880	24,369	21,223	23,564	22,419
High School Graduate (Includes Equivalency)	29,108	33,119	30,628	32,193	31,007
Some College or Associate's Degree	36,161	41,354	42,350	41,845	42,242
Bachelor's Degree	57,282	64,638	72,016	66,992	76,244
Graduate or Professional Degree	80,442	88,172	95,182	101,959	110,657

Source: American Community Survey

Educational Attainment Rates of Population Age 25 and Older, 2015

Educational Attainment	California (%)	East Bay (%)	San Francisco (%)	San Mateo (%)	Santa Clara (%)
Less than 9th Grade	9.9	6.5	8.2	7.4	7.4
9th to 10th Grade, No Diploma	7.9	5.5	4.1	4.6	5.3
High School Graduate (Includes Equivalency)	20.8	18.0	12.8	15.2	14.8
Some College, No Degree	21.5	20.0	14.1	17.8	16.0
Associate's Degree	7.6	6.9	5.6	7.8	7.1
Bachelor's Degree	20.3	25.8	33.2	27.5	26.3
Graduate or Professional Degree	12.0	17.4	22.0	19.6	23.2

Source: American Community Survey

East Bay Occupation Composition of Civilian Employed Population Age 16 and Over

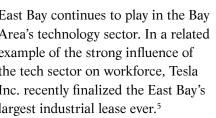
Occupation Type	East Bay 2010	East Bay 2015
Management, Business, Science, and Arts	43.7	46.0
Sales and Office	23.3	20.9
Service	16.6	16.5
Production, Transportation, and Material Moving	9.1	9.0
Natural Resources, Construction, and Maintenance	7.2	7.5

Source: American Community Survey

OCCUPATIONS AND WORKFORCE **RFADINESS**

The largest share of employed East Bay residents work in Management, Business, Science, and Arts. The share of East Bay residents in these occupations grew 2.3 percentage points to 46% from 2010 to 2015. This reflects the integral role the

East Bay continues to play in the Bay Area's technology sector. In a related example of the strong influence of the tech sector on workforce, Tesla Inc. recently finalized the East Bay's largest industrial lease ever.⁵





UC Berkeley Cal Day photo by: City of Berkeley

INCOME INEOUALITY AND POVERTY

Based on the Gini Coefficient, a measure of income inequality, income inequality increased in the East Bay from 2010 to 2015. This was true for the Bay Area as a whole as well as the state. It is worth noting, however, that the Gini Coefficient indicates lower income inequality in the East Bay than in the rest of the Bay Area and California.

Aside from the issue of income inequality, poverty continues to be a problem in the East Bay. Although improvements have been made, nearly 20% of residents without high school diplomas live below the poverty line. Fortunately, there is a

From 2010 to 2015, the share of the population ages 25 and older with bachelor's or higher degrees increased by 3.5 percentage points to 43.2%.



King Park in Brentwood photo by: Sean Stieper

Continued private
sector support for
STEM education at the
primary and secondary
levels, including onsite internships and job
shadowing opportunities,
will greatly benefit residents
of the East Bay.

Poverty by Educational Attainment, 2015 (Population Age 25 and Older)

Educational Level	California	East Bay	San Francisco	San Mateo	Santa Clara
Less than High School Graduate	24.7%	19.8%	22.6%	19.1%	18.1%
High School Graduate (Includes Equivalency)	15.0%	12.6%	17.1%	9.4%	10.9%
Some College or Associate's Degree	10.6%	9.4%	13.3%	6.8%	5.9%
Bachelor's Degree or Higher	5.2%	4.1%	5.8%	3.3%	3.8%

Source: American Community Survey

concerted effort from diverse partners to address this issue. Local Workforce Development Boards, for example, have been working with employers to host job fairs for targeted populations to secure work in tech environments. Community colleges have been acquiring skill set requirements from industry representatives to better prepare their students for jobs. Local philanthropists have been supporting community efforts to introduce lowincome youth to tech careers and coding skills, and businesses have been opening their doors to introduce these youth to workplaces that require STEM (Science, Technology, Engineering & Math) education⁶.

In the long run, one of the best ways to ameliorate the poverty problem in the East Bay is through improved education and skill attainment. Only 4% of East Bay residents with bachelor's or higher degrees were living below the poverty line in 2015. Degrees in STEM fields are especially valuable given the increasing labor demand from tech companies in the Bay Area. Continued private sector support for STEM education at the primary and secondary levels, including on-site internships and job shadowing opportunities, will greatly benefit residents of the East Bay.

Recently, the Bayer USA Foundation provided a grant that will be used to promote STEM education⁷. Other businesses have invested in school districts, community colleges, county offices of education and community nonprofits to emphasize the importance of education and career pathways. The ultimate goal is to raise the level of educational and skill attainment in the East Bay to help more residents reap the benefits of the prosperous Bay Area economy.



"You, Me, We Oakley!" monument photo by: City of Oakley

⁶ http://news.theregistrysf.com/east-bay-stem-career-awareness-day-inspire-next-generation-scientists-innovators/

⁷ http://www.prnewswire.com/news-releases/bayer-usa-foundation-awards-75000-grant-to-connect-and-engage-northern-california-communities-in-stem-300376640.html



This report was supported and prepared in partnership with











