January 2020

The Economic Impacts of Transportation Investments

Forecasting the Benefits of Contra Costa's 2020 Transportation Expenditure Plan

BAY AREA COUNCIL ECONOMIC INSTITUTE

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The Economic Impacts of Transportation Investments

Forecasting the Effects of the Contra Costa Transportation Authority 2020 Transportation Expenditure Plan

The Contra Costa County transportation system is key to the county's economic success

43%

of employed Contra Costa residents commute out of the county. Out-commuters are on the rise, increasing in number by 27.6% from 2010 to 2017.

7 out of every 10

employed Contra Costa County residents drive alone to work, compared to 6 out of every 10 in Alameda County and 3 out of every 10 in San Francisco County.

650,000

daily commuters take trips that rely on routes that either pass through, end, begin, or are completely within Contra Costa County. These commuters have increased by 21.1% since 2010.

Contra Costa County's population and employment are projected to grow over the 35-year Transportation Expenditure Plan (TEP), increasing pressure on the transportation system. Home to 1.1 million people, Contra Costa County is expected to grow by 32% by 2055. Contra Costa County currently has 401,000 jobs, and countywide employment is expected to grow by 41% by 2055.

The county's transportation system performance shows the need for TEP investments to improve the efficiency of the transportation system and the lives of residents who rely on the system daily. Delay from countywide congestion has increased 103% since 2010, now totaling 5.4 million annual vehicle hours of delay (VHD), the equivalent of 4.72 hours per capita. Out of the most congested corridors in the Bay Area, four out of 10 are in Contra Costa County. The average county resident spends the equivalent of 13 days commuting every year, 2.6 more days than the average California resident.

Locally generated transportation tax dollars in Contra Costa County have a track record of funding successful infrastructure

New transit options funded through previous local tax Measure J have been popular, outperforming ridership projections—showing an appetite for new transit options in Contra Costa County—which the TEP would deliver.

- Richmond to San Francisco ferry service outperformed daily ridership projections by 60% by the fifth month of operation.
- In 2018, eBART outperformed daily ridership projections by 29%.
- 23 express lane miles built on I-680, taking advantage of unused high occupancy vehicle (HOV) lane capacity to ease congestion.

Investments across the transportation network can strengthen the Contra Costa County economy by:

Creating jobs through capital investments and operations

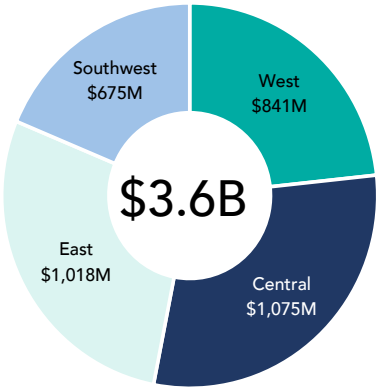
Time and cost saving as a result of reduced congestion

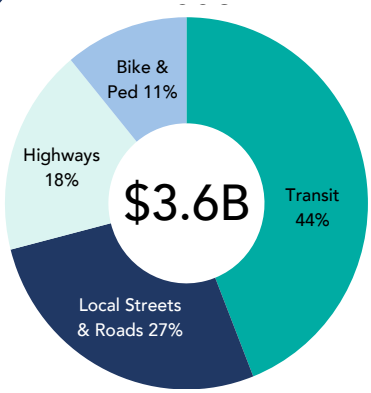
Incentivizing economic development by attracting businesses and workers

Supporting business clustering and opening new markets

Through $3.6 billion in transportation investments over 35 years, the TEP will relieve traffic congestion, make transit safer, cleaner, and more reliable, and provide accessible and safer transportation options.

TEP Spending by Subregion & Mode





Economic Impacts of Contra Costa County Transportation Expenditure Plan

$3.6 billion
in transportation spending over 35 years is expected to result in:

$8.8 billion
in business output, representing new business revenues resulting from increased spending stemming from the initial transportation expenditures.

1,656 jobs
supported annually for 35 years, the equivalent of 57,965 full-time jobs years.

$2.3 billion
in cost savings benefit over 35 years.

TEP Economic Impacts by Industry

Industry	Business Output ($ in millions)	Full-time Equivalent Job Years
Professional & Business Services	1,771	9,060
Financial Activities	1,664	3,517
Construction	1,096	5,786
Manufacturing	1,004	349
Transportation	970	26,741
Education & Health Services	644	4,136
Other Services	402	4,388
Wholesale Trade	370	573
Retail Trade	363	2,179
Media & Information	281	202
Postal & Warehousing	114	754
Government	70	145
Utilities	39	40
Agriculture & Extraction	13	95
Total	8,803	57,965

Note: Full-time equivalent job-years represent one year of one job. For example, a full-time construction job lasting for four years would count as four job-years in this table. Additionally, a 50% part-time manufacturing job lasting two years is counted as one job-year.
Data: Calculated using TREDIS Software; inputs from Contra Costa County Model Performance Measures
Analysis: Bay Area Council Economic Institute

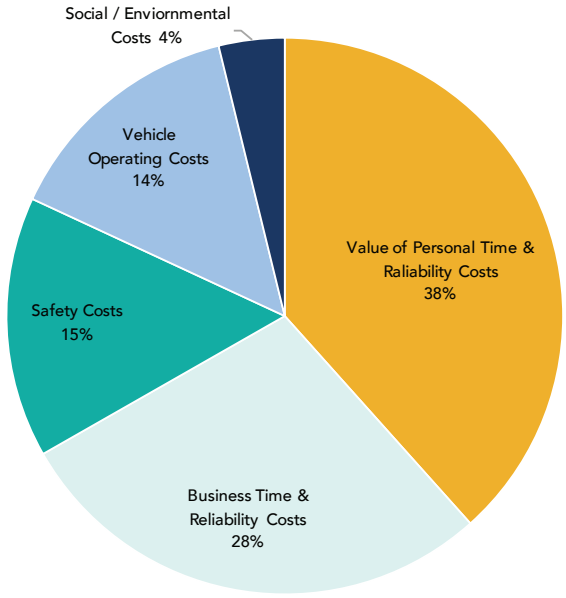
Per capita TEP-related savings based on projected 2055 population include:

- $218 *per capita reduction in vehicle operating costs, including maintenance, operations, and fuel costs*
- $245 *per capita reduction is safety costs*
- $575 *per capita value of personal time savings*
- $449 *per capita value of business time savings*
- *$58 per capita in value of environmental benefits*

All data calculated using TREDIS software with inputs from the Contra Costa County Model Performance Measures.

Value of Cost Savings Benefits

$2.3B savings by 2055



Key projects in the TEP address inefficiencies in the current transportation system

$100 million

invested in East County high-frequency, high-capacity transit extension to Brentwood and connectivity to transit, rail, and parking.

15,900 more Contra Costa County residents chose transit as their commute mode in 2017 versus 2010, showing an appetite for more transit options.

$19 million

to improve traffic flow and local access to Richmond-San Rafael Bridge along I-580 and Richmond Parkway.

188,000 vehicle hours of delay (VHD) on the 7.7-mile approach to the Richmond-San Rafael bridge in 2018, up from 5,000 VHD in 2010.

Congestion solutions along this corridor will address increases in delays to serve the **11,000 Contra Costa County residents** who commute to Marin County on a daily basis.

$200 million

invested to relieve congestion, ease bottlenecks, and improve local access along the I-680 corridor and $50 million to improve transit reliability along the I-680 and Highway 24 corridors.

As the main route connecting San Ramon, the city with the most jobs in Contra Costa County, to Concord, the most populous city in Contra Costa County, both directions of travel on I-680 together experienced **1.3 million vehicle hours of delay** in 2018.

Projects Include:

- Transit only "bus-on-shoulder" operation
- Expansion of park-and-ride facilities
- Advanced technologies that track and learn from congestion data to inform adjustments to traffic signals that smooth traffic and increase efficiency of the freeway
- 25 miles of continuous express lanes

Introduction

Transportation networks are an integral support system to economies. A well-functioning transportation network efficiently connects people to jobs and businesses to services, while enabling the flow of goods into and out of a region. The design of a transportation system influences land use, quality of life, and productivity of communities. Transportation benefits can be measured using many metrics, some of which are described below:

Employment

The American Public Transportation Association found that 24,200 full-time equivalent jobs are supported for one year per $1 billion of combined spending on public transportation capital investment and operations.[1] Additionally, the Federal Highway Administration estimates that 13,000 full-time equivalent jobs are supported for one year per $1 billion of federal spending on highways.[2]

Direct Transportation Network Benefits

Time savings for commuters—either by allowing for varied mode choices or reducing congestion—can directly equate to an increase in productivity that benefits workers and employers. Transportation investments can also enhance safety, thereby lessening the cost of accidents. Lastly, investments in environmentally-friendly modes of transportation can reduce emissions, which can contribute to overall environmental goals.

Economic Development Benefits

Transportation investments can also reshape the makeup of a local economy. Specifically, transportation networks support business clustering and open new markets, allowing companies to enhance their supply chain efficiency, access broader labor pools, and target more customers. Transportation investments are also tied closely to land use benefits, specifically as it relates to transit investments. Transit-oriented developments have sprung up around rail stations, streetcar lines, and bus rapid transit (BRT) stops around the country as investors look to take advantage of the density of people using those systems.

Consumer Spending

Transportation is the fourth largest category for personal expenditures in the U.S. Nationwide, household spending on transportation totaled $1.2 trillion in 2017 and increased by 55% since 2000.[3] The average household spent an annual total of $9,737 on transportation in 2017. Household transportation costs can be even greater if a system is inefficient or operating over capacity. One study estimates disrepair, congestion and lack of safety features on roadways cost the average Concord, CA driver $1,968 annually.[4]

Goods Movement

Balancing the needs of passenger and freight movement is also an important factor to consider, as congestion costs and road conditions impact goods movement businesses. An analysis of the impact congestion has on goods movement found that $20 billion worth of time and fuel was wasted in the trucking industry due to congestion in 2017.[5]

These measures display that businesses, commuters, and residents benefit from a reliable and uncongested transportation system. California is ranked 41st for transportation infrastructure by U.S. News and World Report—a score that takes commute time, road quality, unstable bridges and public transit usage into consideration.[6] Continued investment in the transportation network is essential to remaining economically competitive on a local and global scale.

This study analyzes the economic impacts of the Contra Costa Transportation Authority's 2020 Transportation Expenditure Plan (TEP). A countywide economic profile, an analysis of jobs-housing imbalance, and trends in regional commutes and mode share explain the need for focused investment in Contra Costa's transportation network. The performance of the current transportation system reveals how strategic investments can serve travel needs and preferences throughout the county. Finally, modeling the economic impact of the investments in the TEP highlights the overarching impact the transportation investments will have on the county's economy.

1

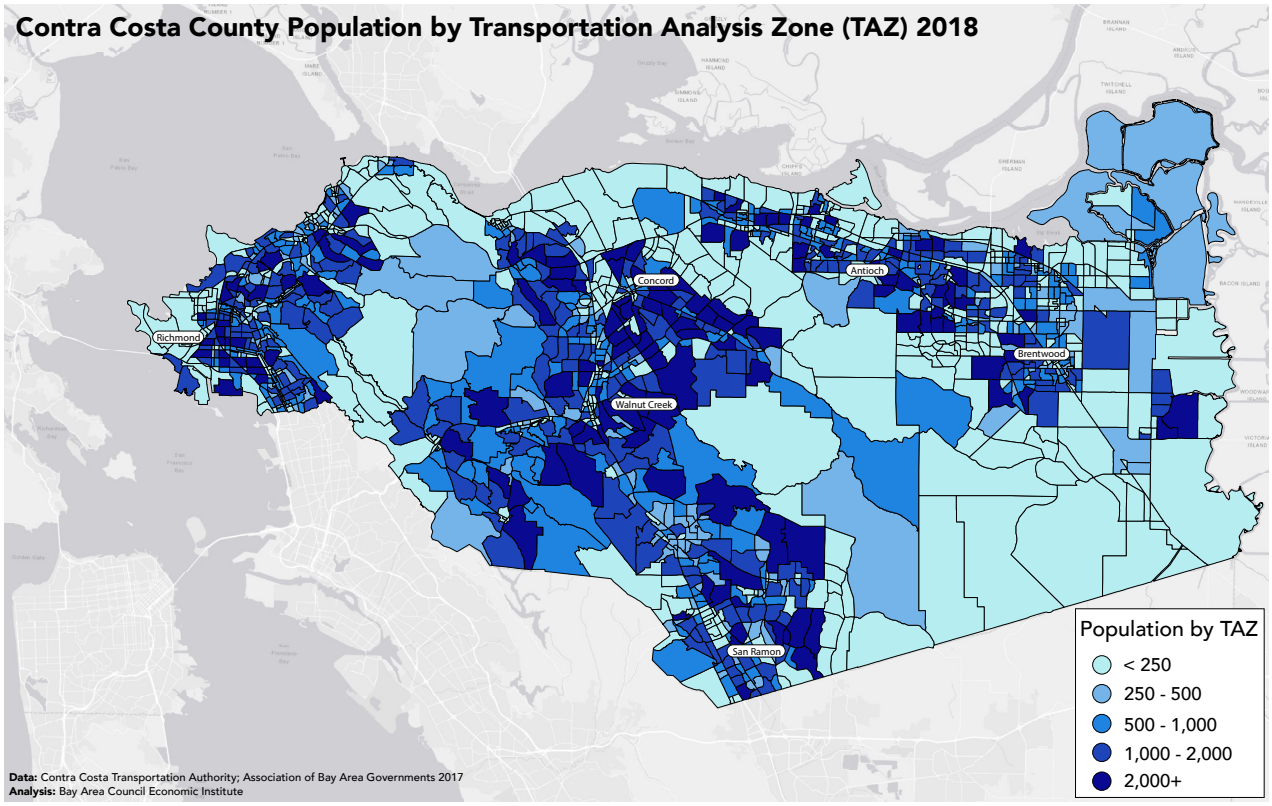
Population & Employment

Contra Costa County Population

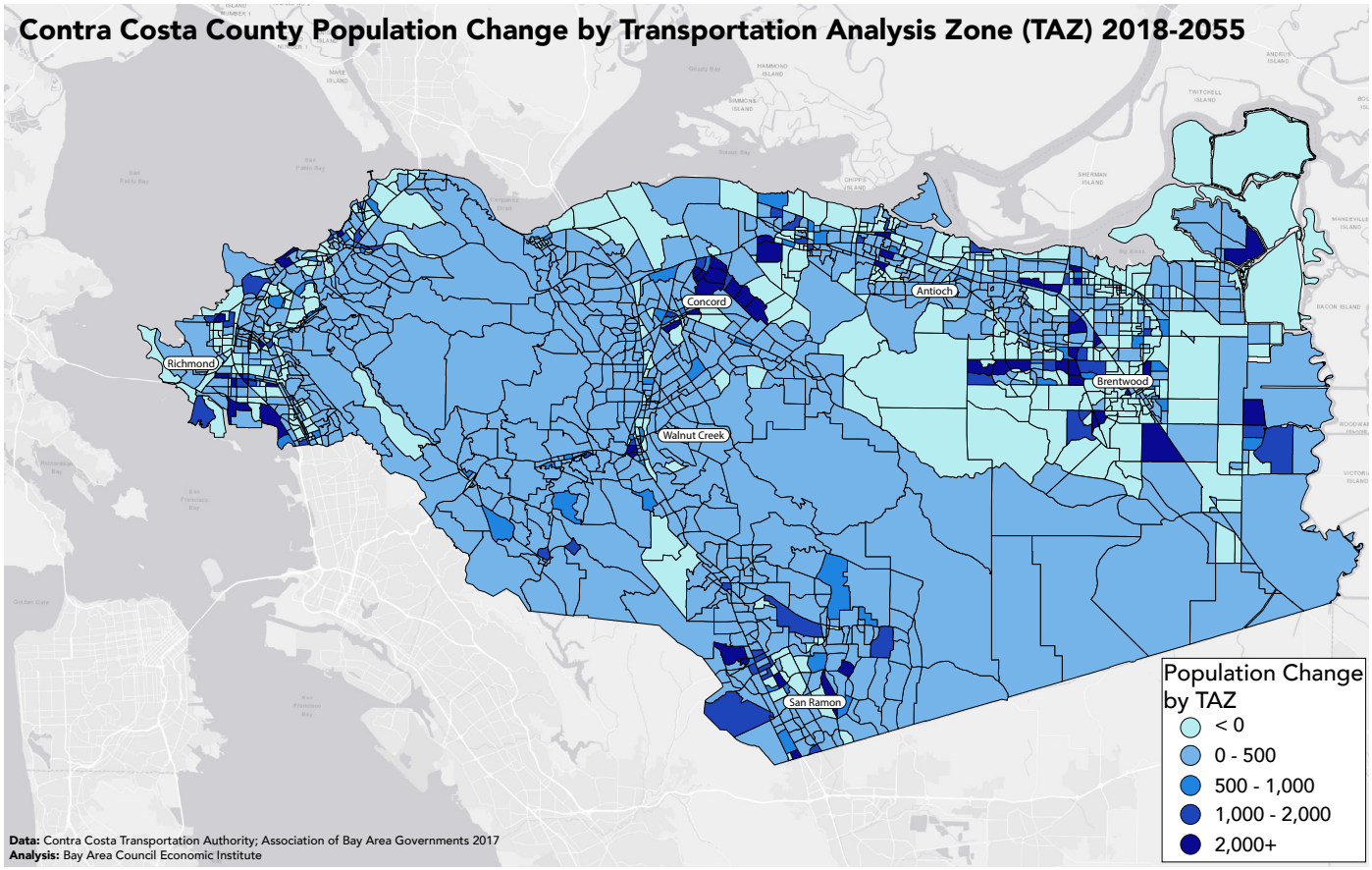
Over the course of the 35 year timeline of the TEP, projected population growth in Contra Costa County is concentrated in a few urban areas in the county. Contra Costa is currently home to 1.1 million people, a population expected to increase 32% by 2055. Over 40% of this population growth is projected to occur in three cities in Contra Costa:

- Concord has the largest share at 17% of the total projected population growth, an increase of 61,000 people by 2055.
- Richmond is the second highest, with 15% of the projected growth, an increase of 31,000 people.
- Third, 10% of the growth is projected in Antioch, estimated to add 35,000 people.

Contra Costa County Population by Transportation Analysis Zone (TAZ) 2018



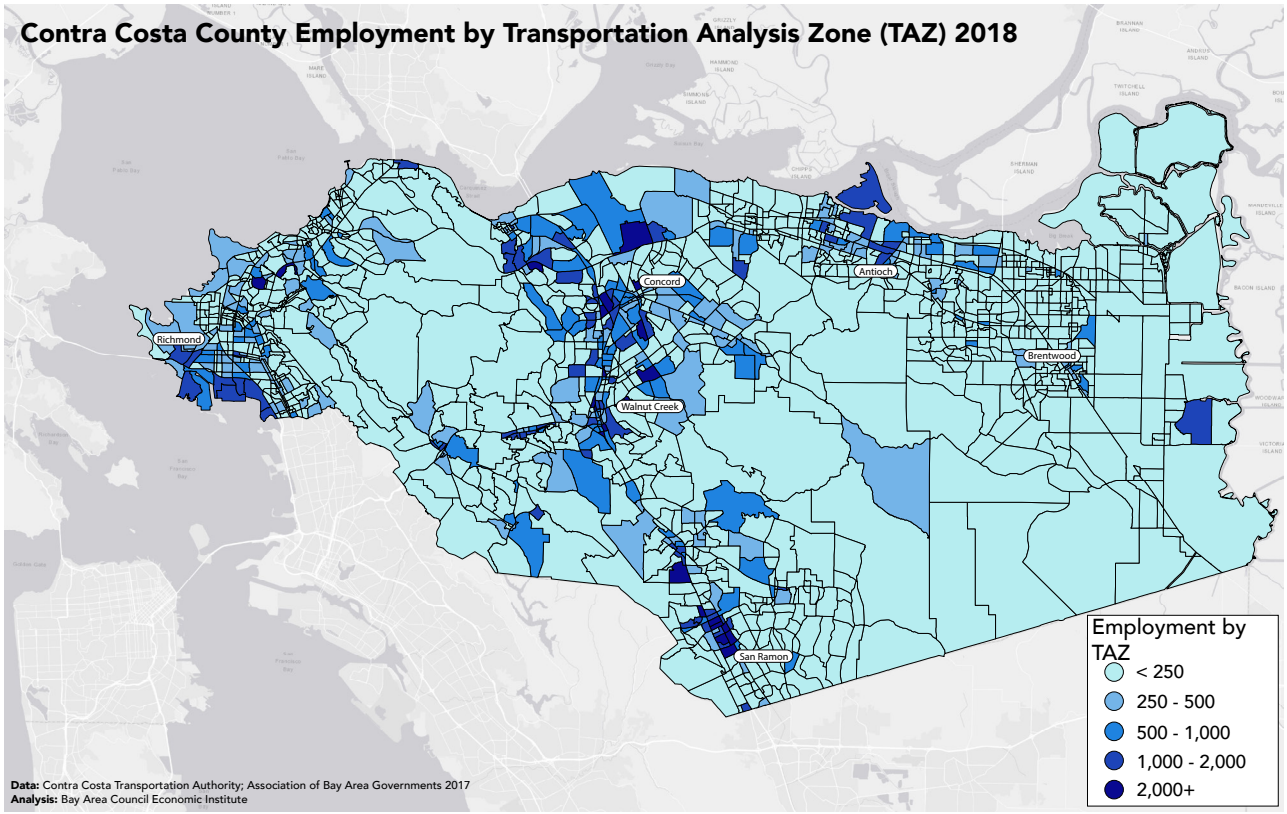
Data: Contra Costa Transportation Authority; Association of Bay Area Governments 2017
Analysis: Bay Area Council Economic Institute

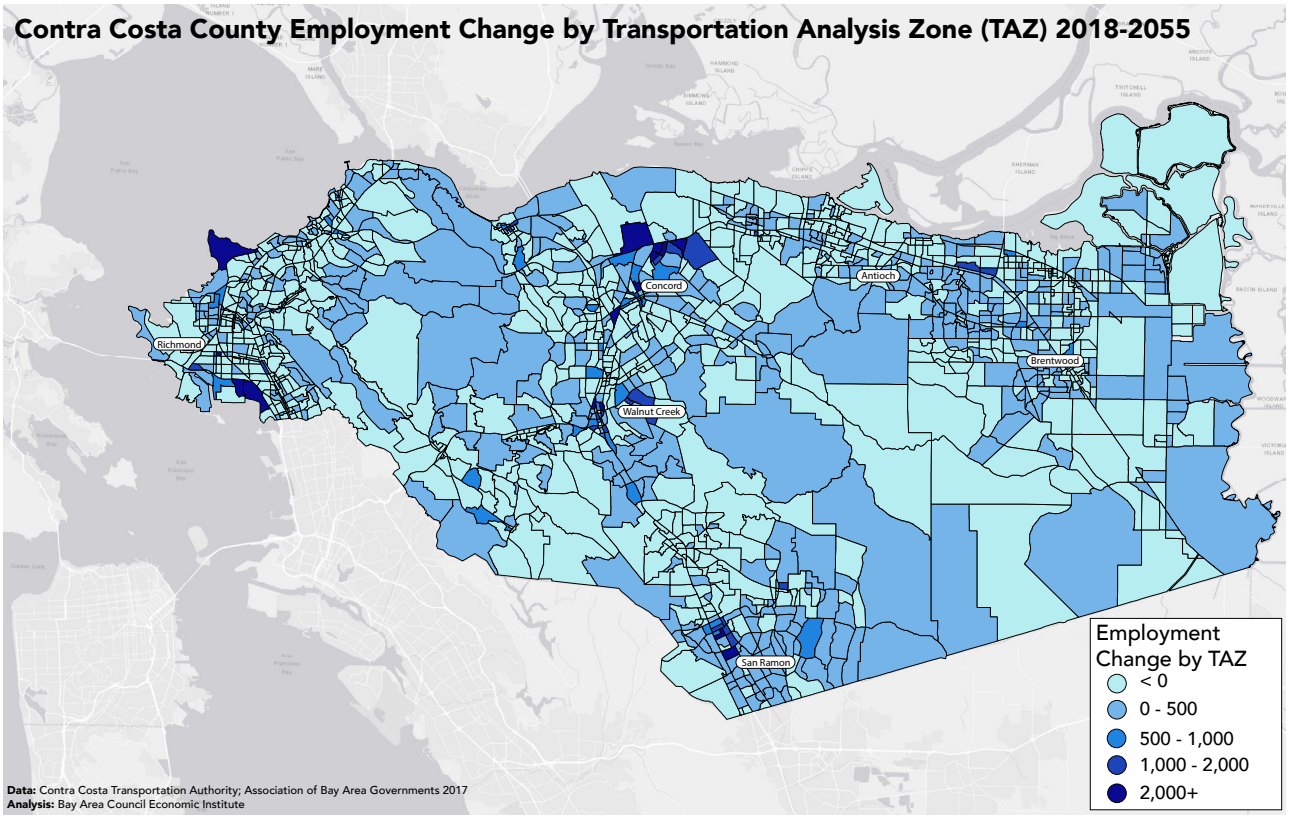


Contra Costa County Employment

Contra Costa County is projected to add 168,000 jobs by 2055, a 41% increase from the 401,000 jobs countywide in 2018. Projected employment growth over the duration of the TEP timeline is even more concentrated than projected population growth, with over 70% of the growth projected in four cities:

- Concord is expected to gain 52,000 new jobs by 2055, the largest share of any city at 31% of the projected job growth.
- Second highest, Walnut Creek, at 17% of the total, is projected to add 29,000 jobs.
- Richmond has the third highest share at 14% of the growth, projecting 23,000 more jobs by 2055.
- Fourth, San Ramon accounts for 11% of the projected growth, with 19,000 new jobs expected in the next 35 years.


Contra Costa County Employment by Transportation Analysis Zone (TAZ) 2018
Richmond
Concord
Antioch
Brentwood
Walnut Creek
San Ramon
Employment by TAZ
< 250
250 - 500
500 - 1,000
1,000 - 2,000
2,000+
Data: Contra Costa Transportation Authority; Association of Bay Area Governments 2017
Analysis: Bay Area Council Economic Institute


Contra Costa County Employment Change by Transportation Analysis Zone (TAZ) 2018-2055
Richmond
Concord
Antioch
Brentwood
Walnut Creek
San Ramon
Employment Change by TAZ
< 0
0 - 500
500 - 1,000
1,000 - 2,000
2,000+
Data: Contra Costa Transportation Authority; Association of Bay Area Governments 2017
Analysis: Bay Area Council Economic Institute

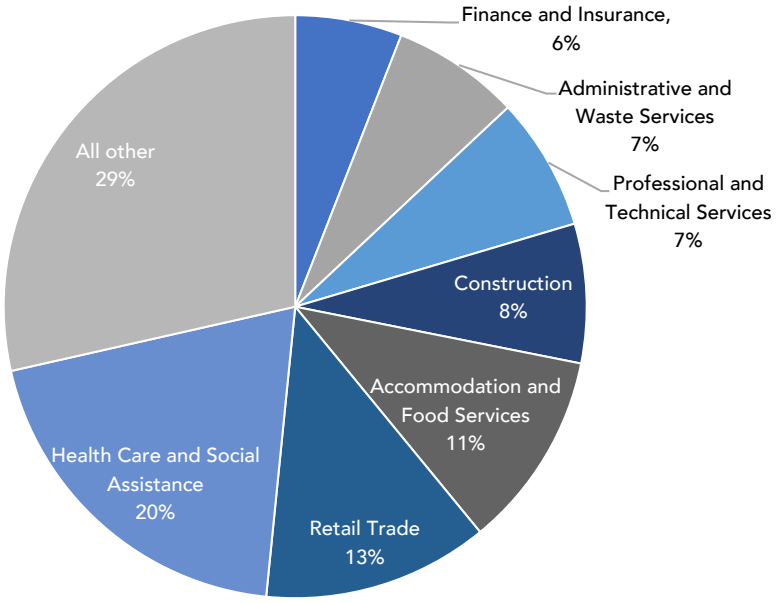
2

Contra Costa County Economy

Contra Costa has an annual Gross Domestic Product (GDP) of $73 billion, accounting for 17% of the San Francisco metropolitan area total GDP, which is the sixth largest of all metropolitan areas in the nation.[7] The businesses contributing to Contra Costa's economic output trust in the county's transportation network. Ensuring they continue to thrive is dependent on a functioning transportation system, which the TEP investments plan to deliver.

Health Care and Social Assistance leads employment in Contra Costa with a 20% share of countywide jobs. Retail Trade and Accommodation and Food Services are the two other sectors that have over 10% share of employment. Compared to other counties in the San Francisco metro area, Contra Costa has a lower percentage of jobs in the Professional and Technical Services sector, at only 8% versus 10% in Alameda and 20% in San Francisco.

Top Sectors in Contra Costa



Data: Quarterly Census of Employment and Wages Q1 2019; includes private, local government, state government, and federal government employment
Analysis: Bay Area Council Economic Institute

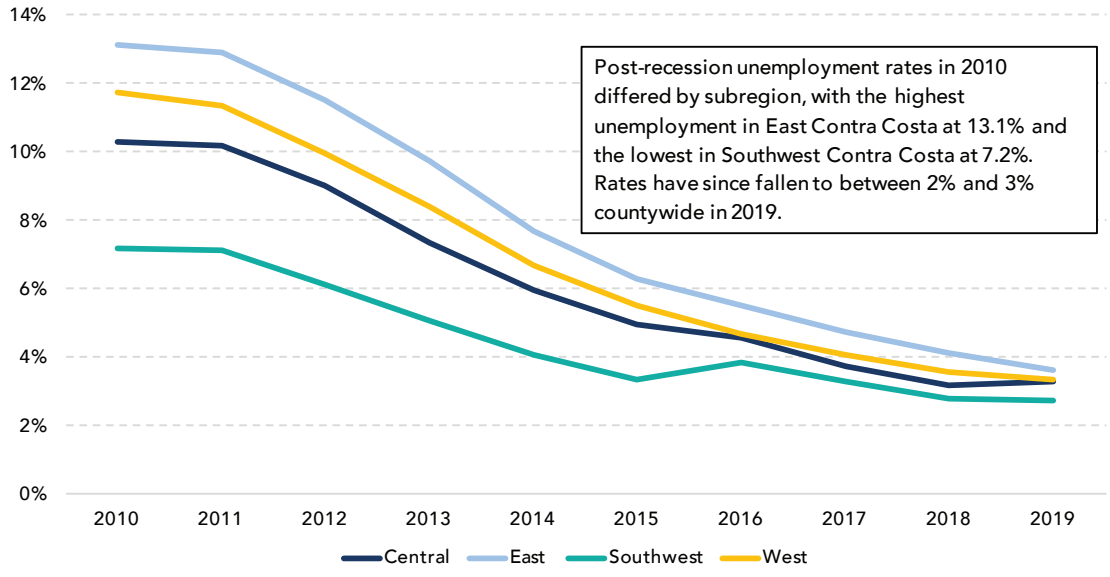
Sectors with largest change in employment 2009-2019

Sector	% of Total Q1 2009	% of Total Q1 2019	Change 2009-2019
Health care and social assistance	14%	20%	+23,170
Accommodation and food services	9%	11%	+9,245
Administrative and waste services	6%	7%	+6,318
Construction	7%	8%	+4,115
Transportation and warehousing	3%	1%	-6,371
Information	4%	2%	-3,570
Manufacturing	7%	5%	-3,508
Other services, except public administration	6%	4%	-3,085

Data: Quarterly Census of Employment and Wages; includes private, local government, state government, and federal government employment
Analysis: Bay Area Council Economic Institute

In the last decade, the most significant shift in the employment profile in Contra Costa is an increased concentration of jobs in the largest sector, Health Care and Social Assistance, which grew by 23,170 jobs from 2009 to 2019. Transportation and Warehousing saw the largest decrease, falling from 3% of the countywide employment in 2009 to less than 1% in 2019, with a total reduction of 6,300 jobs.

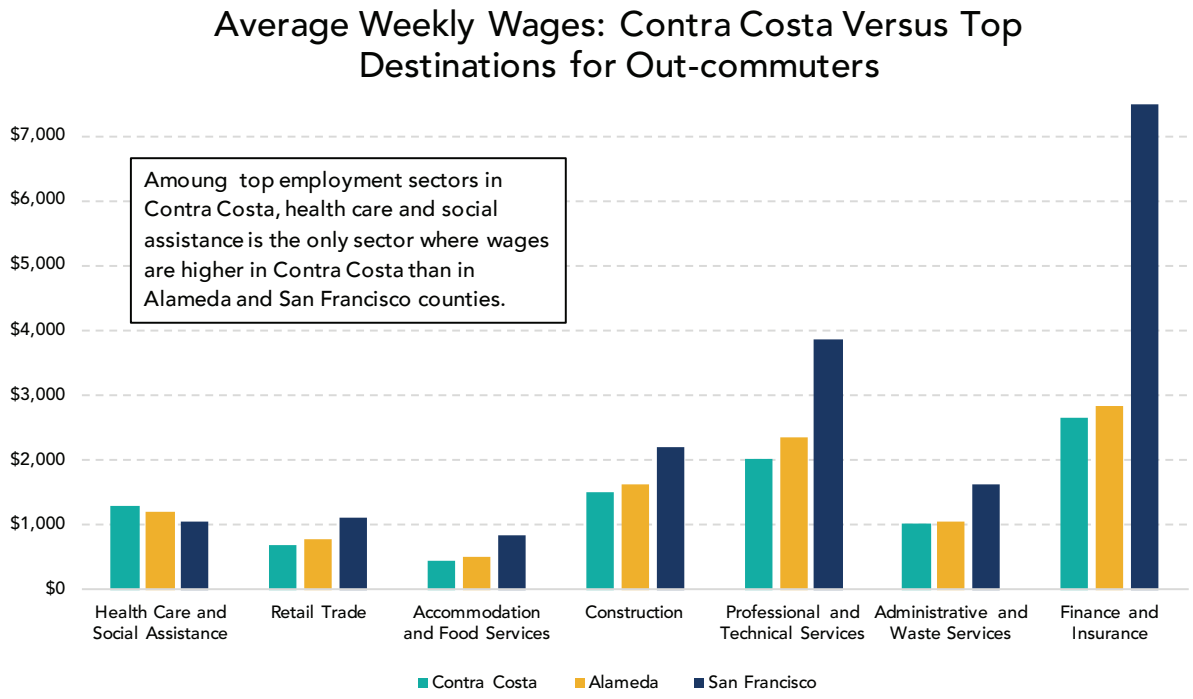
Contra Costa Unemployment Rate by Subregion 2010-2019



Note: Data represents June unemployment each year.
Data: California Employment Development Department
Analysis: Bay Area Council Economic Institute

While the makeup of the top sectors is not uniform across the county, unemployment rates have largely converged among the sub-regions. Countywide, the unemployment rate in June 2019 was 3.2%, below the statewide unemployment rate of 4.2% and on par with other counties in the region such as Alameda (3.1%) and San Francisco (2.3%).

On top of the nominally higher number of jobs in San Francisco and Alameda, higher wages are seen in those two counties in comparison to Contra Costa. An analysis of the wages in two most common destinations for Contra Costa out-commuters, Alameda and San Francisco, shows that Health Care is the only sector where Contra Costa has higher average weekly wages. This is a draw for Contra Costa residents to seek work outside the county, necessitating they trust in a reliable transportation system as they travel longer distances to seek higher paying jobs.



Data: Quarterly Census of Employment and Wages Q1 2019, average wage for private employment
Analysis: Bay Area Council Economic Institute

Jobs-housing imbalance, mode share, commute flows

Several key metrics measuring the pressure on the Contra Costa transportation system find that daily use of the system is growing, and a regional imbalance of where jobs and housing are located limits pressure from being alleviated. The balance between housing, jobs, and employed residents shows insufficient jobs located within the county for the size of the workforce housed in Contra Costa. Mode share and commuting trends illuminate lower use of local transit ridership and fewer bike and pedestrian commuters, both reveal opportunities for investment to make these more attractive options for commuters. Commute flows show growth in the number of people relying on the Contra Costa transportation system daily, necessitating innovative investments to limit congestion. These conditions point to a need for investment in congestion management technologies and additional commute options, both of which are planned investments in the TEP.

Ratio of jobs to housing

The ratio of jobs to housing provides insight into the balance between the number of people living in an area and working in an area. A healthy balance is around 1.5, one full-time and one part-time jobs per housing unit.[8] If the ratio is too low it indicates inadequate availability of jobs for the number of residents, if too high it indicates inadequate housing for the number of jobs.

- Within Contra Costa County the jobs-housing ratio is low at 1.03, indicating an inadequate number of locally available jobs to match the available housing.
- Neighboring Alameda County has a jobs-housing ratio closer to what is considered healthy at 1.21 and San Francisco County has a housing-jobs ratio of 2.06, indicating insufficient housing for jobs levels.
- The imbalance is more extreme in East Contra Costa cities such as Brentwood, Clayton, and Antioch.
- Parts of the county have healthier balances such as San Ramon, Walnut Creek, and Danville.

Ratio of jobs to employed residents

The ratio of jobs to employed residents shows the mismatch between jobs in the county and the size of the employed population in Contra Costa.

- Contra Costa has 0.67 jobs for every employed resident. This is lower than San Francisco that has 1.49 jobs per employed resident and Alameda, which has 0.93 jobs per employed resident.
- The most extreme mismatch between jobs and employed residents is in East Contra Costa in cities such as Oakley, Clayton, and Brentwood.
- Higher ratios are seen in Southwest and Central Contra Costa such as Walnut Creek, Pleasant Hill, San Ramon.
- In 2010, Contra Costa had 97,404 more employed residents that it did jobs within the county, this discrepancy has grown reaching 194,844 in 2018.

Jobs-Housing and Jobs-Employed Resident Ratios by City and County

Geography	Jobs Housing Ratio 2018	Jobs Employed Residents Ratio 2018	Jobs Housing Ratio 2010	Jobs Employed Residents Ratio 2010
Antioch	0.67	0.41	0.59	0.48
Brentwood	0.44	0.40	0.44	0.41
Clayton	0.54	0.33	0.35	0.32
Concord	0.99	0.63	0.92	0.74
Danville	1.24	0.76	1.05	0.91
El Cerrito	0.64	0.46	0.55	0.53
Hercules	0.58	0.35	0.49	0.36
Lafayette	1.19	0.78	1.08	1.00
Martinez	1.28	0.83	1.14	1.00
Moraga	1.04	0.70	0.94	0.91
Oakley	0.44	0.26	0.33	0.26
Orinda	0.85	0.58	0.76	0.71
Pinole	1.15	0.78	0.99	0.87
Pittsburg	0.90	0.54	0.74	0.57
Pleasant Hill	1.65	1.14	1.40	1.25
Richmond	1.16	0.74	0.98	0.80
San Pablo	0.76	0.54	0.63	0.51
San Ramon	1.82	1.09	1.73	1.35
Walnut Creek	1.58	1.24	1.41	1.48
All Contra Costa	1.03	0.67	0.92	0.78
San Francisco County	2.06	1.49	1.37	1.65
Alameda County	1.21	0.93	1.06	0.99

Data: Department of Finance 1/1/2019; Contra Costa Transportation Authority; Association of Bay Area Governments 2017
Analysis: Bay Area Council Economic Institute

These imbalances between jobs, housing, and the size of the workforce within the county shows why commuting out of the county is a part of daily life for many Contra Costa County residents. Furthermore, the ranging ratios across the Bay Area show that housing and jobs are imbalanced on a regional scale, resulting in longer commutes. This imbalance necessitates continued focus on the Contra Costa County transportation network to keep commuters' daily travel times at a minimum.

INSIGHT

Bishop Ranch Business Center

Employment hub in Contra Costa, transportation accessibility key to its success.

Bishop Ranch is a 585-acre mixed-use business park in San Ramon. On top of office space, Bishop Ranch features a shopping center, dining options, and other lifestyle amenities. With 30,000 employees, Bishop Ranch hosts 59% of San Ramon's jobs, and 7% of Contra Costa County's jobs. Bishop Ranch has a holistic transportation strategy, including direct connections to BART and ACE in coordination with County Connection, shuttles from San Francisco, a bike share program on campus, and subsidized carpooling.

Bishop Ranch has also invested in autonomous shuttles, which started operating in 2018. Their hope is to grow these shuttles to a fleet of nearly 100 to make last mile connections from the business park more efficient. Instead of buses that spend 15 minutes picking people up within Bishop Ranch before heading to BART, having a larger fleet of automated feeder shuttles would allow each bus to go directly to BART after loading passengers at a single location, cutting down commute times and making transit a more attractive option.[9]

Transportation access is a key factor in business location decisions, and the comprehensive transportation strategy is an element of the continued popularity of Bishop Ranch. Transportation, along with regional benefits such as housing and regional talent, is one of the top amenities highlighted by Bishop Ranch to prospective tenants. Investing in better connections to transit countywide can help make other business locations in the county similarly attractive to companies choosing where to locate in the Bay Area.

Bishop Ranch Business Park in San Ramon

Mode share and commute patterns in Contra Costa County

Contra Costa County is home to 538,126 employed residents, slightly higher than San Francisco County. However, Contra Costa residents spend more time and travel longer distances to get to their place of work:

- 43% of employed Contra Costa residents work outside of the county, in comparison to neighboring Alameda County (35%) and San Francisco County (24%).
- Regional commutes are becoming more common among Contra Costa residents. The number of commuters traveling outside of the county increased by 27.6% from 2010 to 2017, while the number of commuters employed within Contra Costa County only grew by 10.8% from 2010 to 2017.
- 37,960 (7.8%) of the Contra Costa workforce travels over 90 minutes for work, the highest share of any Bay Area county and the third highest in the state. Residents with these 90+ minute commutes have increased 102% since 2009.[10]
- The average commute time in Contra Costa in 2017 was 37.1 minutes.[11] This means the average Contra Costa commuter spends the equivalent of 13.4 days annually getting to work. This number is higher than average. Contra Costa commuters spend the equivalent of 3 more days commuting than the average Californian, with a statewide average commute time of 29.8 minutes, or 10.8 days.

Mode share trends in Contra Costa County

- The majority of Contra Costa residents drive alone to work, but the share of single occupancy car commuters decreased by 1.7% from 2010 to 2017.
- Working from home is becoming more popular in Contra Costa, increasing by 1.2% since 2010, a shift resulting from 11,870 more people working from home.
- There was a 1.6% increase in transit mode share from 2010 to 2017, representing 15,917 more transit riders. This increase in residents choosing transit shows an appetite for more transit commute options.

Contra Costa Mode Share

Year	Total Employed Residents	Drive Alone	Transit	Carpool	Work from Home	Bike / Ped
2017	538,126	67.6%	11.0%	11.9%	7.6%	1.9%
2010	458,169	69.3%	9.4%	12.7%	6.4%	2.3%
Change 2010 - 2017	79,957	-1.7%	+1.6%	-0.8%	+1.2%	-0.4%

Data: American Community Survey 1-year estimates 2010, 2017
Analysis: Bay Area Council Economic Institute

Mode share in Contra Costa County vs. other Bay Area counties

- Contra Costa has comparatively lower rates of transit use. The higher usage of transit in other counties reveals a prospect of increased transit ridership among Contra Costa residents to match higher levels of transit use in the region through investments making transit a more convenient option.
- Contra Costa also has a lower share of individuals who bike or walk to work. The lower share of bicycle and pedestrian commuters in Contra Costa is another prospect for shifting mode share. The strategic investment in bike and pedestrian infrastructure planned in the TEP could encourage more local commuters to choose an active form of transportation to get to work.

Bay Area Mode Share Comparison, 2017

	Total Employed Residents	Drive Alone	Transit	Carpool	Work from Home	Bike / Ped
Contra Costa	538,126	67.6%	11.0%	11.9%	7.6%	1.9%
Alameda	766,065	61.5%	16.0%	10.3%	6.2%	6.0%
San Francisco	496,450	34.2%	36.7%	6.4%	7.6%	15.1%
Bay Area	3,813,764	64.9%	12.8%	10.5%	6.5%	5.3%

Data: American Community Survey 1-year estimates 2017
Analysis: Bay Area Council Economic Institute

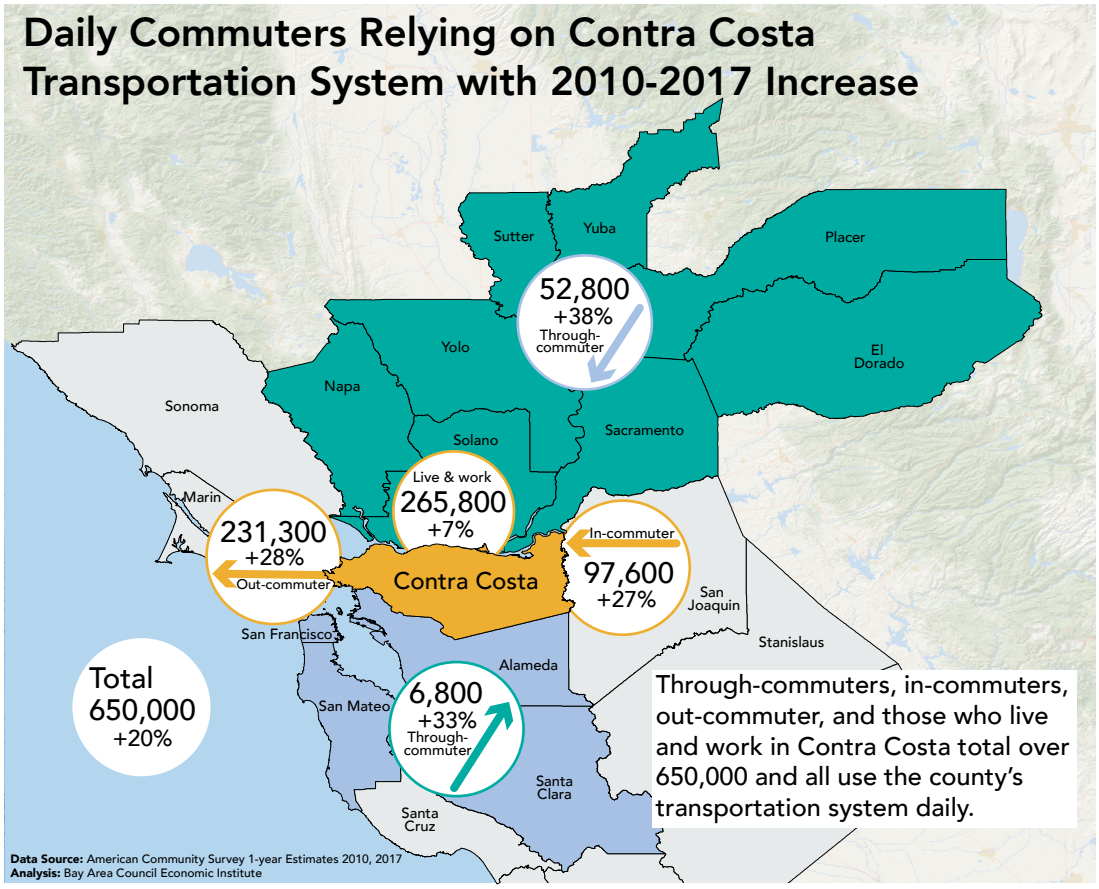
Commute Pattern Trends

- Excluding those who work from home, over 650,000 daily commuters take trips that rely on routes that either pass through, end, begin, or are completely within Contra Costa.
- Transit is the commute mode for 22.8% of commuters leaving Contra Costa and only 2% of commuters within the county. This suggests regional transit such as BART, is a more common mode choice than local transit, pinpointing local transit as an area for improvement. The TEP reflects this opportunity with a 38% of the investments allocated to fund local transit.
- Over the past seven years, through commuters grew faster than any other group relying on the Contra Costa transportation system, increasing by 54.5% compared to a 27.6% increase in out-commuters and a 10.8% increase in those working and living in Contra Costa.

Mode Share by Type of Commuter, 2017

	Total	Increase 2010-2017	Drive Alone	Transit	Carpool	Work from Home	Bike / Ped
Out-commuters	231,320	+27.6%	65.0%	22.8%	11.7%	–	0.5%
Live and work in Contra Costa	306,806	+10.8%	69.6%	2.0%	12.1%	13.4%	2.9%
In-commuters	97,642	+26.6%	81.2%	5.9%	11.9%	–	0.9%
Through commuters	59,611	+54.5%	68.4%	11.9%	18.4%	–	1.2%
Total	695,429	+21.2%	69.6%	10.3%	12.5%	5.9%	1.7%

Data: American Community Survey 1-year estimates 2017
Analysis: Bay Area Council Economic Institute



Higher growth in through and out-commuters is evidence that the regional jobs-housing imbalance is putting more people on the roads in Contra Costa, necessitating investments to manage congestion.

For 300,000+ residents who live and work in Contra Costa County, few live in the same city where they work. Even cities with the highest number of jobs have low percentages of their total workforce residing in the same city:

- San Ramon has the largest number of jobs, but only has 12% of their workforce living in San Ramon.
- Walnut Creek, the second largest job center, has only 7% of their workforce living in the city.
- Richmond and Antioch, with third and fourth largest share of jobs, both have 15% of their workforce as residents.

These low percentages reveal that even among those who live and work in Contra Costa, many rely on the transportation network to traverse the county for their daily commute. This exemplifies the benefit that all residents gain from investment in the system across the county even if they work within the county.

Share of workforce employed and housed in the same city

Top 10 cities by number of jobs	Jobs 2018	Percent of workforce residing in City
San Ramon	50,657	12%
Walnut Creek	49,665	7%
Concord	43,870	15%
Richmond	42,306	15%
Antioch	22,854	23%
Pleasant Hill	22,648	5%
Danville	19,472	11%
Pittsburg	18,926	18%
Martinez	18,556	9%

Data: Contra Costa Transportation Authority; Association of Bay Area Governments 2017; Longitudinal Employer-Household Dynamics, 2017
Analysis: Bay Area Council Economic Institute

3

Performance of the County's Transit and Highway Networks

The performance of the transportation system in Contra Costa County reveals key opportunities for strategic investment. Projects that capitalize on these opportunities are reflected in the projects that the TEP plans to fund. Each of the following opportunities were identified through analysis of metrics measuring the performance of the transportation system and are described in more detail in this chapter:

- Lower transit use in Contra Costa, including lower per capita usage and declining local transit ridership shows a prospect for investments that enhance transit connectivity.
- The success of new transit services demonstrates an appetite among residents for more transit options.
- Upward trends in highway congestion by route show corridors worthy of investments in innovative traffic solutions.
- Rising roadway collisions resulting in injuries and fatalities over the past three years shows need for investment in features enhancing safety on Contra Costa roadways.

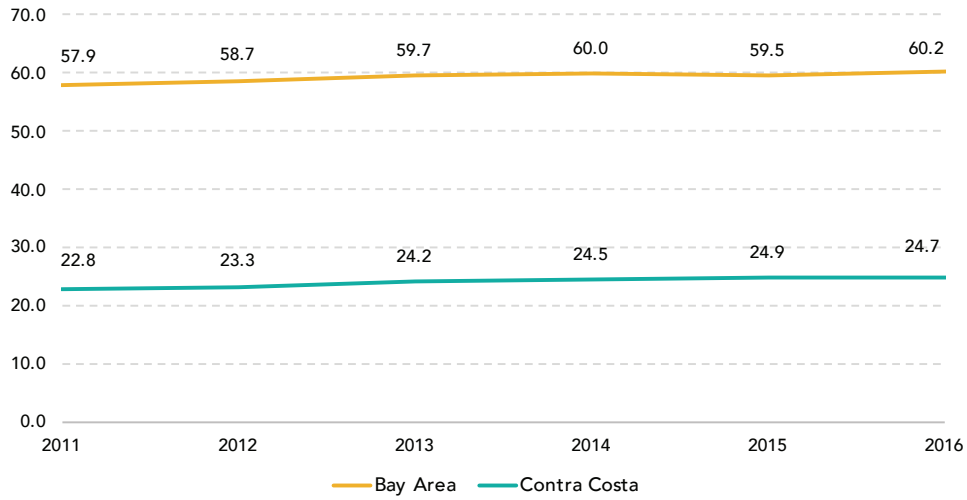
Countywide transit ridership

There are five major transit providers in Contra Costa offering service in the county. Four bus agencies offer service to the subregions of the county, and Bay Area Rapid Transit (BART) serves all four:

- BART operates three lines in the county and carries the most passengers annually in Contra Costa. The three lines connect Richmond to Warm Springs, Richmond to Millbrae, and Antioch to SFO.
- AC Transit operates 15 routes with stops in Western Contra Costa, three of which offer transbay service into San Francisco.
- Tri Delta Transit serves East Contra Costa with 15 local bus routes.
- WestCAT runs 12 local routes, and one transbay bus in Western Contra Costa.
- County Connection has 33 weekday and 7 weekend routes in Central Contra Costa.

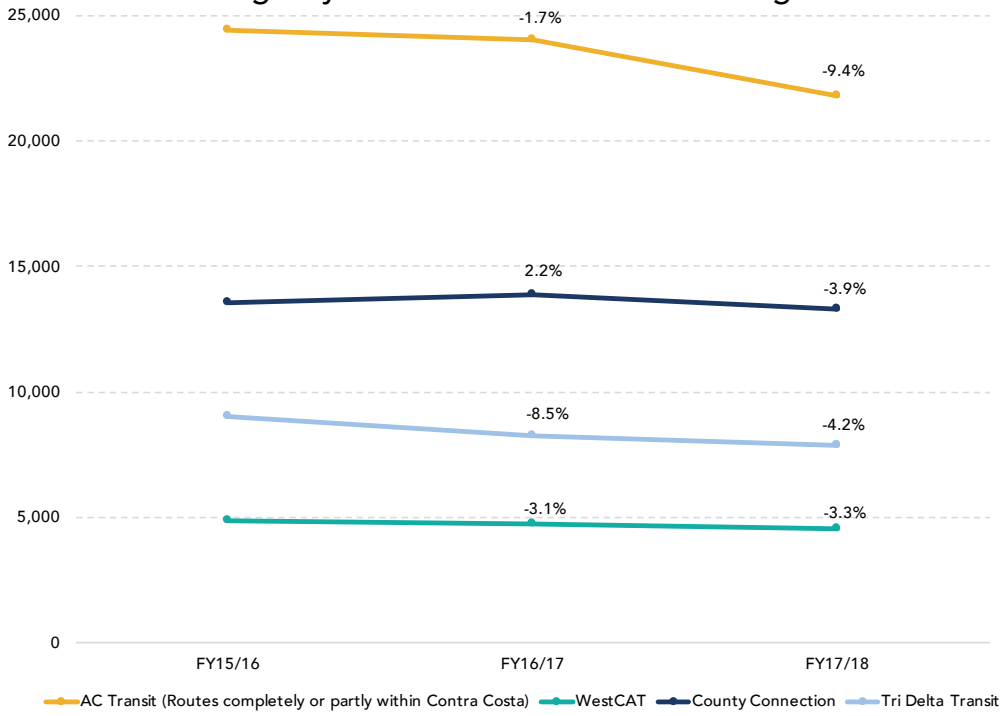
Per capita transit ridership in Contra Costa is lower than transit ridership on a regional scale. In 2016, there were 24.7 total annual weekday boardings per capita in Contra Costa County while the Bay Area saw 60.2 weekday boardings per capita in the same year. Per capita ridership in both Contra Costa and the Bay Area are relatively stable, but the much higher use seen at the regional level shows there is an opportunity to grow ridership in Contra Costa County if strategic investments are made to improve the transit system in the county.

Total Annual Weekday Transit Boardings Per Capita Contra Costa County vs. Bay Area



Note: Contra Costa County transit numbers reflect July of reported year through June of following year.
Data: Metropolitan Transportation Commission; California Department of Finance; Tri Delta Transit; WestCAT; AC Transit; National Transit Database
Analysis: Bay Area Council Economic Institute

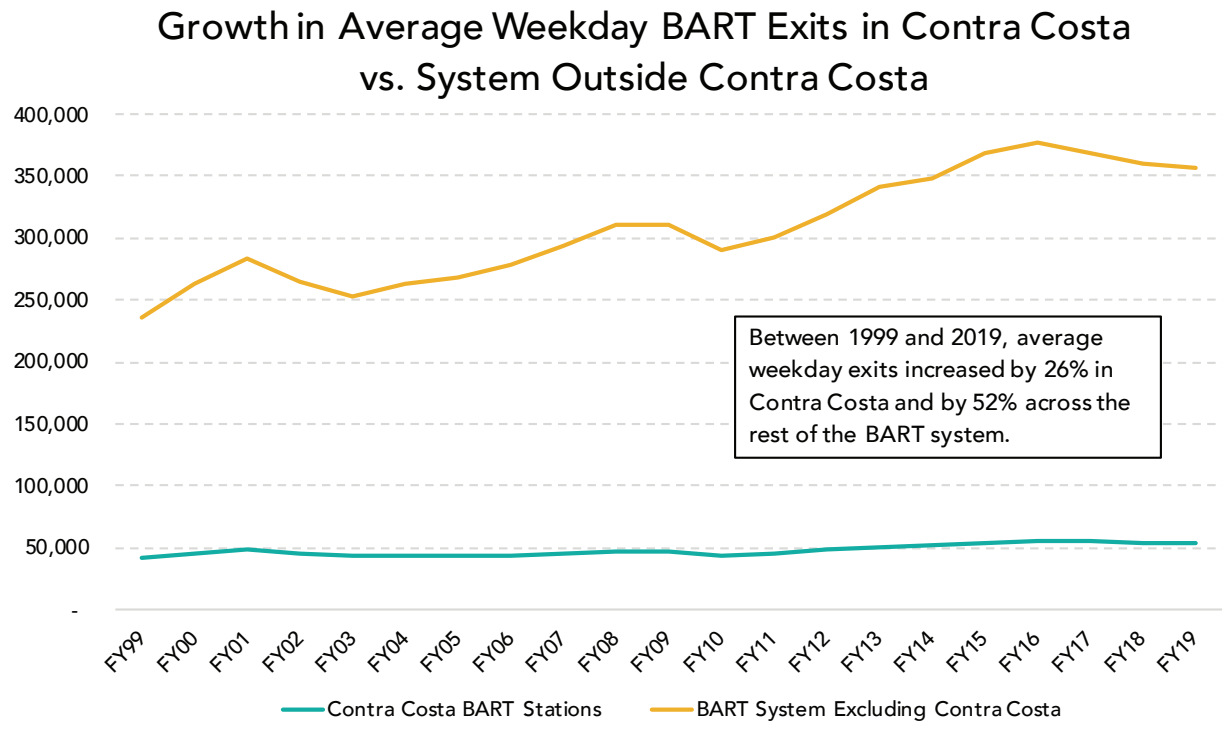
Average Weekday Bus Ridership by Agency Over Time with Percent Change



Note: County Connections represent calander years 2015-2017 due to reporting differences; FY represents July of first year to June of second year.
Data: Tri Delta Transit; WestCAT; AC Transit; National Transit Database
Analysis: Bay Area Council Economic Institute

Average weekday ridership across all five major agencies grew by 15% in Contra Costa County from FY10/11 to FY14/15, but in recent years that growth has been reversed, with a 6% decrease in countywide average weekday ridership from FY15/16 to FY17/18. This decrease in ridership over the past three years was felt across all transit agencies in the county with bus ridership experiencing the sharpest decline.

The agency with the largest decrease in ridership between FY15/16 and FY17/18 was Tri Delta Transit with a 12.4% decrease, followed by AC Transit (-10.9%) and WestCAT (-6.3%). County Connection was less impacted with a loss of only 0.3%.



Note: FY represents July of previous year to June of reported year.
Data: BART, 2019
Analysis: Bay Area Council Economic Institute

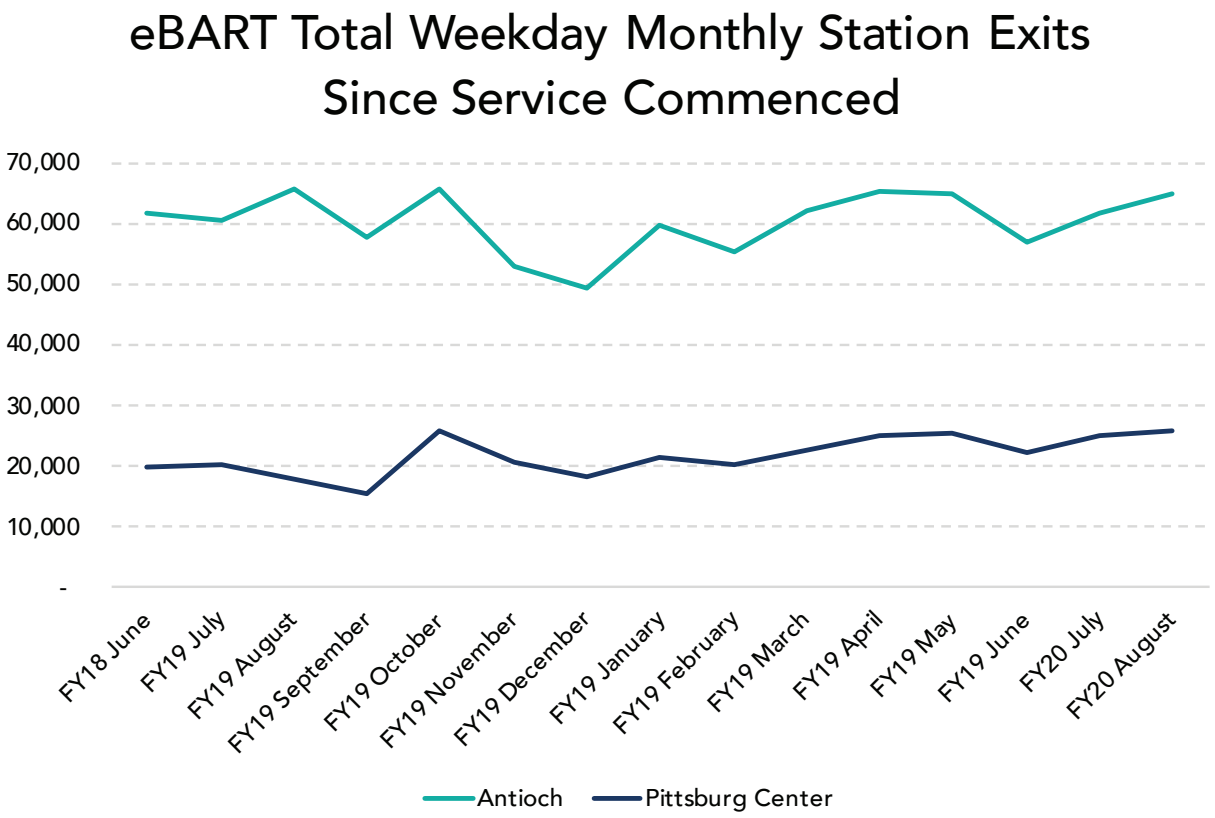
A total of 15.1 million BART trips ended in Contra Costa in FY19, 13% of total systemwide trips. The stations with the highest ridership in Contra Costa are El Cerrito Del Norte, in West Contra Costa, and Pleasant Hill and Walnut Creek in Central Contra Costa.

BART ridership has followed the same declining trend in ridership seen on local bus ridership, though the decline has been less extreme than most local bus agencies, with a 3.3% decrease from FY15/16 to FY17/18. BART ridership in Contra Costa also weathered the recent regional trend in ridership decline better than the rest of the system. From FY16 to FY19, ridership in Contra Costa declined by 4% while the rest of the system ridership shrunk by 5%.

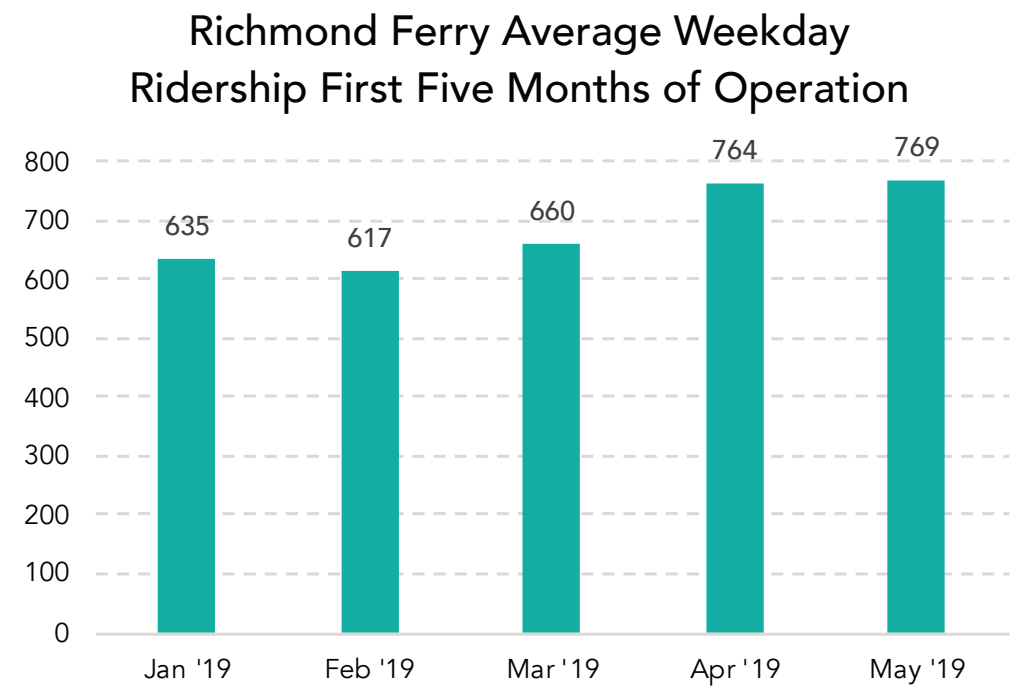
Adoption of new transit options

The two new eBART stations that opened in Contra Costa County in May of 2018 have shown stable ridership numbers in their first year of operation at about 90,000 total monthly exits across the two stations. The successful adoption of use seen and sustained at these two stations shows an appetite for more regional transit options among Contra Costa residents.

The parking lot use at Antioch, the new last stop station, is another testament to the success of eBART. The station opened with capacity for just over 1,000 cars, six months into operation BART announced a plan to add an additional 800 spots due to the consistently full parking lots commuters were experiencing by 6 a.m. on weekdays.[12] The funding for additional parking capacity at the Antioch station is coming from the existing CCTA Measure J sales tax, an example of how local funding is key for the ability to act promptly on necessary improvements to the transportation system.



Data: BART, 2019
Analysis: Bay Area Council Economic Institute



Data: WETA
Analysis: Bay Area Council Economic Institute

The new Richmond ferry connecting Marina Bay in Richmond to the San Francisco Ferry Building has outperformed ridership projections since it began running in January of 2019. While operated by the San Francisco Bay Area Water Emergency Transportation Authority (WETA), the operating funds invested in this new line came from the existing CCTA Measure J sales tax. WETA projected 480 daily boardings for the new service, but ridership climbed well above that in the first month of operation with 635 daily boardings in January 2019.[13]

Ridership continued to grow in the first five months of operation, a trend that shows interest in alternative commute options among Contra Costa residents. Under current conditions with capacity of 445 passengers per trip and a schedule offering four ferries during morning commute hours and two during PM commute hours, the route has the capacity to grow up to 2,670 daily passengers. This service would not exist without the local sales tax dollars generated by the current sales tax measure. For continued investment in varied commute options such the Richmond ferry, the county needs continued generation of local funds.

Highways: Congested corridors and top bottlenecks in Contra Costa County

Contra Costa residents, visitors, and those traveling through the county lose millions of hours to congestion every year. A total of 5.4 million vehicle hours of delay (VHD) were recorded on freeways in the county in 2018, the equivalent of 4.72 hours per capita.[14] Four of the 10 most congested corridors in the Bay Area as ranked by Metropolitan Transportation Commission (MTC) are completely or partly within Contra Costa County, displaying a clear need for investment in congestion relief strategies planned for in the TEP.

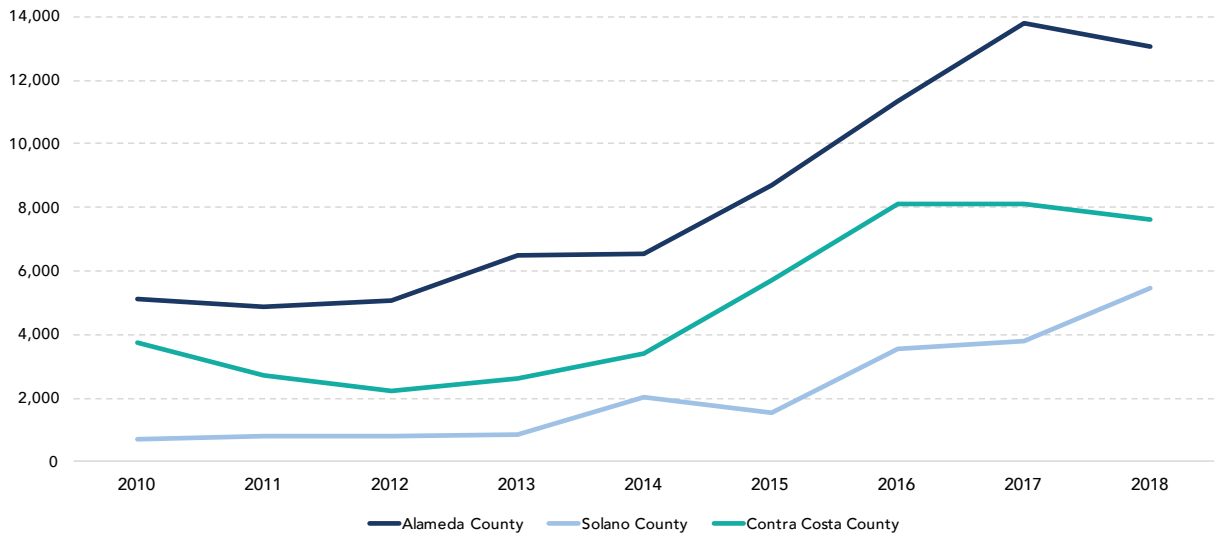
Most Congested Corridors in Contra Costa County

Regional Rank	Average Daily Vehicle Hours of Delay	Route	Location	Direction	Length
2	12,650	I-80	Hercules to Bay Bridge Toll Plaza	West Bound	17.5 mi
5	5,610	CA-4	Martinez to Pittsburg	East Bound	6.1 mi
9	4,520	CA-24	Oakland to Orinda	East Bound	5.1 mi
10	4,500	I-680	Danville to Walnut Creek	North Bound	10.8 mi
11	4,500	CA-4	Antioch to Concord	West Bound	7.8 mi
20	2,830	I-80	Pinole to Richmond	East Bound	9.2 mi

Note: Time spent in congestion is defined as the average daily hours spent in congestion on Tuesdays, Wednesdays and Thursdays during peak traffic months on freeway facilities. Congested delay is identified by setting a threshold of consistent delay greater than 15 minutes on a specific freeway segment from vehicle speeds less than 35 mph.
Data: Metropolitan Transportation Commission, 2017
Analysis: Bay Area Council Economic Institute

When measured against neighboring Solano and Alameda county, controlled for the number of lane miles contained in each county, Contra Costa falls between the two with 7,600 VHD per lane mile in 2018 compared to 5,400 in Solano and 13,000 in Alameda. This shows that investment in Contra Costa up to this point from local tax measure funding, such as the express lanes on I-680, have helped keep congestion lower than Alameda, but there is still room for further relief.

Vehicle Hours of Delay per Lane Mile



Note: Vehicle Hours of Delay (VHD) measure sums up the extra time that vehicles spend on the freeways relative to what they would spend traveling at a standard free-flow speed of 60 mph. VHD speed threshold = 35mph.
Data: California Department of Transportation (Caltrans) Performance Measurement System (PeMS)
Analysis: Bay Area Council Economic Institute

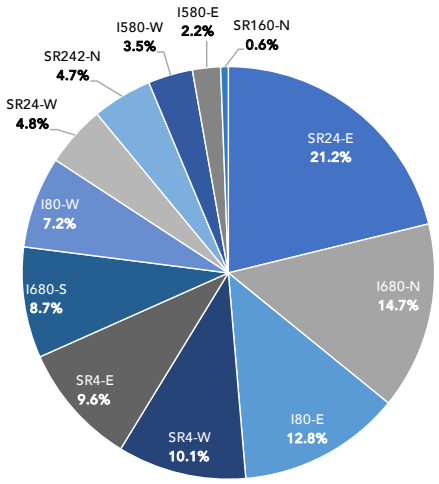
Existing Express Lanes

The Bay Area Express Lane network is a coordination of Bay Area transportation agencies to develop 600 miles of express lanes in the Bay Area by 2035. The MTC Express Lane program will operate 270 miles of express lanes. The first MTC-operated section was opened in Contra Costa on I-680 connecting San Ramon, Danville and Alamo opened in October 2017. The section includes 23 express lane miles in Southwest Contra Costa.

These performance metrics show that express lanes are a successful tactic to take advantage of unused capacity in high-occupancy vehicle (HOV) lanes without inhibiting the benefit of faster speeds for carpoolers and clean air vehicles:

- Peak hour travel speeds in the express lanes averaged 10 mph faster northbound and 11 mph faster southbound than the general-purpose lanes in Q2 2019.
- Share of toll-free carpools and clean air vehicles has increased, rising from 37% in June 2018 to 41% in June 2019.
- Toll costs saw an average increase of $2.40 year-over-year in Q1 2019. Higher tolls were a result of an algorithm that proactively managed demand in 2019 to prevent the lanes from slowing.

Percent of Total Vehicle Hours of Delay by Freeway in Contra Costa 2018



Data: PeMS
Analysis: Bay Area Council Economic Institute

The freeways bearing the largest share of the countywide VHD are routes that connect the most populous cities to job hubs. Parallels can be drawn between the most congested routes, the commute flows, and the job and population density in the county:

- SR-24 westbound, SR-4 westbound and I-80 westbound all support commuters traveling through and from Contra Costa into Alameda and San Francisco counties and together account for 22% of the total VHD in the county.
- The reverse or evening commute routes carrying people from San Francisco and Alameda to Contra Costa, including SR-24 eastbound, SR-4 eastbound, and I-80 eastbound, account for 43.6% of total VHD.
- As the main route connecting San Ramon, the city with the most jobs in Contra Costa, to Concord, the most populous city in Contra Costa, both directions of travel on I-680 together account for 23% of the countywide VHD.

The TEP plans for continued investment in strategies along these corridors to alleviate the growing VHD in the county.

INSIGHT

Transportation Finance Trends

The case for local funding.

In FY18/19, transportation spending in California totaled $35 billion.[15] Just under half of this was funded through local sources, while about a third came from the state, and the remaining from the federal government. Nationwide, public spending on transportation and water infrastructure across federal, state, and local sources as a share of GDP hit a six-decade low in 2017 at 2.28 percent[16]—showing that as the economy expands, infrastructure spending has not kept up. Examining where the lesser investments were felt between 2007 and 2017 reveals capital investments plummeted by 16%, while infrastructure operation and maintenance actually rose by 9.5%.[17] This shows infrastructure is becoming more expensive to maintain, which is limiting the funds available for new investments.

Federal Funding

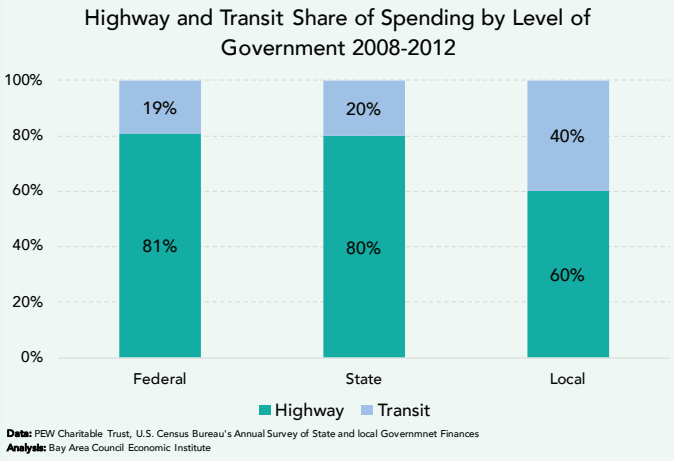
The federal government's main source of transportation funding, the highway trust fund (HTF) has funding issues.[18] The majority of the HTF funding dollars (85-90%) come from an excise tax on gas and diesel. This source has become less reliable due to improving fuel efficiency and modest growth in vehicle mileage, and as a result, HTF spending exceeds its revenue. Congress has made up for this with transfers from the general fund, most recently in 2015, but a report from the Congressional Research Service predicts HTF account balances will reach zero sometime during FY2021 if the current sources of funding remain unchanged.

State Funding

In 2017, the California legislature enacted a transportation funding package, known as Senate Bill 1 (SB1) that is estimated to increase annual state revenues for the California transportation system by an average of $5.2 billion per year over the next decade, through phased in tax and fee rate increases.[19] As part of SB1, local cities and towns in Contra Costa directly receive $31.1 million per year to maintain local streets and roads. The Contra Costa Transportation Authority is only guaranteed $2.4 million per year through the Local Partnership Program, and must compete for any additional SB1 funding.

Regional Funding

Approved by Bay Area voters in 2018, Regional Measure 3 (RM 3) will generate $4.45 billion by 2035 from three $1 toll increases in 2019, 2022, and 2025. These funds will go towards highway and transit improvements across the Bay Area to relieve congestion. However, only $360 million out of the $4.45 billion is allocated to fund projects in Contra Costa.



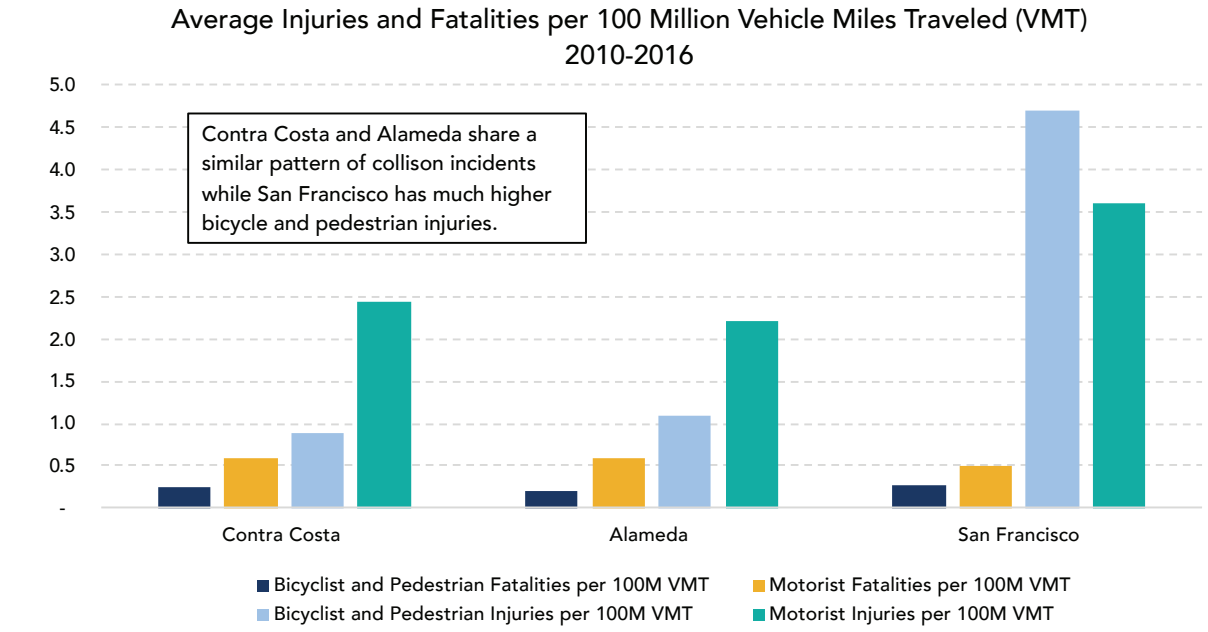
The nationwide trend of less funding for capital projects and higher operating and maintenance costs shows the important role that local sales tax dollars play in supporting the modernization and expansion of transportation infrastructure in the county. The smaller share of federal and state dollars allocated for transit shows that local funding is necessary to grow transit options. Additionally, the uncertainty of the allocation of federal, state, and regional dollars emphasizes the need for a consistent local revenue source to ensure sufficient funds to operate and improve the Contra Costa transportation system.

Transportation safety statistics

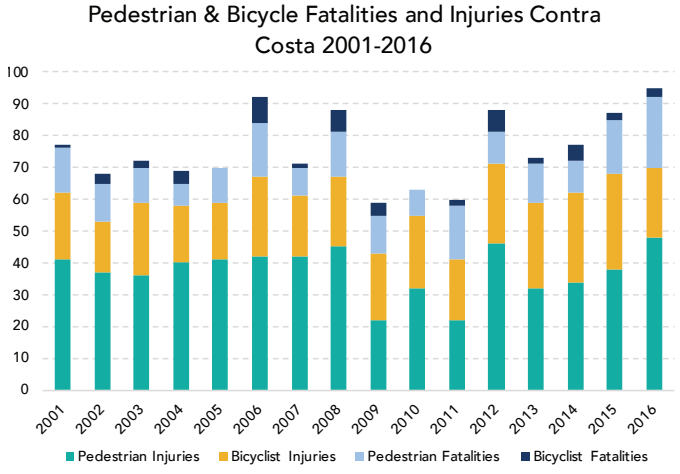
Total roadway incidents, including fatalities and injuries, in Contra Costa have fluctuated historically, most recently rising across all categories in the past few years indicating room for road traffic safety improvements included in the TEP:

Motorists collision incidents have increased the most, from 170 in 2014 to 273 in 2016. Bicycles and pedestrian collision incidents have also increased, though less significantly, from 73 in 2013 to 95 in 2016.

Average annual incident rates from 2010 to 2016 compared county to county with a control for how many vehicle miles are traveled within each county reveals that Contra Costa shows similar patterns of roadway incidents to Alameda, but has significantly lower average annual bicycle injuries and lower motorist injuries than San Francisco.



Data: Metropolitan Transportation Commission
Analysis: Bay Area Council Economic Institute



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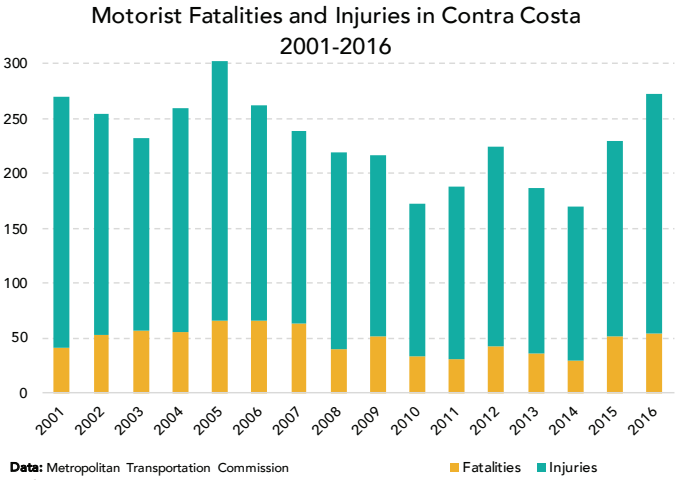
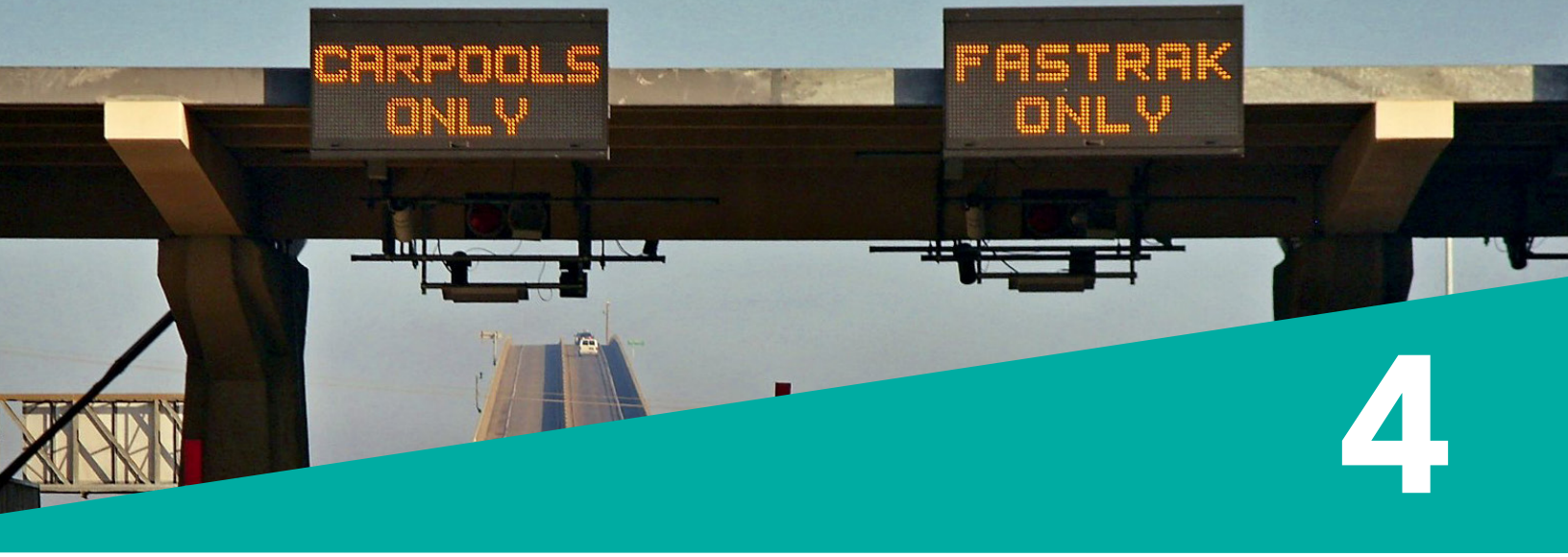


Data: Metropolitan Transportation Commission
Analysis: Bay Area Council Economic Institute



4

Transportation Expenditure Plan Overview

Since the passage of Measure J in 2004, pressure on the Contra Costa transportation network has grown. The Contra Costa Transportation Authority's 2020 TEP outlines a path for innovating the transportation network to support the changing mobility preferences and needs of residents. In total, the TEP would generate $3.6 billion over 35 years. The TEP reflects projected growth trends by investing $1.48 billion in three major corridors that connect to Oakland, San Francisco, and Silicon Valley where highest job growth is projected. The plan balances major corridor investments with $1.98 billion in funding for local transportation improvements to serve localized transportation needs of communities of all sizes countywide.

$1.48B
in Investments in Three Key Corridors

Improve State Route (SR-242), Highway 4, Transit and eBART Corridor – $705 million

- Relieve Congestion and Improve Access to Jobs Along Highway 4 and SR-242
- Improve Local Access to Highway 4 and Byron Airport
- East County Transit Extension to Brentwood and Connectivity to Transit, Rail, and Parking
- Improve Traffic Flow on Major Roads in East County
- Enhance Ferry Service and Commuter Rail in East and Central County
- Improve Transit Reliability Along SR-242, Highway 4, and Vasco Road
- Additional eBART Train Cars
- Seamless Connected Transportation Options

Enhance I-80, I-580 (Richmond-San Rafael Bridge), Transit, and BART Corridor – $243 million

- Improve Transit Reliability Along the I-80 Corridor
- Relieve Congestion and Improve Local Access Along the I-80 Corridor
- Improve Traffic Flow on Major Roads in West County
- Improve Traffic Flow and Local Access to Richmond-San Rafael Bridge Along I-580 and Richmond Parkway
- Seamless connected transportation options

TEP investments on I-680

The TEP includes plans to expand express lanes along I-680, with funding for 25 miles of continuous lanes southbound and 25 miles of nearly continuous lanes northbound. The TEP also includes plans to fund bus-on-shoulder operations. The ability for buses to operate in "transit only" lanes will be accompanied with funding for additional city buses and expansion of park and ride facilities to make transit a more viable option on the I-680 corridor. The plan also includes funds to invest in advanced technologies to relieve congestion, including technologies preparing the corridor for autonomous vehicles and technologies that track and learn from congestion data to inform adjustments to traffic signals that smooth traffic and increase highway efficiency.

Modernize I-680, Highway 24, Transit and BART Corridor– $536 million

- Relieve Congestion, Ease Bottlenecks, and Improve Local Access Along the I-680 Corridor
- Improve Traffic Flow on Major Roads in the Central County and Lamorinda
- Improve Transit Reliability Along the I-680 and Highway 24 Corridors
- Provide Greater Access to BART Stations Along I-680 and Highway 24
- Improve Traffic Flows on Highway 24 and Modernize the Old Bores of Caldecott Tunnel
- Improve Traffic Flows on Major Roads in San Ramon Valley
- Seamless Connected Transportation Options

$1.98B
in Countywide Transit and Transportation Improvements

- Modernize Local Roads and Improve Access to Job Centers and Housing
- Provide Convenient and Reliable Transit Services in Central, East and Southwest Contra Costa
- Increase Bus Services and Reliability in West Contra Costa
- Improve Walking and Biking on Streets and Trails
- Accessible Transportation for Seniors, Veterans, and People with Disabilities
- Cleaner, Safer BART
- Safe Transportation for Youth and Students
- Reduce and Reverse Commutes
- Reduce Emissions and Improve Air Quality

Expenditures by Type

Type	Total (millions)	Percent
Local Transit	$1,333	38%
BART	$197	6%
Highways & Freeways	$647	18%
Local Roads & Streets	$925	27%
Bicycle / Pedestrian	$363	11%

Data: Contra Costa Transportation Authority
Analysis: Bay Area Council Economic Institute

INSIGHT

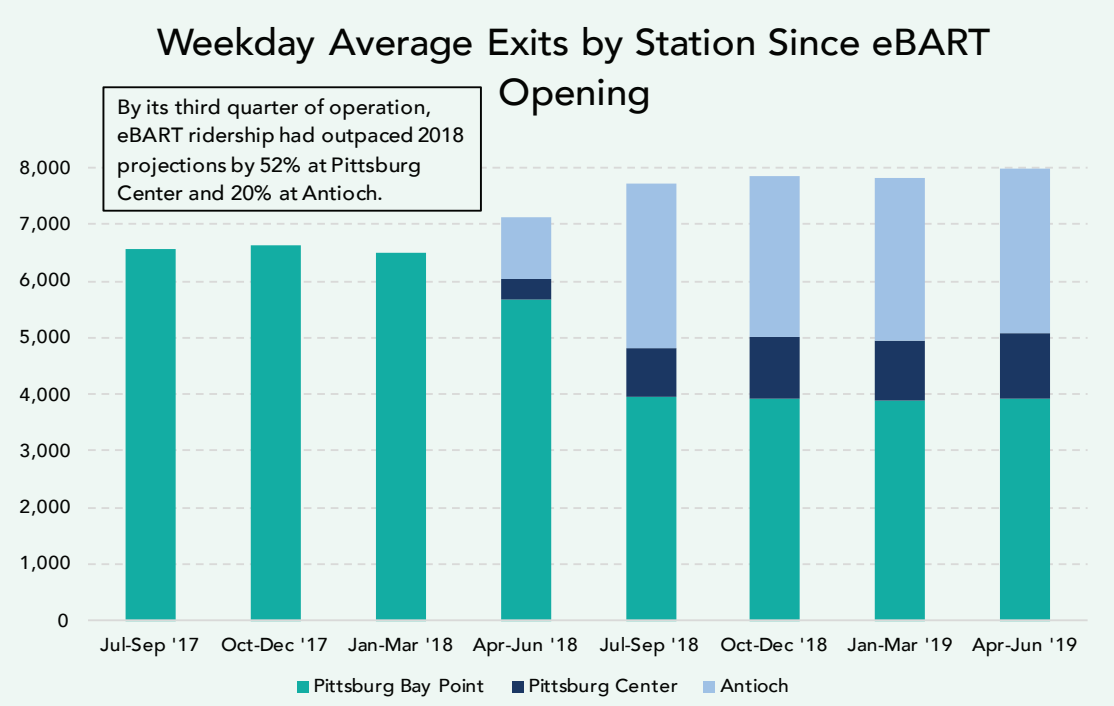
East County Transit Extension to Brentwood

Ridership has outperformed projections at the two new eBART stations in East Contra Costa, showing a strong appetite for a transit in the eastern part of the county. The current Measure J extends to 2034 but it does not include funding for another transit extension. Reflecting the initial popularity of eBART, the TEP plans for investment in a high frequency transit extension to Brentwood.

Some of the ridership at the eBART stations can be attributed to end of the line riders who shifted their trips to the new stations, but there is also growth in combined ridership across the previous end of the line entry point, Pittsburg Bay Point, and the two new stations:

- 6,510 average weekday exits at Pittsburg Bay Point in Q3 2018, prior to eBART opening.
- 7,840 average weekday exits at Pittsburg Bay Point + eBART stations a year later in Q3 2019.
- 1,330 increase in average weekday ridership, comparing Pittsburg Bay Point in Q3 2018 to Pittsburg Bay Point + eBART stations Q3 2019.

Ridership at the new stations made up for this decrease seen at Pittsburg Bay Point and eBART added additional riders. On an average weekday, about 2,500 riders have shifted their entry station, presumably shortening their path to transit, and 1,300 people have adopted transit as their commute mode as a result of eBART opening. By the end of 2018, combined ridership at the two eBART stations had already outpaced 2018 projections by 29%.[20]



Data: BART Ridership Reports, 2019; North Concord to Antioch BART Access Study
Analysis: Bay Area Council Economic Institute

5

The Economic Impacts of the 2020 Transportation Expenditure Plan

The $3.6 billion in transportation spending generated by the TEP over 35 years has the potential to catalyze economic output, create local jobs, and spur cost savings benefits across Contra Costa. Measurable economic impacts of the expenditures over 35 years outlined in the TEP include:

- **$8.8 billion in business output related to the expenditure plan over 35 years.**
- **$2.3 billion in cost savings benefits, including reductions in vehicle operating and safety costs, personal and business time savings and environmental benefits.**
- **1,656 jobs supported annually for 35 years in Contra Costa County, the equivalent of 57,965 job-years.**

Business Output & Jobs Derived from Contra Costa 2020 TEP

Industry	Business Output ($ in millions)	Full-time Equivalent Job Years
Professional & Business Services	1,771	9,060
Financial Activities	1,664	3,517
Construction	1,096	5,786
Manufacturing	1,004	349
Transportation	970	26,741
Education & Health Services	644	4,136
Other Services	402	4,388
Wholesale Trade	370	573
Retail Trade	363	2,179
Media & Information	281	202
Postal & Warehousing	114	754
Government	70	145
Utilities	39	40
Agriculture & Extraction	13	95
Total	8,803	57,965

Note: Full-time equivalent job-years represent one year of one job. For example, a full-time construction job lasting for four years would count as four job-years in this table. Additionally, a 50% part-time manufacturing job lasting two years is counted as one job-year.
Data: Calculated using TREDIS Software; inputs from Contra Costa County Model Performance Measures
Analysis: Bay Area Council Economic Institute

INSIGHT

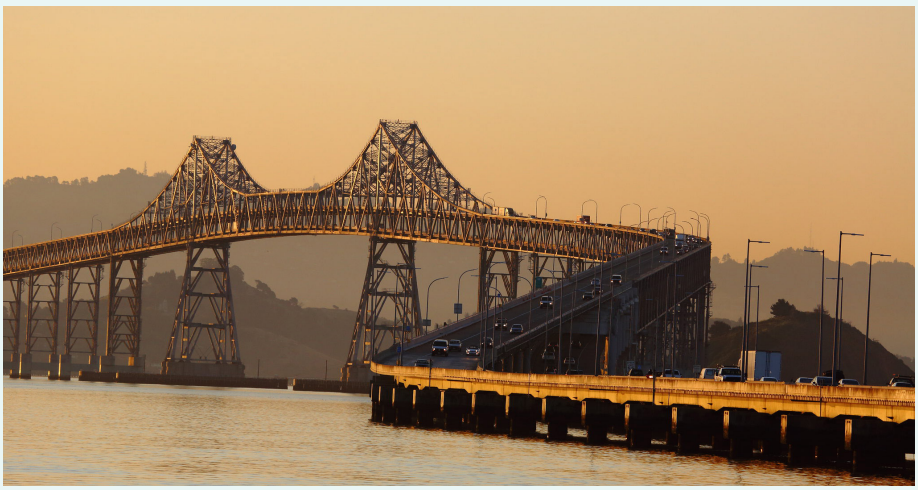
Improved traffic flow and local access to Richmond-San Rafael Bridge along I-580 and Richmond Parkway

Impacts of adding high occupancy vehicle (HOV) lane to the I-580 approach to RSR Bridge and overhaul of toll plaza to allow all electronic payment.

The TEP allocates funding to update the toll plaza on the San Rafael Bridge and add HOV lanes approaching the toll plaza. Several metrics display the increased pressure on the Richmond-San Rafael Bridge, demonstrating the need for congestion relief investments:

- In 2017, 10,900 Contra Costa residents made the commute from Contra Costa County to Marin County on a daily basis, this number has grown by 58% since 2010.
- The Richmond-San Rafael Bridge annual toll volume in 2018 was 15 million, total volume grew by 2.8 million from 2010 to 2018.
- The I-580 westbound 7.7-mile section in Contra Costa approaching the Richmond-San Rafael Bridge experienced 187,749 vehicle hours of delay (VHD) (delay threshold 35 mph) in 2018, up from 4,656 VHD in 2010.

The growth in Contra Costa residents commuting daily across the Richmond-San Rafael Bridge, the increased annual toll volume, and the growing delay approaching the bridge all point to a need for investment in congestion relief strategies along the westbound section of I-580 approaching the toll plaza. The addition of an HOV lane in that corridor, along with migration to an all electronic payment toll plaza would help ease the growing pressure on this bridge.



Richmond-San Rafael I-580 Bridge

INSIGHT

Improve Local Access to Highway 4 and Byron Airport

Impacts of increased economic activity at Byron Airport due to improved access.

Of the two airports in Contra Costa County, Byron Airport has far less traffic than Buchanan Field. A main reason cited as a limitation to Byron reaching similar levels of traffic to Buchanan is the limited ground access to the airport. Improved ground access recommended by the Contra Costa Airport Development Plan include connections between Armstrong Road and Vasco Road and Armstrong Road and the Byron Highway.[21] These access improvements have the potential to encourage growth at the airport in the following ways:

- Support aviation growth in Contra Costa. The population and development growth in the Eastern subregion of the county where the airport is located represents potential for growth in flight numbers at Byron Airport.
- Incentivize development of more hangar space. Byron has land available to build more facilities, but current hangar space is at capacity.
- Attract more Bay Area technology startups to utilize Byron as a test site for emerging aviation-related technologies. This is already underway at the airport, but easier road access could make Byron a more attractive option than other regional airports offering similar services.
- Improved road access could also be a factor in attracting cargo operations in the future. Airport infrastructure improvements would also be necessary for Byron Airport to serve as a cargo facility, but local road access has in the past stood in the way of cargo operations being considered at the Byron Airport.

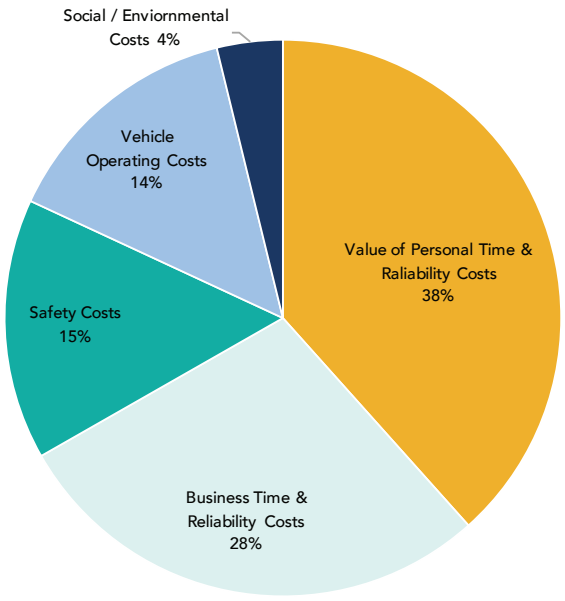
Investing in these improvements is an element of the TEP, and a key example of how the strategic investments from the spending plan have the potential to stimulate increased economic activity across sectors. In this case, the investment in roads accessing the Byron Airport has the potential to grow aviation in East Contra Costa.

Byron Airport in Contra Costa County

To further explain the business output impact, the hypothetical example of spending to extend a rail transit system provides a useful context. First, there is a direct effect: the number of jobs and dollars in tax revenue that are directly linked to the original expenditure. Second, there is an indirect effect: when a contractor is hired to build new tracks, this stimulates activity directly related to this contractor, but also indirectly stimulates activity at the concrete and steel companies that supply the materials. Finally, there is an induced effect that results from the employees at the construction and steel companies spending their increased take-home pay. The $8.8 billion of total business output from the TEP includes all three of these categories.

Value of Cost Savings Benefits

$2.3B savings by 2055



Data: Calculated using TREDIS Software; inputs from Contra Costa County Model Performance Measures
Analysis: Bay Area Council Economic Institute

The $2.3 billion in cost saving benefits are a result of infrastructure improvement and modernization that improve the efficiency of mobility countywide, and can be quantified in monetary terms as follows:

- Time savings is the most significant cost savings benefit, valued at $865 million in personal time savings and $675 million in business time savings.
- Vehicle operation cost savings, including reductions in maintenance and fuel costs, arise from investments in new roadways and congestion reduction. These savings are estimated to total $329 million, the equivalent of $218 per capita based on 2055 population estimates.
- Environmental benefits, calculated from the reductions in VMT, congestion and fuel consumption, are estimated at $88 million.
- Cost saving from improved safety, representing monetized impacts of collisions including injuries, fatalities, and property damage are estimated at $370 million.

The broad economic impacts revealed through this modeling demonstrate that in addition to making travel throughout the Contra Costa more efficient, safe, and convenient, the TEP will strengthen the Contra Costa economy. The TEP will deliver critical improvements and transportation innovations to Contra Costa while creating jobs, boosting economic output, and catalyzing cost savings benefits to businesses and individuals. The TEP offers the potential to spur economic growth through investments that tackle the county's biggest transportation challenges and prepare the Contra Costa transportation system for future mobility.

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