

Appendix H
2021 TIP Investment Analysis

2021 TIP Investment Analysis

A FOCUS ON LOW-INCOME AND MINORITY POPULATIONS,
SENIORS, AND PERSONS WITH DISABILITIES

INTRODUCTION

The 2021 TIP Investment Analysis is an assessment of TIP investments through an equity lens, specifically focused on the Bay Area's disadvantaged populations. The purpose of the analysis is to understand if low-income and minority populations, seniors, and persons with disabilities are sharing equitably in the region's near-term transportation investments. Although investment information is current as of development of the 2021 TIP, travel data and modal usage is pre-COVID-19. Any long-term impacts to travel patterns due to COVID-19 will be reflected in the analysis of future TIPs.

2021 TIP

The Bay Area's 2021 TIP covers the four-year period of FY 2020-21 through FY 2023-24 and includes approximately 330 transportation projects with \$10.3 billion in committed funding during the four-year period.

Projects in the TIP

The TIP includes all transportation projects that are federally funded, require a federal action, or are considered regionally significant for air quality conformity purposes. The majority of projects in the TIP are federally funded, although some local or state-funded projects are also included, particularly those that are large in scale or impact travel patterns over a relatively large geographic area, such as a new lane on a state highway. In reviewing TIP investments as a whole, it is important to keep in mind that most transportation projects are local, in both scale and funding, and these projects are typically not reflected in the TIP. These projects include pavement preservation, transit operations and maintenance, planning efforts, bicycle/pedestrian improvements, and minor intersection improvements.

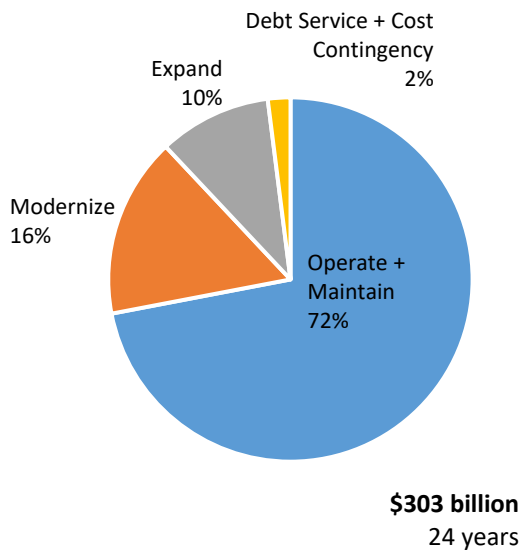
All projects included in the TIP must be consistent with the region's long-range plan, the Amended Plan Bay Area 2040 (the Plan). As such, the TIP represents a four-year snapshot that is a small part of the 24 years of the Plan.

In addition to the total investments captured in the TIP versus the Plan, there is an important difference between these two documents that complicates any side-by-side comparison. While the Plan includes the universe of revenues reasonably expected to be available (federal, state, local, and private funds) to implement planned transportation projects, program, and strategies, the TIP is much more focused on projects with federal funding or that affect air quality conformity. This means that the TIP is more heavily weighted toward large capital projects, such as transit and highway expansions, that are more likely to require federal funds or action. The vast majority of funds that go to operate, maintain, and manage the region's existing transportation system, a top priority of the long-range plan, are not typically captured in a TIP as they tend to be locally funded. See Figure 1, on the following page, for an illustration of this distinction.

Figure 1. TIP and Plan Investments by Mode/Type

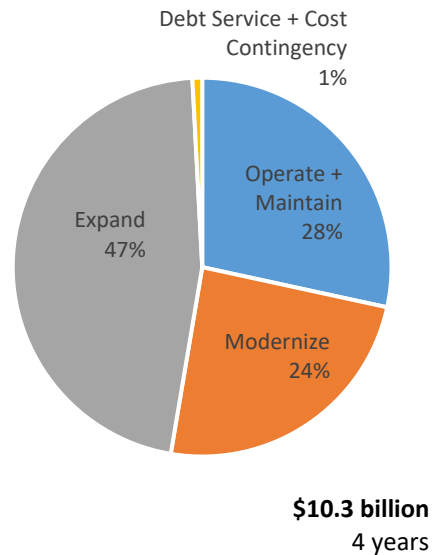
Plan Bay Area 2040 Investments

Expenditures by Investment Strategy



2021 TIP Investments

Expenditures by Investment Strategy



The narrower focus of the TIP also means only a fraction of total regional transportation expenditures are captured in any given year. On average, one year of investments in the 2021 TIP accounts for less than a quarter of annual expenditures in the regional long-range plan.

Another feature of the TIP that distinguishes it from the regional long-range plan is that it tends to be a more dynamic document – meaning that it is revised frequently to reflect changing funding and project changes, and on-going funding efforts. For context, the 2019 TIP was amended or modified more than 40 times in the two years following its federal approval.

Equity and Environmental Justice Considerations

As the federally designated Metropolitan Planning Organization (MPO) for the Bay Area, MTC is required to ensure that the region's transportation planning processes comply with applicable equity and environmental justice requirements. The legal, regulatory, and policy framework for addressing those issues is described in Appendix A and includes:

- ❖ **Title VI of the Civil Rights Act:** states that no person shall be subject to discrimination based on his or her race, color or national origin under any federally funded program.
- ❖ **Federal Guidance on Environmental Justice:** requirement that federal programs and funds do not result in disproportionately high and adverse impacts on minority and low-income populations.

❖ **MTC's Environmental Justice Principles:** adopted principles that affirm MTC's ongoing commitments to:

- ♦ Create an open and transparent public participation process that empowers disadvantaged communities to participate in decision making that affects them, and
- ♦ Collect accurate and current data essential to defining and understanding the presence and extent of inequities, if any, in transportation funding based on race and income.

MTC satisfies its requirements for equity and environmental justice primarily through Plan Bay Area's Equity Analysis, MTC's Public Participation Plan, and MTC's broader Title VI program. To further build upon MTC's commitment to address equity concerns, the TIP Investment Analysis provides the public with an additional opportunity to assess the region's near-term transportation investments funded within the TIP.

BAY AREA COMMUNITY CONTEXT

Demographic Profile

An important first step of the investment analysis is to understand the demographic context and travel patterns for the Bay Area.

Race and Ethnicity

The Bay Area is one of the most diverse regions in the country, with 62 percent of the population identifying as non-white. Within the region, more than a quarter of the population identifies as Asian (27%), followed closely by Hispanic or Latino (24%), and then Black or African American (6%). Other racial minorities, including those identifying as two or more races, account for the remaining 5% of the population.

TABLE 1. Population Distribution by Race/Ethnicity

	Population (in millions)	%
Non-white	4.7	62%
Asian	2.1	27%
Hispanic or Latino	1.8	24%
Black or African American	0.5	6%
Other minority	0.4	5%
White	3.0	38%
Total	7.7	100%

Notes: Tabulation prepared by MTC based on data from 2019 American Community Survey, Table C03002.

Income

Although the Bay Area's economy has shown strong growth over the past few decades, regional levels of poverty persist. Approximately 10 percent of the population lives below the federal poverty level (\$25,100 a year for a family of four). Another 12 percent of the region's households are technically above the federal poverty line but still qualify as low-income for the purposes of this analysis, defined as households with incomes that fall below \$50,000 (approximately 200 percent of the federal poverty line for a family of four). For reference, the 2018 household median income ranges from nearly \$78,000 in Solano County to more than \$116,000 in Santa Clara County.

TABLE 2. Population Distribution by Household Income

	Population (in millions)	%
Low-Income	1.7	22%
<\$25,000	0.8	10%
\$25,000 - \$49,999	0.9	12%
Not Low-Income	6.0	78%
\$50,000 - \$99,999	1.8	24%
\$100,000 - \$149,999	1.5	19%
>\$150,000	2.7	35%
Total	7.7	100%

Notes: Tabulation prepared by MTC based on data from 2018 American Community Survey Public Use Microdata Samples. Income is calculated in 2018-denominated dollars. Note that the universe is persons in households and excludes persons living in group quarters.

Seniors and Persons with Disabilities

Nearly 15% of the Bay Area's population is aged 65 or older. Persons reporting disabilities across six categories defined by the Census Bureau total more than 9% of the region's population.

TABLE 3. Seniors and Persons with Disabilities

	Population (in millions)	%
Seniors	1.1	15%
Persons with Disabilities	0.7	9%

Notes: Tabulation prepared by MTC based on data from 2019 American Community Survey Tables C18101 and B01001. Note that the universe is civilian noninstitutionalized population counted in disability.

Travel Patterns

Commute trips by Bay Area residents are overwhelmingly made by motor vehicle (76%) followed by transit (12%), non-motorized trips (5%), telecommute (6%), and other modes (1%). Travel pattern data is pre-COVID-19. Any long-term impacts to travel patterns due to COVID-19 will be reflected in future TIP analyses, once updated data becomes available.

TABLE 4. Share of Commute Trips by Mode by Population

	Low- Income	Minority	Seniors	Total Population
Roadway (Motorized)	73%	78%	73%	76%
Roadway (Non-motorized)	8%	4%	4%	5%
Transit	11%	12%	8%	12%
Telecommute	6%	4%	14%	6%
Other	2%	1%	1%	1%
Total	100%	100%	100%	100%

Notes: Tabulation prepared by MTC based on data from 2016 American Community Survey Public Use Microdata Samples. Income is calculated in 2016-denominated dollars. Note that the universe is persons in households and excludes persons living in group quarters.

The share of all trips (including both commute and non-commute trips) made by target population groups is provided in Table 4 below. While there are differences in the travel patterns of low-income, minority and senior populations, the vast majority of all trips are categorized as roadway trips, which includes highway and roadway travel as well as trips made by walking or biking.

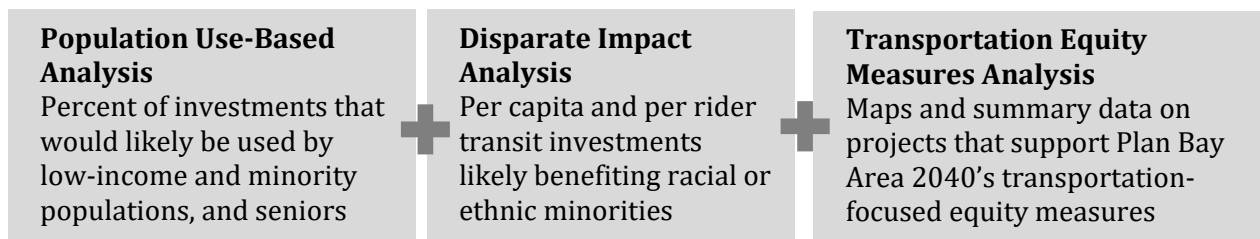
TABLE 5. Share of Commute and Non-Commute Trips by Mode by Population

	Low- Income	Minority	Seniors	Total Population
Roadway (Motorized)	74%	80%	82%	80%
Roadway (Non-motorized)	18%	14%	14%	15%
Transit	7%	6%	4%	5%
Total	100%	100%	100%	100%

Notes: Tabulation based on 2012 California Household Travel Survey. Tabulation does not include share of trips made by persons with disabilities due to sample size limitations.

METHODOLOGY

The 2021 TIP investment analysis is built on three components that work together to inform how low-income and minority communities, seniors, and persons with disabilities may be affected by the investments in the 2021 TIP.



The methodologies used in each analysis are described in more detail below. Appendix B includes definitions and data sources used in this analysis.

Population Use-Based Analysis

This portion of the analysis compares the estimated percent of investments included in the TIP that benefit low-income and minority populations, as well as seniors, to the percent of these populations' relative usage of the transportation system, for both roadways and transit. The analysis measures transit and motor vehicle trips using the 2012-2013 California Household Travel Survey.

1. For this analysis, investments in the TIP are separated into two modes: transit and local streets and roads/highway (referred to as "roadway"). For simplicity, pedestrian and bicycle projects are assigned to local streets and roads and not evaluated as a separate mode of travel or investment type.

For reference, Appendix C includes maps for each county with projects shown with their roadway or transit categorization.

2. To analyze what share of each mode (transit and roadway) low-income, minority, and senior populations utilize, the following definitions are used to identify disadvantaged populations:
 - **Low-Income Households:** Low-income households were defined as households earning \$50,000 or less. This is roughly equivalent to 200 percent of the federal poverty level for a family of four.
 - **Minority Households:** For this analysis, minority households were defined using U.S. Census Bureau definitions. Racial and ethnic minorities examined in this analysis are Hispanic, black or African American, Asian, and other or two or more races.
 - **Seniors:** Seniors are defined as persons aged 65 and over.

3. The assignment of investments by usage is then performed by multiplying the percent of use of the mode by the investment in that particular mode. This analysis is conducted at the county level for highways and roadways and at the transit-operator level for transit.

For the multimodal, aggregate analysis, trip data from the household travel survey is used. As an illustrative example, low-income populations make 32% of Alameda County roadway trips. For a \$50 million state highway project in that county, 32% or \$16 million, would be assigned as a financial benefit to low-income populations and the remaining 68%, or \$34 million, to the remaining population. A similar approach is followed for transit investments by operator. A similar analysis is conducted using roadway vehicle miles traveled (VMT) and transit origin-destination distance.

For the in-depth analysis, transit usage data is derived from the most recent transit survey data available for each operator through MTC's ongoing Transit Passenger Demographic Survey. For in-depth roadway usage, VMT data is used from the household travel survey.

4. The investments by mode (from county or transit operator data) are summed for low-income, minority, and senior populations based on each group's usage share of each mode. The percent of usage of the system by the target and other populations is then compared to the percent of investment for trips supporting that population.

Disparate Impact Analysis

This portion of the analysis compares 2021 TIP investments per capita for racial or ethnic minority populations to per capita investments identified for non-minority populations, to investigate whether disadvantaged persons in the region are receiving an equitable share of the benefits from TIP investments. Due to the similarities in the analysis required by the Federal Transit Administration (FTA) for the long-range transportation plan, this portion of the analysis is also referred to as the Title VI analysis. The disparate impact analysis is not a required component of the TIP, and is provided for informational purposes only.

This portion of the analysis focuses on federal- and state-funded projects only. Some of the State and Federal fund sources included are FTA 5307, FTA 5309, FTA 5311, FTA 5337 funds, STP/CMAQ, Proposition 1B, and Senate Bill 1 (SB 1) funds. In addition, racial or ethnic minority groups (Asian, Black or African American, Hispanic or Latino and other minorities) are evaluated collectively in comparison to the investments per capita for non-minority populations.

The disparate impact analysis incorporates the quantitative results produced by the population/use-based analysis for state and federally funded projects. Investments are first expressed in terms of investments per capita for both minority and non-minority transit riders (or total population) in the region as follows:

$$\text{Minority benefit per capita} = \frac{\text{Total transit investments allocated to minority riders}}{\text{Total regional minority transit ridership (or population)}}$$

$$\text{Non-minority benefit per capita} = \frac{\text{Total transit investments allocated to non-minority riders}}{\text{Total regional non-minority transit ridership (or population)}}$$

Next, the minority and non-minority per-capita benefit results are compared, expressing the minority benefit per capita as a percentage of the non-minority benefit per capita:

$$\text{Result (\%)} = \frac{\text{Minority benefit per capita}}{\text{Non-minority benefit per capita}}$$

Although FTA does not provide specific guidance or standard benchmarks for MPOs to use in the metropolitan planning process to determine whether any given result for a long-range plan represents a disparate impact, a general practice is to use the percentage result to determine whether any differences between benefits for minority or non-minority populations may be considered statistically significant. If a disparate impact in the long-range plan is found to be statistically significant, consideration must then be given to “whether there is a substantial legitimate justification for the policy that resulted in the disparate impacts, and if there are alternatives that could be employed that would have a less discriminatory impact.”¹ As stated earlier, the disparate impact analysis is not a federal requirement for the TIP, and is included in the 2021 TIP Investment Analysis for informational purposes.

Transportation Equity Measures Analysis

The third component of the analysis highlights projects and investments that are likely to support our regional performance targets in four transportation-related equity measures from Plan Bay Area 2040.

Plan Bay Area 2040		
Goal Area	Goal #	Performance Target
Healthy and Safe Communities	3	Reduced adverse health impacts associated with air quality, road safety, and physical inactivity by 10%
Economic Vitality	8	Increase by 20% the share of jobs accessible within 30 minutes by auto or within 45 minutes by transit in congested conditions
Transportation System Effectiveness	12	Reduce vehicle operating and maintenance costs due to pavement conditions by 100%
	13	Reduce per-rider transit delay due to aged infrastructure by 100%

In 2019 TIP Investment Analysis, an additional Plan Bay Area 2040 equity measure was included. The target for Equitable Access was to decrease the share of lower-income residents’ household income consumed by transportation and housing by 10%. Due to limitations of the travel demand model in estimating changes in transportation costs from projects in the TIP, this measure was not included in the 2021 TIP Investment Analysis.

¹ FTA Circular 4702.1B, page VI-2.

Healthy and Safe Communities

Projects that are expected to contribute towards reaching our regional goals for healthy and safe communities include projects that improve road safety, projects that increase physical activity, and projects that improve air quality. These projects are identified by:

- **Safety:** Projects identified by the project sponsors as having a primary purpose of addressing safety, or as anticipated to have a significant impact on reducing fatalities and serious injuries for all users.
- **Physical Activity:** Projects identified by project sponsors as being focused primarily on bicycle or pedestrians (greater than 50% of the project's investment supports bicyclists and/or pedestrians), and the total investments included in the TIP that support bicycle or pedestrian mode regardless of the project's primary purpose.
- **Air Quality:** Projects funded with federal Congestion Mitigation Air Quality Improvement Program (CMAQ), state California Air Resources Board (CARB), regional Transportation for Clean Air (TFCA) grants, or in MTC's Climate Initiatives Program.

The number and investment level of the projects supporting the healthy and safe communities goal area are summarized at the regional and county level. Safety and active transportation projects that have physical locations (ex.: a complete streets project, or an interchange improvement) are also mapped over the region's Communities of Concern (COCs).

Economic Vitality

Transportation projects that can be expected to increase accessibility to the share of jobs by car and transit are projects that reduce traffic congestion or improve the reliability of the existing transportation system. These projects are identified by:

- **Road Congestion/Reliability:** Road projects identified by the project sponsors as having a primary purpose of addressing congestion or system reliability, or projects anticipated as having a significant impact on congestion reduction or improved system reliability.
- **Transit Service/Capacity:** Transit projects identified by the project sponsors as having a primary purpose of addressing congestion or system reliability, or projects anticipated as having a significant impact on congestion reduction or improved system reliability.

The number and investment level of projects supporting the economic vitality goal area are summarized at the regional and county level. Additionally, projects identified as improving congestion or system reliability that have physical locations (ex.: a new bus rapid transit project, or a new HOV or express lane) are also mapped over the region's Communities of Concern (COCs).

Transportation System Effectiveness

The transportation system effectiveness goal area encompasses two performance measures: pavement condition and transit state of good repair. These projects are identified by:

- **Pavement Condition:** Projects that include a pavement rehabilitation or preservation component.
- **Transit State of Good Repair:** Projects that rehabilitate or replace existing transit assets.

The number and investment level of projects supporting improved pavement conditions are summarized at the regional level and county level. Additionally, pavement projects are also mapped over the region's Communities of Concern (COCs).

Transit state of good repair investments are summarized at the regional and transit operator level. As transit asset projects tend to be systemwide, rather than tied to a static location, they are not included in the Transportation System Effectiveness maps. Transit projects associated with new or expanded service in specific locations, such as a new light rail line, are represented in the Economic Vitality maps.

Limitations

As a regional analysis, the methods used in the TIP investment analysis have several limitations. The most significant limitation is that the analysis does not directly assess the resulting benefit and burden of specific projects or programs, such as travel time savings or improved accessibility to jobs or other destinations. Other limitations are:

- ***TIP is a snapshot in time:*** It is also important to re-emphasize that the TIP does not reflect the full picture of transportation investments in the Bay Area over the long-term. As discussed in the introduction, the TIP only includes four years of near-term fund programming, compared to the 20+ years forecast in Plan Bay Area 2040. Also, funding shown in the TIP is included in the year that project phases begin or are obligated and does not reflect the actual flow of funding and expenditures within these phases. While rehabilitation programs will typically have their funding spread across many years, large capital projects tend to have their funding lumped into a single year in the TIP, even if the funds will actually be expended over a number of years, some of which may be outside the 4-year period of the TIP.
- ***Notes on assumptions:*** In addition, the analysis assumes that mode choice and system usage remain constant over time. System expansion, such as a new transit line or highway, and changing conditions, such as improvements to reliability and travel costs, tend to influence travel behavior over time. However, this analysis assumes that the usage derived in the recent travel survey and transit passenger surveys remain static over time.

The classification of investments into either roadway or transit investments also presents some limitations. For example, classifying a pavement rehabilitation project as strictly roadway does not account for the benefit to the region's transit vehicles that share the street with private automobiles.

- **Mapping limitations:** Mapping projects provides a visual representation of the location of projects in relation to COCs. However, project mapping also presents certain limitations. First, not all significant regional investments are mappable. For example, a substantial share of total funding in the TIP is dedicated to transit operators for ongoing maintenance and rehabilitation of their entire system, which cannot be represented as a simple point or line on a map in relation to a specific community. Second, displaying investments on a map does not translate into a direct benefit or burden for the surrounding communities. Given these limitations, the mapping analysis provides a qualitative, rather than quantitative, assessment of the spatial distribution of mappable projects included in the TIP.
- **Funding and project types:** Given the document's federal focus, the investments reflected in the TIP represent only about a quarter of all transportation investments in the Bay Area at any given time. As a result, the investment analysis does not capture the equity implications of many locally funded projects. Local projects tend to be smaller, in both geography and scope, but collectively, these projects are expected to have a significant impact on travel behaviors and experiences throughout the region.
- **Demographic data:** While the latest available demographic data was used in the investment analysis, some data sets have been updated more recently than others. The information from the household travel survey is more than 7 years old, with data collected from households between 2012 and 2013. The transit passenger survey data is more recent. However, the exact year of data collection varies, as MTC conducts the surveys by operator on a rolling basis. Given the pace with which travel patterns and behaviors have changed in recent years, the year in which data is collected is expected to influence the results of the analysis. Furthermore, travel pattern data is pre- COVID-19. Any long-term impacts to travel patterns due to COVID-19 will be reflected in future TIP analyses, once updated data becomes available.

The 2021 TIP Investment Analysis includes an analysis of investments benefiting seniors. Unfortunately, a similar analysis for persons with disabilities is not included due to sample size limitations of the travel survey, and data unavailability from the transit passenger demographic survey. However, a qualitative discussion of regional transportation investments that benefit seniors and persons with disabilities is included in the following section.

ANALYSIS RESULTS & DISCUSSION

Population Use-Based Results

The population use-based analysis is divided into three focus areas: income, race/ethnicity, and seniors. Additional information is also provided at the end of this section on regional efforts and initiatives to support and better understand the transportation needs of residents with transportation related disabilities.

Investments by Income

Bay Area residents living in low-income households, earning less than \$50,000 per year, account for nearly a third of all trips (27%) in the region.

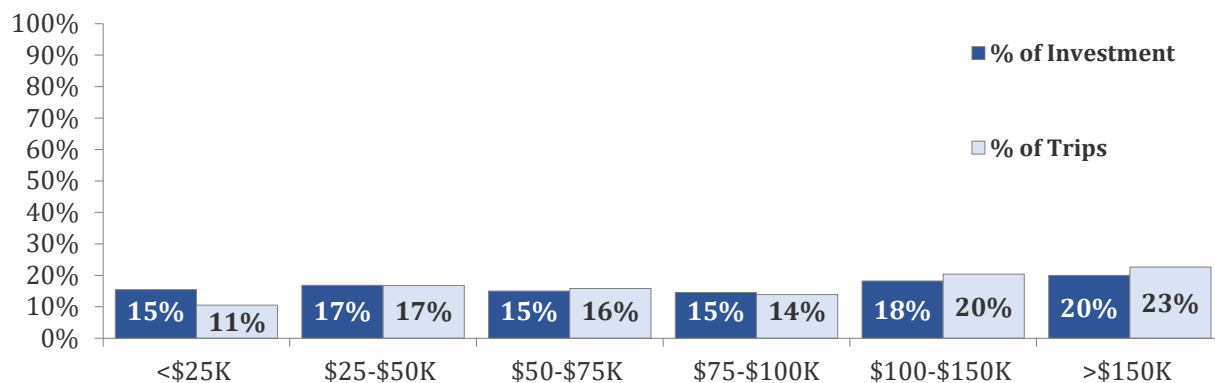
In the 2021 TIP, 32%, or more than \$3 billion, is directed to projects supporting trips made by residents from low-income households. The share of these investments supporting low-income trips exceeds the share of trips made by persons from low-income households by approximately 5%.

See Table 6 and Figures 2 and 3 for additional detail.

TABLE 6. 2021 TIP Investments and Trips by Income

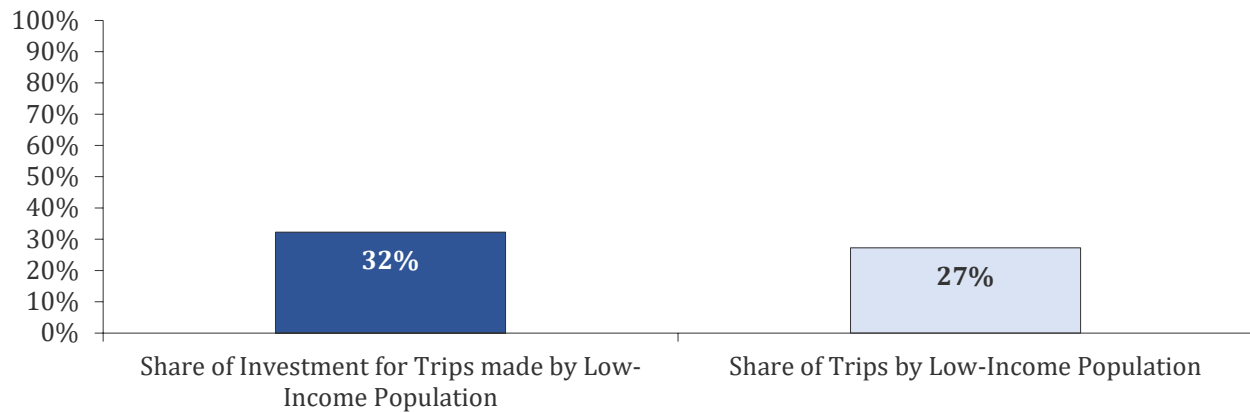
	2021 TIP Investments (in \$ billions)	% of Investment	% of Trips
Low-Income	\$3.3	32%	27%
<\$25,000	\$1.6	15%	11%
\$25,000 - \$49,999	\$1.7	17%	17%
Not Low-Income	\$7.0	68%	73%
\$50,000 - \$74,999	\$1.5	15%	16%
\$75,000 - \$99,999	\$1.5	15%	14%
\$100,000 - \$149,999	\$1.9	18%	20%
>\$150,000	\$2.1	20%	23%
Total	\$10.3	100%	100%

FIGURE 2. 2021 TIP Investments and Trips by Income Category



Source: 2021 TIP and California Household Travel Survey

FIGURE 3. 2021 TIP Investments and Low-Income Trips



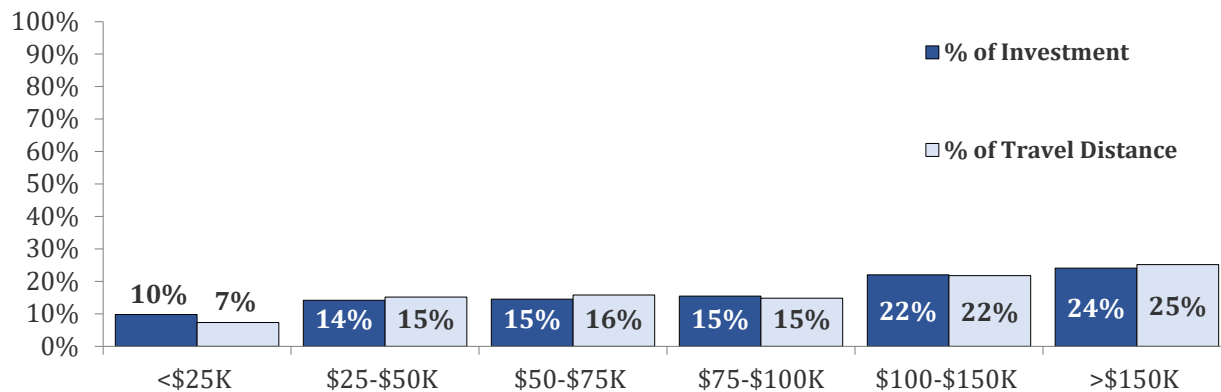
Source: 2021 TIP and California Household Travel Survey

Similarly, the share of investments in projects that support travel made by low-income populations (24%) slightly exceeds their usage share of the transportation system in terms of share of the total distance traveled (22%) – vehicle miles traveled (VMT) for auto trips and origin-destination distance for transit trips. See Table 7 and Figure 4.

TABLE 7. 2021 TIP Investments and Travel Distance by Income

	2021 TIP Investments (in \$ billions)	% of Investment	% of Total Travel Distance
Low-Income	\$2.5	24%	22%
<\$25,000	\$1.0	10%	7%
\$25,000 - \$49,999	\$1.5	14%	15%
Not Low-Income	\$7.8	76%	78%
\$50,000 - \$74,999	\$1.5	15%	16%
\$75,000 - \$99,999	\$1.6	15%	15%
\$100,000 - \$149,999	\$2.3	22%	22%
>\$150,000	\$2.5	24%	25%
Total	\$10.3	100%	100%

FIGURE 4. 2021 TIP Investments and Travel Distance by Income Category



Source: 2021 TIP and California Household Travel Survey

The analysis indicates that the share of investments in local road, state highway and toll bridge systems that benefit drivers living in low-income households (22%) is roughly equivalent to the share of total VMT by drivers living in low-income households (22%). See Table 8 and Figure 5.

TABLE 8. 2021 TIP Roadway Investments and Travel Distance by Income

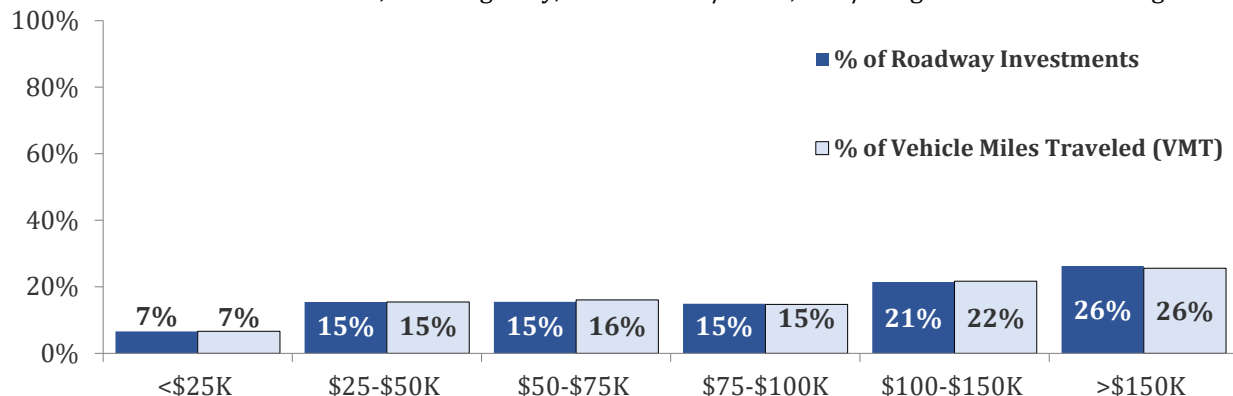
Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge

	2021 TIP Roadway Investments (in \$ billions)	% of Investment	% of Total Travel Distance*
Low-Income	\$1.2	22%	22%
<\$25,000	\$0.3	7%	7%
\$25,000 - \$49,999	\$0.8	15%	15%
Not Low-Income	\$4.1	78%	78%
\$50,000 - \$74,999	\$0.8	15%	16%
\$75,000 - \$99,999	\$0.8	15%	15%
\$100,000 - \$149,999	\$1.1	21%	22%
>\$150,000	\$1.4	26%	26%
Total	\$5.4	100%	100%

*Total travel distance is vehicle miles traveled (VMT) for all non-transit trips as derived from the California Household Travel Survey.

FIGURE 5. 2021 TIP Roadway Investments and Travel Distance by Income

Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge



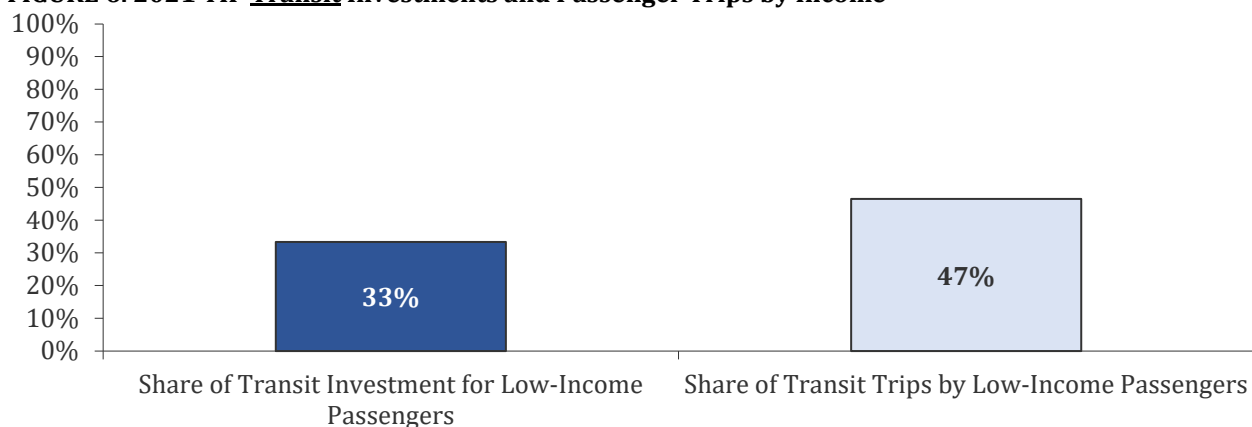
Source: 2021 TIP and California Household Travel Survey

The share of transit investments in the 2021 TIP for passengers living in low-income households (33%) falls short of the share of transit trips by passengers living in low-income households (47%).

TABLE 9. 2021 TIP Transit Investments and Transit Trips by Income

	2021 TIP Transit Investments (in \$ billions)	% of Transit Investment	% of Passenger Transit Trips
Low-Income	\$1.7	33%	47%
Not Low-Income	\$3.3	67%	53%
Total	\$5.0	100%	100%

FIGURE 6. 2021 TIP Transit Investments and Passenger Trips by Income



Sources: 2021 TIP and Transit Passenger Demographic Survey (MTC) and BART Customer Satisfaction Survey

Investments by Race/Ethnicity

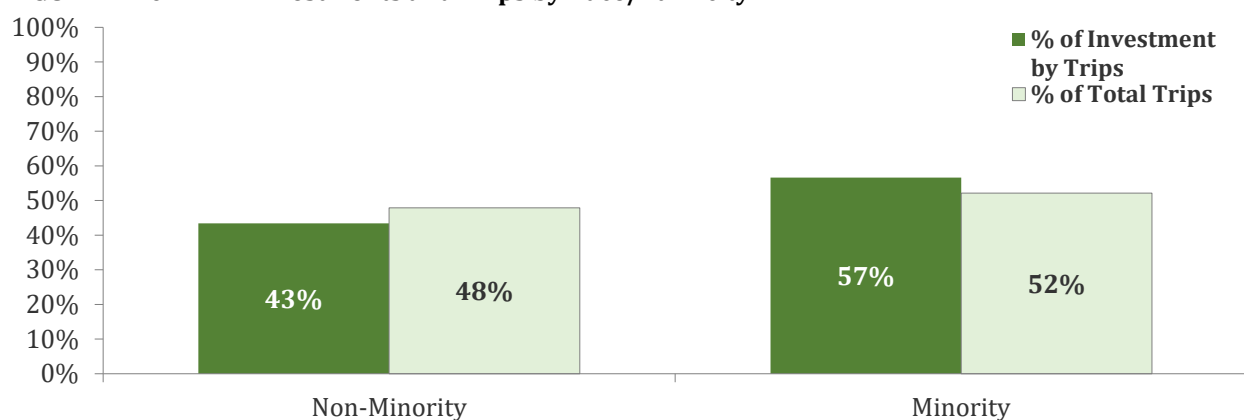
Minority households make up 62% of the region's population and account for 52% of all trips.

The share of transportation investments in the Bay Area that support minority population trips (57%) is greater than the share of trips taken by these populations (52%).

TABLE 10. 2021 TIP Investments and Trips by Race/Ethnicity

	2021 TIP Investments by Trips (in \$ billions)	% of Investment	% of Trips
Non-Minority	\$4.5	43%	48%
Minority	\$5.8	57%	52%
Total	\$10.3	100%	100%

FIGURE 7. 2021 TIP Investments and Trips by Race/Ethnicity



Source: 2021 TIP and California Household Travel Survey

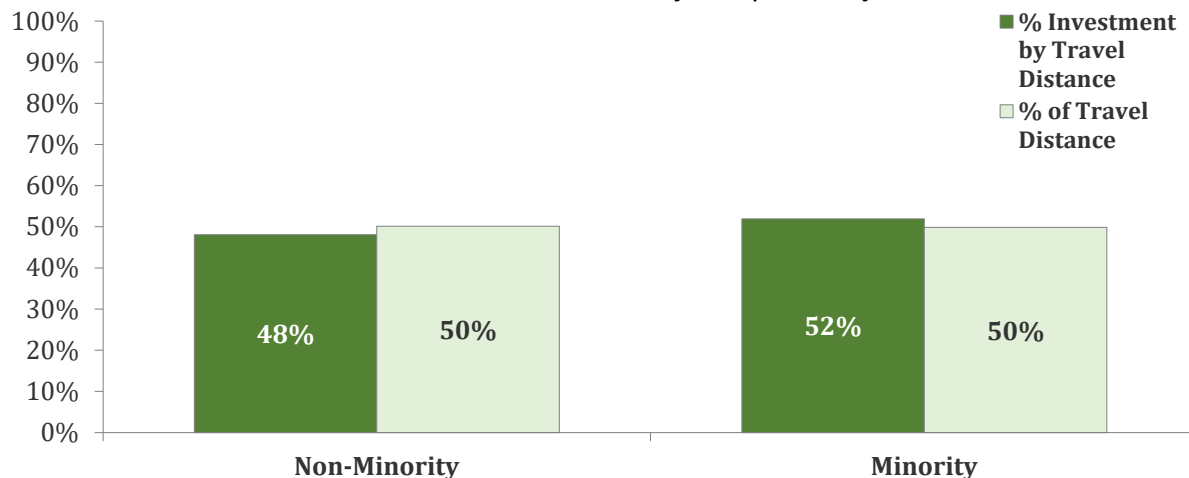
The minority household populations account for approximately half (50%) of all travel distance, as measured by VMT of roadway trips and origin destination distance for transit trips.

The share of investments supporting minority travel by distance (52%) is slightly more than the share of travel distance traversed by the minority populations (50%).

TABLE 11. 2021 TIP Investments and Travel Distance by Race/Ethnicity

	2021 TIP Investments by Travel Distance (in \$ billions)	% of Investment	% of Travel Distance
Non-Minority	\$4.9	48%	50%
Minority	\$5.3	52%	50%
Total	\$10.3	100%	100%

FIGURE 8. 2021 TIP Investments and Travel Distance by Race/Ethnicity



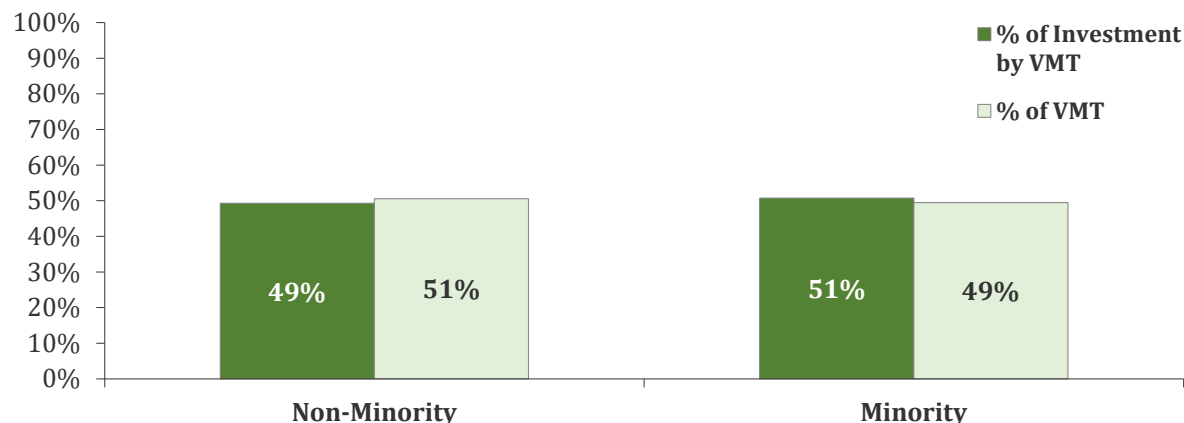
Source: 2021 TIP and California Household Travel Survey

Persons from minority households account for about half of all roadway travel distance, as measured by VMT. The share of investments supporting minority roadway travel by distance (51%) is roughly equivalent to the overall share of VMT traveled by minority populations (49%).

TABLE 12. 2021 TIP Roadway Investments and Travel Distance (VMT) by Race/Ethnicity
Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge

	2021 TIP Investments by VMT (in \$ billions)	% of Investment	% of VMT
Non-Minority	\$2.6	49%	51%
Minority	\$2.7	51%	49%
Total	\$5.3	100%	100%

FIGURE 9. 2021 TIP Roadway Investments and Travel Distance (VMT) by Race/Ethnicity
Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge



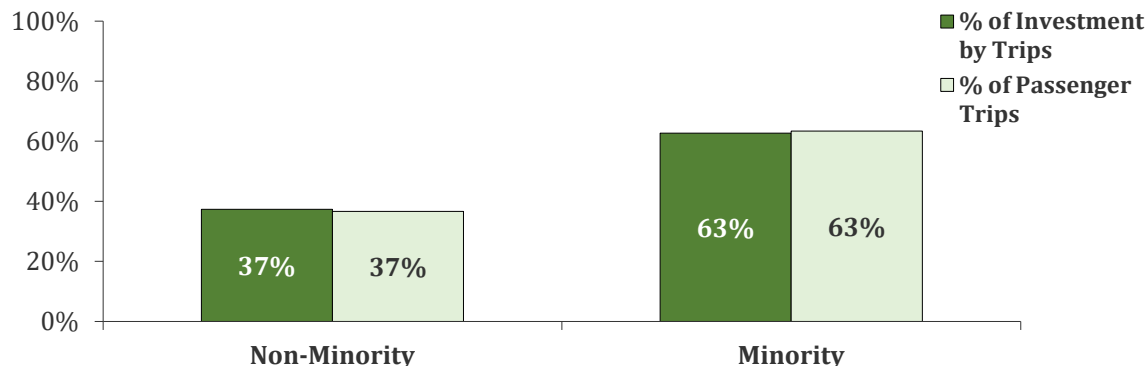
Source: 2021 TIP and California Household Travel Survey

Nearly two-thirds (63%) of transit trips in the Bay Area are taken by residents identifying as a racial or ethnic minority. The share of investments in the 2021 TIP that support these transit trips (63%) is roughly equivalent to the share of transit trips made by minority populations (63%).

TABLE 13. 2021 TIP Transit Investments and Transit Trips by Race/Ethnicity

	2021 TIP Investments by Transit Trips (in \$ billions)	% of Investment	% of Transit Trips
Non-Minority	\$1.9	37%	37%
Minority	\$3.1	63%	63%
Total	\$5.0	100%	100%

FIGURE 10. 2021 TIP Transit Investments and Transit Trips by Race/Ethnicity



Sources: 2021 TIP and Transit Passenger Demographic Survey (MTC) and BART Customer Satisfaction Survey

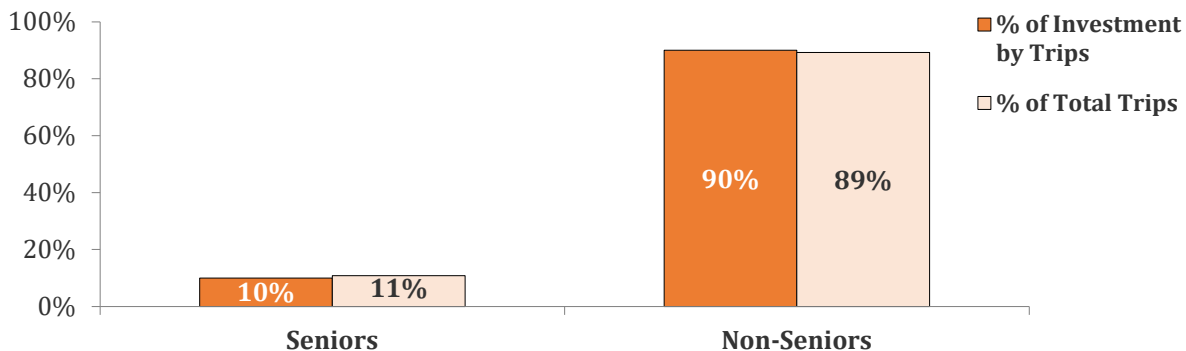
Investments by Seniors

Seniors, defined for this analysis as persons over the age of 65, account for 15% of the region's population. The share of transportation investments that support trips taken by seniors (10%) is slightly less than, but roughly equivalent to, their share of trips (11%).

TABLE 14. 2021 TIP Investments and Trips by Seniors

	2021 TIP Investments by Trips (in \$ billions)	% of Investment	% of Trips
Senior	\$1.0	10%	11%
Non-Senior	\$9.3	90%	89%
Total	\$10.3	100%	100%

FIGURE 11. 2021 TIP Investments and Trips by Seniors



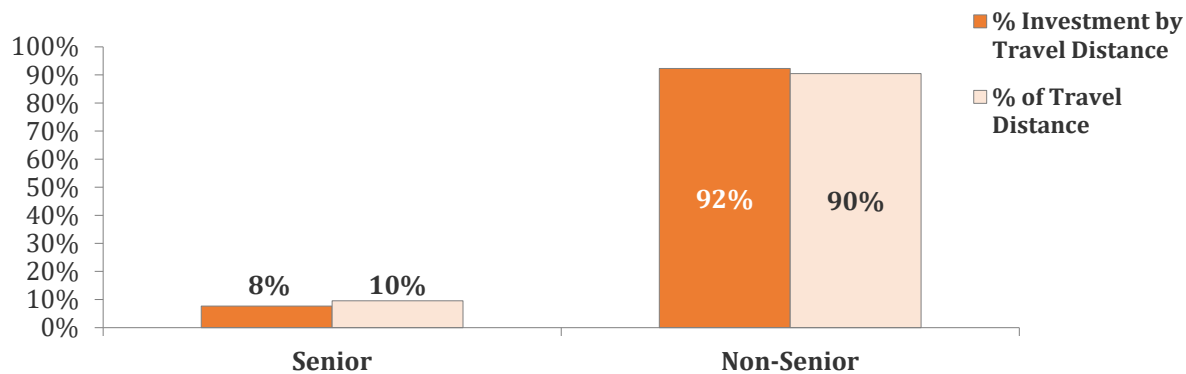
Source: 2021 TIP and California Household Travel Survey

Seniors also account for 10% of all travel distance, as measured by VMT of roadway trips and origin/destination distance for transit trips. This is roughly equivalent to their share of the investments (8%) supporting distance travelled by senior populations.

TABLE 15. 2021 TIP Investments and Travel Distance by Seniors

	2021 TIP Investments by Travel Distance (in \$ billions)	% of Investment	% of Travel Distance
Senior	\$0.8	8%	10%
Non-Senior	\$9.5	92%	90%
Total	\$10.3	100%	100%

FIGURE 12. 2021 TIP Investments and Travel Distance by Seniors



Source: 2021 TIP and California Household Travel Survey

For roadway travel, seniors account for 10% of all VMT and benefit from an equivalent share of investments (10%).

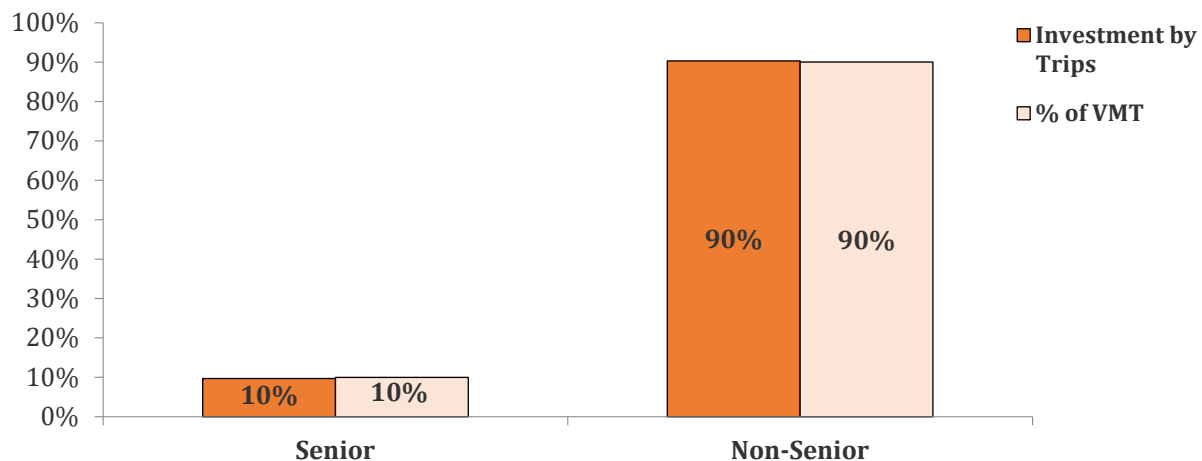
TABLE 16. 2021 TIP Roadway Investments and Travel Distance (VMT) by Seniors

Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge

	2021 TIP Investments by VMT (in \$ billions)	% of Investment	% of VMT
Senior	\$0.5	10%	10%
Non-Senior	\$4.8	90%	90%
Total	\$5.3	100%	100%

FIGURE 13. 2021 TIP Roadway Investments and Travel Distance (VMT) by Seniors

Includes Local Streets and Roads, State Highway, Public Lands/Trails, Port/Freight Rail and Toll Bridge



Source: 2021 TIP and California Household Travel Survey

Given the limitations of the data available, a detailed look at investments by transit trip length by passenger age is not included in the population use-based analysis.

Supplemental Information - Persons with Transportation-Related Disabilities

Limitations in the data available make it difficult to quantify transportation system usage of persons with disabilities to the degree necessary for the population use-based analysis. However, transportation investments benefiting these populations are being made throughout the region. Below is an overview of regional investments and planning initiatives that support transportation by persons with disabilities. A list of transit projects compliant with the Americans with Disabilities Act (ADA) is included Appendix A-48.

- **Community Based-Transportation Planning (CBTP)** – Provides planning funds for developing project recommendations in each of the region’s Communities of Concern (COCs). Persons with disabilities are one of eight factors that are used to determine COC designations. Between 2004 and 2020, forty-one CBTPs were completed by and for these communities, with roughly ten CBTPs currently in production. The current \$1,465,000 funding cycle for CBTPs is set to last from Fiscal Year 2017/2018 through Fiscal Year 2021/2022; another round of funding for this work is expected to be released as part of the third One Bay Area Grant (OBAG) program in Fiscal Year 2022/2023.
- **Lifeline Transportation Program** – Provides funds to address mobility needs of low-income residents, including seniors and individuals with disabilities. Funding is used to support projects from CBTPs and other improvements to publicly available transportation projects. Historically, \$20 million has been provided annually, with the exception of the most recent cycle, which was \$7 million.
- **FTA Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities** – Provides capital and operating grants to private nonprofit and public agencies to improve mobility for seniors and individuals with disabilities by removing barriers to and expanding services. In the last round of funding, \$12.1 million in awards were made in the region's large urbanized areas. The region's small urbanized areas received \$2.0 million in awards.
- **Transit Capital Priorities** – Provides an ADA set aside of 10% of the FTA Section 5307 urbanized area apportionment. Operators may use this funding to defray the operating costs of their paratransit systems. Annually, this amounts to approximately \$20 million.
- **State Transit Assistance** – With the adoption of MTC Resolution No. 4321 in February 2018, 70% of all STA Population-Based funds now flow to each county Congestion Management Agency through the STA County Block Grant and 30% is directed to the Regional Program managed by MTC. Paratransit operations are an eligible use of the County Block Grant program.
- **MTC’s Coordinated Public Transit—Human Services Transportation Plan** – Identifies the transportation needs of older adults, low-income populations and people with disabilities, and identifies funding priorities and coordination strategies

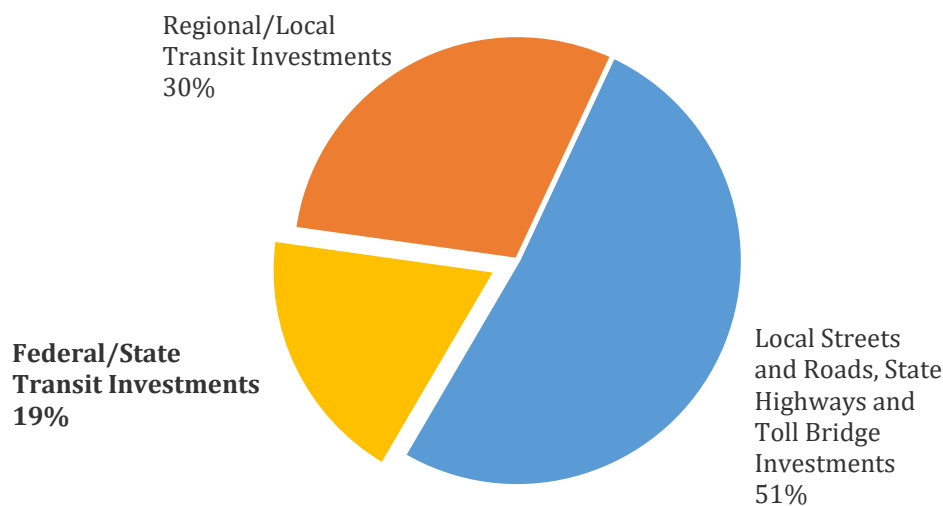
for meeting these needs. The Coordinated Plan is intended to meet the federal planning requirements as well as to provide MTC and its regional partners with a “blueprint” for implementing a range of strategies to advance local efforts to improve transportation for transportation disadvantaged populations. MTC staff works with stakeholders throughout the region to gather input on transportation gaps, as well as solutions that are then eligible for federal funding through the Section 5310 program. The Coordinated Plan was last updated in 2018. The next Coordinated Plan will be adopted in 2022.

- Caltrans awarded a \$406,000 grant to the World Institute on Disability (WID) through MTC for a planning project focused on exploring ways to expand partnerships between public transit and the disability community, and make recommendations to transportation planning agencies such as MTC, public transit agencies, county transportation authorities, and local jurisdictions to better understand and address access and mobility needs of people with a disabilities. MTC will support WID to engage community-based organizations, transportation agencies and stakeholders. The project started in fall 2018 and will end by March 2021.

Disparate Impact Analysis

The second component of the investment analysis includes a closer look at federal and state investments in public transportation. The federal and state funding sources for transit account for only a small portion (19%) of funding in the 2021 TIP, as illustrated below in Figure 11.

FIGURE 11. 2021 TIP Transit Investments from Federal/State Sources as a Share of All Investments



Source: 2021 TIP

Although 30% of the TIP is made up of regional or local investments in public transit, it is important to note that a substantial share of total funding dedicated to transit operators for ongoing operations and maintenance is not included in the TIP. This funding comes from state, regional and local sources and may not be captured in the TIP as these projects and programs do not typically require a federal action.

The disparate impact analysis indicates that the share of federal and state transit investments distributed to transit service supporting minority populations vary as compared to respective shares of regional transit ridership and regional population.

TABLE 17. 2021 TIP Federal/State Transit Investments by Minority Status

	Federal/State Transit Investments (\$ millions)	% of Total Federal/State Transit Funding	% of Regional Transit Ridership	% of Total Regional Population
Minority	\$1,203	62%	63%	60%
Non-Minority	\$729	38%	37%	40%
Total	\$1,932	100%	100%	100%

Investments distributed on a per-capita basis indicate that minority populations in the region are receiving \$252 in benefits per person, more than the \$246 in benefits per person for non-minority populations (or 102% of the benefits received by non-minority residents).

TABLE 18. 2021 TIP Federal/State Transit Investments, Disparate Impact Analysis by Population

	Federal/State Transit Investments (\$ millions)	Regional Population (2019)	Per-Capita Benefit	Minority per Capita Benefit as % of Non-Minority Per Capita Benefit
Minority	\$1,203	4,778,954	\$252	102%
Non-minority	\$729	2,960,424	\$246	
Total	\$1,932	7,739,378	\$250	

Investments distributed on a per transit rider basis indicate that minority populations in the region receive \$1,178 in benefits per rider, less than the \$1,234 in benefits per transit rider for non-minority populations (or 95% of the benefits received by non-minority residents).

TABLE 19. 2021 TIP Federal/State Transit Investments, Disparate Impact Analysis by Boardings

	Federal/State Transit Investments (\$ millions)	Average Daily Transit Ridership (2017)	Per-Rider Benefit	Minority per Rider Benefit as % of Non-Minority Per Rider Benefit
Minority	\$1,203	1,021,704	\$1,178	95%
Non-minority	\$729	590,626	\$1,234	
Total	\$1,932	1,612,330	\$1,198	

Transportation Equity Measures

Healthy and Safe Communities

Projects that are expected to contribute towards reaching our regional goals for healthy and safe communities include projects that improve road safety, increase physical activity, and improve air quality.

- **Road Safety:** In the 2021 TIP, 99 projects and more than \$1.5 billion in funding are directed to projects that are identified by project sponsors as having a primary purpose of improving road safety or that are otherwise anticipated to significantly reduce fatalities and serious injuries

Table 20. 2021 TIP Road Safety Improvements

County	Projects	Investments
Alameda	23	\$408
Contra Costa	9	\$61
Marin	6	\$14
Napa	6	\$39
San Francisco	5	\$119
San Mateo	10	\$41
Santa Clara	23	\$282
Solano	8	\$39
Sonoma	5	\$12
Multiple	4	\$514
	99	\$1,531

due to traffic collisions (Table 20). It is important to note that many other projects in the 2021 TIP are anticipated to have a moderate or slight positive impact on transportation safety. However, this analysis focuses on those projects that have safety improvement as a primary purpose or that are otherwise anticipated to lead to significant reductions in transportation fatalities and serious injuries caused by traffic collisions.

A few of the largest safety investments in the 2021 TIP include:

- ❖ \$319 million for various State Highway Operation and Protection Program (SHOPP) Collision Reduction projects
- ❖ \$50 million for I-80/Gilman St Interchange Improvements in Berkeley
- ❖ \$38 million for various local Highway Safety Improvement Program projects
- ❖ \$35 million for the Caltrain Rengstorff Grade Separation in Mountain View

Additional information is provided on projects that are expected to improve the safety of our roads for pedestrians and bicyclists.

As shown in Table 21, nearly \$800 million is invested in 55 projects in the 2021 TIP that are identified by the project sponsors as anticipated to have a significant impact on reducing fatalities and serious injuries for pedestrians and bicyclists.

Safety of the transportation system includes more than just the reduction of collisions. Projects unrelated to reducing collisions can also have significant impacts on safety to the traveling public, including seismic retrofits, security improvements, and resiliency projects. The 2021 TIP also includes a significant investment in the Golden Gate Bridge Suicide Deterrent Safety System, which aims to impede the ability of individuals to jump off the bridge. This project was not included in the Healthy and Safe Communities measure for this analysis, but does serve an important safety purpose.

Table 21. 2021 TIP Safety Improvements for Pedestrians & Bicyclists

County	Projects	Investments
Alameda	18	\$372
Contra Costa	2	\$15
Marin	3	\$3
Napa	4	\$35
San Francisco	4	\$35
San Mateo	7	\$39
Santa Clara	14	\$215
Solano	-*	-*
Sonoma	1	\$1
Multiple Counties	2	\$42
	55	\$757

*Bicycle and pedestrian projects are programed within Solano County in the 2021 TIP; however, no bicycle and pedestrian projects in Solano County are anticipated by the project sponsor as having a significant effect on bicyclist and pedestrian safety.

- **Physical Activity:** The 2021 TIP includes 85 projects and over \$300 million invested in projects that are primarily focused on bicycle and pedestrian improvements and programs, which enable and encourage active transportation.

Some of the largest bicycle and pedestrian investments in the 2021 TIP include:

- ❖ \$20 million for Willow-Keyes Complete Streets Improvement in San Jose
- ❖ \$17 million Iron Horse Trail Bike and Pedestrian Overcrossing in San Ramon
- ❖ \$15 million Rumrill Blvd Complete Streets in San Pablo
- ❖ \$15 million for Powell St Safety Improvements in San Francisco

Many projects in the TIP that are focused on other modes or purposes also include improvements that benefit bicyclists or pedestrians, such as a pavement rehabilitation project that includes adding a new bike lane. Project sponsors report the share of each project's total project cost that can be attributed to the various modes that will benefit from the project. Table 22 displays county and regional investments in bike/pedestrian projects as well as the total dollars invested on all projects that are anticipated to benefit bicyclists and pedestrians over the four-year TIP period, as reported by the project sponsors.

Table 22. 2021 TIP Bike & Pedestrian Investments

Bicycle & Pedestrian Projects			Projects with Bicycle & Pedestrian Elements	
County	Projects	Investments	Projects	Investments
Alameda	16	\$99	29	\$92
Contra Costa	8	\$54	24	\$61
Marin	6	\$6	8	\$7
Napa	4	\$14	10	\$19
San Francisco	4	\$27	8	\$34
San Mateo	8	\$11	19	\$26
Santa Clara	26	\$102	45	\$217
Solano	6	\$14	12	\$23
Sonoma	6	\$9	10	\$11
Multiple	1	\$1	4	\$5
	85	\$337	169	\$496

- **Air Quality:** Projects funded with federal Congestion Mitigation Air Quality Improvement Program (CMAQ), California Air Resources Board (CARB), the state Affordable Housing and Sustainable Communities (AHSC), or regional Transportation for Clean Air (TFCA) funds are expected to improve air quality through promoting cleaner technologies, alternative modes of transportation, or compact development. Many other projects in the 2021 TIP may also support improved air quality, but this analysis focused on projects funded with air quality specific fund sources (Table 23).

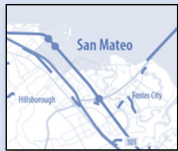
A few of the projects funded through air quality funding programs in the 2021 TIP include:

- ❖ \$8 million for Alameda County Complete Streets Improvements
- ❖ \$6 million for Tully Road Safety Improvements in San Jose
- ❖ \$5 million for El Cerrito del Norte Transit Oriented Development
- ❖ \$2 million for Francisco Boulevard East Sidewalk Widening in San Rafael

Table 23. 2021 TIP Air Quality Focused Investments

County	Projects	Investments
Alameda	10	\$25
Contra Costa	7	\$20
Marin	4	\$4
Napa	2	\$2
San Francisco	_*	_*
San Mateo	8	\$8
Santa Clara	20	\$34
Solano	6	\$8
Sonoma	2	\$2
Multiple	1	<\$1
	60	\$104

*The bulk of CMAQ funding programmed to local projects as part of the One Bay Area Grant Program (OBAG 2) obligated during the 2019 TIP, including all CMAQ funded projects in San Francisco.



Maps: 2021 TIP Healthy & Safe Communities

Safety and active transportation projects are mapped, where possible, by county and overlaid against Communities of Concern to display the overall spatial distribution of projects that support the region's goals to improve the health and safety of region. These maps can be viewed starting on page

34, and can also be viewed on an interactive webmap that include additional data on spatial concentrations by race and ethnicity, here: <https://mtc.ca.gov/our-work/fund-invest/transportation-improvement-program>.

Economic Vitality

Projects that reduce congestion, improve reliability, or improve transit service or capacity are most likely to support the regional goal to increase the share of jobs accessible within 30 minutes by car or 45 minutes by transit in congested conditions.

- **Road Congestion/Reliability:** There are 81 roadway projects in the 2021 TIP, totaling more than \$3.4 billion, which are identified by project sponsors as having a primary purpose of reducing congestion or improving system reliability or are otherwise anticipated to significantly improve congestion or reliability (Table 24).

A few of these projects in the 2021 TIP include:

- ❖ \$762 million for various SHOPP Roadway Preservation projects
- ❖ \$356 million for various SHOPP Mobility Program projects
- ❖ \$243 million for I-80 Managed Lanes in Solano County
- ❖ \$154 million for US 101/Zanker Road-Skyport Drive-N. Fourth St. Improvements in Santa Clara County
- ❖ \$128 million for Yerba Buena Island (YBI) Ramp Improvements in San Francisco
- ❖ \$28 million for US 101/Woodside Interchange Improvement in San Mateo County
- ❖ \$27 million for SR 12/29/221 Soscol Junction Interchange Improvements in Napa County

Table 24. 2021 TIP Roadway Congestion/Reliability Investments

County	Projects	Investments
Alameda	16	\$345
Contra Costa	8	\$73
Marin	3	\$93
Napa	5	\$39
San Francisco	3	\$145
San Mateo	14	\$120
Santa Clara	20	\$664
Solano	4	\$341
Sonoma	2	\$1
Multiple	6	\$1,648
	81	\$3,470

- **Transit Service/Capacity:** There are 9 transit projects in the 2021 TIP, totaling more than \$3.4 billion, which are identified by project sponsors as having a primary purpose of reducing congestion or improving system reliability or are otherwise anticipated to significantly improve congestion or reliability (Table 25).

A few of these projects in the 2021 TIP include:

- ❖ \$3.2 billion for the BART – Berryessa to San Jose Extension
- ❖ \$103 million for the Transbay Terminal/Caltrain Downtown Extension Phase 2
- ❖ \$8 million for ACE Platform Extensions in Alameda County

Table 25. 2021 TIP Transit Service/Capacity Improvements

County	Projects	Investments
Alameda	1	\$8
Contra Costa	1	\$1
Marin	1	\$1
Napa	1	\$2
San Francisco	1	\$103
San Mateo	-	-
Santa Clara	1	\$3,184
Solano	1	<\$1
Sonoma	-	-
Multiple	2	\$7
	9	\$3,306



Maps: 2021 TIP Economic Vitality

Road congestion or reliability projects and transit service or capacity improvement projects are mapped, where possible, by county and overlaid against Communities of Concern to display the overall spatial distribution of projects that support the region's goals to improve economic vitality.

These maps can be viewed starting on page 34, and can also be viewed on an interactive webmap that include additional data on spatial concentrations by race and ethnicity, here: <https://mtc.ca.gov/our-work/fund-invest/transportation-improvement-program>.

Transportation System Effectiveness

The transportation system effectiveness goal area encompasses two performance measures: improved pavement condition and transit state of good repair. Projects that include a pavement or bridge rehabilitation or preservation component or rehabilitate or replace existing transit assets are compiled for this portion of the analysis.

- **Pavement and Bridge Condition:** In the 2021 TIP, 74 projects totaling more than \$3.1 billion is invested in rehabilitation and preservation of existing roads and bridges (Table 26).

A few of the larger rehabilitation projects in the 2021 TIP include:

- ❖ \$762 million for various SHOPP Roadway Preservation projects
- ❖ \$508 million for various SHOPP Bridge Rehabilitation and Reconstruction projects
- ❖ \$201 million for various Local Highway Bridge Program projects
- ❖ \$159 million for the regional Toll Bridge Rehabilitation Program

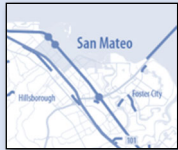
Table 26. 2021 TIP Pavement and Bridge Rehabilitation Projects

County	Projects	Investments
Alameda	20	\$321
Contra Costa	7	\$15
Marin	6	\$74
Napa	3	\$15
San Francisco	3	\$219
San Mateo	6	\$8
Santa Clara	16	\$689
Solano	4	\$13
Sonoma	3	\$5
Multiple	6	\$1,741
	74	\$3,102

- **Transit State of Good Repair:** There are 31 transit state of good repair projects in the 2021 TIP, totaling \$956 million in committed investments. The transit investments in the 2021 TIP include:
 - ❖ \$425 million for BART's Transbay Core Capacity Improvements
 - ❖ \$218 million for Caltrain Electrification
 - ❖ \$41 million for SFMTA's Train Control & Trolley Signal Rehabilitation and Replacement
 - ❖ \$10 million for Concord BART Station Modernization

Table 27. 2021 TIP Transit Rehabilitation/Replacement Projects

Sponsor	Projects	Investments	Sponsor	Projects	Investments
AC Transit	-	-	SamTrans	-	-
ACE	1	\$7	Santa Rosa Bus	-	-
BART	5	\$541	SFMTA	11	\$144
Caltrain	1	\$218	SMART	1	\$11
CCCTA	-	-	SolTrans	-	-
ECCTA	-	-	Son Co Transit	-	-
Fairfield	1	<\$1	Union City Transit	1	\$7
GGBHTD	-	-	Vacaville	-	-
LAVTA	-	-	VTA	7	\$20
MCTD	-	-	WCCTA	-	-
NVTA	2	\$6	WETA	1	\$1
Grand Total				31	\$956

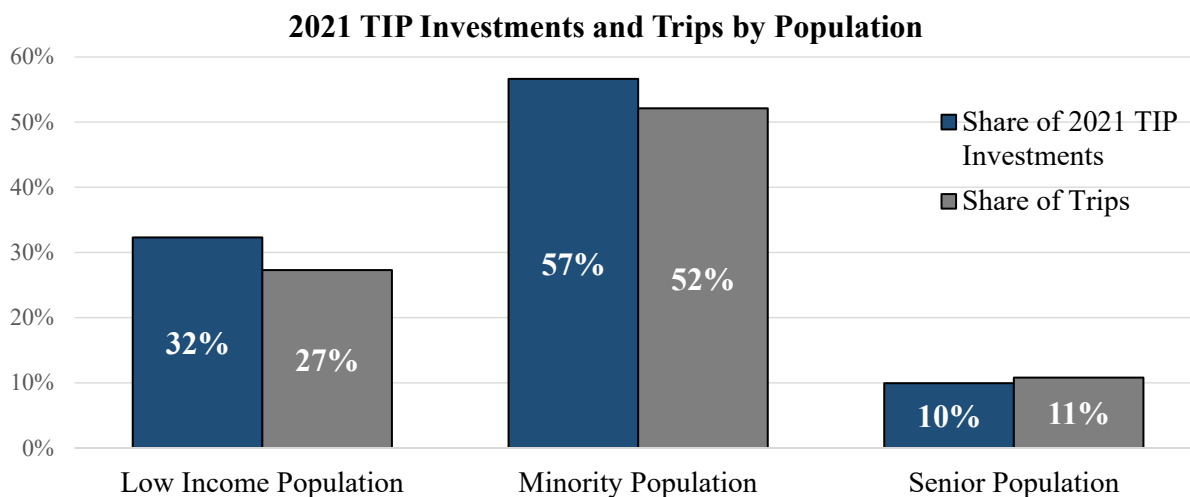
***Maps: 2021 TIP Transportation System Effectiveness***

Pavement and bridge condition projects and transit asset management projects are mapped, where possible, by county and overlaid against Communities of Concern to display the overall spatial distribution of projects that support the region's goals to improve economic vitality. These maps can be viewed starting on page 34, and can also be viewed on an interactive webmap that include additional data on spatial concentrations by race and ethnicity, here: <https://mtc.ca.gov/our-work/fund-invest/transportation-improvement-program>.

2021 TIP Investment Analysis Key Findings

Equitable distribution of investments overall

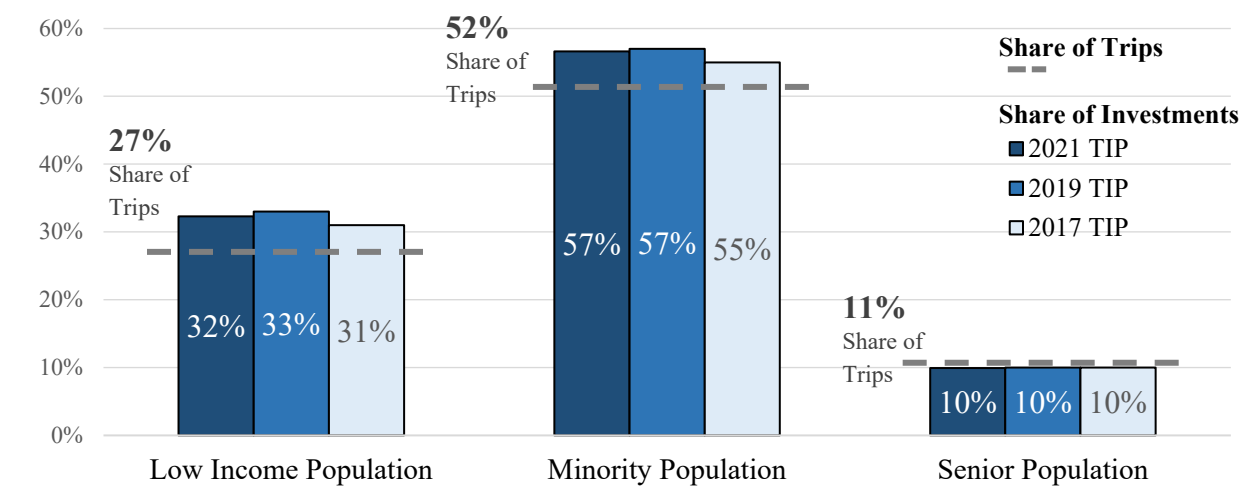
The results of the population use-based analysis indicate that overall, the investments in the 2021 TIP direct an equitable proportion of investments to projects that support the transportation of residents of low-income households, racial or ethnic minorities, and seniors.



Comparison with Prior Analyses

The equitable distribution of investments in the 2021 TIP is largely consistent with results of recent analyses, with levels of investment to support the mobility of specific population groups changing less than two percentage points between each TIP.

2021 TIP Investments: Comparison with 2019 TIP and 2017 TIP



Variable results for transit, due to small number of very large investments

There are a few variances worth noting in the population used-based analysis and disparate impact analysis of the 2021 TIP, specifically related to transit.

- The share of transit investments that support trips made by passengers in low-income households (33%) falls somewhat short of these passengers' relative share of the transit trips taken (47%).
- Federal and state transit investments result in a per capita benefit for minorities that slightly exceeds the per capita benefit for non-minorities (102% of non-minority per capita benefit). However, on a per transit rider basis, federal and state transit investments fall short, with a minority per rider benefit of 95% of the non-minority per rider benefit.

The varied transit results in the 2021 TIP are attributed to a small number of very large projects, particularly the BART Berryessa to San Jose Extension. With \$3.2 billion programmed to the project, the BART extension alone accounts for 64% of all transit funding in the 2021 TIP. When focusing only on state and federal funds, this project accounts for approximately 33% of funding in the TIP period. While BART ridership approximately mirrors the regional ridership share for minority populations, the share of BART riders from low-income households is less than the regional average share.

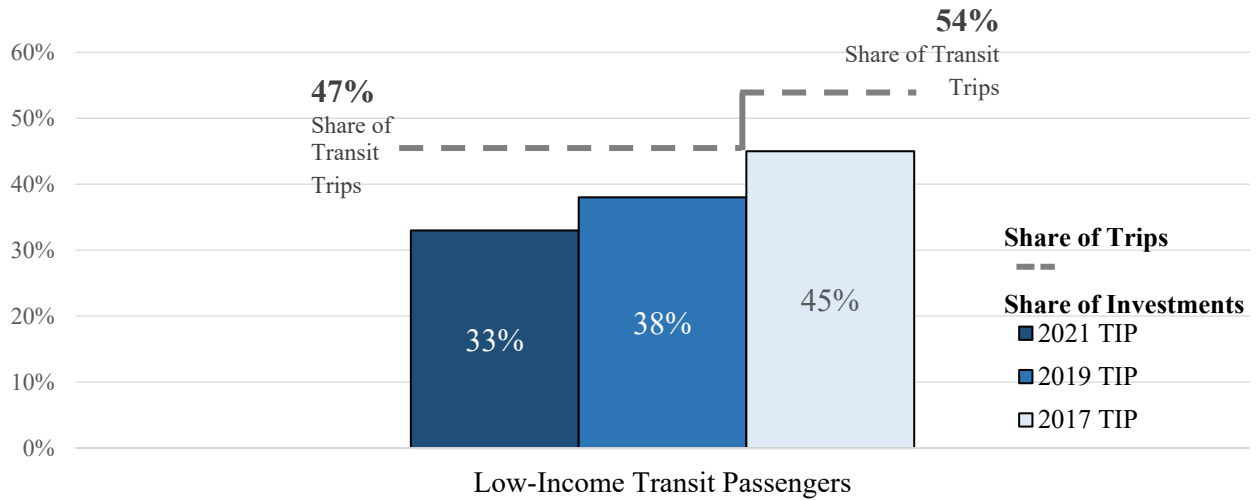
In addition, FTA formula funding of approximately \$1.9 billion for the four-years of the 2021 TIP has not yet been included in the TIP. These funds will be amended into the TIP through the Transit Capital Priorities (TCP) program when the funds are made available by FTA. Minority populations and low-income households benefit from this funding in accordance with the regional TCP funding process.

It is also important to re-emphasize that the TIP does not reflect the full picture of transportation investments in the Bay Area. The TIP only includes four years of near-term fund programming and tends not to include operating and maintenance funds, particularly for transit.

Comparison with Prior Analyses

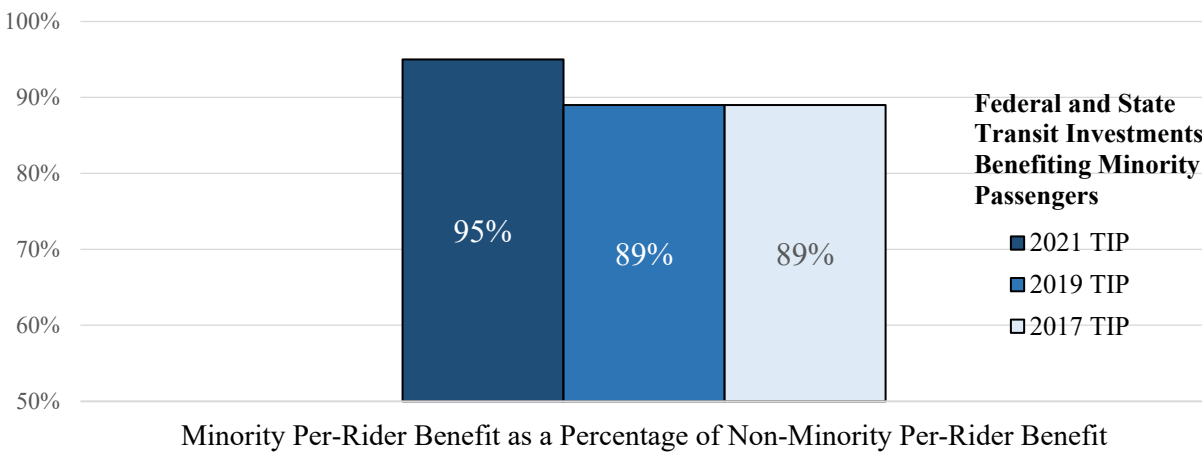
In the case of transit investments, the share of transit investments in the 2021 TIP that support trips made by passengers in low-income households (33%) continues to fall short of these passengers' relative share of transit trips (47%). This mismatch has increased over recent TIPs, as shown in the table on the following page.

2021 TIP Transit Investments: Comparison with 2019 TIP and 2017 TIP



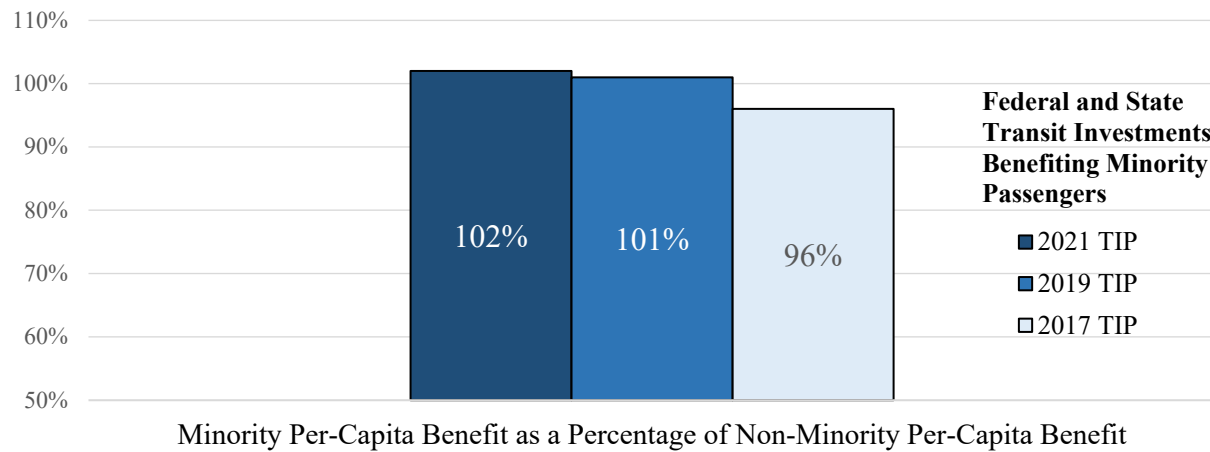
Conversely, the results of the disparate impact transit analysis have improved with the 2021 TIP, as compared to the 2019 TIP. The minority per transit rider investment benefit increased from 89% of non-minority transit investment benefits in the 2019 TIP to 95% benefit in the 2021 TIP.

2021 TIP Transit Investments *Per Rider*: Comparison with 2019 TIP and 2017 TIP



Additionally, the per capita transit investment benefit for minorities continues to slightly exceed the per capita for non-minorities (102% of the non-minority per capita benefit in both the 2019 and 2021 TIP), an improvement from minority residents receiving 96% of the benefits received by non-minority residents in the 2017 TIP.

2021 TIP Transit Investments *Per Capita*: Comparison with 2019 TIP and 2017 TIP



Addition of transportation equity measures provides opportunity for better understanding of potential equity impacts

For the 2021 TIP, additional information is provided on projects that support Plan Bay Area 2040's transportation-focused equity measures: Healthy and Safe Communities, Economic Vitality, Transportation System Effectiveness, and Equitable Access. Although the analysis does not identify direct benefits and burdens resulting from individual investments, it builds upon the population use-based and disparate impact analyses to better understand the nature of the projects included in the 2021 TIP and their anticipated effects on long-term regional goals. Data for the transportation equity measures is self-reported by project sponsors, therefore the resulting information is limited by the quality and consistency of the data provided.

Where possible, projects supporting the transportation-focused equity measures were also mapped to illustrate the location of 2021 investments in relation to adopted COCs as well as census tracts with concentrations of minority populations that are above regional averages. The geographic display of projects allows for examination and identification of any apparent systematic exclusion of communities in the spatial distribution of benefits, or any apparent systematic imbalances between the distribution of projects between communities of concern and the remainder of the region, or between minority and non-minority communities. As noted above, many projects and additional data can be viewed on an interactive webmap available on <https://mtc.ca.gov/our-work/fund-invest/transportation-improvement-program>.

2021 TIP Investment Analysis

Alameda County Project List

- | | | | |
|----|---|----|--|
| 1 | ACE: ACE Platform Extensions | 39 | MTC: I-880 Integrated Corridor Management - Central |
| 2 | ACTC: I-680 Express Lane Gap Closure: SR-84 to Alcosta | 40 | MTC: Improved Bike/Ped Access to East Span of SFOBB |
| 3 | ACTC: I-80 Gilman Interchange Improvements | 41 | MTC: Toll Bridge Maintenance |
| 4 | ACTC: I-80/Ashby Avenue Interchange Improvements | 42 | MTC: Toll Bridge Rehabilitation Program |
| 5 | ACTC: I-880 NB HOV/HOT: North of Hacienda to Hegenberger | 43 | Oakland: Fruitvale Alive Bike/Ped Gap Closure |
| 6 | ACTC: I-880/Whipple Rd Industrial Pkwy SW I/C Imps | 44 | Oakland: Lake Merritt to Bay Trail Bike/Ped Bridge |
| 7 | ACTC: Oakland/Alameda Access Project | 45 | Oakland: Lakeside Family Streets |
| 8 | ACTC: SR 84 Widening, South of Ruby Hill Dr to I-680 | 46 | Oakland: Telegraph Avenue Complete Streets |
| 9 | Alameda County: Complete Street Improvements | 47 | Oakland: Various Streets Improvements |
| 10 | Alameda County: E14th St/Mission Blvd Corridor Improvements | 48 | Piedmont: Oakland Avenue Improvements |
| 11 | Alameda County: Estuary Bridges Seismic Retrofit and Repairs | 49 | Pleasanton: I-680/Sunol Interchange Improvements |
| 12 | Alameda County: Fruitvale Ave Roadway Bridge Lifeline | 50 | San Leandro: SR 185- E 14th St/ Hesperian Blvd/150th Ave |
| 13 | Alameda County: Niles Canyon Trail, Phase I | 51 | San Leandro: Washington Avenue Rehabilitation |
| 14 | Alameda County: Various Streets and Roads Preservation | 52 | Union City: Dyer Street Pavement Rehabilitation |
| 15 | Alameda: Central Avenue Safety Improvements | 53 | WETA: Ferry Service - Berkeley |
| 16 | Alameda: Citywide Pavement Rehabilitation | | |
| 17 | Alameda: Clement Avenue Complete Streets | | |
| 18 | Albany: San Pablo Ave & Buchanan St Pedestrian Imps | | |
| 19 | BART: Bay Fair Connection | | |
| 20 | BART: Railcar Procurement Program | | |
| 21 | BART: Transbay Core Capacity Improvements | | |
| 22 | Berkeley: Southside Complete Streets & Transit Improvement | | |
| 23 | Dublin: Dublin Blvd - North Canyons Pkwy Extension | | |
| 24 | Dublin: Dublin Blvd Rehabilitation | | |
| 25 | Dublin: I-580 Interchange Imps at Hacienda/Fallon Rd, Ph 2 | | |
| 26 | EBRPD: Doolittle Drive Bay Trail | | |
| 27 | Emeryville: Frontage Rd, 65th St and Powell St Pavement Maint | | |
| 28 | Fremont: Centerville Complete Streets of Relinquished SR 84 | | |
| 29 | Fremont: SR 262 (Mission Blvd) Improvements | | |
| 30 | Hayward: I-880/A Street Interchange Reconstruction | | |
| 31 | Hayward: I-880/Industrial Parkway West Interchange | | |
| 32 | Hayward: I-880/West Winton Avenue Interchange | | |
| 33 | Hayward: Main Street Complete Street | | |
| 34 | Hayward: Winton Ave Complete Street | | |
| 35 | MTC: Bay Bridge Forward-Commuter Parking Access Imps. | | |
| 36 | MTC: Bay Bridge Park | | |
| 37 | MTC: Bike Share Capital Program | | |
| 38 | MTC: Freeway Performance Program: SR 84 | | |

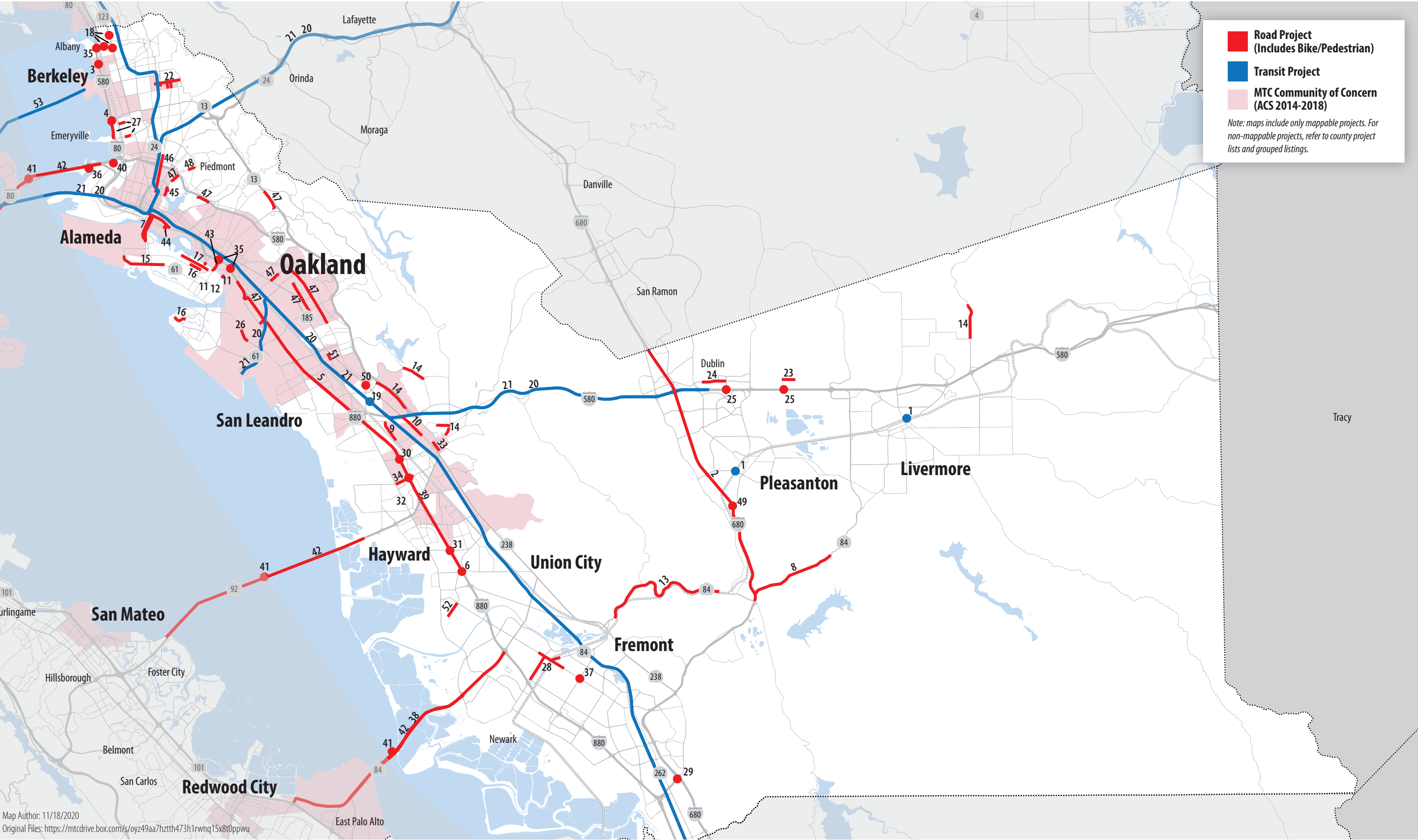
2021 TIP Investment Analysis

Alameda County Project List

NOT MAPPED (Continued)	
MTC: Bay Area Commuter Benefits Program	
MTC: Connected Bay Area	
MTC: COVID-19 Emergency Transit Operations	
MTC: Regional Planning - PDA Implementation	
MTC: Regional Planning Activities and PPM - Alameda County	
MTC: Regional Planning Activities and PPM - MTC	
MTC: Regional Streets and Roads Program	
Union City Transit: COVID-19 Emergency Transit Operations	
Union City Transit: Electric Bus Procurement	
WETA: COVID-19 Emergency Transit Operations	
WETA: Replace Ferry Vessels	

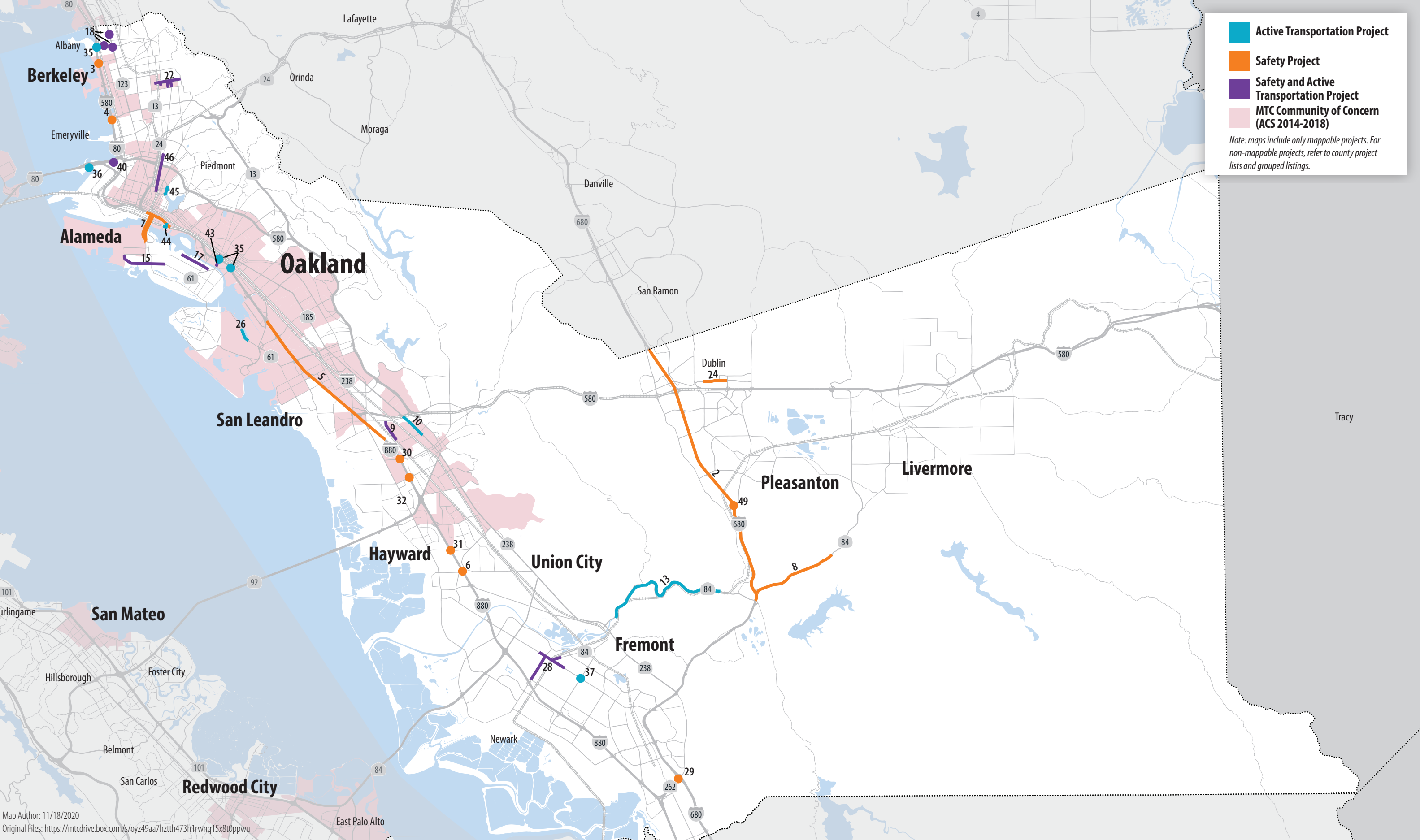
2021 TIP Investment Analysis

Alameda County: Roadway and Transit Projects



2021 TIP Investment Analysis

Alameda County: Healthy and Safe Communities Projects



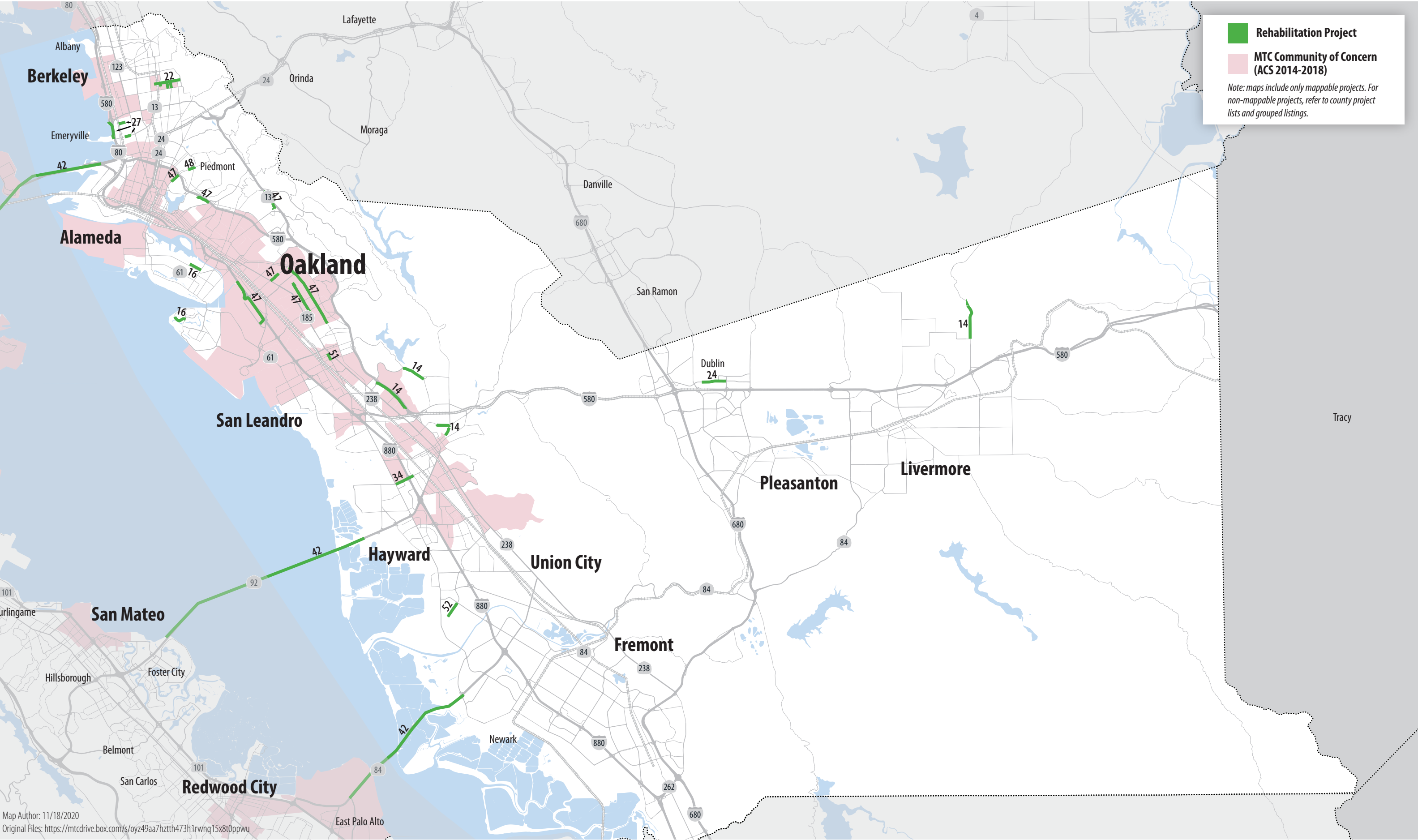
2021 TIP Investment Analysis

Alameda County: Economic Vitality Projects



2021 TIP Investment Analysis

Alameda County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Contra Costa County Project List

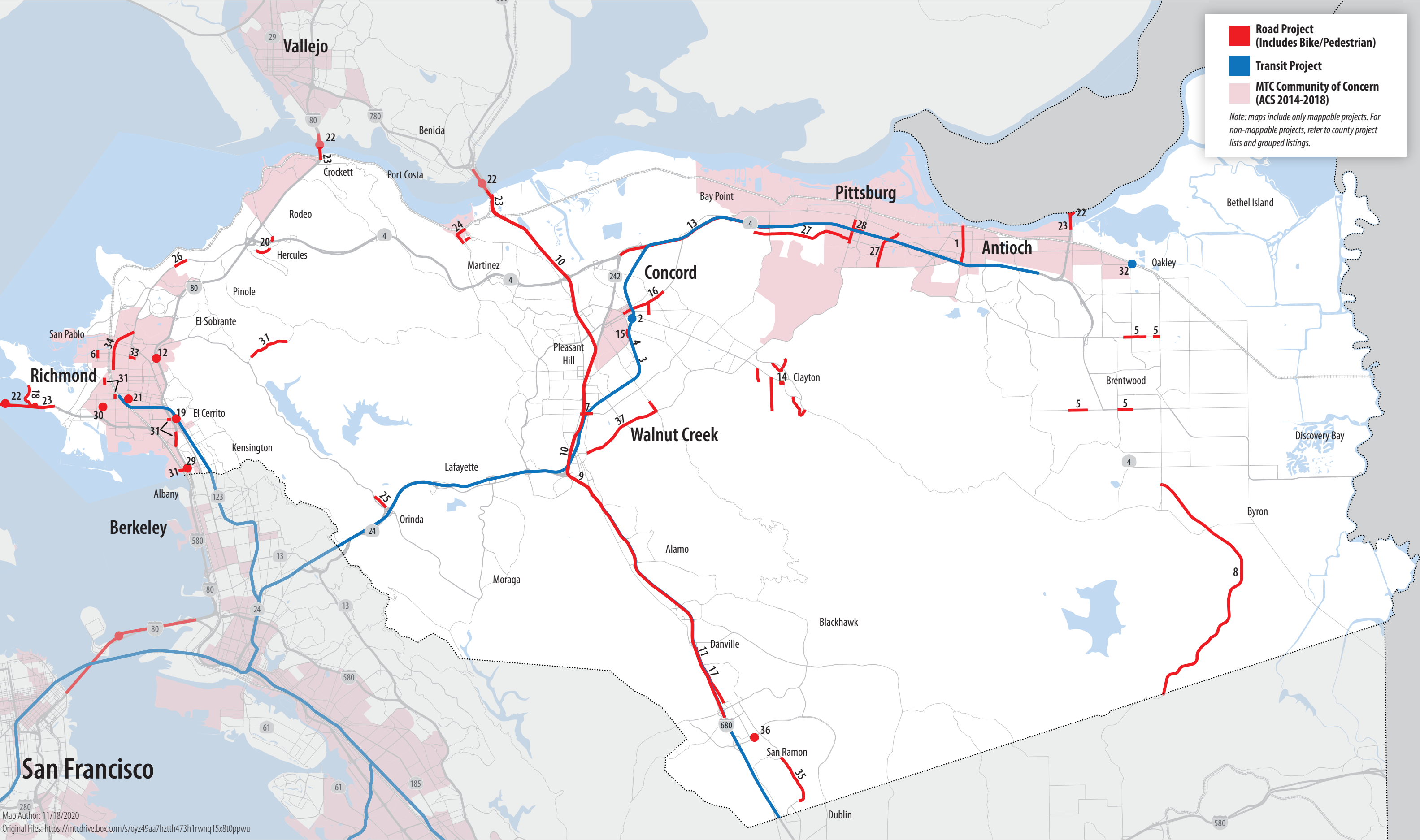
- 1 Antioch: L Street Pathway to Transit
- 2 BART: Concord BART Station Modernization
- 3 BART: Railcar Procurement Program
- 4 BART: Transbay Core Capacity Improvements
- 5 Brentwood: Various Streets and Roads Preservation
- 6 CC County: Fred Jackson Way First Mile/Last Mile Connection
- 7 CC County: Treat Boulevard Corridor Improvements
- 8 CC County: Vasco Road Safety Improvements
- 9 CCTA: I-680 Advanced Technologies
- 10 CCTA: I-680 NB Express Lane Completion
- 11 CCTA: I-680 Part Time Transit Lane
- 12 CCTA: Reconstruct I-80/San Pablo Dam Rd Interchange
- 13 CCTA: SR-4 Operational Improvements - Initial Phases
- 14 Clayton: Neighborhood Street Rehab
- 15 Concord: Monument Boulevard Class I Path
- 16 Concord: Willow Pass Road Repaving SR2T
- 17 Danville: Camino Ramon Improvements
- 18 EBRPD: SF Bay Trail Point Molate
- 19 El Cerrito: El Cerrito del Norte Area TOD Complete Street Imps
- 20 Hercules: Sycamore/Willow Pavement Rehabilitation
- 21 MTC: Bike Share Capital Program
- 22 MTC: Toll Bridge Maintenance
- 23 MTC: Toll Bridge Rehabilitation Program
- 24 Martinez: Downtown Streets Rehabilitation
- 25 Orinda: Orinda Way Pavement Rehabilitation
- 26 Pinole: San Pablo Avenue Rehabilitation
- 27 Pittsburg: Citywide Pavement Improvements
- 28 Pittsburg: Pittsburg BART Pedestrian and Bicycle Connectivity
- 29 Richmond: I-80/Central Avenue - Local Portion
- 30 Richmond: Lincoln Elementary SRTS Pedestrian Enhancements
- 31 Richmond: Roadway Preservation and ADA Improvement
- 32 SJRC: Oakley Station Platform
- 33 San Pablo: Giant Road Pavement Rehabilitation
- 34 San Pablo: Rumrill Blvd Complete Streets Improvements
- 35 San Ramon: Alcosta Boulevard Pavement Rehab
- 36 San Ramon: Iron Horse Trail Bike and Pedestrian Overcrossing
- 37 Walnut Creek: Ygnacio Valley Road Rehabilitation

NOT MAPPED

AC Transit: COVID-19 Emergency Transit Operations
 BART: COVID-19 Emergency Transit Operations
 BART: Elevator Renovation Program
 BART: TOD Implementation
 Caltrans: Bridge Rehab and Reconstruction - SHOPP
 Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
 Caltrans: Emergency Repair - SHOPP Emergency Response
 Caltrans: Highway Safety Improvement Program
 Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
 Caltrans: Pvmr Resurf/Rehab State Hwy Sys - SHOPP Minor
 Caltrans: Railroad-Highway Crossing
 Caltrans: Safety Improvements - SHOPP Mandates
 Caltrans: Safety Improvements - SHOPP Mobility Program
 Caltrans: Safety Imprv. - SHOPP Collision Reduction
 Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
 CCCTA: COVID-19 Emergency Transit Operations
 CCTA: Automated Driving System
 CCTA: Bay Area MOD
 ECCTA: COVID-19 Emergency Transit Operations
 MTC: 511 Next Gen
 MTC: Active Operations Management
 MTC: Bay Area Commuter Benefits Program
 MTC: Connected Bay Area
 MTC: COVID-19 Emergency Transit Operations
 MTC: Regional Planning - PDA Implementation
 MTC: Regional Planning Activities and PPM - Contra Costa County
 MTC: Regional Planning Activities and PPM - MTC
 MTC: Regional Streets and Roads Program
 WCCTA: COVID-19 Emergency Transit Operations
 WETA: COVID-19 Emergency Transit Operations
 WETA: Replace Ferry Vessels

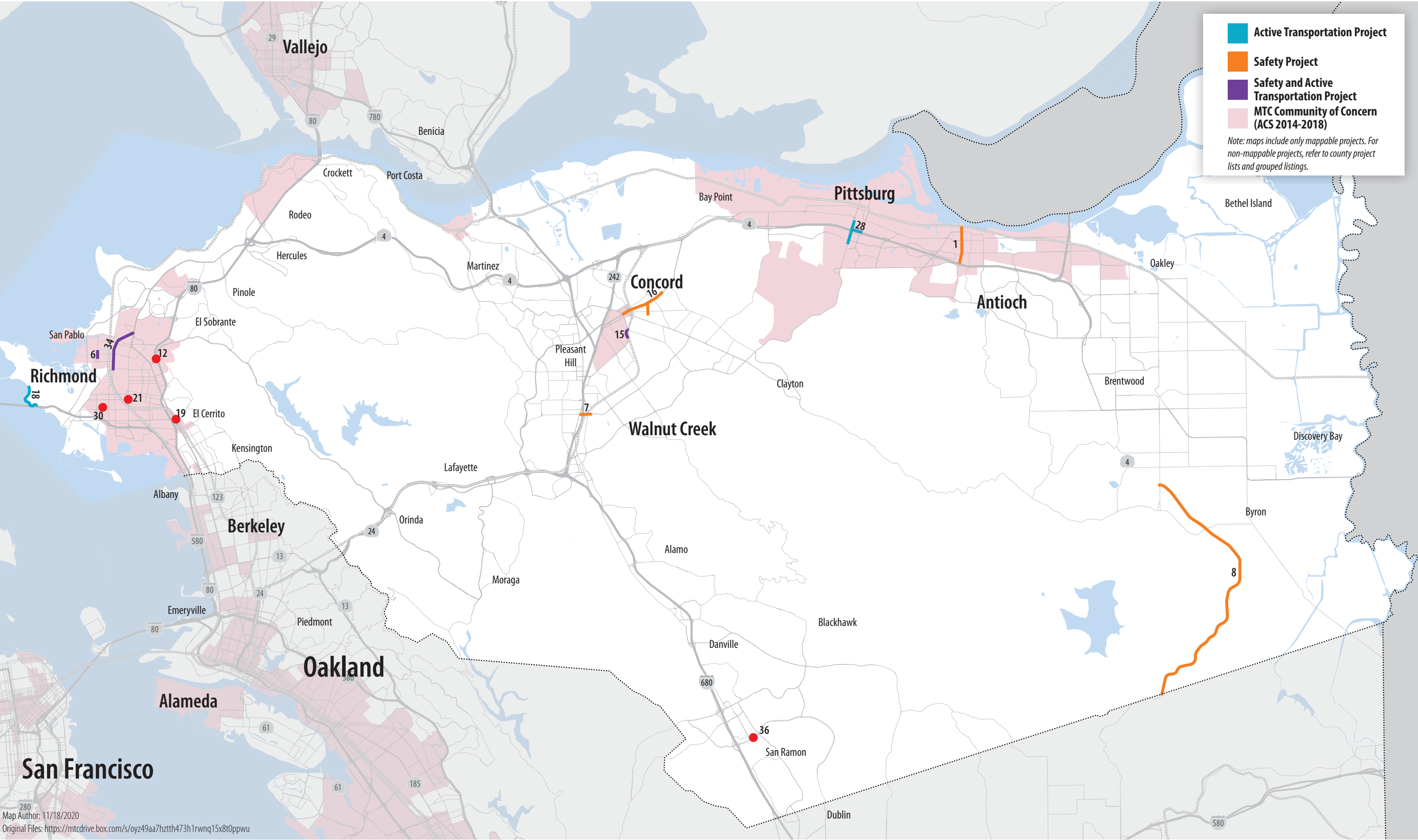
2021 TIP Investment Analysis

Contra Costa County: Roadway and Transit Projects



2021 TIP Investment Analysis

Contra Costa County: Healthy and Safe Communities Projects



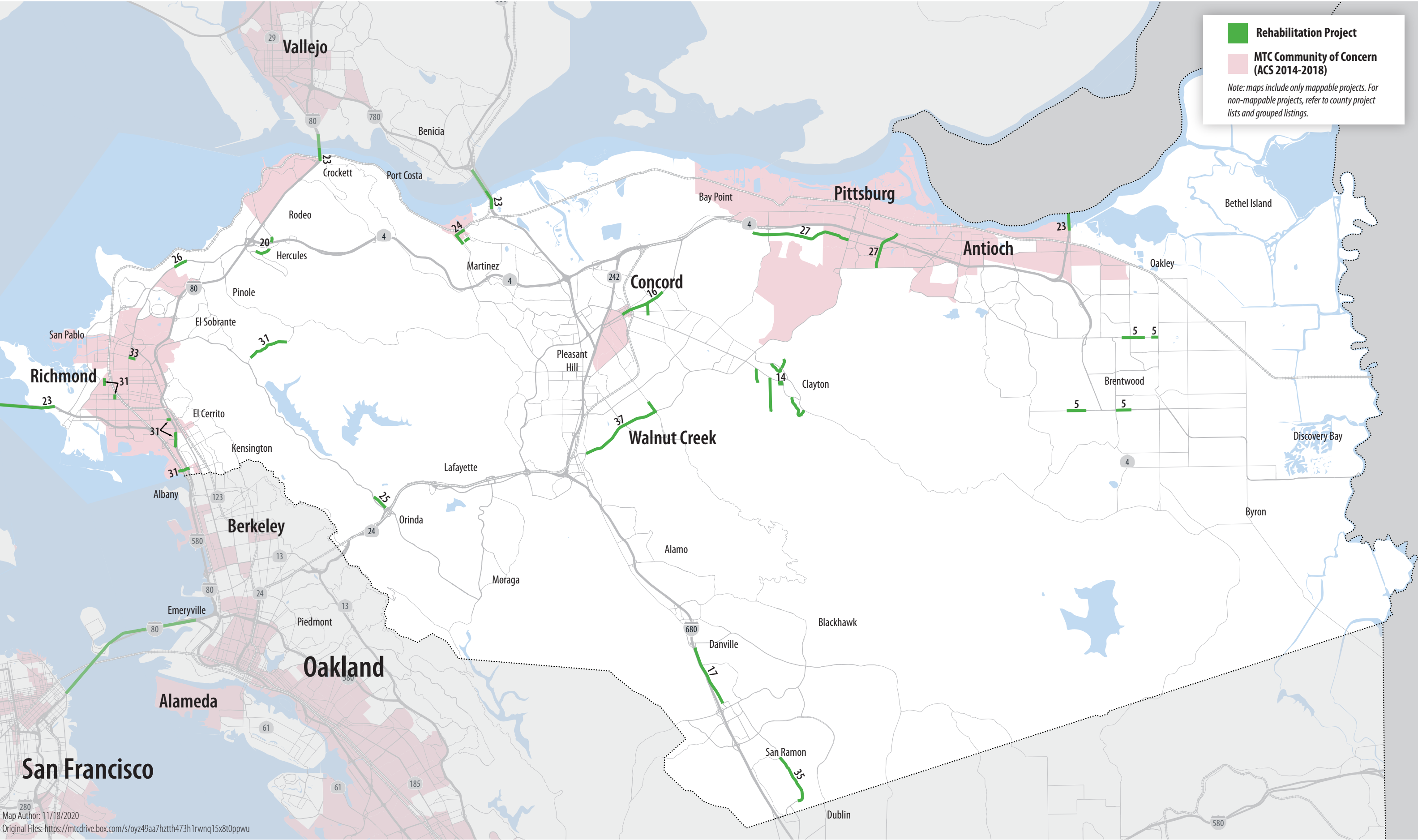
2021 TIP Investment Analysis

Contra Costa County: Economic Vitality Projects



2021 TIP Investment Analysis

Contra Costa County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Marin County Project List

- 1 Corte Madera: Paradise Drive Multiuse Path
- 2 GGBHTD: Golden Gate Bridge Seismic Retrofit, Ph: 1-3A
- 3 GGBHTD: Golden Gate Bridge Seismic Retrofit, Phase 3B
- 4 GGBHTD: Golden Gate Bridge-Suicide Deterrent System
- 5 GGBHTD: Larkspur Ferry Terminal Parking Garage
- 6 Larkspur: Old Redwood Highway Multi-Use Path
- 7 MTC: Bike Share Capital Program
- 8 MTC: Toll Bridge Maintenance
- 9 MTC: Toll Bridge Rehabilitation Program
- 10 Marin County: Hicks Valley/Marshall/Petaluma/Wilson Hill Rd Rehab
- 11 Marin County: Marin City Pedestrian Crossing Improvements
- 12 Marin County: Mountain View Rd Bridge Replacement
- 13 National Parks Service: Fort Baker's Vista Point Trail
- 14 SMART: Sonoma Marin Area Rail Corridor
- 15 San Anselmo: Center Blvd Bridge Replacement
- 16 San Anselmo: San Anselmo Bike Spine
- 17 San Anselmo: Sir Francis Drake Blvd Pavement Rehabilitation
- 18 San Rafael: Francisco Boulevard East Sidewalk Widening

MTC: Regional Planning - PDA Implementation

MTC: Regional Planning Activities and PPM - Marin County

MTC: Regional Planning Activities and PPM - MTC

MTC: Regional Streets and Roads Program

SMART: COVID-19 Emergency Transit Operations

NOT MAPPED

Caltrans: Bridge Rehab and Reconstruction - SHOPP

Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program

Caltrans: Emergency Repair - SHOPP Emergency Response

Caltrans: Highway Safety Improvement Program

Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.

Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor

Caltrans: Railroad-Highway Crossing

Caltrans: Safety Improvements - SHOPP Mandates

Caltrans: Safety Improvements - SHOPP Mobility Program

Caltrans: Safety Imprv. - SHOPP Collision Reduction

Caltrans: Shoulder Imprv - SHOPP Roadside Preservation

GGBHTD: COVID-19 Emergency Transit Operations

Marin Transit: COVID-19 Emergency Transit Operations

MTC: 511 Next Gen

MTC: Active Operations Management

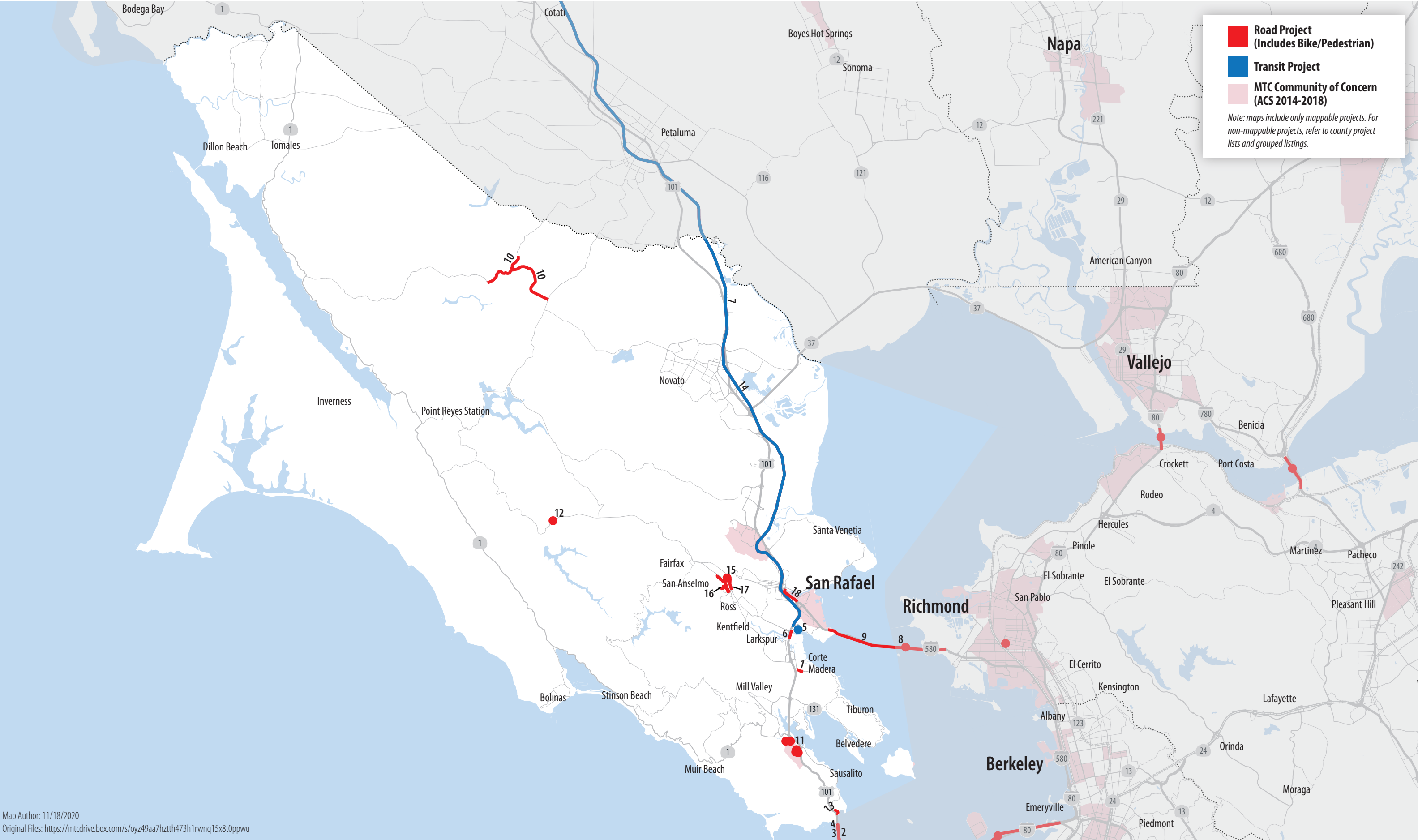
MTC: Bay Area Commuter Benefits Program

MTC: Connected Bay Area

MTC: COVID-19 Emergency Transit Operations

2021 TIP Investment Analysis

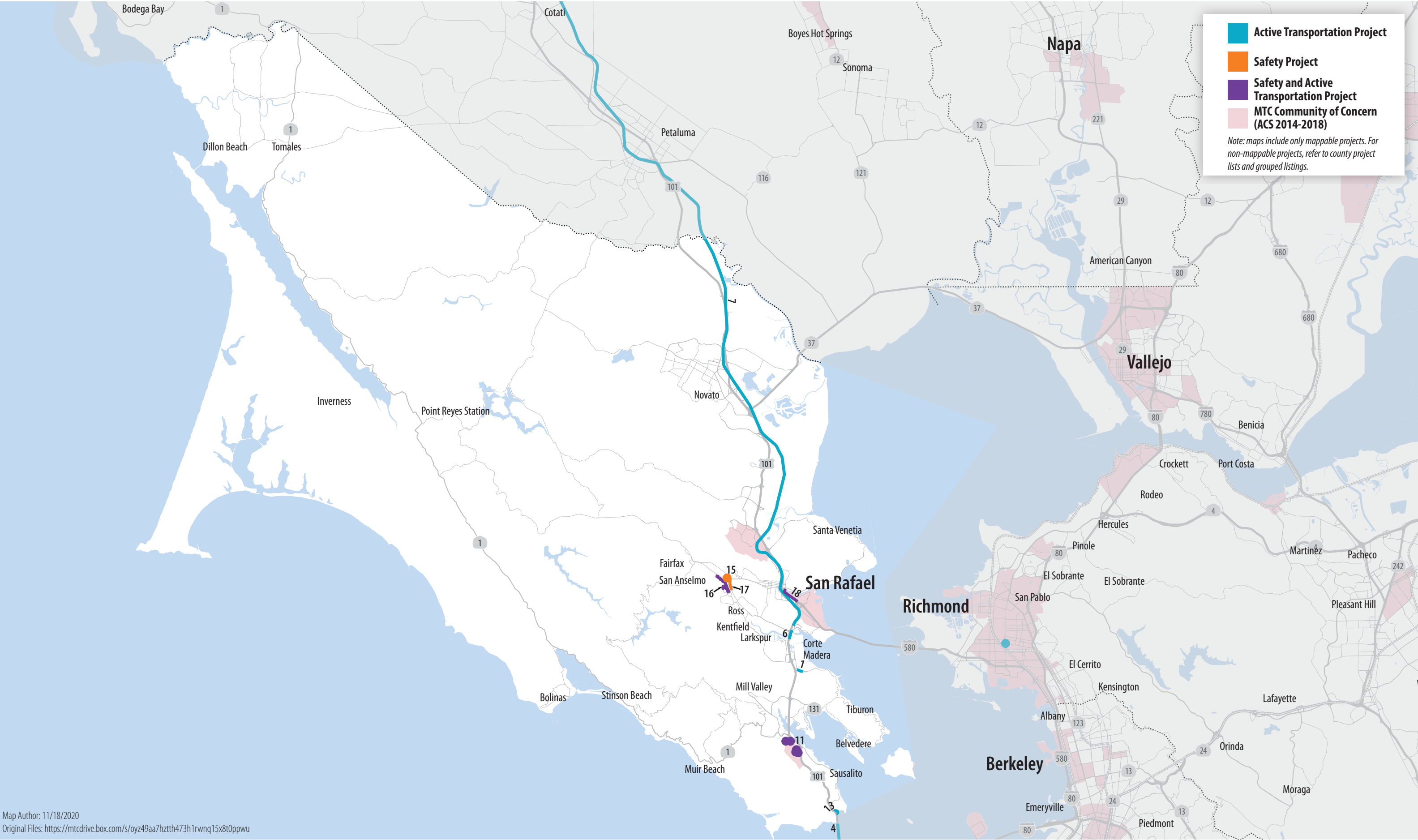
Marin County: Roadway and Transit Projects



Map Author: 11/18/2020
Original Files: <https://mtcdrive.box.com/s/oyz49aa7hztth473h1rwnq15x8t0ppwu>

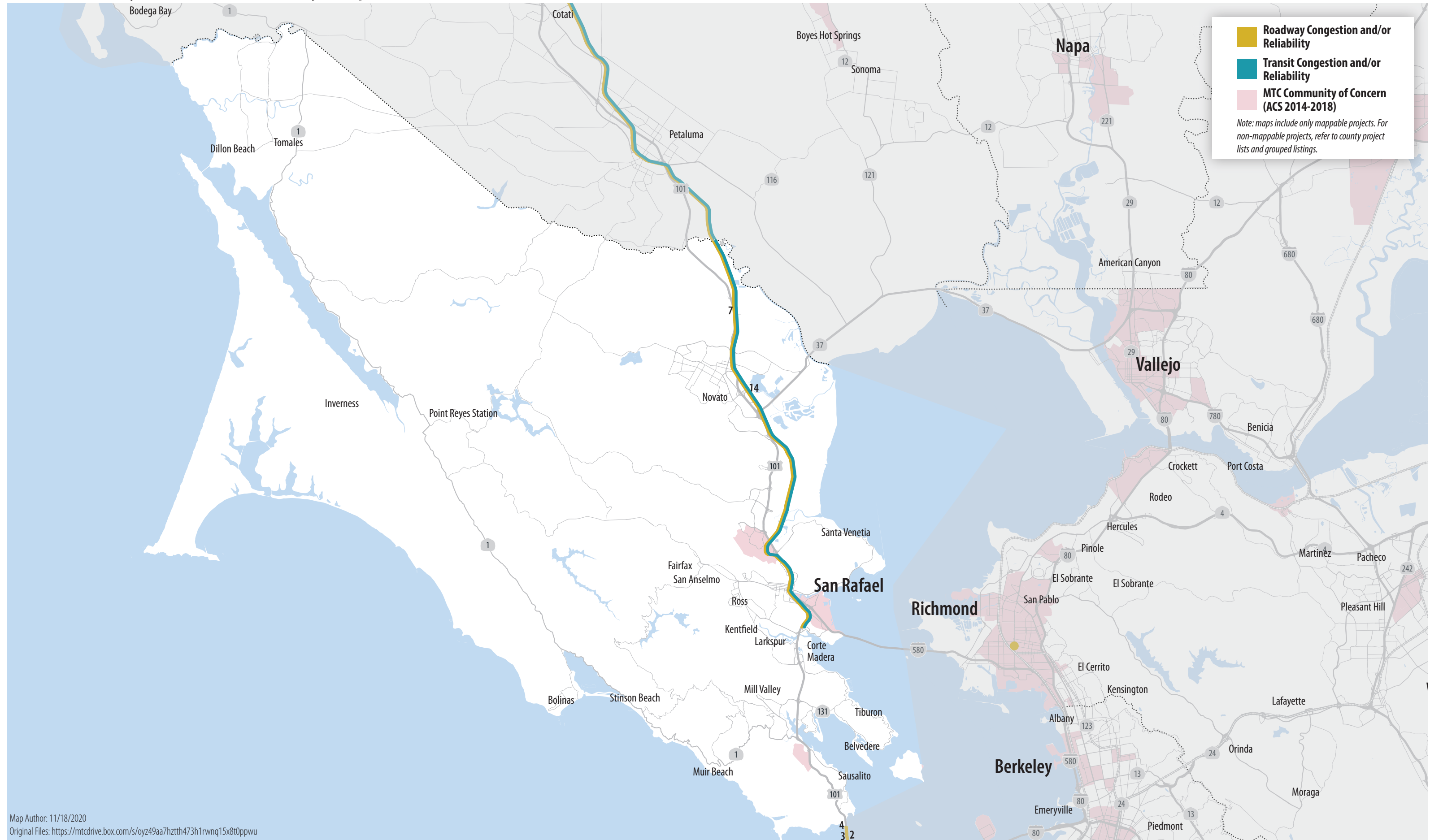
2021 TIP Investment Analysis

Marin County: Healthy and Safe Communities Projects



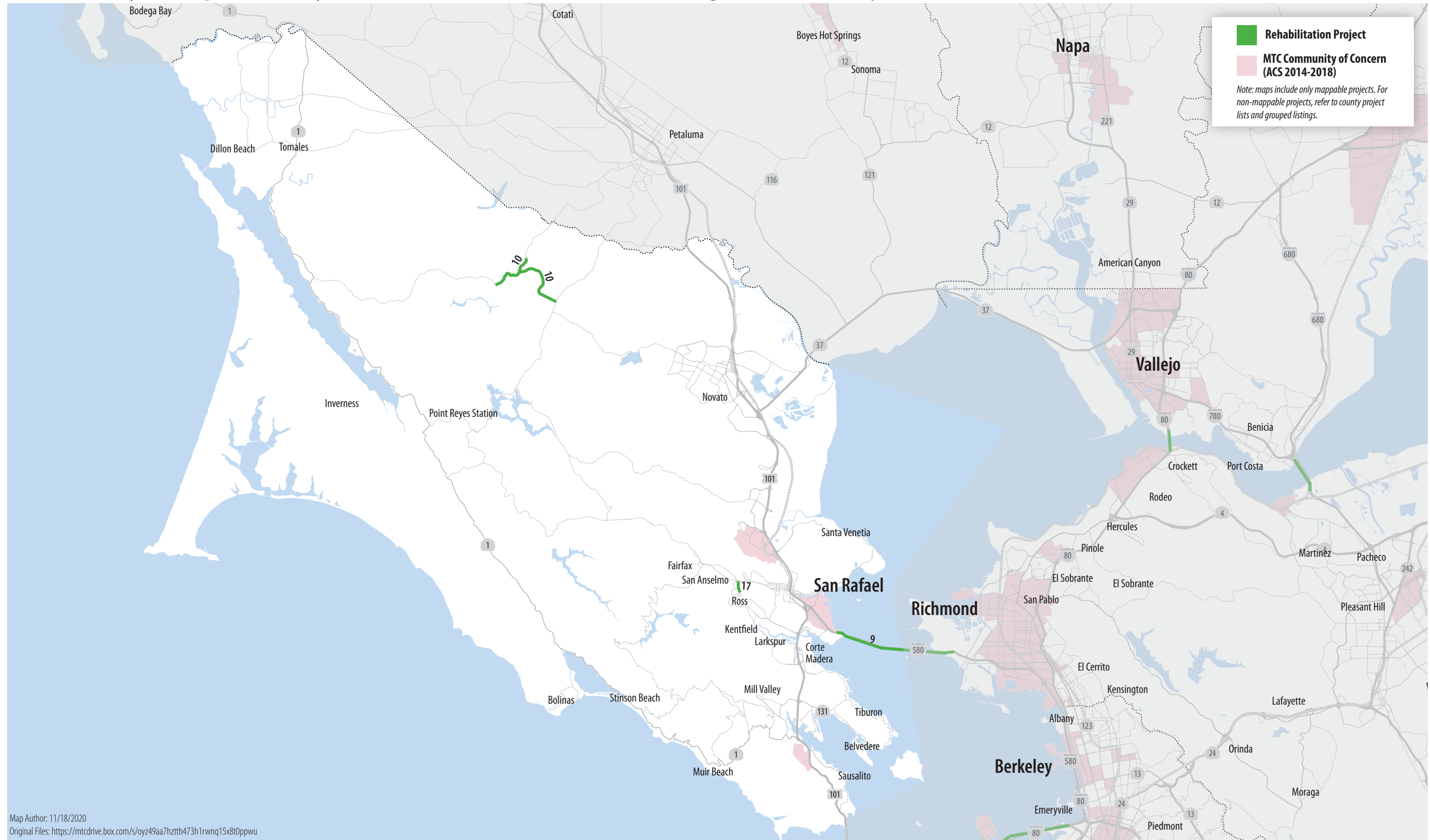
2021 TIP Investment Analysis

Marin County: Economic Vitality Projects



2021 TIP Investment Analysis

Marin County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Napa County Project List

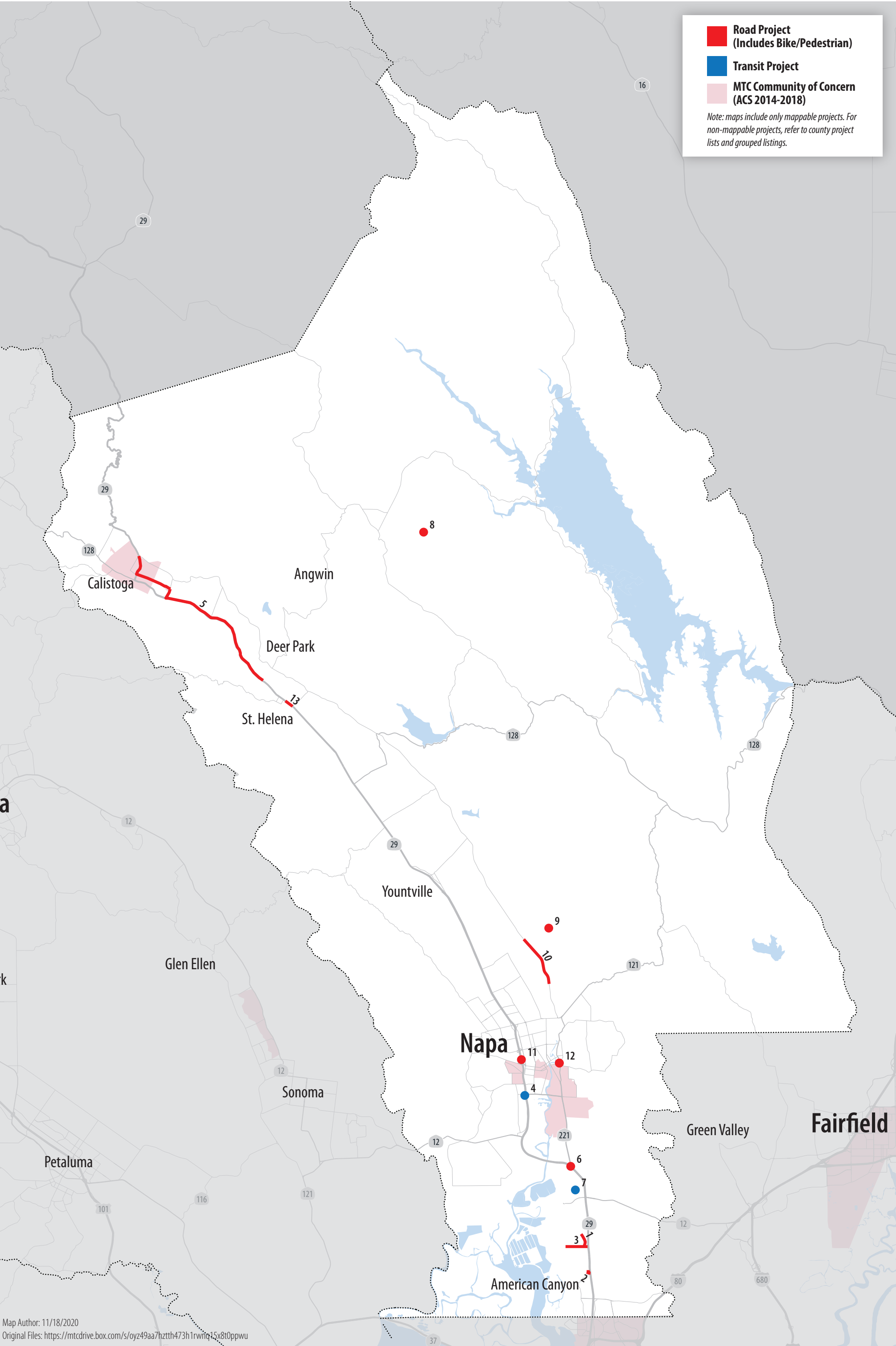
- 1 American Canyon: Devlin Road and Vine Trail Extension
- 2 American Canyon: Eucalyptus Drive Realignment Complete Streets
- 3 American Canyon: Green Island Road Class I
- 4 NVTa: Imola Park & Ride and Express Bus Stop Improvement
- 5 NVTa: Napa Valley Vine Trail Calistoga-St. Helena Seg.
- 6 NVTa: SR 12/29/221 Soscol Junction Interchange Imps.
- 7 NVTa: Vine Transit Bus Maintenance Facility
- 8 Napa County: Hardin Rd Bridge Replacement - 21C0058
- 9 Napa County: Loma Vista Dr Bridge Replacement - 21C0080
- 10 Napa County: Silverado Trail Phase L Rehab
- 11 Napa: SR 29 Bicycle & Pedestrian Undercrossing
- 12 Napa: Silverado Trail Five-Way Intersection Improvements
- 13 St. Helena: Main Street St. Helena Pedestrian Improvements

NOT MAPPED

Caltrans: Bridge Rehab and Reconstruction - SHOPP
Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
Caltrans: Emergency Repair - SHOPP Emergency Response
Caltrans: Highway Safety Improvement Program
Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor
Caltrans: Railroad-Highway Crossing
Caltrans: Safety Improvements - SHOPP Mandates
Caltrans: Safety Improvements - SHOPP Mobility Program
Caltrans: Safety Imprv. - SHOPP Collision Reduction
Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
MTC: 511 Next Gen
MTC: Active Operations Management
MTC: Bay Area Commuter Benefits Program
MTC: Connected Bay Area
MTC: COVID-19 Emergency Transit Operations
MTC: Napa Valley Forward -Traffic Calming & Multimodal
MTC: Regional Planning - PDA Implementation
MTC: Regional Planning Activities and PPM - MTC
MTC: Regional Planning Activities and PPM - Napa County
MTC: Regional Streets and Roads Program
NVTa: COVID-19 Emergency Transit Operations

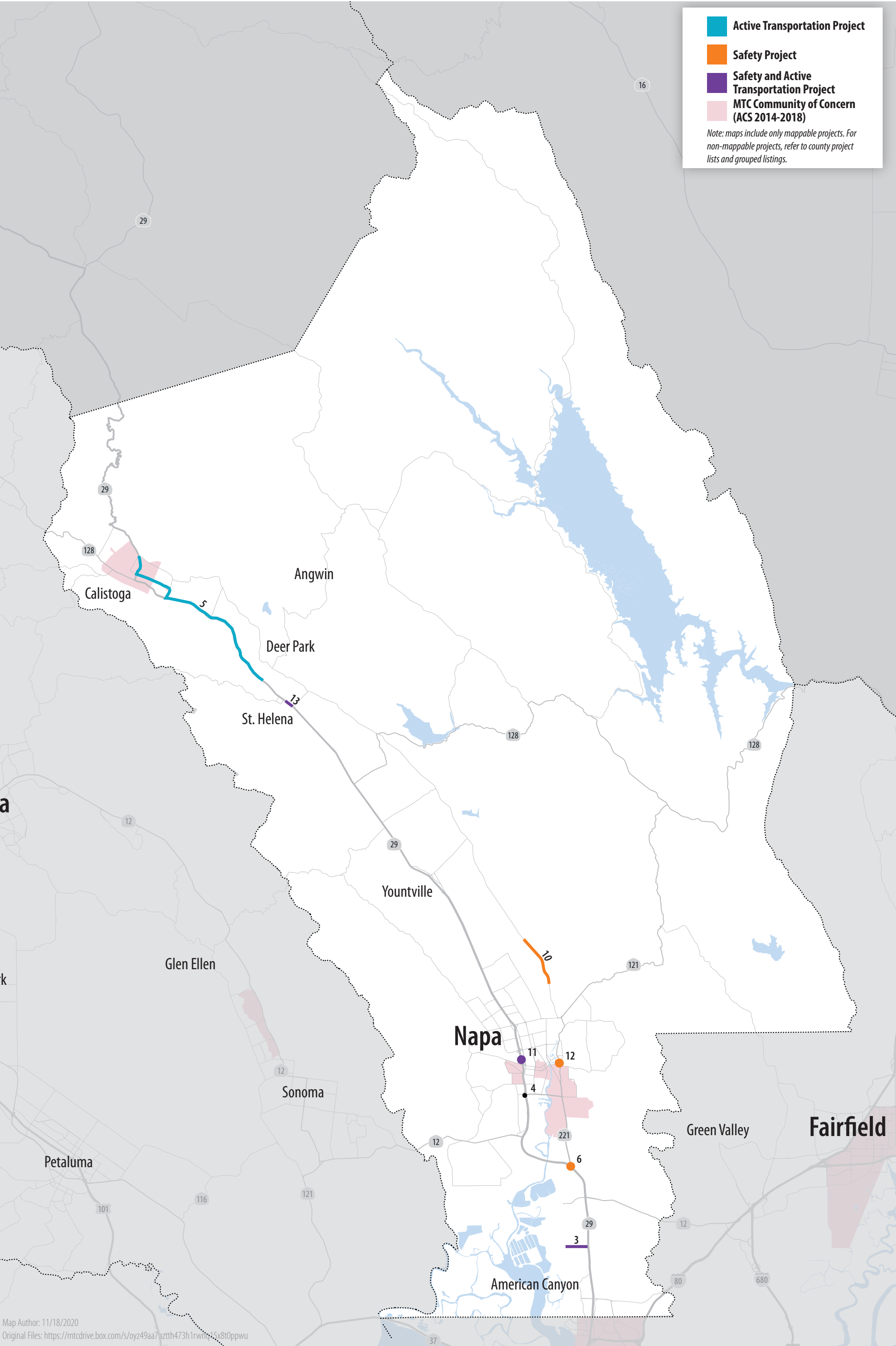
2021 TIP Investment Analysis

Napa County: Roadway and Transit Projects



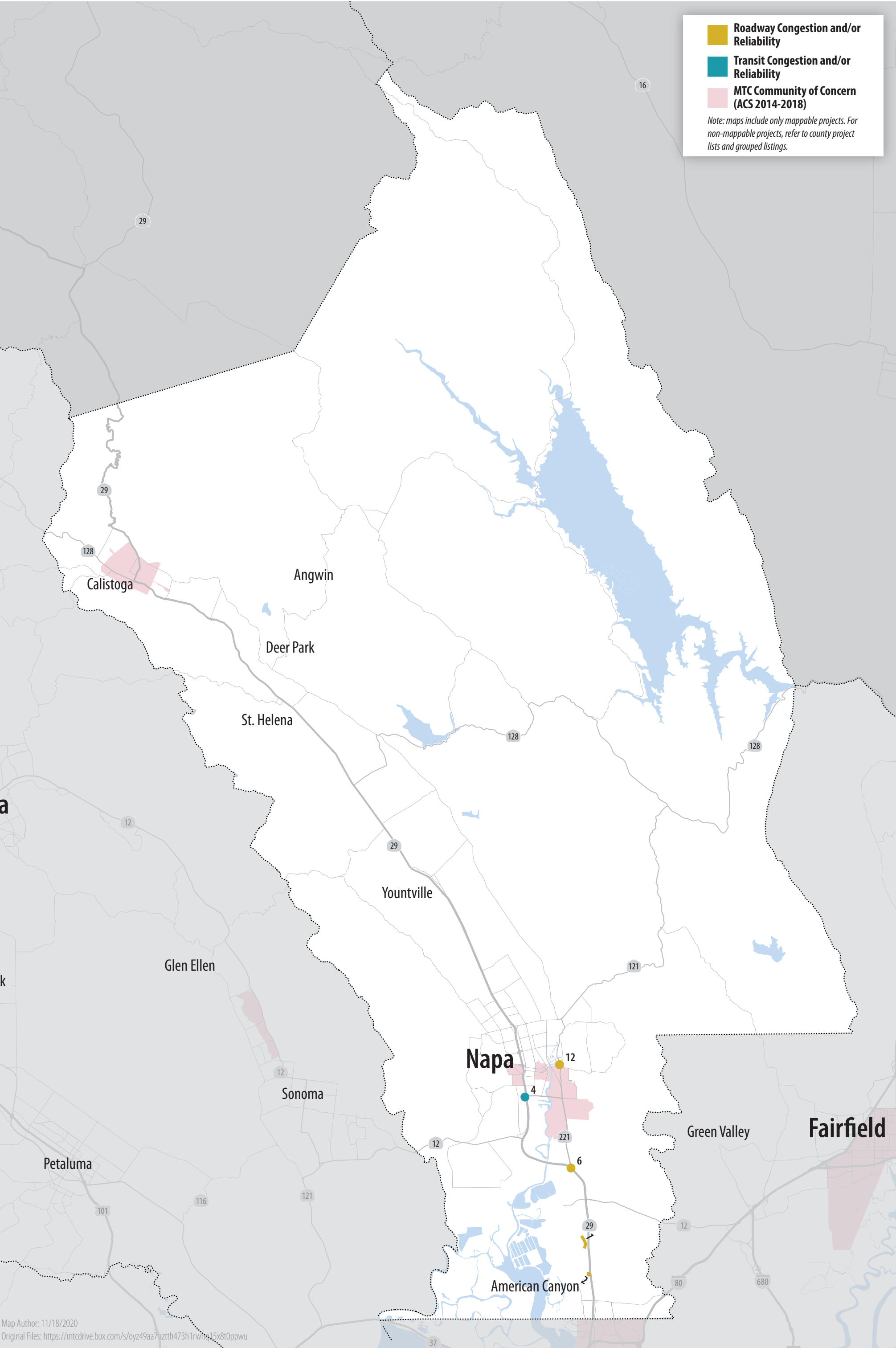
2021 TIP Investment Analysis

Napa County: Healthy and Safe Communities Projects



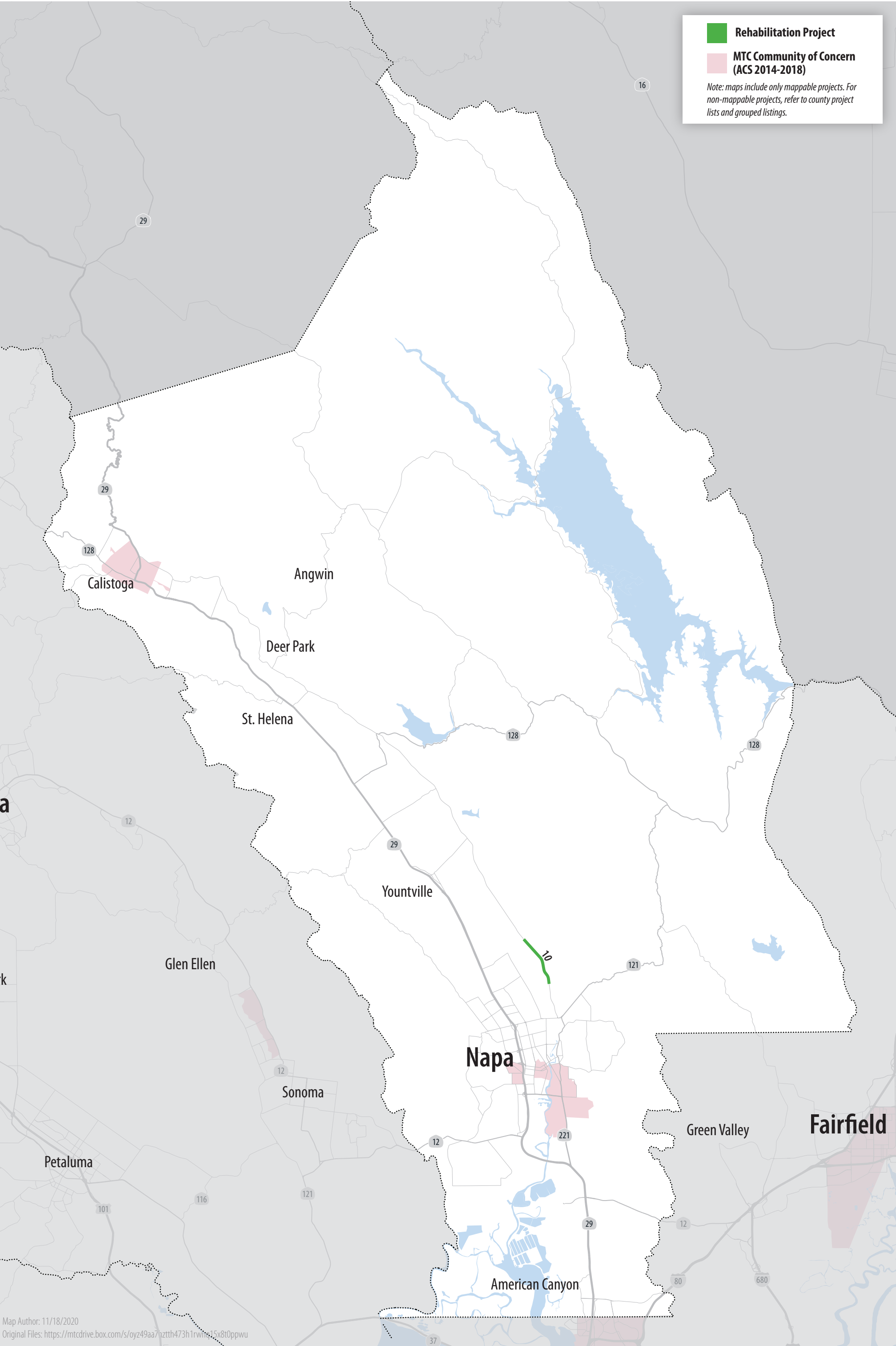
2021 TIP Investment Analysis

Napa County: Economic Vitality Projects



2021 TIP Investment Analysis

Napa County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

San Francisco County Project List

- 1 BART: Railcar Procurement Program
- 2 BART: Transbay Core Capacity Improvements
- 3 Caltrain: Caltrain Electrification
- 4 MTC: Toll Bridge Maintenance
- 5 MTC: Toll Bridge Rehabilitation Program
- 6 Port of SF: Cargo Way and Amador Street Improvements
- 7 SF DPW: Alemany Interchange Improvements, Phase 2
- 8 SF DPW: Better Market Street Transportation Elements
- 9 SF DPW: Great Highway Restoration
- 10 SFCTA: Quint-Jerrold Connector Road
- 11 SFCTA: SF Downtown Congestion Pricing
- 12 SFCTA: Yerba Buena Island (YBI) Ramp Improvements
- 13 SFMTA: 6th Street Pedestrian Safety Improvements
- 14 SFMTA: Cable Car Traction Power & Guideway Rehab
- 15 SFMTA: Geary Bus Rapid Transit
- 16 SFMTA: Geneva Harney BRT Infrastructure - Eastern Segment
- 17 SFMTA: Powell Street Safety Improvement
- 18 TBJPA: Transbay Terminal/Caltrain Downtown Ext: Ph. 2
- 19 TIMMA: Treasure Island Ferry Terminal Landside Improvements
- 20 WETA: Ferry Service - Berkeley

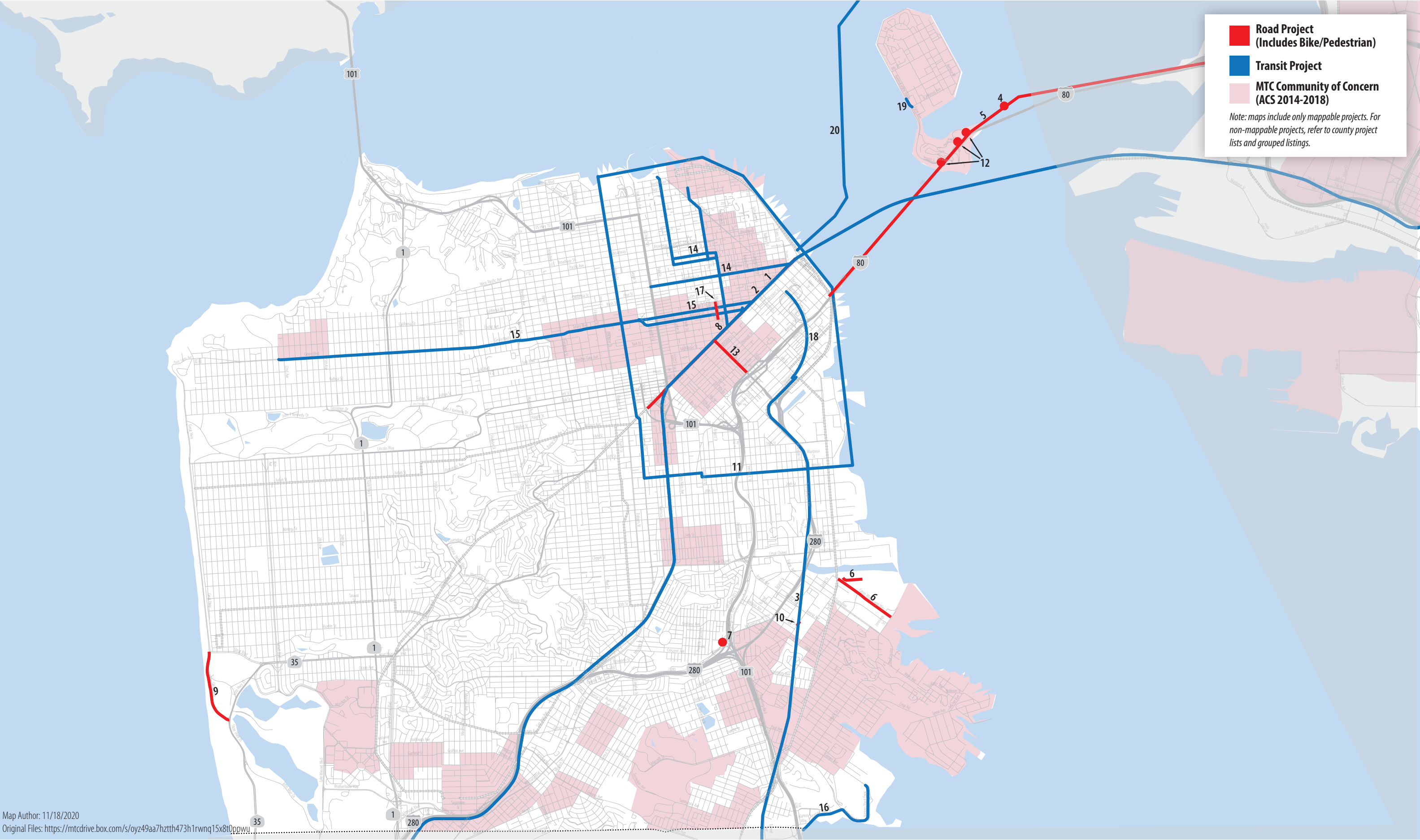
NOT MAPPED

GGBHTD: COVID-19 Emergency Transit Operations
 BART: COVID-19 Emergency Transit Operations
 BART: Elevator Renovation Program
 BART: TOD Implementation
 Caltrans: Bridge Rehab and Reconstruction - SHOPP
 Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
 Caltrans: Emergency Repair - SHOPP Emergency Response
 Caltrans: Highway Safety Improvement Program
 Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
 Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor
 Caltrans: Railroad-Highway Crossing
 Caltrans: Safety Improvements - SHOPP Mandates
 Caltrans: Safety Improvements - SHOPP Mobility Program
 Caltrans: Safety Imprv. - SHOPP Collision Reduction
 Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
 MTC: 511 Next Gen

MTC: Active Operations Management
 MTC: Bay Area Commuter Benefits Program
 MTC: Connected Bay Area
 MTC: COVID-19 Emergency Transit Operations
 MTC: Regional Planning - PDA Implementation
 MTC: Regional Planning Activities and PPM - MTC
 MTC: Regional Planning Activities and PPM - San Francisco County
 MTC: Regional Streets and Roads Program
 SFCTA: US 101 Doyle Drive Availability Payments
 SFMTA: Zero Emission Bus Procurement
 SFMTA: 60' Motor Coach Mid-Life Overhaul
 SFMTA: Cable Car Vehicle Renovation Program
 SFMTA: Core Capacity Program
 SFMTA: COVID-19 Emergency Transit Operations
 SFMTA: Facilities Condition Assessment Repairs
 SFMTA: Light Rail Vehicle Procurement
 SFMTA: L-Taraval - SGR Project Elements
 SFMTA: Overhead Line Recon. & Traction Power Prog
 SFMTA: Rail Replacement Program
 SFMTA: Rehab Historic Streetcars
 SFMTA: Replacement of 30' Motor Coaches
 SFMTA: Train Control & Trolley Signal Rehab/Replace
 TBJPA: COVID-19 Emergency Transit Operations
 WETA: COVID-19 Emergency Transit Operations
 WETA: Replace Ferry Vessels

2021 TIP Investment Analysis

San Francisco County: Roadway and Transit Projects



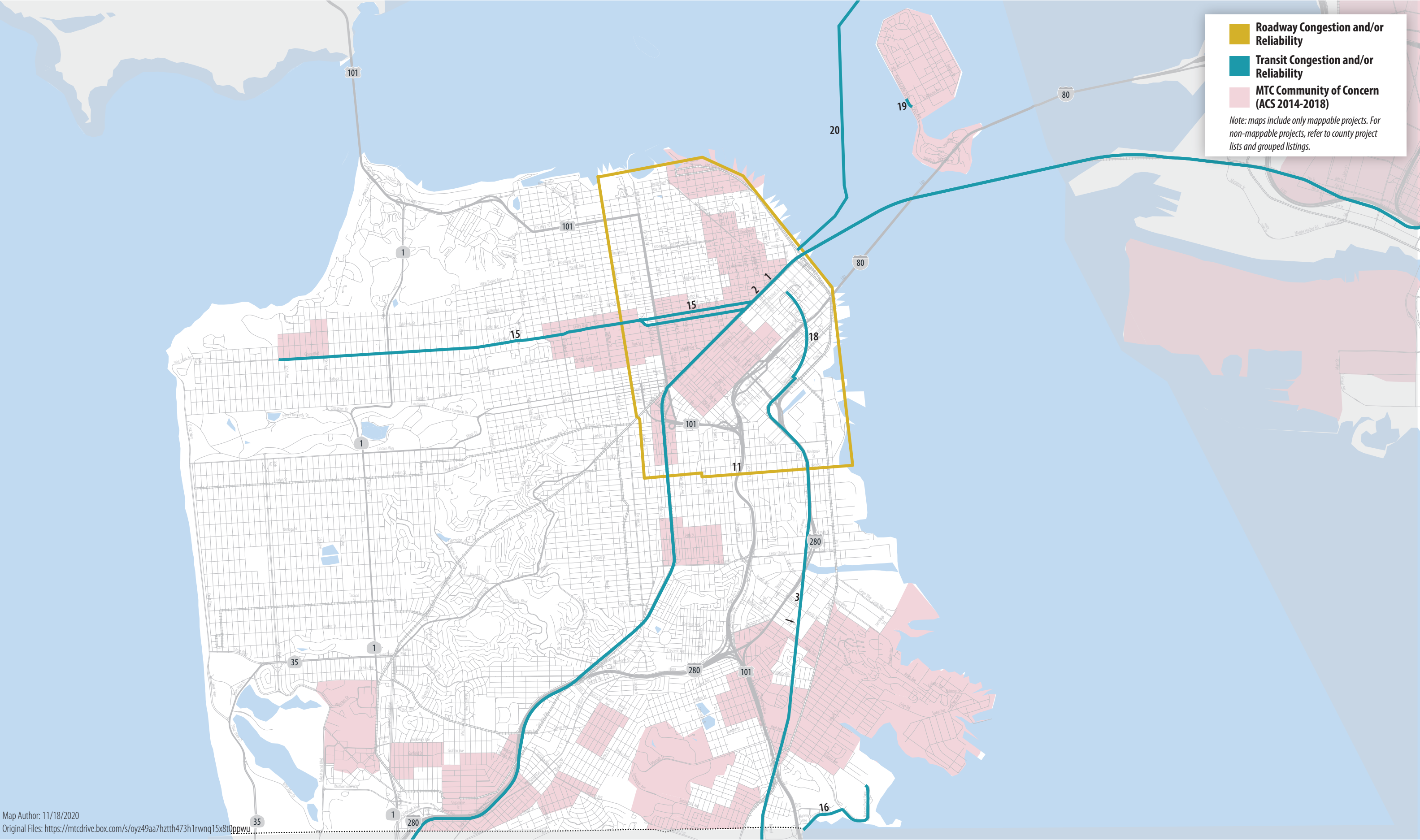
2021 TIP Investment Analysis

San Francisco County: Healthy and Safe Communities Projects



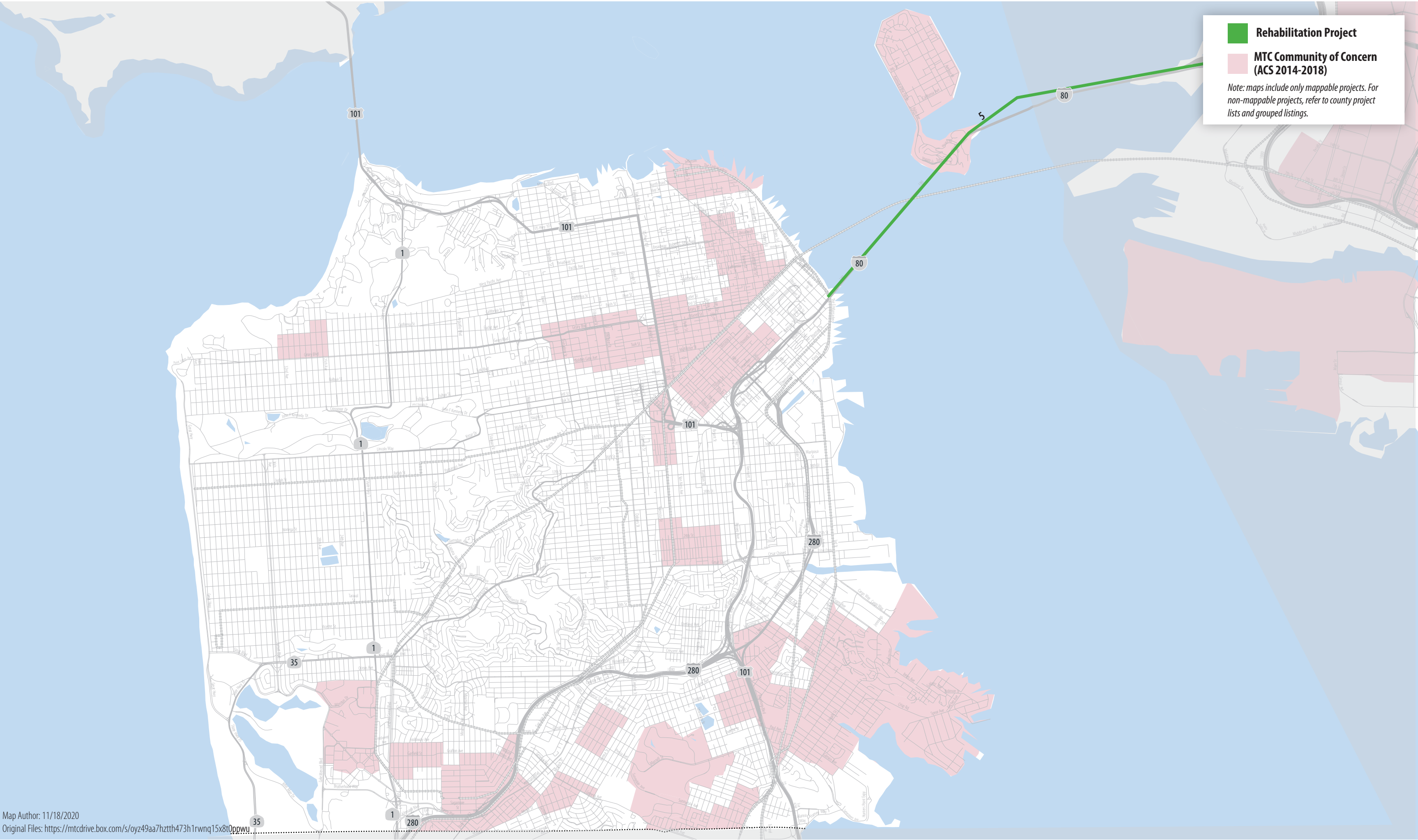
2021 TIP Investment Analysis

San Francisco County: Economic Vitality Projects



2021 TIP Investment Analysis

San Francisco County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

San Mateo County Project List

- 1 Atherton: Atherton Street Preservation
- 2 Belmont: Belmont Pavement Preservation
- 3 Belmont: Ralston Avenue Corridor Bike-Ped Imps
- 4 Brisbane: Crocker Trail Commuter Connectivity Upgrades
- 5 Brisbane: US 101/Candlestick I/C Reconfiguration
- 6 Burlingame: Hoover School Area Sidewalk Impvts (Summit Dr.)
- 7 CCAG: ITS Improvements in Northern Cities
- 8 CCAG: Improve US 101 operations near SR 92
- 9 CCAG: US-101 Managed Lanes North of I-380
- 10 CCAG: US101 Managed Lanes: Santa Clara Co-S of Grand Ave
- 11 Caltrain: Caltrain Electrification
- 12 Caltrain: Peninsula Corridor Electrification Expansion
- 13 Half Moon Bay: Poplar Complete Streets
- 14 Half Moon Bay: SR 1 improvements in Half Moon Bay
- 15 Hillsborough: Hillsborough Street Resurfacing
- 16 MTC: Freeway Performance Program: SR 84
- 17 MTC: Toll Bridge Maintenance
- 18 MTC: Toll Bridge Rehabilitation Program
- 19 Millbrae: Widen Millbrae Avenue
- 20 Portola Valley: Portola Valley Street Preservation
- 21 Redwood City: Blomquist Street Extension
- 22 Redwood City: Redwood City Ferry Service
- 23 Redwood City: US 101/Woodside Interchange Improvement
- 24 Redwood City: US 101/Woodside Road Class 1 Bikeway
- 25 SF City/County: Southern Skyline Blvd. Ridge Trail Extension
- 26 SSF: Grand Boulevard Complete Streets (Phase III)
- 27 SSF: US 101/Produce Avenue New Interchange
- 28 San Bruno: Huntington Transit Corridor Bike/Ped Improvements
- 29 San Bruno: Huntington/San Antonio Street Rehabilitation
- 30 San Carlos: US101/Holly St I/C Mod and Bike/Ped Overcrossing
- 31 San Mateo Co: Countywide Pavement Maintenance
- 32 San Mateo Co: SR 1 Congestion & Safety Improvements
- 33 San Mateo: Laurie Meadows Ped/Bike Safety Improvements
- 34 San Mateo: SR92/El Camino Real (SR82) Ramp Modifications
- 35 San Mateo: San Mateo Street Rehabilitation

NOT MAPPED

Caltrans: Bridge Rehab and Reconstruction - SHOPP
 Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
 Caltrans: Emergency Repair - SHOPP Emergency Response
 Caltrans: Highway Safety Improvement Program
 Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
 Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor
 Caltrans: Railroad-Highway Crossing
 Caltrans: Safety Improvements - SHOPP Mandates
 Caltrans: Safety Improvements - SHOPP Mobility Program
 Caltrans: Safety Imprv. - SHOPP Collision Reduction
 Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
 CCAG: Countywide ITS Improvements - SSF Segment
 MTC: 511 Next Gen
 MTC: Active Operations Management
 MTC: Bay Area Commuter Benefits Program
 MTC: Connected Bay Area
 MTC: COVID-19 Emergency Transit Operations
 MTC: Regional Planning - PDA Implementation
 MTC: Regional Planning Activities and PPM - MTC
 MTC: Regional Planning Activities and PPM - San Mateo County
 MTC: Regional Streets and Roads Program
 SamTrans: COVID-19 Emergency Transit Operations
 WETA: COVID-19 Emergency Transit Operations
 WETA: Replace Ferry Vessels

Legend:

- Road Project (Includes Bike/Pedestrian)
- Transit Project
- MTC Community of Concern (ACS 2014-2018)

Note: maps include only mappable projects. For non-mappable projects, refer to county project lists and grouped listings.

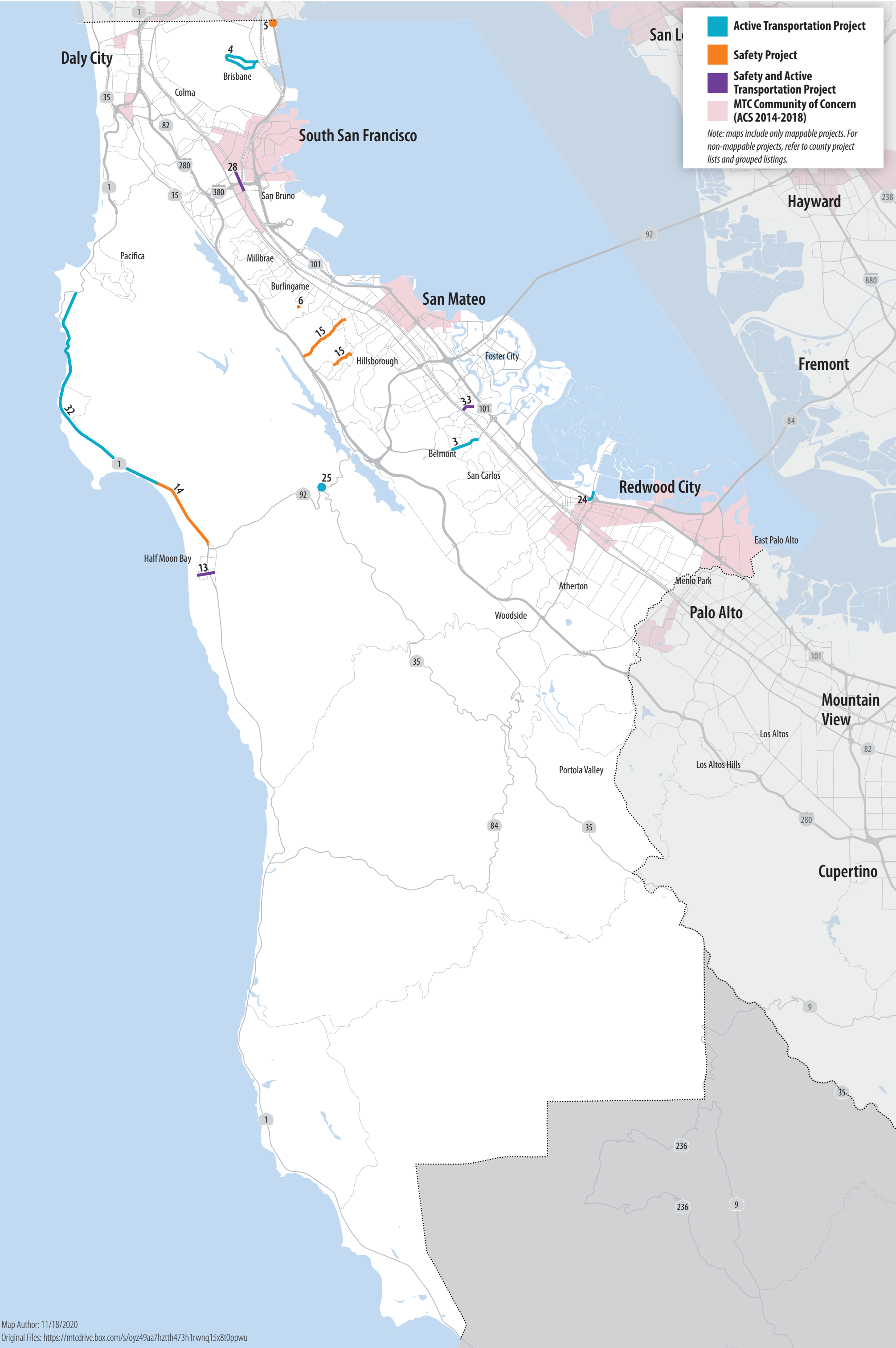
Map Labels: Daly City, South San Francisco, San Bruno, Millbrae, Burlingame, Hillsborough, San Mateo, Foster City, Belmont, San Carlos, Redwood City, Atherton, Woodside, Palo Alto, Mountain View, Los Altos, Los Altos Hills, Cupertino, Half Moon Bay, Pacifica, Colma, Brisbane, San Bruno, Millbrae, Burlingame, Hillsborough, San Mateo, Foster City, Belmont, San Carlos, Redwood City, Atherton, Woodside, Palo Alto, Mountain View, Los Altos, Los Altos Hills, Cupertino, Half Moon Bay, Pacifica, Colma, Brisbane.

Highways: 1, 82, 92, 101, 280, 380, 880.

Project Numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37.

2021 TIP Investment Analysis

San Mateo County: Healthy and Safe Communities Projects



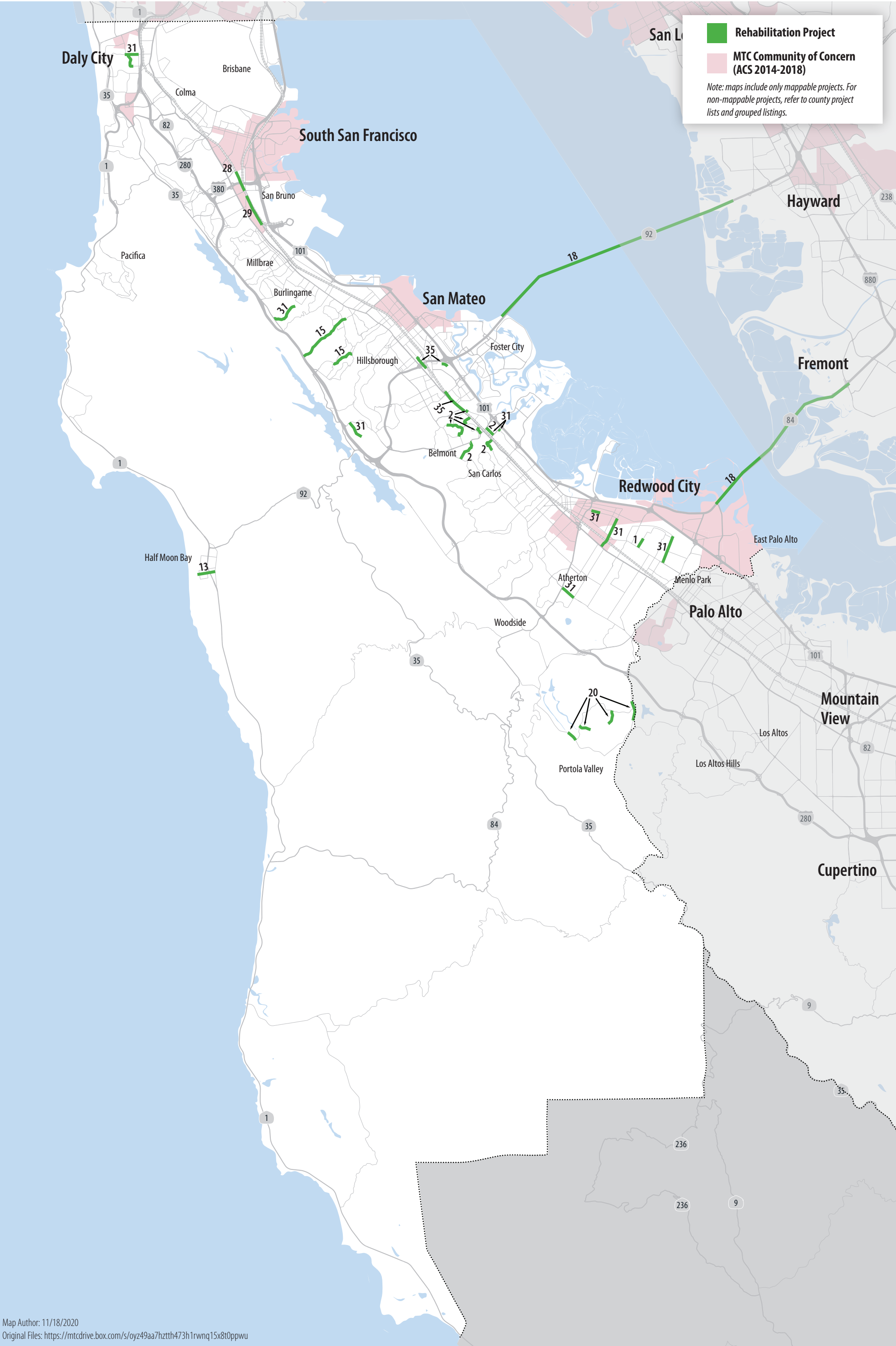
2021 TIP Investment Analysis

San Mateo County: Economic Vitality Projects



2021 TIP Investment Analysis

San Mateo County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Santa Clara County Project List

- | | | | |
|----|---|----|--|
| 1 | BART: Railcar Procurement Program | 39 | MTA: Calaveras Boulevard Widening |
| 2 | BART: Transbay Core Capacity Improvements | 40 | MTA: I-280 HOV - San Mateo County line to Magdalena Ave |
| 3 | Caltrain: Caltrain Electrification | 41 | MTA: I-280 NB Braided Ramps btw Foothill Expwy & SR 85 |
| 4 | Campbell: Harriet Avenue Sidewalk Improvements | 42 | MTA: I-280 Soundwalls - SR-87 to Los Gatos Creek Bridge |
| 5 | Campbell: SR 17 Southbound/Hamilton Ave. Off-Ramp Widening | 43 | MTA: I-280/Saratoga Avenue Interchange Improvement |
| 6 | Cupertino: McClellan Road Separated Bikeways (Phase 3) | 44 | MTA: I-280/Winchester Blvd Interchange Improvement |
| 7 | Los Altos: Fremont Ave Pavement Preservation | 45 | MTA: I-280/Wolfe Road Interchange Improvement |
| 8 | Los Gatos: Shannon Road Complete Streets | 46 | MTA: I-680 Soundwalls - Capitol Expwy to Mueller Ave |
| 9 | Milpitas: Street Resurfacing 2020 & 2021 | 47 | MTA: I-680/ Alum Rock/ McKee Road Interchange Imp |
| 10 | Morgan Hill: Dunne Avenue Pavement Rehabilitation | 48 | MTA: SR 17 Congestion Relief in Los Gatos |
| 11 | Mountain View: Rengstorff Grade Separation | 49 | MTA: SR 237 WB Auxiliary Lane fr McCarthy to North 1st |
| 12 | Palo Alto: El Camino Real Ped Safety & Streetscape | 50 | MTA: SR 237/US 101/Mathilda Interchange Modifications |
| 13 | Palo Alto: Waverley, E. Meadow & Fabian Enhanced Bikeways | 51 | MTA: SR 85 Express Lanes |
| 14 | San Jose: Better Bikeway San Jose - San Fernando Street | 52 | MTA: SR 87/Charcot Ave On-Ramp HOV Bypass |
| 15 | San Jose: Coyote Creek Trail (Hwy 237-Story Rd) | 53 | MTA: Santa Clara County - US 101 Express Lanes |
| 16 | San Jose: McKee Road Safety Improvements | 54 | MTA: US 101/Buena Vista Avenue Interchange Improvement |
| 17 | San Jose: Mt Pleasant Ped & Bike Traffic Safety Improvements | 55 | MTA: US 101/De L Cruz Blvd - Trimble Road I/C Imp |
| 18 | San Jose: San Jose Pavement Maintenance | 56 | MTA: US 101/SR 152/10th Ramp and Intersection Imp. |
| 19 | San Jose: Tully Road Safety Improvements | 57 | MTA: US 101/SR 25 Interchange - Phase 1 |
| 20 | San Jose: US 101/Old Oakland Road Interchange improvements | 58 | MTA: US 101/San Antonio Rd/Charleston/Rengstorff I/C Imp |
| 21 | San Jose: W San Carlos Urban Village Streets Improvements | 59 | MTA: US 101/Zanker Road-Skyport Drive-N. Fourth St. Imp |
| 22 | San Jose: Willow-Keyes Complete Streets Improvements | | |
| 23 | Santa Clara Co: Montague Expwy Widening - Trade Zone-Great Mall | | |
| 24 | Santa Clara: Hetch-Hetchy Trail Phase 1 | | |
| 25 | Santa Clara: San Tomas Aquino Creek Trail Underpass | | |
| 26 | Santa Clara: Saratoga Creek Trail Phase 1 | | |
| 27 | Saratoga: Saratoga Village Crosswalks and Sidewalk Rehab | | |
| 28 | Sunnyvale: Bernardo Avenue Bicycle Underpass | | |
| 29 | Sunnyvale: East Sunnyvale Area "Sense of Place" | | |
| 30 | Sunnyvale: Fair Oaks Avenue Bikeway - Phase 2 | | |
| 31 | Sunnyvale: Homestead Rd at Homestead High School Improvements | | |
| 32 | Sunnyvale: Java Dr Road Diet and Bike Lanes | | |
| 33 | Sunnyvale: Lawrence Station Area Sidewalks & Bike Facilities | | |
| 34 | Sunnyvale: Ped and Bike Infrastructure Improvements | | |
| 35 | Sunnyvale: Peery Park "Sense of Place" Improvements | | |
| 36 | Sunnyvale: SNAIL Neighborhood Improvements | | |
| 37 | Sunnyvale: Safe Routes to School Improvements | | |
| 38 | VTA: BART - Berryessa to San Jose Extension | | |

2021 TIP Investment Analysis

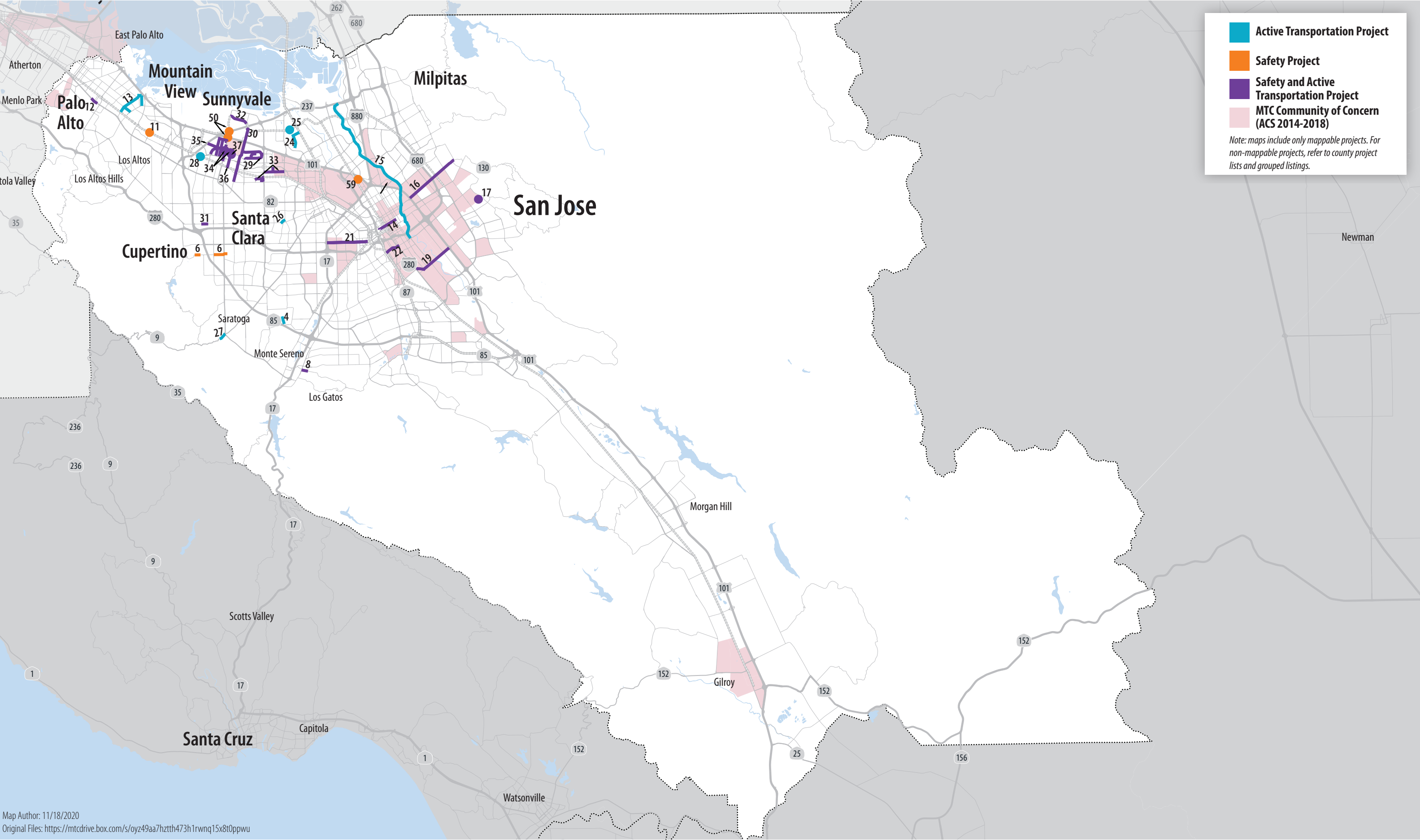
Santa Clara County Project List

NOT MAPPED (Continued)

MTC: Bay Area Commuter Benefits Program
MTC: Connected Bay Area
MTC: COVID-19 Emergency Transit Operations
MTC: Regional Planning - PDA Implementation
MTC: Regional Planning Activities and PPM - MTC
MTC: Regional Planning Activities and PPM - Santa Clara County
MTC: Regional Streets and Roads Program
Santa Clara: School Access Improvements
Sunnyvale: Traffic Signal Upgrades/Replacements
VTA: COVID-19 Emergency Transit Operations
VTA: Downtown San Jose Speed Improvements
VTA: Guadalupe Entrance Security Improvement
VTA: Guadalupe Roll Up Doors
VTA: Guadalupe Steam Rack Improv & Liner Replace
VTA: Hwy. Transp Operations System/FPI Phase 1 & 2
VTA: Light Rail Station Rehabilitation
VTA: LR Platform CCTV System Replacement
VTA: Pedestrian Backgates - Non-Vasona
VTA: Public Address System Upgrade
VTA: Rehab of LR System Elevators and Escalators
VTA: Santa Clara Countywide Noise Abatement Program

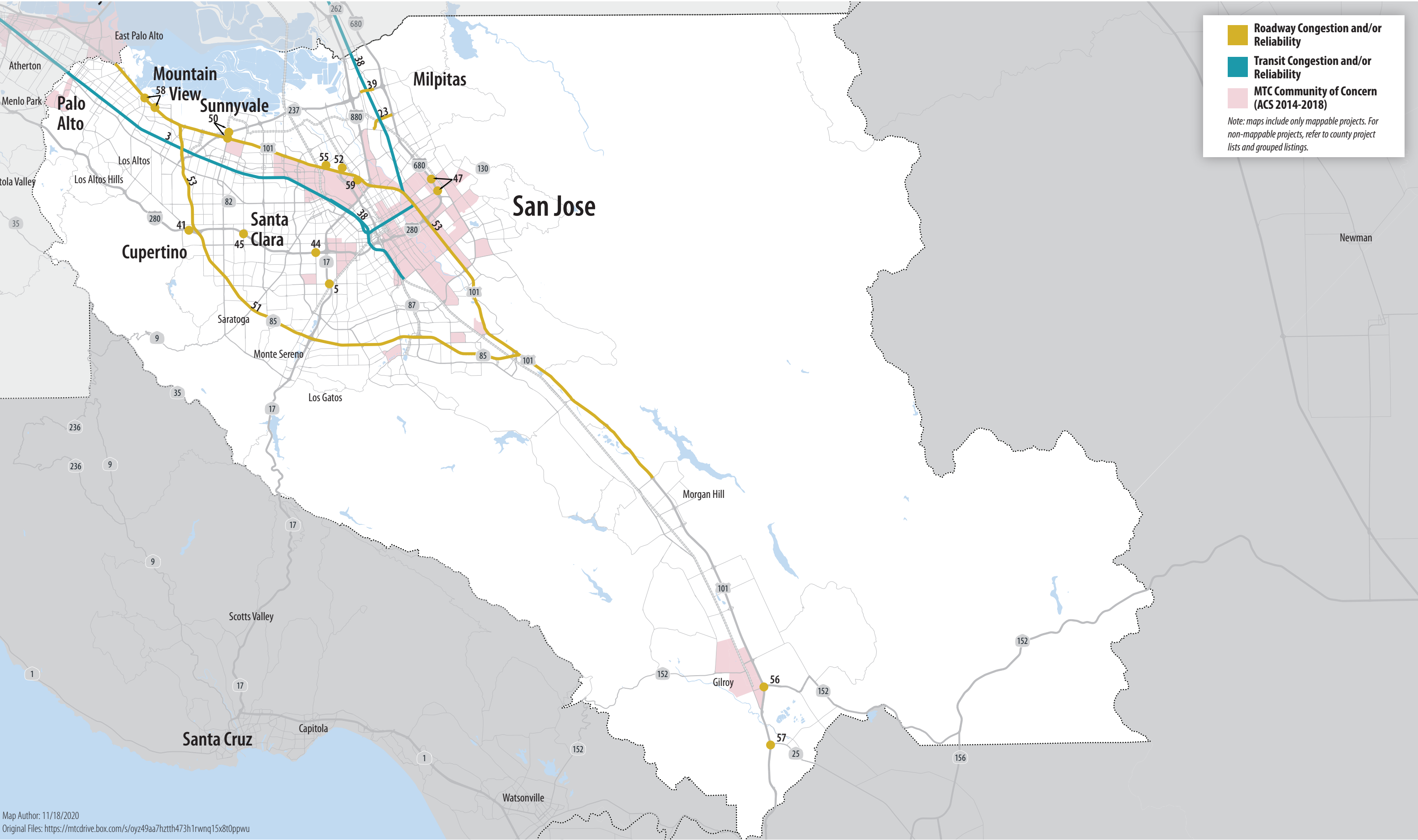
2021 TIP Investment Analysis

Santa Clara County: Healthy and Safe Communities Projects



2021 TIP Investment Analysis

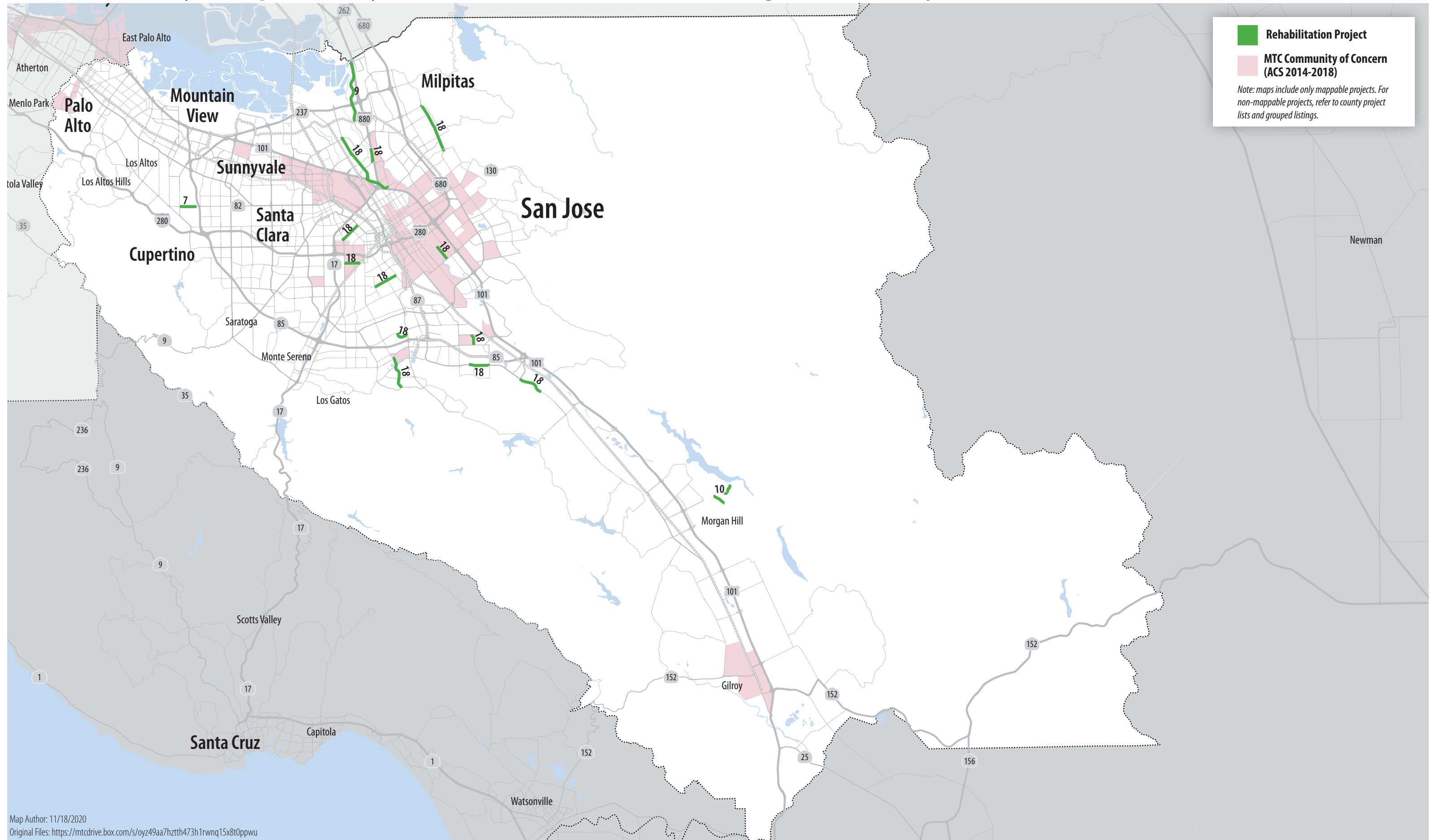
Santa Clara County: Economic Vitality Projects



Map Author: 11/18/2020
Original Files: <https://mtcdrive.box.com/s/oyz49aa7hztth473h1rwnq15x8t0ppwu>

2021 TIP Investment Analysis

Santa Clara County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Solano County Project List

- 1 Benicia: Park Road Improvements
- 2 Fairfield: East Tabor Tolenas SR2S Sidewalk Gap Closure
- 3 Fairfield: Grange Middle School Safe Routes to School
- 4 MTC: Solano I-80 Managed Lanes
- 5 MTC: Toll Bridge Maintenance
- 6 MTC: Toll Bridge Rehabilitation Program
- 7 STA: I-80/I-680/SR 12 Interchange Phase 2A
- 8 STA: Jepson: Leisure Town Road Phase 1B and 1C
- 9 STA: SR12/Church Rd Intersection Improvements
- 10 Solano County: Farm to Market Phase 3
- 11 Solano County: Redwood-Fairgrounds Dr Interchange Imps
- 12 Solano County: Solano County Roadway Preservation
- 13 Suisun City: McCoy Creek Trail - Phase 2
- 14 Suisun City: New Railroad Avenue Pavement Rehabilitation
- 15 Vacaville: Vaca Valley/I505 Multimodal Improvements
- 16 Vallejo: Sacramento St Road Diet and Rehab
- 17 Vallejo: Vallejo Bay Trail / Vine Trail Gap Closure

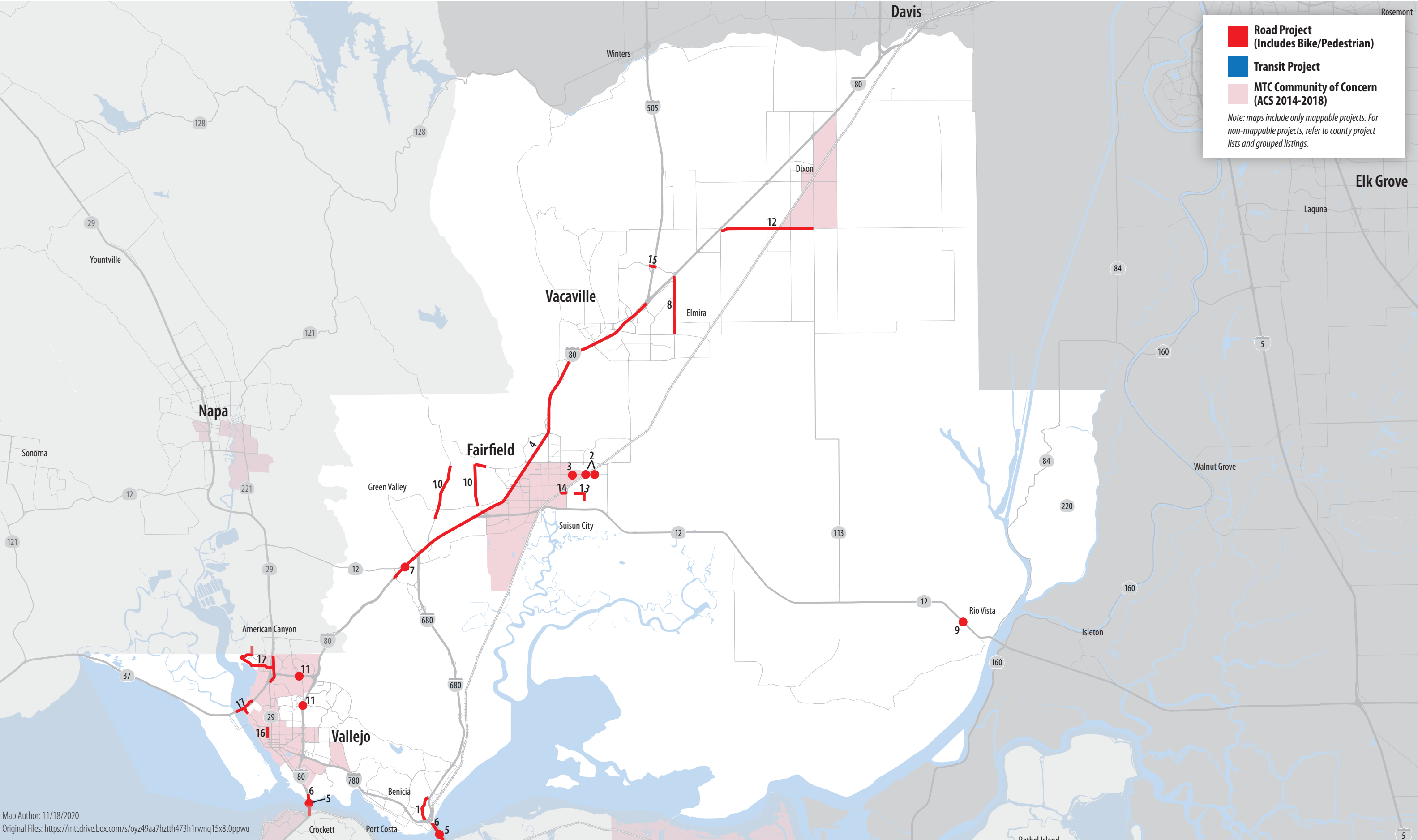
MTC: Regional Planning - PDA Implementation
 MTC: Regional Planning Activities and PPM - MTC
 MTC: Regional Planning Activities and PPM - Solano County
 MTC: Regional Streets and Roads Program
 Rio Vista: COVID-19 Emergency Transit Operations
 SolTrans: COVID-19 Emergency Transit Operations
 SolTrans: Electric Bus Charging Infrastructure
 STA: Solano Mobility Call Center
 STA: Solano Regional Transit Improvements - TIRCP
 STA: SolanoExpress Bus Electrification
 Vacaville: COVID-19 Emergency Transit Operations
 WETA: COVID-19 Emergency Transit Operations
 WETA: Replace Ferry Vessels

NOT MAPPED

Caltrans: Bridge Rehab and Reconstruction - SHOPP
 Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
 Caltrans: Emergency Repair - SHOPP Emergency Response
 Caltrans: Highway Safety Improvement Program
 Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
 Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor
 Caltrans: Railroad-Highway Crossing
 Caltrans: Safety Improvements - SHOPP Mandates
 Caltrans: Safety Improvements - SHOPP Mobility Program
 Caltrans: Safety Imprv. - SHOPP Collision Reduction
 Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
 Dixon: COVID-19 Emergency Transit Operations
 Fairfield: COVID-19 Emergency Transit Operations
 F-S Transit: Electric Bus Fleet and Infrastructure
 MTC: 511 Next Gen
 MTC: Active Operations Management
 MTC: Bay Area Commuter Benefits Program
 MTC: Connected Bay Area
 MTC: COVID-19 Emergency Transit Operations

2021 TIP Investment Analysis

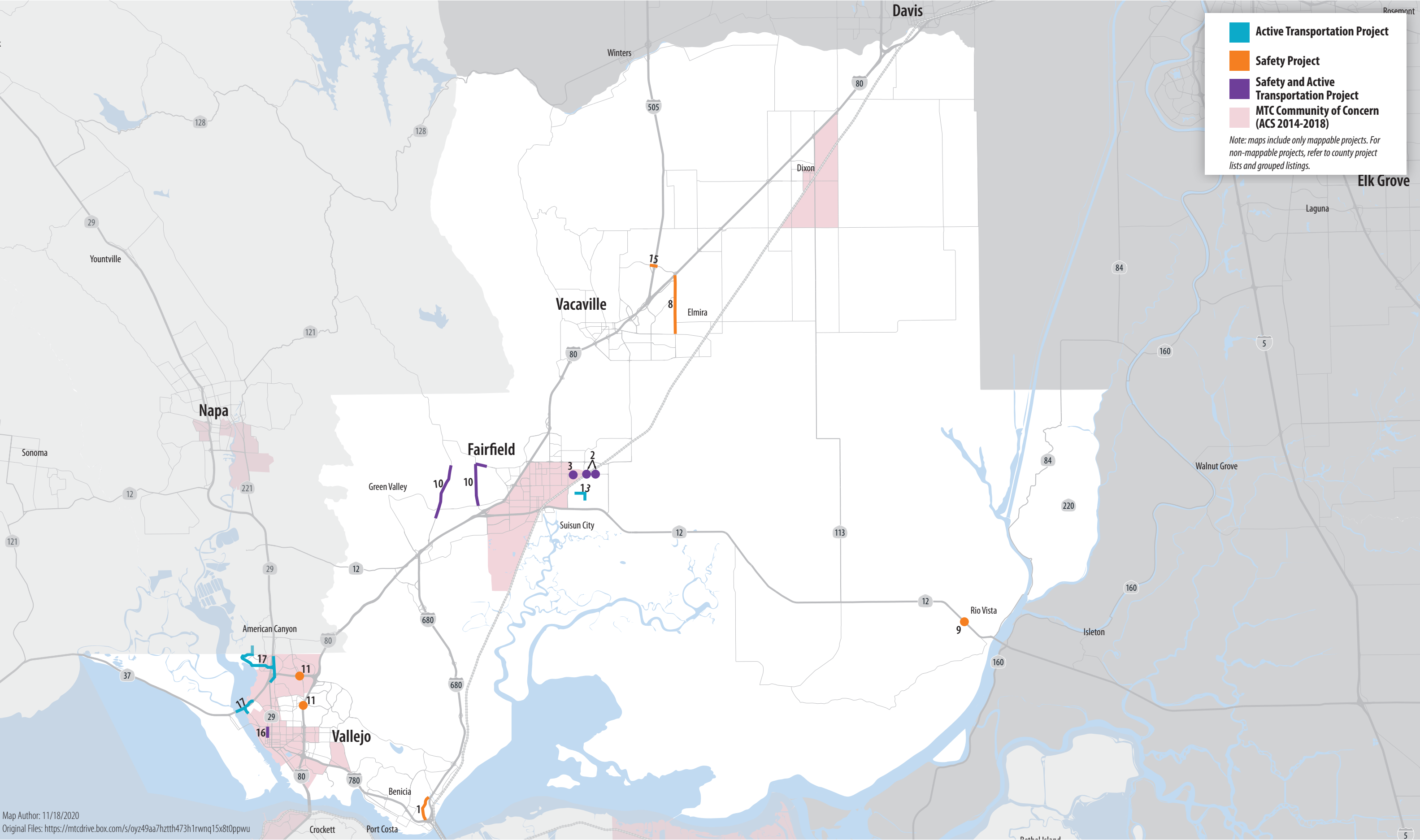
Solano County: Roadway and Transit Projects



Map Author: 11/18/2020
Original Files: <https://mtcdrive.box.com/s/oyz49aa7hztth473h1rwnq15x8t0ppwu>

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Solano County: Healthy and Safe Communities Projects



2021 TIP Investment Analysis

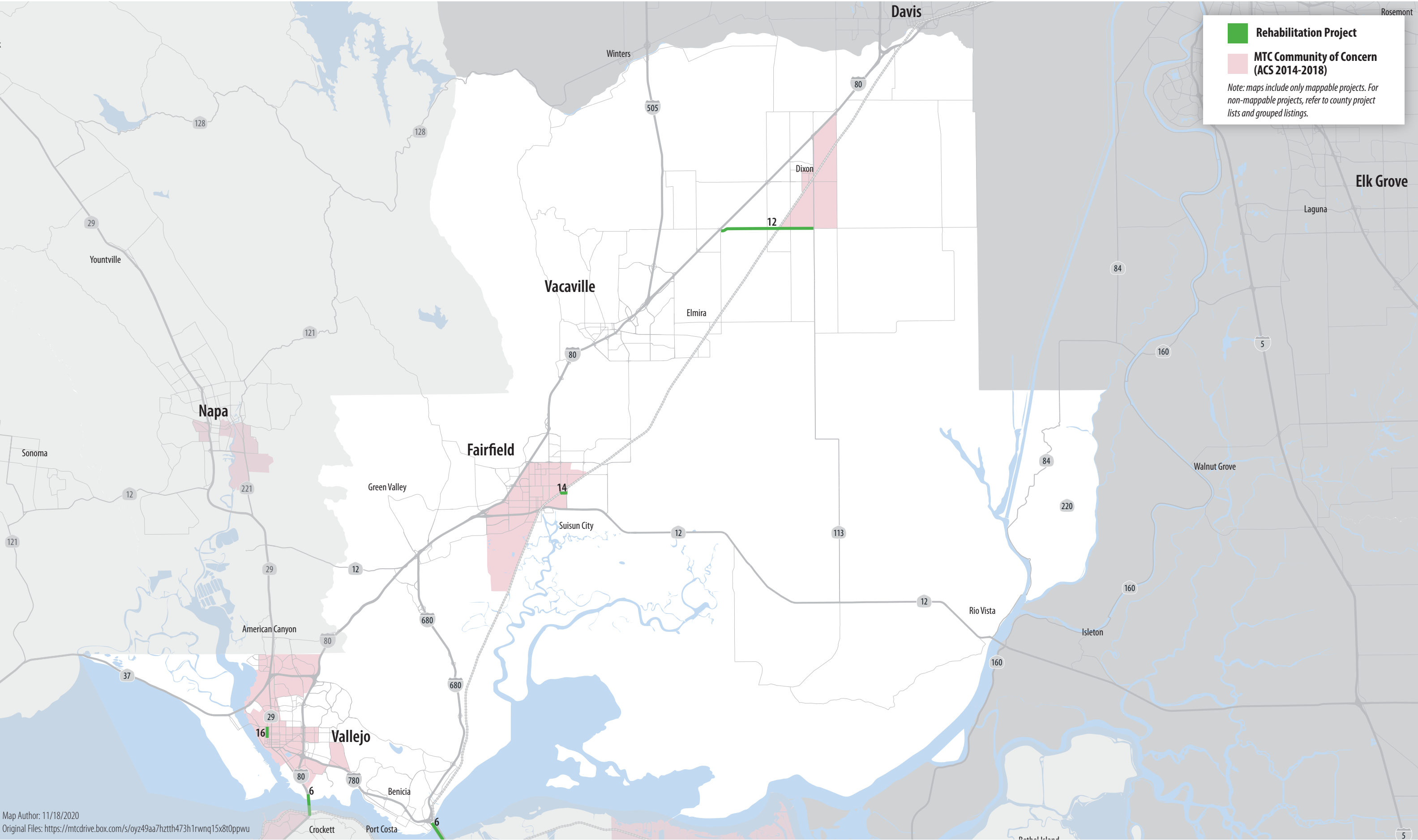
Solano County: Economic Vitality Projects



Map Author: 11/18/2020
Original Files: <https://mtcdrive.box.com/s/oyz49aa7hztth473h1rwnq15x8t0ppwu>

2021 TIP Investment Analysis

Solano County: Transportation System Effectiveness-Pavement and Bridge Condition Projects



2021 TIP Investment Analysis

Sonoma County Project List

- 1 Healdsburg: Healdsburg Avenue Complete Streets Improvements
- 2 MTC: Bike Share Capital Program
- 3 Petaluma: Petaluma Blvd South Road Diet at E Street
- 4 SMART: Sonoma Marin Area Rail Corridor
- 5 Santa Rosa: Downtown Communication Infrastructure Enhancement
- 6 Santa Rosa: Highway 101 Bicycle and Pedestrian Overcrossing
- 7 Santa Rosa: Santa Rosa Pavement Rehab of Various Streets
- 8 Sebastopol: Bodega Avenue Bike Lanes and Pavement Rehab
- 9 Son Co Reg Park: Joe Rodota Trail Bridge Replacement
- 10 Sonoma City: Fryer Creek Pedestrian and Bicycle Bridge
- 11 Sonoma County: Crocker Bridge Bike and Pedestrian Passage
- 12 Windsor: Windsor River Road/Windsor Road Intersection Imps

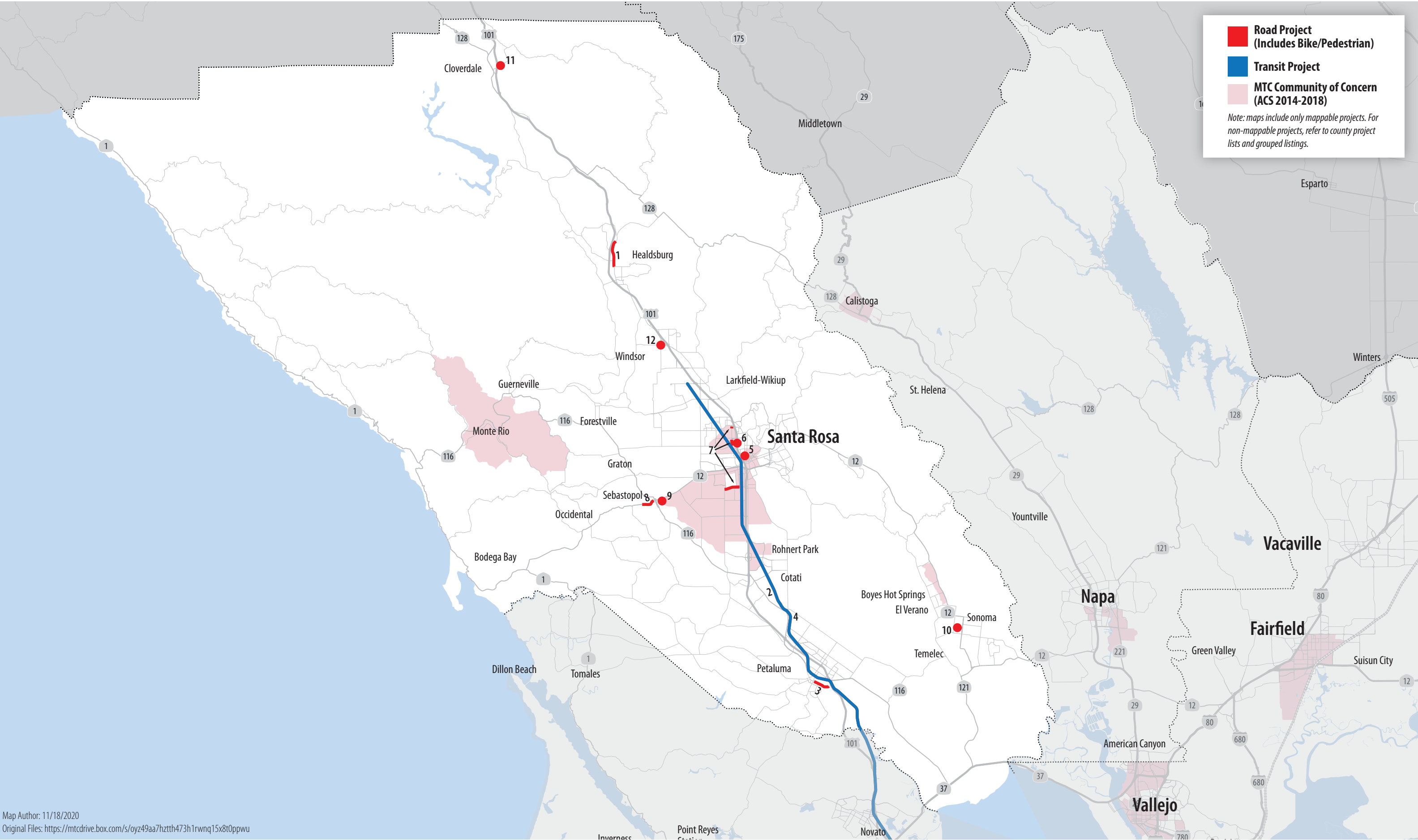
Sonoma County Transit: COVID-19 Emergency Transit Operations

NOT MAPPED

Caltrans: Bridge Rehab and Reconstruction - SHOPP
 Caltrans: Bridge Rehab/Recon. - Local Hwy Bridge Program
 Caltrans: Emergency Repair - SHOPP Emergency Response
 Caltrans: Highway Safety Improvement Program
 Caltrans: Pavement Resurf./Rehab - SHOPP Roadway Presv.
 Caltrans: Pvmnt Resurf/Rehab State Hwy Sys - SHOPP Minor
 Caltrans: Railroad-Highway Crossing
 Caltrans: Safety Improvements - SHOPP Mandates
 Caltrans: Safety Improvements - SHOPP Mobility Program
 Caltrans: Safety Imprv. - SHOPP Collision Reduction
 Caltrans: Shoulder Imprv - SHOPP Roadside Preservation
 MTC: 511 Next Gen
 MTC: Active Operations Management
 MTC: Bay Area Commuter Benefits Program
 MTC: Connected Bay Area
 MTC: COVID-19 Emergency Transit Operations
 MTC: Regional Planning - PDA Implementation
 MTC: Regional Planning Activities and PPM - MTC
 MTC: Regional Planning Activities and PPM - Sonoma County
 MTC: Regional Streets and Roads Program
 Petaluma: COVID-19 Emergency Transit Operations
 Santa Rosa CityBus: COVID-19 Emergency Transit Operations
 SMART: COVID-19 Emergency Transit Operations

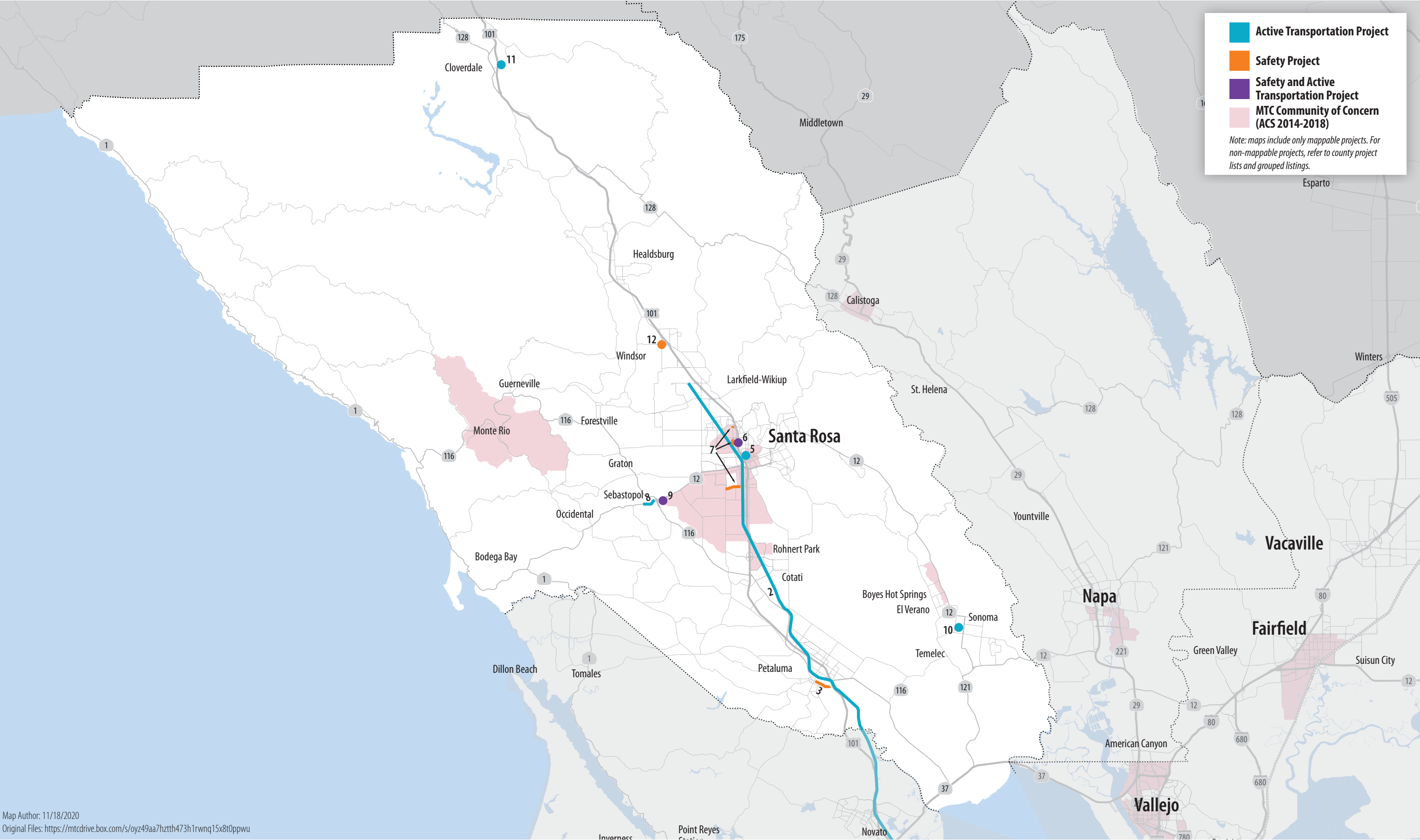
2021 TIP Investment Analysis

Sonoma County: Roadway and Transit Projects



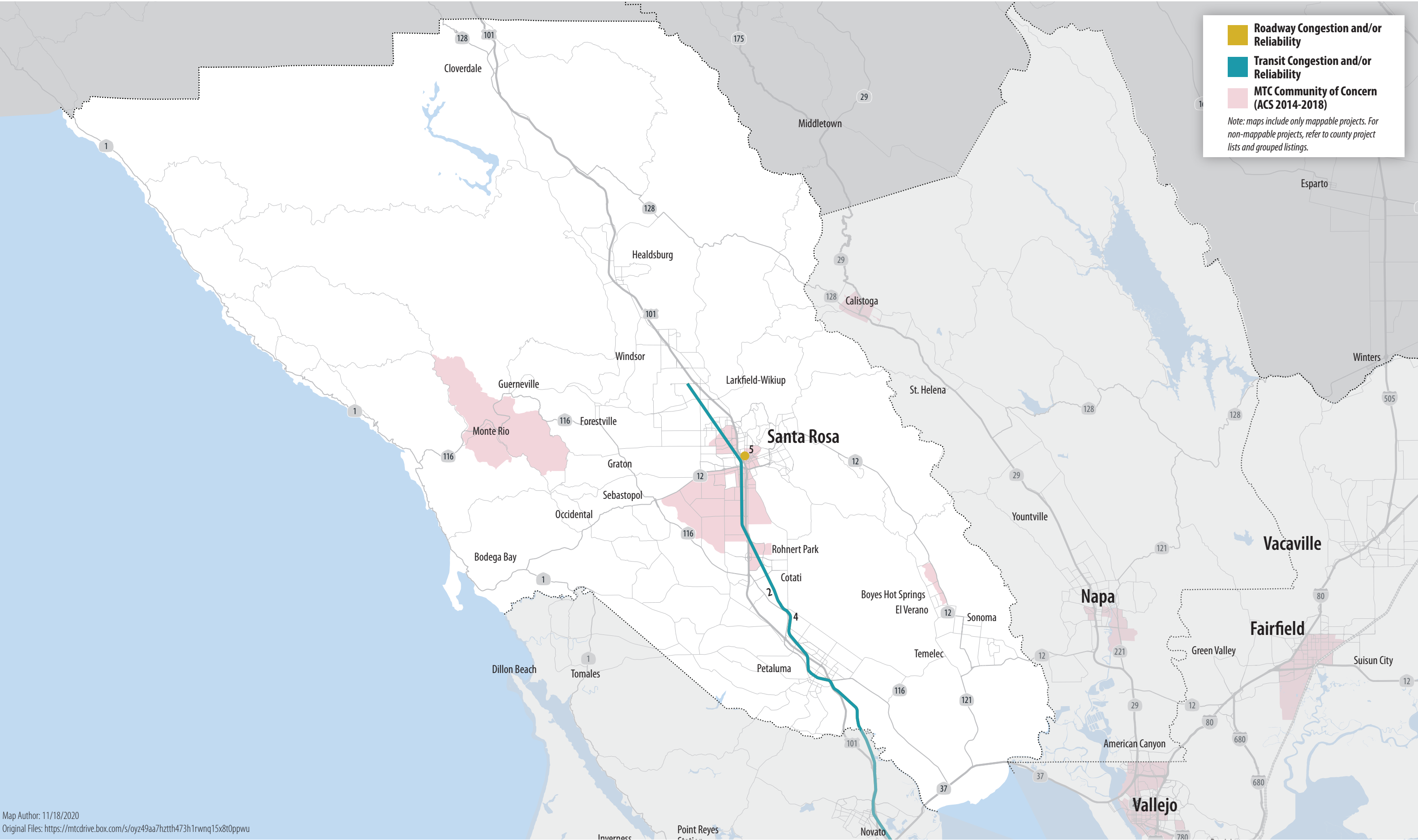
2021 TIP Investment Analysis

Sonoma County: Healthy and Safe Communities Projects



2021 TIP Investment Analysis

Sonoma County: Economic Vitality Projects



2021 TIP Investment Analysis

Sonoma County: Transportation System Effectiveness-Pavement and Bridge Condition Projects

