Countywide Transportation Plan Advancing Mobility 2045

Performance Metrics Mid-Plan Review Report

April 2024

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1 INTRODUCTION

The Napa Valley Transportation Authority (NVTA) is responsible for developing long-range countywide transportation priorities through an integrated planning process. The Countywide Transportation Plan is updated every four years. The NVTA Board of Directors approved the most recent Countywide Transportation Plan, Advancing Mobility 2045, in May 2021 (CTP 2021). As part of the most recent version of the Countywide Transportation Plan, NVTA adopted performance metrics to measure various multimodal elements of the transportation network. These performance metrics provide a glimpse into the condition and performance of the transportation system in six focus areas: equity, safety, congestion relief, sustainability, maintenance and preservation.

The purpose of this Mid-Plan Review was to collect and analyze data as a snapshot in time to compare to the previous performance metric data identified, collected, and analyzed as part of CTP 2021 development. The focus of this effort was to review and assess how the projects, programs, and policies adopted in the Plan collectively met, did not met, or are making progress towards meeting the Plan's performance targets. This Mid-Plan review will be used to identify programming changes, changes to data collection protocols, and policy change recommendations to further accelerate movement of the County towards meeting the CTP 2021 Goals and Objectives.

This Mid-Plan Review should be referenced and used as a tool for NVTA and member agencies to hold iterative programming discussions to discuss tradeoffs associated with investing in various priorities with fiscal constraint and transportation system performance considered in both regional and local transportation improvement programs (TIPs) and capital improvement programs (CIPs). This approach is extremely important to Napa County as a region reaching performance targets defined in the CTP 2021 because the overall multimodal transportation system works as a connected network in which local and regional investments work in concert with one another to deliver a safe and efficient transportation system composed of assets and systems owned, operated, and maintained by NVTA and member agencies.

Table 3-2 in Chapter 3 of this document correlates previously identified projects within the NVTA region to performance metrics identified as part of this Mid-Plan Review needing additional investments to further progress towards obtaining CTP 2021 transportation system performance targets.

CTP 2021 GOALS AND OBJECTIVES

NVTA's CTP 2021 goals and objectives were assessed for this Mid-Plan Review. The goals represent a transportation system and asset performance aspirations NVTA and member agencies are continually striving to achieve. The objectives are specific and measurable steps to attain goals set by NVTA in collaboration with member agencies. Some of the most pressing transportation system needs include congestion relief, improved traffic safety, provision of additional active transportation infrastructure, and maintenance and repair of the existing transportation system.

Table 1-1 contains NVTA's six goals and 26 objectives from the CTP 2021:

Table 1-1: CTP 2021, Advancing Mobility 2045, Goals and Objectives

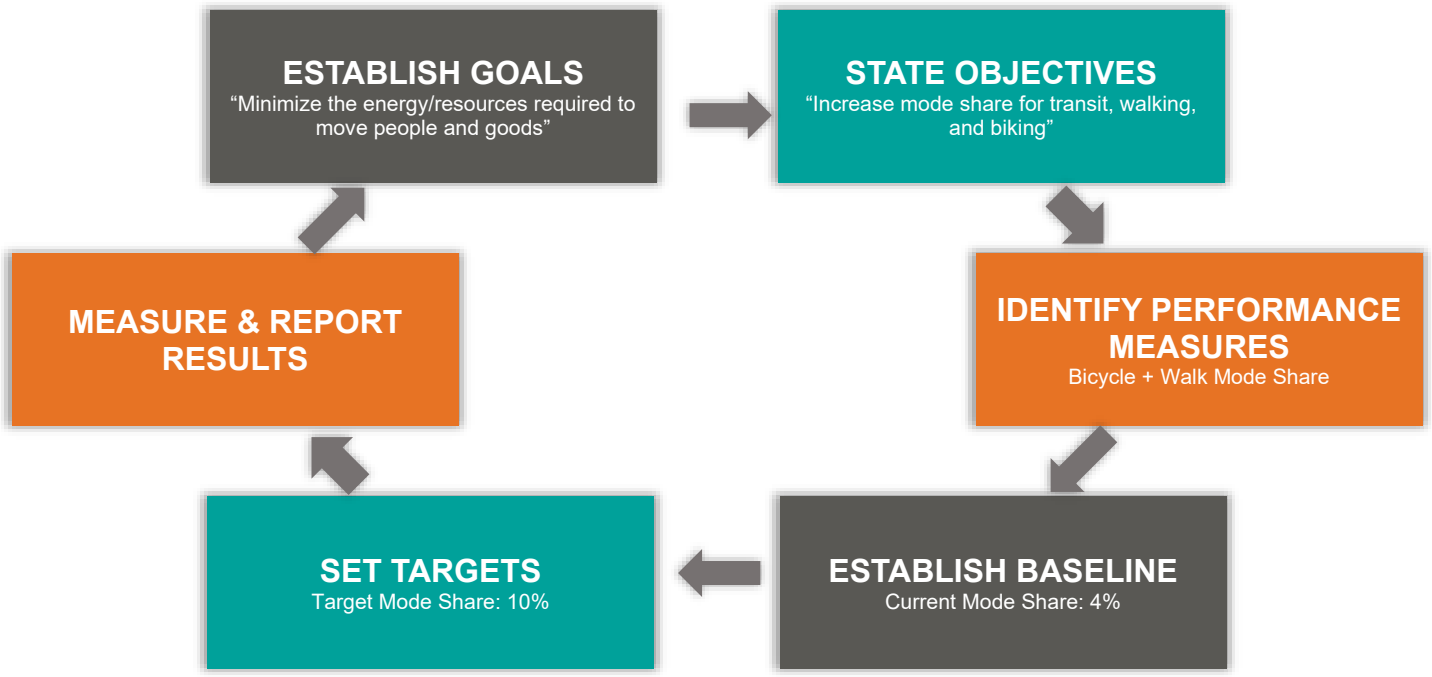
Goal Number	Goal	Objectives
1	Serve the transportation needs of the entire community regardless of age, income, or ability	1. Provide safe access to jobs, schools, recreation and other daily needs for Napa's residents and visitors. 2. Serve the special transportation needs of seniors, children, and the disabled. 3. Coordinate transportation services for persons with disabilities, seniors, children, and other groups so each serves as many people as possible. 4. Provide affordable transportation solutions to ensure access to jobs, education, goods, and services for all members of the community.
2	Improve system safety in order to support all modes and serve all users	1. Design roadways and other transportation facilities to enhance coexistence of all modes. 2. Educate all roadway users so they may safely coexist. 3. Work with Napa Jurisdictions to adopt safety strategies such as vision zero that address their needs and requirements. 4. Ensure Measure T roadway funds are maximized to improve infrastructure, as allowed under the ordinance, to benefit all transportation modes. 5. Promote projects that expand travel options for cyclists and pedestrians as well as those projects that reduce congestion and improve safety for vehicles, pedestrians, and cyclists.
3	Use taxpayer dollars efficiently	1. Continue to prioritize local streets and road maintenance, consistent with Measure T. 2. Invest in timely and reliable bus service and infrastructure, so public transit is an attractive alternative to driving alone. 3. Identify innovative alternative solutions that minimize costs, maximize system performance, and reduce congestion. 4. Explore new transportation funding sources, including fees associated with new development. 5. Foster partnerships with Caltrans, California Transportation Commission (CTC), Metropolitan Transportation Commission (MTC) and Napa's state legislators to support expanded transportation funding for local mobility needs and to accommodate demand from regional traffic that travels through Napa County.
4	Promote Napa County's economic sustainability	1. Identify and improve key goods movement routes. 2. Work with employers to improve access to employment centers, as well as dispersed agricultural employment sites. 3. Improve transportation services aimed at visitors, including alternatives to driving. 4. Support policies that shift travel from peak to non-peak hours.
5	Minimize the energy and other resources required to move people and goods	1. Prioritize projects that reduce greenhouse gases. 2. Increase mode share for transit, walking, and bicycling. 3. Reduce vehicle miles traveled (VMT). 4. Encourage the provision of alternative fuel infrastructure. 5. Invest in improvements to the transportation network that serve land use, consistent with SB 375. 6. Identify revenues that support investments in Priority Development Areas (PDAs) and Priority Production Areas (PPAs)
6	Prioritize the maintenance and rehabilitation of the existing system	1. Deliver Measure T projects effectively. 2. Focus funding on maintenance priorities.

2 CURRENT PERFORMANCE UPDATE

WHY MEASURE SYSTEM PERFORMANCE?

Performance measures allow transportation agencies to track progress towards the goals of an equitable, safe, and sustainable transportation system while understanding what it will take to achieve measurable positive change. In addition, guidelines from the Bay Area Metropolitan Transportation Commission (MTC) outline a performance measurement framework, noting that utilization and tracking of performance metrics will help align investment decisions with established agency goals and objectives. Although the performance targets apply to the CTP 2021 horizon year of 2045, the intent is to revisit and potentially readjust the performance measures and investments approximately every five years to track progress and align with investments. This Mid-Plan Review evaluates each of the performance metrics to determine the progress NVTA and member agencies are making towards or achieving performance targets defined in the CTP 2021. This Mid-Plan Review is more important than usual due to the unique impacts on the transportation system posed by the COVID-19 pandemic, and the pandemic's influence on travel behavior. This iterative performance review process is the baseline for development of an informed framework for making decisions related to programming projects and programs considering fiscal constraint, ultimately making strategic transportation plans such as the CTP 2021 a "living document."

Figure 2-1: Performance Based Planning Process Metric Example – Share of Active Transportation for Commute Trips



Performance metrics rely on readily available and reliable sources of data. The following sections describe and illustrate progress moving towards transportation system performance targets during the time that has passed between CTP 2021 adoption and this Mid-Plan Review. As is discussed in greater detail later in this document, the COVID-19 pandemic had a profound impact on the way the multimodal transportation system is utilized and performs due to changes in the way people live, work, and recreate

including significant impacts to the wine and hospitality industries. In addition, economic impacts of the COVID-19 pandemic resulted in substantive reductions in tax receipts and related funding for multimodal transportation systems including transit and roadway maintenance. The sections devoted to each CTP 2021 metric include a description of the measures and sources of data, provide baseline performance data, reference goals associated with each performance metric, and highlight the degree to which NVTA and member agencies did or did not make progress.

Table 2-1, shows the 6 performance areas and 14 individual performance metrics. There are 5 measures, highlighted in teal, where NVTA and member agencies achieved CTP 2021 performance targets during the Mid-Plan Review while the remaining 9 metric area targets were not achieved, or no progress was made towards target achievement since CTP 2021 adoption.

Table 2-1: CTP 2021 and Mid-Plan Review Performance Metrics and Measures

Performance Metric	Measure	Metric Achieved
Equity	1. Number of Households below the County Median Income that are within a Quarter of a mile of transit	
Safety	1. Number of Severe Injury and Fatal Collisions Reduced to Zero	
Congestion Relief	1. Peak Period Delay Index	✓
	2. Average Weekday Person Hours of Delay on NAPA Roadways	
	3. On-Time Bus Performance Weighted by Ridership	
	4. Number of Registered Users in NVTA's Transportation Demand Management Program	✓
Economic Sustainability	1. Reliability of Truck Travel Times	✓
	2. Number of Jobs Accessible by Transit Within one Hour During the Morning Commute	
Sustainability	1. Greenhouse Gas Emissions	✓
	2. Vehicle Miles Traveled	✓
	3. Share of Active Transportation for Commute Trips	
	4. Transit Ridership by Annual Boardings and Alightings	
Maintenance and Preservation	1. Miles between Bus Road Calls (Breakdowns)	
	2. Pavement Condition Index	

Note: Metric Measures in teal were achieved during the Mid-Plan Review

COVID-19 IMPACTS

The global COVID-19 pandemic impacted travel patterns and mode-choice globally, nationally, regionally, and locally starting in January 2020. Due to the highly contagious nature of COVID-19, many Napa County employers, businesses, and schools either halted operations or modified operations to utilize a remote virtual environment to conduct educational and business transactions. The increase in employees, students, and the general public staying at home to telecommute and lessen physical contact, led to profound changes in travel behavior and mode choice that is still prevalent today and will likely remain in the future. According to the Bay Area Metropolitan Transportation Commission Vital Signs website, 300,000 jobs were lost in the Bay Area from 2019-2020 and 29 percent of jobs in the leisure and hospitality sector were lost between 2019 and 2021 as a result of the COVID-19 pandemic.[1] In addition, many employers allowed employees to work remotely, and schools went to virtual learning to slow or avoid the spread of COVID-19. These fundamental changes in the way people work, learn, and recreate had a significant impact on vehicle travel, transit ridership, and the need for residents to walk or bike to employment, shopping, or recreational destinations. Many of the datasets used to develop performance metrics as part of the CTP 2021 referenced data from before the pandemic.

The COVID-19 pandemic negatively impacted NVTA and member agencies' ability to make progress on or performance objectives. More specifics are provided for how the pandemic impeded progress towards meeting or achieving certain performance targets.

[1] "Jobs." Vital Signs – *SF Bay Area*, vitalsigns.mtc.ca.gov/indicators/jobs.

GOAL: EQUITY

MEASURE: NUMBER OF HOUSEHOLDS BELOW THE COUNTY MEDIAN INCOME THAT ARE WITHIN A QUARTER OF A MILE OF TRANSIT STOP

Metric Not Met.

Baseline Performance Measurement:	**85%** of below median income households have transit access
Goal:	Equity
Target:	**100%** of below median income households have transit access
Mid-Plan Review:	**83%** of below median income households have transit access

Key Data Sources CTP 2021:

- American Community Survey (ACS) Five Year Estimates, 2014-2018; Table B19001 (Households by income bracket and block group)
- Census block group geographic boundaries
- Vine Transit stop locations

Key Data Sources CTP Mid-Plan Review:

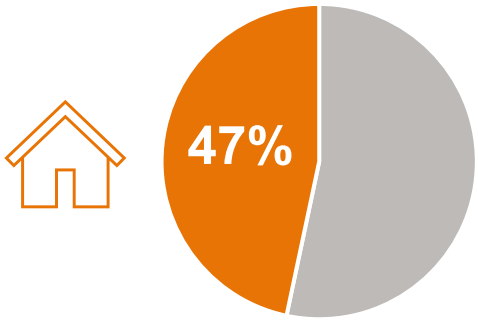
- American Community Survey (ACS) Five Year Estimates, 2017-2021; Table B19001 (Households by income bracket and block group)
- Census block group geographic boundaries
- Vine Transit stop locations

The equity performance metric reflects the accessibility of transit to low-to-moderate income households (as defined by the median income of Napa County). Transit accessibility is key to ensure low-income households have access to jobs, healthcare and social services. The CTP 2021 target is to provide a fixed route transit stop within a quarter mile (walking distance) to 100 percent of below median income households.

Figure 2-2 shows the CTP 2021 analysis and **Figure 2-3** shows the Mid-Plan Review analysis for Napa County households below the median income for this metric. The Total number of households below the median income of $75,000 decreased between the CTP 2021 and the Mid-Plan Review, as shown in **the Figures**. The number of households below the median income of $75,000 went from forty seven percent (47%) to thirty eight percent (38%). The decrease in the total number of households below the median income means there is an increase in wealth and household income throughout Napa County. The second pie chart in each of the two figures below shows the total number of households below the median income within a quarter of a mile of a transit stop. There is a slight decrease from 85 to 83 percent between CTP 2021 adoption and this Mid-Plan Review. This decrease can be attributed to the increase in Napa County household wealth, thereby lowering the number of households. It should be noted that the total number of stops and access to stops increased between the CTP 2021 and Mid-Plan Review.

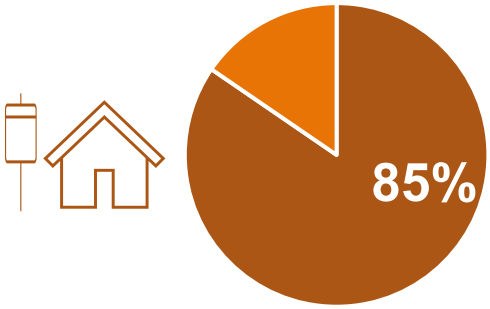
Figure 2-2: CTP 2021 Percentage of Households Below the Napa County Median Income Within a Quarter of a Mile of Transit (ACS 2014-2018)

Napa County Total Number of Households Below the Median Income of $75,000: **19,951**



Napa County Total Number of Households: **42,747**

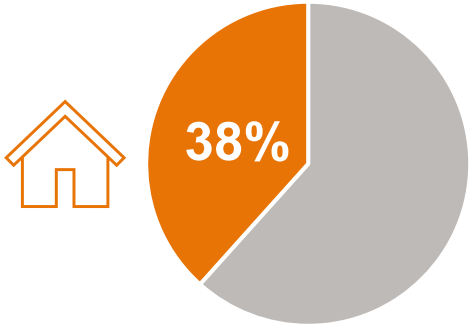
Napa County Number of Households Below Median Income Within a Quarter Mile of Transit: **16,869**



Napa County Total Number of Households Below Median Income $75,000: **19,951**

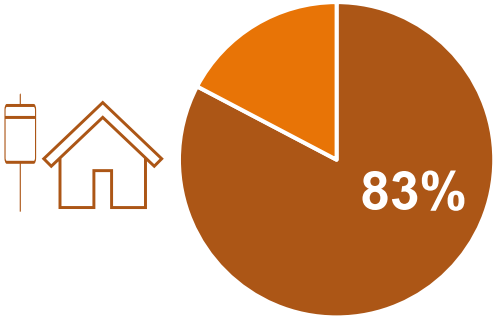
Figure 2-3: Mid-Plan Review Percentage of Households Below the Napa County Median Income Within a Quarter of a Mile of Transit (ACS 2017-2021)

Napa County Total Number of Households Below the Median Income of $75,000: **18,695**



Napa County Total Number of Households: **48,745**

Napa County Number of Households Below Median Income Within Quarter Mile of Transit: **15,461**



Napa County Total Number of Households Below Median Income of $75,000: **18,695**

*Notes: **Figure 2-2** and **Figure 2-3** - The median income of Napa County was $84,753 according to the 2014-2018 American Community Survey and the median income of Napa County was $97,498 according to the 2017-2021 American Community Survey, but the ACS reports households in income brackets. This measure counts all households below the income bracket of $75,000-$99,999.*

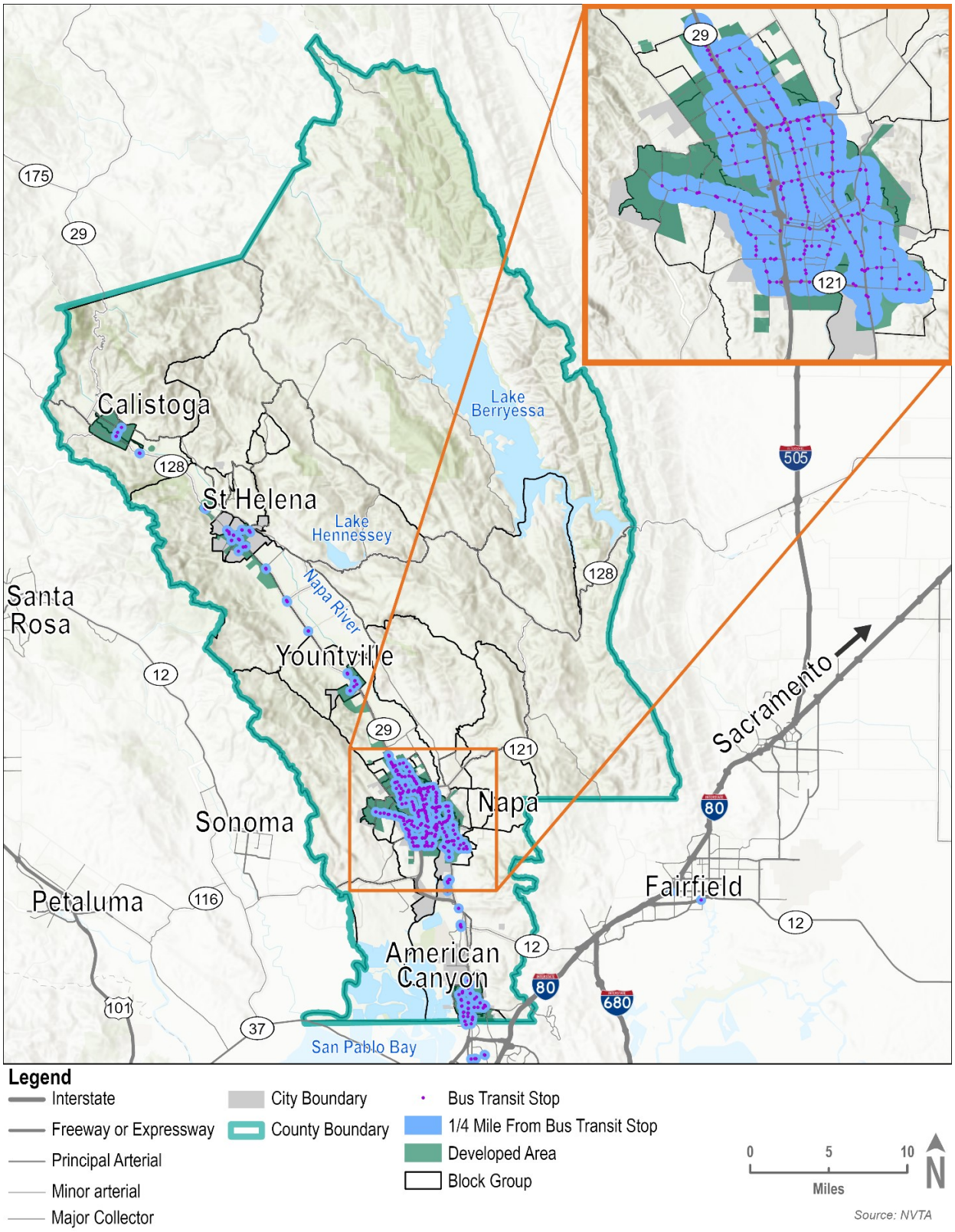
Table 2-2 shows all income brackets above $75,000 having an increase in the total number of households between CTP 2021 adoption and the Mid-Plan Review. The income bracket with the highest population increase was the $200,000+ income bracket which increased by nearly 66 percent and the $150,000-$199,999 bracket that increased by 33 percent. This increase in high-income households in Napa County may be attributed to high earning segments of the population with the ability to perform job duties remotely moving from more dense areas of the Bay Area to Napa County.

Table 2-2: Napa County Households Within 1/4 Mile of Vine Transit Stop by Income Bracket

ACS Income Bracket	CTP 2021 2014-2018 Number of Households Within 1/4 Mile of Vine Transit Stop	Mid-Plan Review 2017-2021 Number of Households Within 1/4 Mile of Vine Transit Stop	Percent Change
Less than $10,000	1,131	1,352	19.54%
$10,000 to $14,999	1,141	1,027	-9.99%
$15,000 to $19,999	1,098	907	-17.40%
$20,000 to $24,999	1,385	796	-42.53%
$25,000 to $29,999	1,286	1,381	7.39%
$30,000 to $34,999	1,186	1,227	3.46%
$35,000 to $39,999	1,310	919	-29.85%
$40,000 to $44,999	1,332	1,220	-8.41%
$45,000 to $49,999	1,282	1,352	5.46%
$50,000 to $59,999	2,447	2,232	-8.79%
$60,000 to $74,999	3,271	3,048	-6.82%
$75,000 to $99,999	4,756	5,105	7.34%
$100,000 to $124,999	3,876	4,263	9.98%
$125,000 to $149,999	2,732	2,940	7.61%
$150,000 to $199,999	3,380	4,495	32.99%
$200,000 or more	3,746	6,209	65.75%
Total HHs Below $75,000	**16,869**	**15,461**	**-8.35%**
Total	**35,360**	**38,473**	**8.81%**

Figure 2-4 illustrates the Napa County equity metric, which includes census blocks, developable land, bus stops, and 1/4 mile bus stop buffers.

Figure 2-4: Napa County Mid-Plan Review Equity Metric



COVID-19 Impacts - Number of Households Below the County Median Income that are Within a Quarter of a Mile of a Transit Stop

During 2020 as COVID-19 guidance and regulations were introduced including lockdowns, the Vine Transit system experienced large ridership declines. At its lowest, the Vine system had a 70 percent decrease in ridership. Due to this reduction in ridership, the pandemic created significant financial instability for the Vine system. NVTA, in collaboration with Transdev, transitioned the Vine system in the City of Napa from a fixed route system to a stop-to-stop on-demand system using the RidetheVine mobile app. Even though service hours on local shuttle services in American Canyon, Calistoga, St. Helena, and Yountville were reduced, they continued to operate and provide service to the community. The Vine Transit change to a stop-to-stop service likely had a minimal impact on the number of households below the County median income within a quarter mile of transit since most of the stops were not removed and were still utilized.

GOAL: SAFETY

MEASURE: NUMBER OF SEVERE INJURY AND FATAL COLLISIONS

Metric Not Met.

Baseline Performance Measurement:	Fatal Collisions: **48** Severe Injury Collisions: **291**
Goal:	Safety
Target:	Fatal Collisions: **0** Severe Injury Collisions: **0**
Mid-Plan Review:	Fatal Collisions: **64** Severe Injury Collisions: **271**

Key Data Sources CTP 2021:

- Transportation Injury Mapping (TIMS): 2015 – 2018 (Geocoded data and mapping application of CHP's Statewide integrated Traffic Records System – University of California, Berkeley SafeTREC)

Key Data Sources CTP Mid-Plan Review:

- Transportation Injury Mapping (TIMS): 2019 – 2022 (Geocoded data and mapping application of CHP's Statewide integrated Traffic Records System – University of California, Berkeley SafeTREC)

To measure system safety, NVTA considered the number of fatal and severe injury collisions on Napa's roadways based on the most recent 4-years of verified data. The CTP 2021 target goal was to reduce the number of severe injury and fatal collisions to zero. The collision data includes pedestrian and bicycle-involved collisions, as well as those that involved motor vehicles. **Table 2-3** shows the data analyzed for the CTP 2021 while **Table 2-4** shows the data analyzed for the Mid-Plan Review. The comparison between the two periods is shown in **Table 2-5**. There was an increase in collisions between the CTP 2021 adoption and the Mid-Plan Review in American Canyon, Napa, and Yountville and a decrease in Calistoga and the Unincorporated Napa County. **Table 2-5** shows that the total number of fatal and severe collisions between the CTP 2021 and the Mid-Plan Review remained similar; however, there was an increase in fatal collisions and a decrease in severe injury collisions. The 2019 through 2022 total fatal and severe collisions are shown by location in **Figure 2-5** and the pedestrian and bicycle fatal and severe collisions are shown by location in **Figure 2-6**.

Table 2-3: CTP 2021 Fatal and Severe Injury Collisions by Jurisdiction (2015-2018)

City	Fatal	Severe Injury	Total Injury	Alcohol Involved	Pedestrian Involved	Pedestrian Fatalities	Bicycle Involved	Bicycle Fatalities	Motor-Cycle Involved	Motor-Cycle Fatalities
American Canyon	1	12	324	18	15	-	7	-	17	-
Calistoga	1	13	57	5	4	-	10	-	2	-
Napa	5	59	1,467	155	96	2	105	-	59	-
St Helena	2	3	133	10	10	1	4	1	3	-
Unincorporated	39	202	2,198	190	14	1	47	2	180	9
Yountville	-	2	16	2	1	-	3	-	-	-
Napa County Total	**48**	**291**	**4,195**	**380**	**140**	**4**	**176**	**3**	**261**	**9**

Table 2-4: Mid-Plan Review Fatal and Severe Injury Collisions by Jurisdiction (2019-2022)

City	Fatal	Severe Injury	Total Fatal and Severe Injury	Alcohol Involved	Pedestrian Involved	Pedestrian Fatalities	Bicycle Involved	Bicycle Fatalities	Motor-cycle Involved	Motor-cycle Fatalities
American Canyon	4	12	16	3	3	-	2	1	3	1
Calistoga	1	9	10	2	2	1	1	-	1	-
Napa	13	64	77	25	25	5	10	-	6	2
St Helena	-	5	5	-	1	-	2	-	-	-
Unincorporated	46	177	223	42	7	6	7	1	76	12
Yountville	-	4	4	1	1	-	-	-	-	-
Napa County Total	**64**	**271**	**335**	**73**	**39**	**12**	**22**	**2**	**86**	**15**

Table 2-5: Fatal and Severe Injury Collisions CTP 2021 to Mid-Plan Review Percent Change by Jurisdiction

City	2015-2018 Fatal	2015-2018 Severe Injury	2015-2018 Total Fatal and Severe Injury	2019-2022 Fatal	2019-2022 Severe Injury	2019-2022 Total Fatal and Severe Injury	Total Fatal and Severe Percent Change
American Canyon	1	12	13	4	12	16	+23%
Calistoga	1	13	14	1	9	10	-29%
Napa	5	59	64	13	64	77	+20%
St Helena	2	3	5	-	5	5	+0%
Unincorporated	39	202	241	46	177	223	-7%
Yountville	-	2	2	-	4	4	+100%
Napa County Total	**48**	**291**	**339**	**64**	**271**	**335**	**-1%**

Figure 2-5: Mid-Plan Review Fatal and Severe Injury Traffic Collisions (2019-2022)

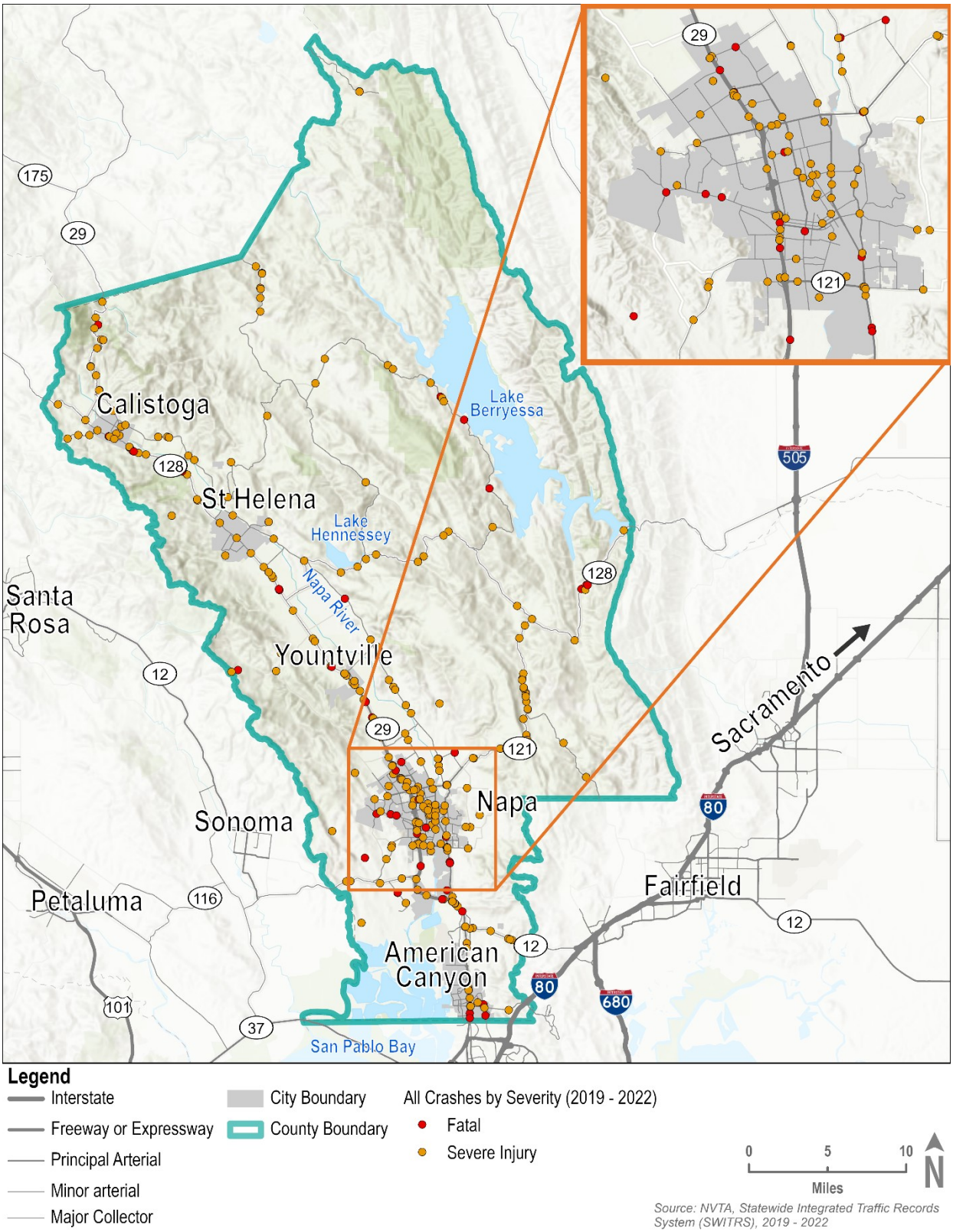
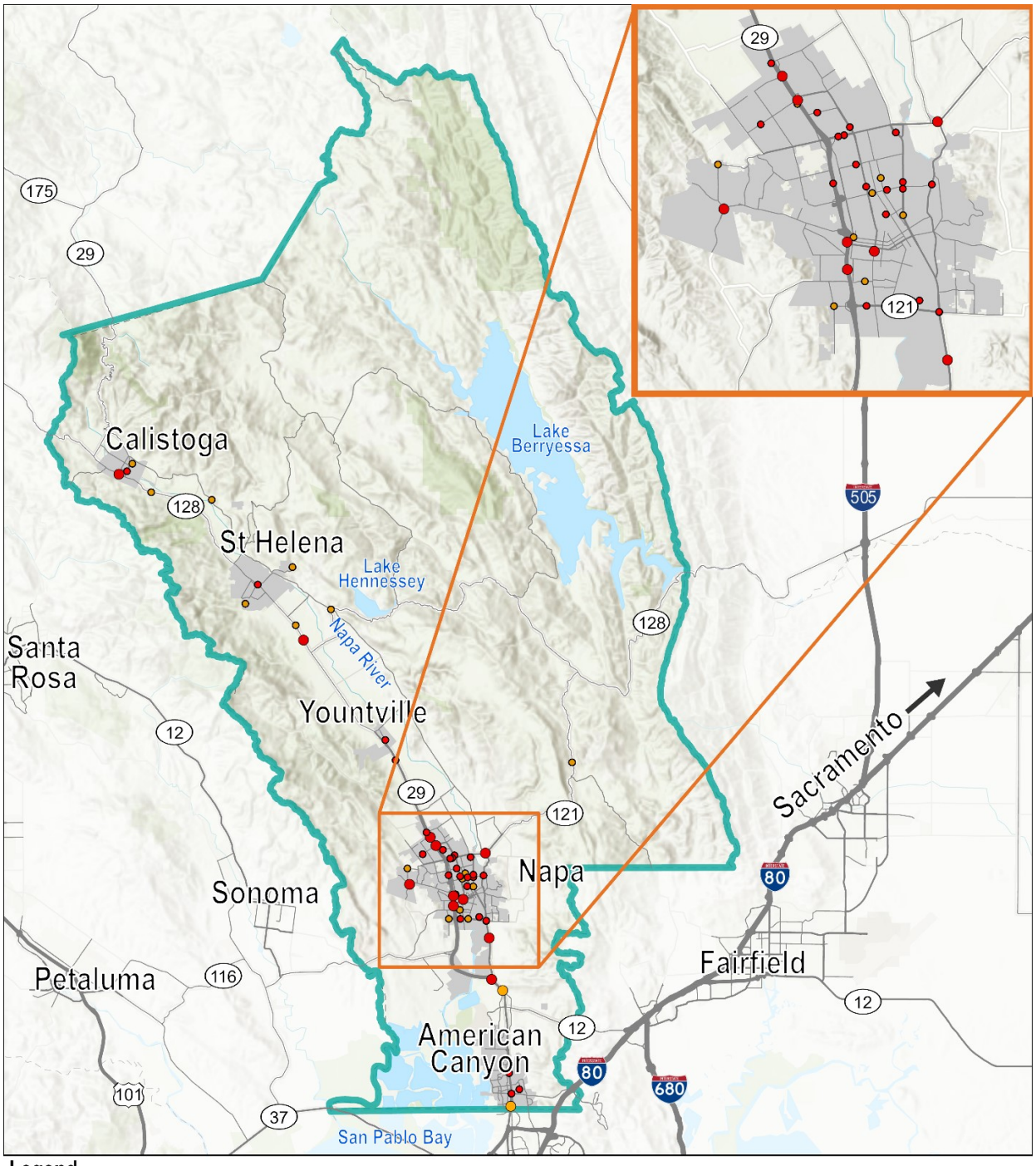


Figure 2-6: Mid-Plan Review Fatal and Severe Injury Collisions Involving Pedestrians and Bicycles (2019-2022)



On-Going and Completed Regional Safety Initiatives

Napa Valley Transportation Authority Vision Zero Plan (Adopted October 18, 2023)

Napa Valley Transportation Authority and its member agencies are committed to prioritizing roadway safety and eliminating traffic related deaths and serious injuries by 2030. NVTA is committed to eliminating this loss of life by focusing on preventing the most significant risk factors and prioritizing safety on identified high injury roadway networks in the cities, town, and unincorporated areas of Napa Valley.

In October 2023, the NVTA Board adopted the Countywide Vision Zero Plan, which seeks to reduce severe roadway injuries and fatalities to zero by 2030. This data-driven and community focused plan provides a roadmap for infrastructure and programmatic changes to support roadway safety that builds on existing and ongoing roadway safety efforts countywide. NVTA staff has coordinated with partner jurisdictions to adopt local resolutions of support. As of this writing, all six jurisdictions have adopted resolutions.

Vision Zero-Going Forward

To continue momentum for reaching the goal, NVTA staff is forming a countywide Vision Zero Task Force. This stakeholder group will meet up to four times annually to ensure collaboration and coordination across all sectors and will include but not be limited to representatives from public health, law enforcement and public safety, elected officials, public works and planning staff, advocacy groups and education.

The Task Force will follow the guiding principles of the Safe System Approach to direct the Plan's recommendations towards achieving zero deaths and serious roadway injuries. The goal of the Safe System approach is to ensure that if crashes occur, they do not result in serious human injury. This requires coordination and cooperation across all sectors to be successful and to assist in identifying how funding decisions will be made when addressing roadway safety programs and projects.

NVTA and consultants, Fehr & Peers, have developed an interactive online "storymap" that complements the Vision Zero Plan and provides agencies and the public with access to underlying data in a highly visual manner. This storymap will be updated periodically with new collision data as it becomes available, project details from local jurisdictions, and updates from the countywide Vision Zero Task Force. The storymap and data dashboard will be instrumental in tracking progress towards the vision zero goal.

GOAL: CONGESTION RELIEF

MEASURE #1: PEAK PERIOD DELAY INDEX

Metric Achieved.

Baseline Performance Measurement:	Peak period delay index of **3.71** for the most congested roadway segment
Goal:	Congestion Relief
Target:	Peak period delay index less than or equal to **2.0** for all monitored roadway segments
Mid-Plan Review:	Peak period delay index of **1.32** for the most congested roadway segment

Key Data Sources CTP 2021:

- Daily trip tables, free flow travel times and congested travel times from Napa Activity Based Model (Baseline Scenario – 2020)

Key Data Sources CTP Mid-Plan Review:

- Daily trip tables, free flow travel times and congested travel times from Napa Activity Based Model (Baseline Scenario – 2022)

Two performance measures were identified to measure traffic congestion trends. The first performance measure is the Peak Period Delay Index for a roadway corridor, which is the ratio of congested travel time to free flow travel time along a corridor and is an indicator of roadway reliability. A Peak Period Delay Index of 2, for example, means travel times are twice what they would be under uncongested conditions.

The Peak Period Delay Index reflects the extra time that people must build into their trips in order to arrive on time. Delay index measurements have been calculated to reflect conditions for both the morning (6–10 a.m.) and afternoon (3–7 p.m.) peak commute periods using outputs from the Napa County Travel Demand Model. **Table 2-6** through **Table 2-8** shows the Peak Period Delay Index by roadway corridor for the CTP 2021 and the Mid-Plan Review. The highest AM and PM peak period delay indices at CTP 2021 adoption were 3.71 and 3.14 respectively. These high indices were found on State Route 29 in the northbound and southbound direction between State Route 12 and Soscol Junction. All other roadways corridors had a Peak Period Delay Index of less than 1.22.

As shown in **Table 2-6** through **Table 2-8** the highest AM peak period delay index is 1.32 while the highest PM peak period delay index is 1.13 for the Mid-Plan Review. There is one segment on State Route 128 (northbound Imola Avenue to Lincoln Avenue) with a PM peak period delay index of 1.13. The AM peak delay index of 1.32 is found on State Route 29 in the northbound direction between State Route 12 and Soscol Junction. All roadway segments analyzed for the Mid-Plan Review are below the target goal of less than or equal to a Peak Period Delay Index of 2.0.

It should be noted that the inputs for the 2022 Napa Activity Based Model (baseline scenario) were updated between CTP 2021 adoption and the Mid-Plan Review. The following list of changes were made in the model:

1. The input network for the model for the State Route 12 corridor includes interchange improvements, allowing for increased capacity on the roadways and thus decreased peak period delays;
2. Validation work such as traffic counts and satellite surveys were completed;
3. The roadway segment input speeds and assignment volumes were updated, which decreased the Peak Period Delay;
4. External gateway volumes were adjusted with updated data which further decreased the Peak Period Delay metrics in the model.

Table 2-6: Delay Index – Eastbound and Westbound Directions (CTP 2021 and Mid-Plan Review)

Direction	Route	Extents	Peak Period Delay Indices (CTP 2021)		Peak Period Delay Indices (Mid-Plan Review)	
			AM	PM	AM	PM
EB	Trancas Street	State Route 29 to Silverado Trail	1.00	1.00	1.01	1.01
EB	Imola Avenue	State Route 29 to State Route 221	1.00	1.00	1.00	1.00
EB	State Route 12	Old Sonoma Road to State Route 12 / 29 / 121 Junction	1.04	1.04	1.02	1.05
WB	Trancas Street	Silverado Trail to State Route 29	1.00	1.00	1.00	1.00
WB	Imola Avenue	State Route 221 to State Route 29	1.00	1.00	1.00	1.00
WB	State Route 12	State Route 12/29/121 Junction to Old Sonoma Road	1.04	1.04	1.04	1.02

Table 2-7: Delay Index – Southbound Direction (CTP 2021 and Mid-Plan Review)

Direction	Route	Extents	Peak Period Delay Indices (CTP 2021)		Peak Period Delay Indices (Mid-Plan Review)	
			AM	PM	AM	PM
SB	Silverado Trail	Deer Park Road to Trancas Street	1.00	1.00	1.04	1.04
SB	Silverado Trail	Trancas Street to Lincoln Avenue	1.01	1.01	1.03	1.04
SB	Silverado Trail	Lincoln Avenue to Imola Avenue	1.01	1.01	1.01	1.01
SB	State Route 221	Imola Avenue to State Route 12	1.01	1.05	1.01	1.02
SB	State Route 29	Soscol Junction to State Route 12	1.88	3.14	1.03	1.01
SB	State Route 29	State Route 12 to Donaldson Way	1.14	1.16	1.01	1.02
SB	State Route 29	Donaldson Way to American Canyon Road	1.01	1.04	1.02	1.03
SB	State Route 128	Pope Street to Trancas Street	1.00	1.02	1.00	1.01
SB	State Route 128	Trancas Street to Lincoln Avenue	1.20	1.22	1.09	1.11
SB	State Route 128	Lincoln Avenue to Imola Avenue	1.09	1.13	1.10	1.10
SB	State Route 128	Imola Avenue to State Route 12	1.01	1.01	1.10	1.10
SB	State Route 128	Sonoma Highway to Soscol Junction	1.02	1.03	1.00	1.00
SB	Soscol Avenue	Trancas Street to Imola Avenue	1.00	1.01	1.01	1.01

Table 2-8: Delay Index – Northbound Direction (CTP 2021 and Mid-Plan Review)

Direction	Route	Extents	Peak Period Delay Indices (CTP 2021)		Peak Period Delay Indices (Mid-Plan Review)	
			AM	PM	AM	PM
NB	State Route 29	American Canyon Road to Donaldson Way	1.03	1.02	1.02	1.03
NB	State Route 29	Donaldson Way to State Route 12	1.09	1.07	1.02	1.02
NB	State Route 29	State Route 12 to Soscol Junction	3.71	2.40	**1.32**	1.03
NB	State Route 221	Soscol Junction to Imola Avenue	1.01	1.01	1.01	1.01
NB	Silverado Trail	Imola Avenue to Lincoln Avenue	1.00	1.01	1.01	1.01
NB	Silverado Trail	Lincoln Avenue to Trancas Street	1.01	1.01	1.03	1.02
NB	Silverado Trail	Trancas Street to Deer Park Road	1.00	1.00	1.05	1.06
NB	State Route 128	Soscol Junction to State Route 12	1.00	1.00	1.00	1.00
NB	State Route 128	State Route 12 to Imola Avenue	1.00	1.00	1.09	1.12
NB	State Route 128	Imola Avenue to Lincoln Avenue	1.11	1.10	1.10	**1.13**
NB	State Route 128	Lincoln Avenue to Trancas Street	1.08	1.08	1.09	1.10
NB	State Route 128	Trancas Street to Pope Street	1.03	1.01	1.00	1.01
NB	Soscol Avenue	Imola Avenue to Trancas Street	1.03	1.02	1.01	1.01

COVID-19 Impacts - Peak Period Delay Index

The COVID-19 pandemic had a considerable influence on Peak Period Delay. In the face of COVID-19, many Napa County governments and the State of California adopted the strategy to encourage or require people to stay at home as much as possible and obtain daily necessities through delivery services, family or friends. The self-isolation or lockdown imposed reduced work and school trips, resulting in a decline in traffic. The number of commuters during peak periods decreased both due to unemployment and work from home habits. Napa County was uniquely susceptible to losses in employment or underemployment due to the large service and tourist economy and the pausing of these activities during stay-at-home orders. According to the Bay Area Metropolitan Transportation Commission Vital Signs website, 300,000 jobs were lost in the Bay Area from 2019-2020 and 29 percent of jobs in the leisure and hospitality sector were lost between 2019 and 2021 as a result of the COVID-19 pandemic.[2] Overall, 25 percent of United States adults reported that someone in their family was fired or unemployed due to the COVID-19 outbreak, and 15 percent of them said it happened to them personally.[3] Moreover, 37 percent of jobs in the U.S. can be performed at home.[4] Due to this loss in employment and an increase in remote work, traffic volumes decreased significantly, in particular during peak periods.

[2] "Jobs." Vital Signs – *SF Bay Area*, vitalsigns.mtc.ca.gov/indicators/jobs.
[3] Parker, Kim. "Economic Fallout from Covid-19 Continues to Hit Lower-Income Americans the Hardest." Pew Research Center's Social & Demographic Trends Project, Pew Research Center, 24 Sept. 2020, www.pewresearch.org/social-trends/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/#:~:text=Overall%2C%2025%25%20of%20U.S.%20adults,has%20occurred%20in%20their%20household.
[4] Dingel, Jonathan and Neiman, Brent. "How many jobs can be done at home?", Journal of Public Economics. 2020. https://doi.org/10.1016/j.jpubeco.2020.104235.

Although data is not available for Napa County, the Bay Area Council collected survey data from roughly 200 employers throughout the Bay Area region in partnership with the Metropolitan Transportation Commission and EMC research since April 2021 in order to gather information related to in-person and remote work policies. According to a survey administered in November 2023, 87 percent of employers have already fully implemented their long-term policy for in-person and remote work with remaining employers planning to fully implement their strategy within the next 7-11 months.

As the pandemic has waned, the demand for remote work has continued to be strong. A Gallup[5] survey in June of 2022 found that 8 in 10 people are working hybrid or remote, while only 2 in 10 people are entirely working on-site. An AT&T[6] study found the hybrid work model is expected to grow from 42 percent in 2021 to 81 percent in 2024. These statistics correlate with why 2022 Peak Period Delay data shows a marked decrease in the Peak Period Delay Index. If predictions for future hybrid and remote work come to fruition, Peak Period Delay indices may remain reduced for some time into the future until demographic, population growth or socioeconomic shifts reverse or modifies these trends.

The Bay Area Council has collected survey data from roughly 200 employers throughout the region in partnership with the Metropolitan Transportation Commission and EMC Research since April 2021 in order to gather reopening plans and inform transit agencies and policymakers. The latest results are from January 2024 which show that 85 percent of employers have implemented their own company long-term policy for in-person and remote work with the remaining 15 percent currently working on and planning to implement in the future. The results also show that 25 percent of the employers do not require employees to work in-person or visit the office and 66 percent of the employers require some or all employees to visit or work in-person.[7] Current trends show nationally and regionally hybrid work, either one day a week or a few days a week in the office, will remain the same and is the new normal for employees.

[5] Agrawal, Ben Wigert and Sangeeta. “Returning to the Office: The Current, Preferred and Future State of Remote Work.” *Gallup.Com*, Gallup, 21 July 2023, www.gallup.com/workplace/397751/returning-office-current-preferred-future-state-remote-work.aspx.

[6] “The Future of Work in All Industries Is a Hybrid Workforce.” *AT&T Business*, www.business.att.com/learn/research-reports/is-corporate-america-ready-for-the-future-of-work.html. Accessed 4 Jan. 2024.

[7] “Return to Office Survey.” Bay Area Council, 14 Feb. 2024, www.bayareacouncil.org/employer-survey-results/.

GOAL: CONGESTION RELIEF

MEASURE #2: AVERAGE WEEKDAY PERSON HOURS OF DELAY ON NAPA ROADWAYS

Metric Not Met.

Baseline Performance Measurement:	**3,108** Daily person hours of delay on Napa Valley roadways
Goal:	Congestion Relief
Target:	Reduce the daily person hours of delay on Napa Valley roadways from baseline levels
Mid-Plan Review:	**3,317** Daily person hours of delay on Napa Valley Roadways
Key Data Sources CTP 2021: • Daily trip tables, free flow travel times and congested travel times from Napa Activity Based Model (Baseline Scenario – 2020) **Key Data Sources CTP Mid-Plan Review:** • Daily trip tables, free flow travel times and congested travel times from Napa Activity Based Model (Baseline Scenario – 2022)	

Congestion on Napa County roadways can also be quantified in terms of Person Hours of Delay. This performance measure quantifies the delay experienced by people traveling on Napa's roadways in excess of travel times under free-flow conditions. The baseline measurement is calculated with outputs from the Napa County Travel Demand Model and includes travel by Napa County residents, workers, and visitors. The performance target is to reduce the overall number of person hours spent in congestion on a typical weekday from CTP 2021 adopted levels.

As shown in **Table 2-9,** the Average Weekday Person Hours of Delay on Napa roadways increased by 6.7 percent, meaning the metric was not met since the overall target is a reduction in person hours of delay.[8]

This metric indicates an increase in congestion throughout the entire day rather than during peak periods shown in the previous metric. This is likely due to the increase of telecommuting and tourism. Roadway users that can telecommute tend to take more trips outside peak period timeframes and those on vacation usually are traveling during non-peak period timeframes.

Table 2-9: Average Weekday Person Hours of Delay on Napa Roadways

Metric	CTP 2021	Mid-Plan Review	Percent Change
Average weekday person hours of delay on Napa Roadways	3,108	3,317	+6.7%

COVID-19 Impacts – Average Weekday Person Hours of Delay on Napa Valley Roadways

In April 2020, as most activity was curtailed to slow the spread of COVID-19, U.S. vehicle miles of travel (VMT) was 40 percent lower than April 2019. By the end of the 2020, overall U.S. VMT was 11 percent lower than in 2019. Vehicle travel rebounded to 4 percent below pre-pandemic levels in 2021, and in

[8] The 2022 Napa Activity Based Model was changed between CTP 2021 adoption and the Mid-Plan Review. See Congestion Relief Measure #1: Peak Period Delay Index for the list of changes made to the Napa Activity Based Model.

2022 rose to one percent below 2019's pre-pandemic levels.[9] Since the CTP 2021 data was derived from 2020 data, it makes sense that the overall baseline daily person hours of delay may be artificially low at 3,108 hours due to reduced travel associated with the COVID-19 pandemic. Mid-Plan Review data is from 2022 and likely reflects the uptick in travel in a post-pandemic world, therefore this metric may benefit from reconsidering the baseline for future measurement. The preponderance of working remotely and an increase in post-pandemic tourism may also explain why there has been an increase in weekday person hours of delay when compared to the COVID-19 pandemic that peaked in 2020.

[9] Federal Highway Administration (2022). Traffic Volume Trends. https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm

GOAL: CONGESTION RELIEF

MEASURE #3: ON-TIME BUS PERFORMANCE WEIGHTED BY RIDERSHIP

Metric Not Met.

Baseline Performance Measurement:	**69%** Average weighted on-time performance for all route types
Goal:	Congestion Relief
Target:	**90%** Average weighted on-time performance for all route types
Mid-Plan Review:	**56%** Average weighted on-time performance for all route types

Key Data Sources CTP 2021:

- Vine Transit on-time performance data by route for 2018 (routes changed December 2019)
- Vine Transit ridership data by route for year 2018

Key Data Sources CTP Mid-Plan Review:

- Vine Transit on-time performance data by route for 2022
- Vine Transit ridership data by route for year 2022

On-time bus performance (OTP) is a strong indicator of service reliability and customer experience. NVTA's acceptable threshold for OTP is 90 percent using the following thresholds: 1 minute early and 5 minutes late (Short Range Transit Plan). NVTA strives to achieve 90 percent OTP and continues to work to provide the greatest level of reliability to passengers. Given the shortage of drivers, GPS connectivity issues and associated system challenges stemming from the COVID-19 pandemic, OTP was impacted and continues to be impacted.

COVID-19 and Other Operational Challenges

In 2018, Vine Transit fixed routes experienced 69.15 percent average weighted OTP (**Table 2-10**) across all route types (City of Napa Local, Regional, and Express), and set a target of 90 percent average weighted OTP for all route types. Although 2022 data by route shows an average weighted OTP at 56.33 percent (**Table 2-11**), Vine Transit service was operating a different mix of local routes in the City of Napa, as the system continued to recover from COVID-19 service disruptions. In 2018, NVTA operated eight fixed routes that covered short routes, with limited distance between time points in areas with limited congestion. As illustrated in **Figure 2-7** these eight local routes had higher OTP (79 percent) than the regional (65 percent) and intercity (63 percent) routes that are long-distance routes (18 miles or more) with greater distance between timepoints, and high levels of traffic congestion. Fast forward to 2022, most of the OTP data was coming from the regional and intercity routes which historically had lower OTP than the local routes. This is because the City of Napa in 2022 was only operating four local fixed routes along with on-demand service which is not included in the OTP data because it does not follow a schedule. Therefore, a substantial portion of the difference in the OTP from 2018 to 2022 is based upon a change in route structure.

The second major factor impacting OTP was a high number of drivers calling in sick and a shortage of drivers to take their place, which attributed to low OTP because a missed trip means that a bus never showed at each stop, which is counted as late. Driver call-offs impacted the total number of missed trips throughout 2022, with an average of 50 missed trips on fixed routes, peaking in August 2022, with 91 missed trips. Each of these missed trips constituted a late trip and negatively impacted on-time

performance. Since the height of poor OTP, service has improved across all routes. On-time performance should continue to improve as the number of missed trips decreases.

The third factor impacting OTP in 2022 is the change in the Computer-Aided Dispatch/ Automatic Vehicle Location (CAD/AVL). The CAD/AVL system is the source of the OTP data. All Vine Transit fixed routes are equipped with digital routers, which provide internet to mobile data units on board transit vehicles. Issues associated with routers occurred when switching CAD/AVL systems at the beginning of 2022. NVTA switched to CAD/AVL from Avail Technologies, which was the source of the 2018 data. After switching CAD/AVL systems and working to resolve router connectivity issues, NVTA continues to experience problems with accurate data reporting. Root causes of these reporting discrepancies are driver errors when signing into a trip, and continued communication errors between Mobile Data Terminals (MDT)s and on-board routers. NVTA has worked to address these issues by retraining drivers and updating MDTs to latest software versions to address AVL connectivity and is continuing to monitor the performance and accuracy of MDTs to ensure frequent and accurate OTP data is being collected.

Figure 2-7: On-Time Bus Performance Weighted by Ridership

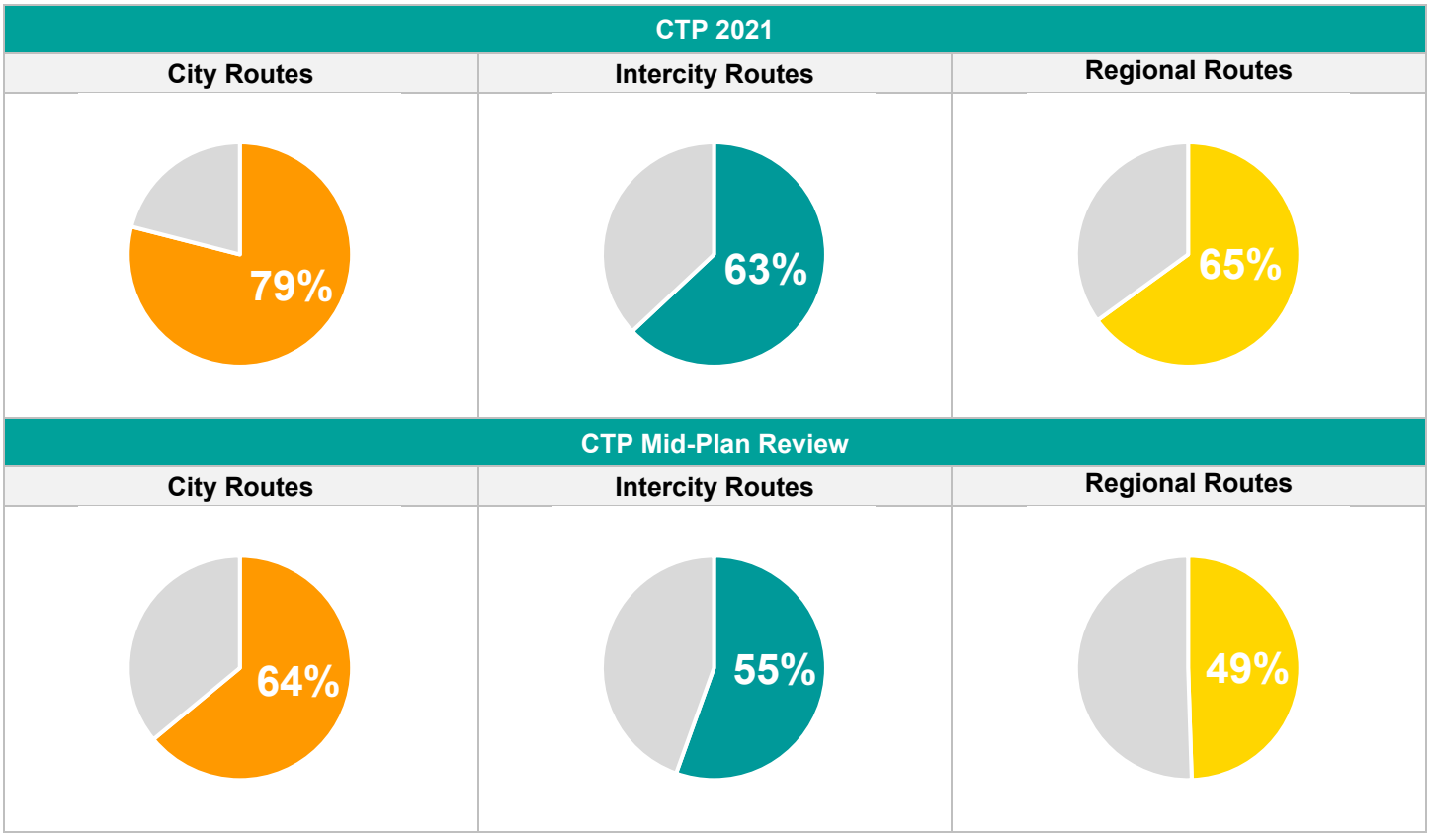


Table 2-10: CTP 2021 On-Time Bus Performance Weighted by Ridership

Category	Route	Ridership	On-Time Performance (2018)	Weighting	Weighted On-Time Performance	Average Weighted On-Time Performance
City	Route 1	18,533	84.82%	5%	79.22%	69.15%
	Route 2	51,810	80.09%	14%		
	Route 3	60,592	79.16%	16%		
	Route 4	50,853	84.72%	13%		
	Route 5	51,219	81.08%	13%		
	Route 6	38,632	75.42%	10%		
	Route 7	16,689	76.59%	4%		
	Route 8	93,695	75.70%	25%		
Intercity	Route 10	230,578	58.25%	48%	63.12%	
	Route 11	251,751	67.57%	52%		
Regional	Route 21	21,140	68.21%	25%	65.13%	
	Route 29	62,922	64.10%	75%		

Table 2-11: CTP Mid-Plan Review On-Time Bus Performance Weighted by Ridership

Category	Route	Ridership	On-Time Performance (2018)	Weighting	Weighted On-Time Performance	Average Weighted On-Time Performance
City	Route N	59,624	64.9%	57%	64.01%	56.33%
	Route S	14,825	58.0%	14%		
	Route E	2,849	60.8%	3%		
	Route W	27,239	65.8%	26%		
Intercity	Route 10	138,876	50.6%	53%	55.48%	
	Route 11	117,145	61.4%	45%		
	Route 11X	3,962	53.9%	2%		
Regional	Route 21	14,343	51.1%	29%	49.49%	
	Route 29	34,303	48.8%	71%		

GOAL: CONGESTION RELIEF

MEASURE #4: NUMBER OF REGISTERED USERS IN NVTA'S TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Metric Achieved.

Baseline Performance Measurement:	Number of registered V-Commute Users and Napa Valley Forward Users: **282**
Goal:	Congestion Relief
Target:	Increase the number of users registered for NVTA's Transportation Demand Program by targeting large employers
Mid-Plan Review:	Number of registered V-Commute Users: **975**

Key Data Sources CTP 2021:

- V-Commute Program registered user data (2020)

Key Data Sources CTP Mid-Plan Review:

- V-Commute Program registered user data (July 2023)

As shown in **Table 2-12**, the number of registered V-Commute Users was 975 in July of 2023 and is continuing to grow. This is a 246 percent increase from the CTP 2021 combination of both the V-Commute and Napa Valley Forward programs. V-Commute (formerly Solano-Napa Commuter Information) is Napa Valley's Transportation Demand Management program that promotes alternatives to driving alone. V-Commute services include carpool matching, guaranteed ride home, and information about transit, bicycling, and walking. Employers with 50 or more full-time employees can register their commuter benefits program to comply with regulations of the Bay Area Air Quality Management District. During the CTP 2021, V-Commute was complemented by the Napa Valley Forward program, a Transportation Demand Management pilot program aimed at vintners and the hospitality industry. The Napa Forward pilot ended, and several employers opted into the V-Commute platform, which updates the metric from tracking the total number of users for both programs to only tracking the V-Commute program. Currently, the Transportation Demand Management program is focused on commuter travel, but it would be possible to increase program focus on all trips, not only commute trips. The goal is to increase the number of registered users for the Transportation Demand Management program.

The V-Commute program experienced an increase in participation during an incentivized 2-month period for an annual commute challenge. The 2023 annual challenge took place between September 1st and October 31st with 93 participants. A participant during the challenge is someone logging at least three or more alternative trips per week. During non-incentivized months there is an average of 35 people logging three or more trips per week. Another statistic tracked is the number of active users, people logging at least 2 alternative trips per week, during each month. There were 236 active users between May and December of 2023. NVTA has a goal of a minimum of 500 active users on a regular basis throughout the year and could potentially obtain that target by providing increased awareness and program incentives support.

Table 2-12: Number of Registered V-Commute Users

Metric	CTP 2021	Mid-Plan Review	Percent Change
Number of registered V-Commute Users	282	975	246% Increase

For future Countywide Transportation Plans, it is recommended this metric change to number of active users (those logging alternative mode trips) not registered users. This measure would more accurately portray adoption of the program and progress toward meeting the congestion relief goal.

GOAL: ECONOMIC SUSTAINABILITY

MEASURE #1: RELIABILITY OF TRUCK TRAVEL TIMES (TTTR)

Metric Achieved.

Baseline Performance Measurement:	Overall TTTR Index: **2.39**
Goal:	Economic Sustainability
Target:	Overall TTTR Index: Maintain at **2.39** or reduce
Mid-Plan Review:	Overall TTTR Index for years 2020-2022 has maintained at 2.39 or less ranging from 1.86 in 2020 to 2.16 in 2022

Key Data Sources CTP 2021:

- National Performance Management Research Data Set (NPMRDS 2017-2019) obtained from RITIS

Key Data Sources CTP Mid-Plan Review:

- National Performance Management Research Data Set (NPMRDS 2020-2022) obtained from RITIS

Freight transportation is vital to the economic sustainability of Napa County. The Truck Travel Time Reliability (TTTR) index indicates the reliability of freight travel times as measured by historical truck speed data, comparing days with extremely high delay to days with average delay. The TTTR index for a corridor is the TTTR ratio weighted by the length of each study corridor. **Figure 2-10** illustrates the following list of analyzed corridors within the CTP 2021 and the Mid-Plan Review:

1. SR-12
2. SR-29
3. SR-121
4. Napa-Vallejo Highway

Figure 2-8 includes the 2017-2019 period which was analyzed in the CTP 2021 and the 2020-2022 timeframe which was used in the Mid-Plan Review analysis. **Figure 2-9** illustrates the TTTR index for each of the four analyzed corridors between 2019 and 2022. As shown in **Figure 2-8** and **Figure 2-9**, every year after 2019 (2020-2022) had a TTTR index below the target TTTR index of 2.39 and therefore this metric is achieved during the Mid-Plan Review. However, the last two years, 2021 and 2022, show an increase from 2020, meaning the TTTR index is increasing towards the upper acceptable TTTR index threshold index of 2.39 rather than decreasing.

COVID-19 TTTR Impacts

Due to 2020 being the peak of COVID-19, there was a decrease in personal vehicles on the road which caused a decrease in Truck Travel Time, meaning trucks experienced less congestion and were moving more commonly at free-flowing speeds resulting in less delay. As the population transitioned to attending school and work in person, the Truck Travel Time increased as shown in 2021Truck Travel Time may remain lower in future years to observe how work and learn from home trends stabilize in a post-pandemic era.

Figure 2-8: Annual Corridor Average Overall Truck Travel Time Reliability Index (TTTR) (2017-2022)

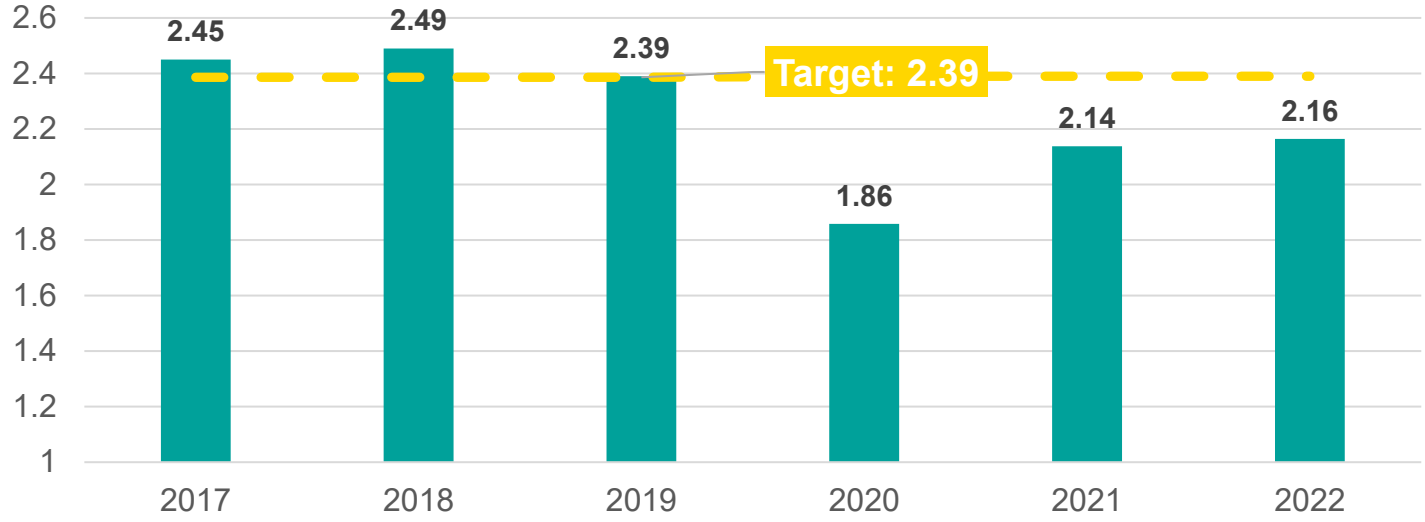


Figure 2-9: Average Bidirectional Corridor Truck Travel Time Reliability Index (TTTR) (2019-2022)

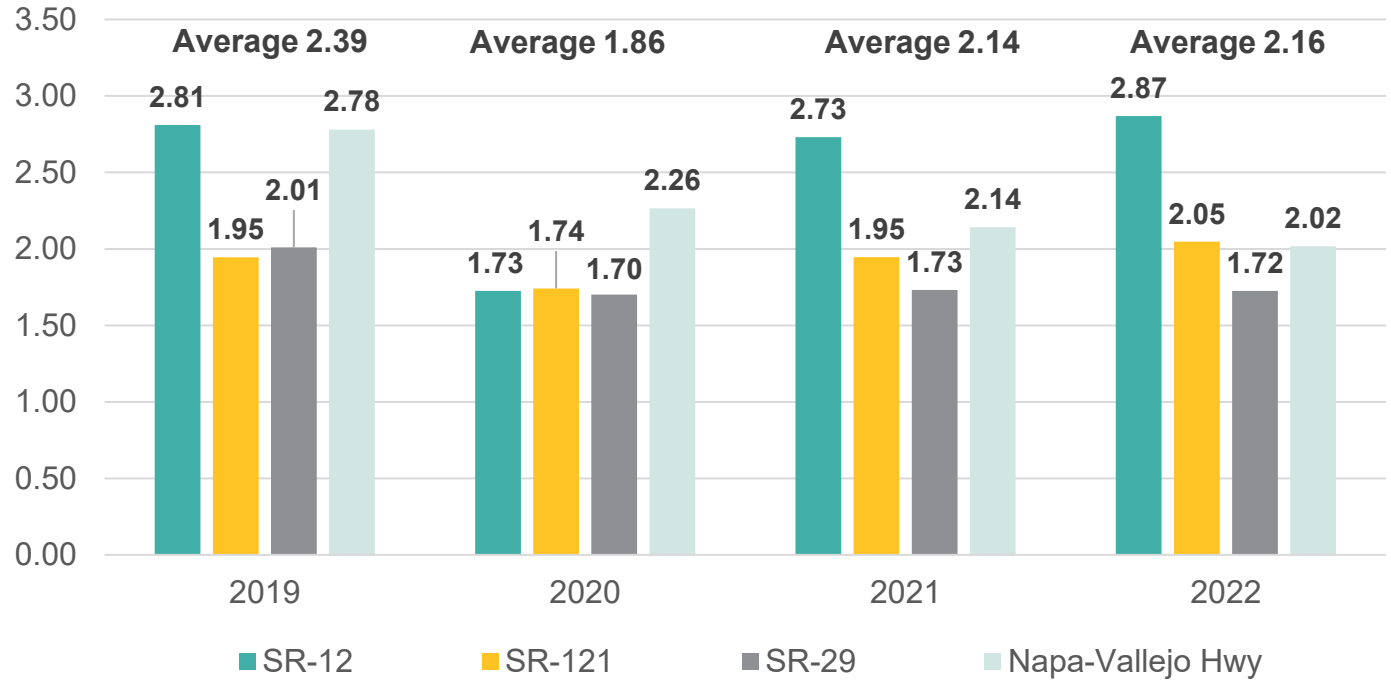
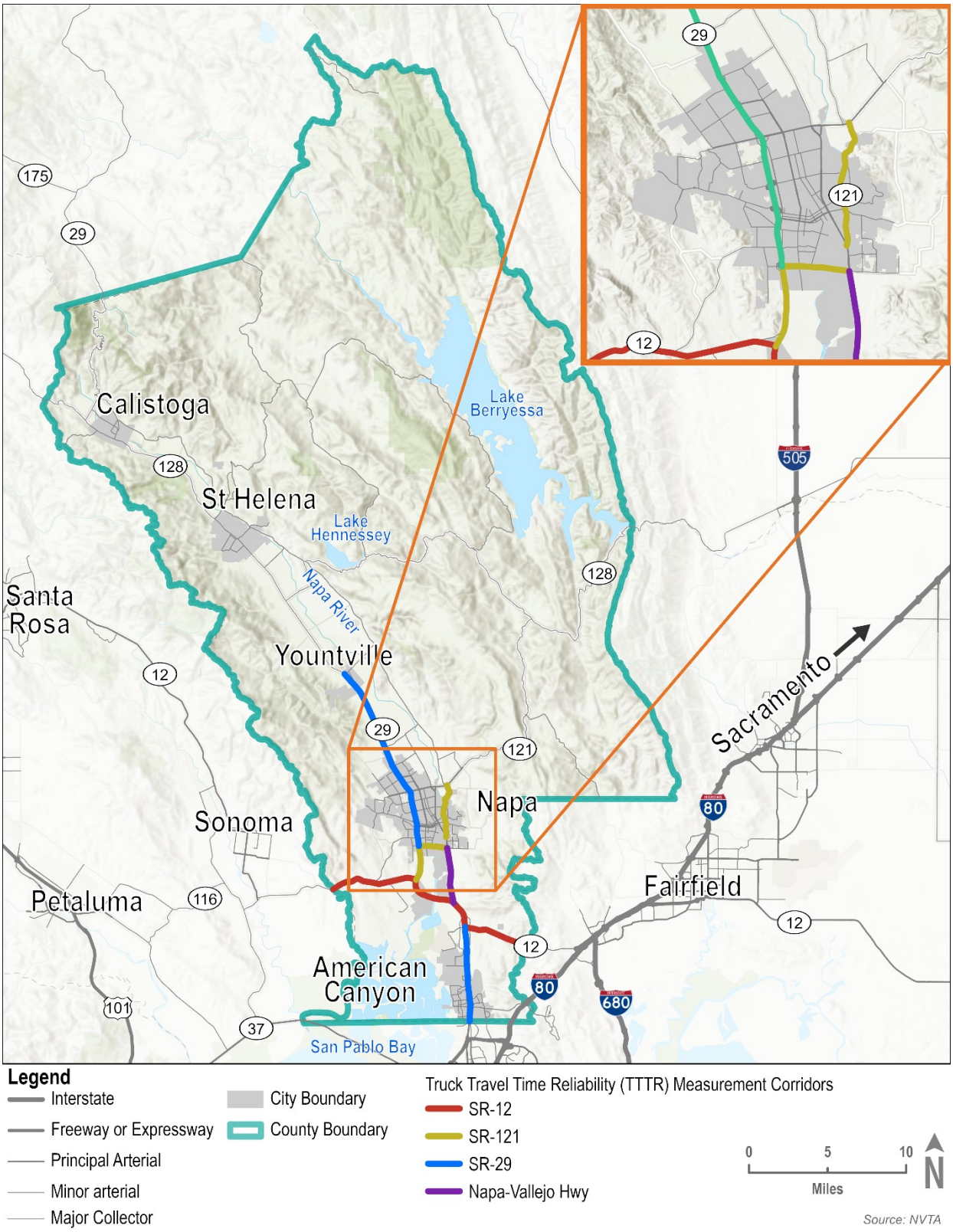


Figure 2-10: Study Corridors for Truck Travel Reliability (TTTR) Measurement



GOAL: ECONOMIC SUSTAINABILITY

MEASURE #2: NUMBER OF JOBS ACCESSIBLE BY TRANSIT WITHIN ONE HOUR DURING THE MORNING COMMUTE

Metric Not Met.

Baseline Performance Measurement:	Jobs accessibility by Vine Transit: American Canyon: 37,725 Calistoga: 8,831 Napa: 40,241 St. Helena: 19,397 Yountville: 29,521
Goal:	Economic Sustainability
Target:	Maintain or improve the baseline level of jobs accessibility by Vine Transit in American Canyon, Calistoga, Napa, St. Helena, and Yountville
Mid-Plan Review:	Jobs accessible by Vine Transit: American Canyon: 23,661 Calistoga: 8,911 Napa:45,938 St. Helena: 27,697 Yountville: 24,043

Key Data Sources CTP 2021:

- Isochrones of transit coverage centered at jurisdictions from www.remix.com for: 6:40 AM, 7:00 AM, and 7:40 AM
- Number of jobs shapefile from 2012-2016 Census Transportation Planning Products (CTPP); Table A202100 at TAZ level

Key Data Sources CTP Mid-Plan Review:

- Isochrones of transit coverage centered at jurisdictions from www.remix.com for: 6:40 AM, 7:00 AM, and 7:40 AM
- Number of jobs shapefile from Census OnTheMap Portal (2020)

Access to employment opportunities is also key to Napa Valley's economic sustainability. Number of Jobs Accessible by Transit Within One Hour During the Morning Commute is an important measure to ensure households have access to jobs. Note that this measure does not capture all the jobs that might be located along a transit route. It includes only jobs that can be reached from the stops since passengers can only alight at the bus stops. As shown in **Table 2-13** there was an increase in job accessibility from Calistoga, Napa, and St. Helena and a decrease in American Canyon and Yountville when comparing between the CTP 2021 and the Mid-Plan Review. **Table 2-13** also shows a data correction for St. Helena and includes accessible jobs located in the City of Napa during the CTP 2021 reporting period. **Figure 2-11** shows the transit coverage within 60 minutes of American Canyon, Calistoga, Napa, St. Helena, and Yountville. **Figure 2-12** through **Figure 2-16** illustrate the total number of jobs accessible within one hour during the morning commute by each NVTA member agency.

For Future Countywide Transportation Plans, it is recommended this metric change to select an hour for each jurisdiction within the peak morning commute hours of 6:00 AM to 9:00 AM, and base the hour selected for each jurisdiction off the most relevant transit schedule. This will result in each jurisdiction

having a slightly different hour start time but will be more realistic in measuring the morning commute for each individual community.

Table 2-13: Transit Coverage Within 60 Minutes of Napa County Jurisdictions

City	CTP 2021 2012-2016 Census Transportation Planning Products Data	CTP 2021 2021-2016 Census Transportation Planning Products Data Correction	Mid-Plan Review 2020 US Census OnTheMap Portal Data	Percent Change
American Canyon	37,725	37,725	23,661	-37%
Calistoga	8,831	8,831	8,911	+1%
Napa	40,241	40,241	45,938	+14%
St. Helena	8,475	**19,397**	27,697	+42%
Yountville	29,521	29,521	24,043	-19%

Not all member agencies within Napa County met the metric of remaining at or increasing above the baseline total jobs accessible by transit within one hour during the morning commute. American Canyon and Yountville both had a decrease in jobs accessibility of 37 percent and 19 percent respectively. The remaining three member agencies, Calistoga, Napa, and St. Helena all had an increase in jobs accessibility. St. Helena had a 42 percent increase in accessible jobs, which is the highest increase amongst all NVTA member agencies.

COVID-19 Impacts - Number of Jobs Accessible by Transit Within One Hour During the Morning Commute

It is anticipated the reduction in jobs accessible by transit within one hour by transit during the morning commute in American Canyon and Yountville can be correlated to the COVID-19 pandemic and general regional employment shifts, especially since the Mid-Plan Review data was from 2020 during the height of the pandemic. The COVID-19 pandemic resulted in a major downturn in employment on national, state, regional, and local scales. Since the COVID-19 pandemic had unique and profound implications on employment and travel patterns, it will be important to monitor this metric into the future to ascertain whether decreases in employment accessibility from American Canyon and Yountville via transit within an hour during the morning commute is an anomaly or a new normal that may require transit service adjustments to maximize employment accessibility.

Figure 2-11: Mid-Plan Review Transit Coverage Within One Hour During the Morning Commute

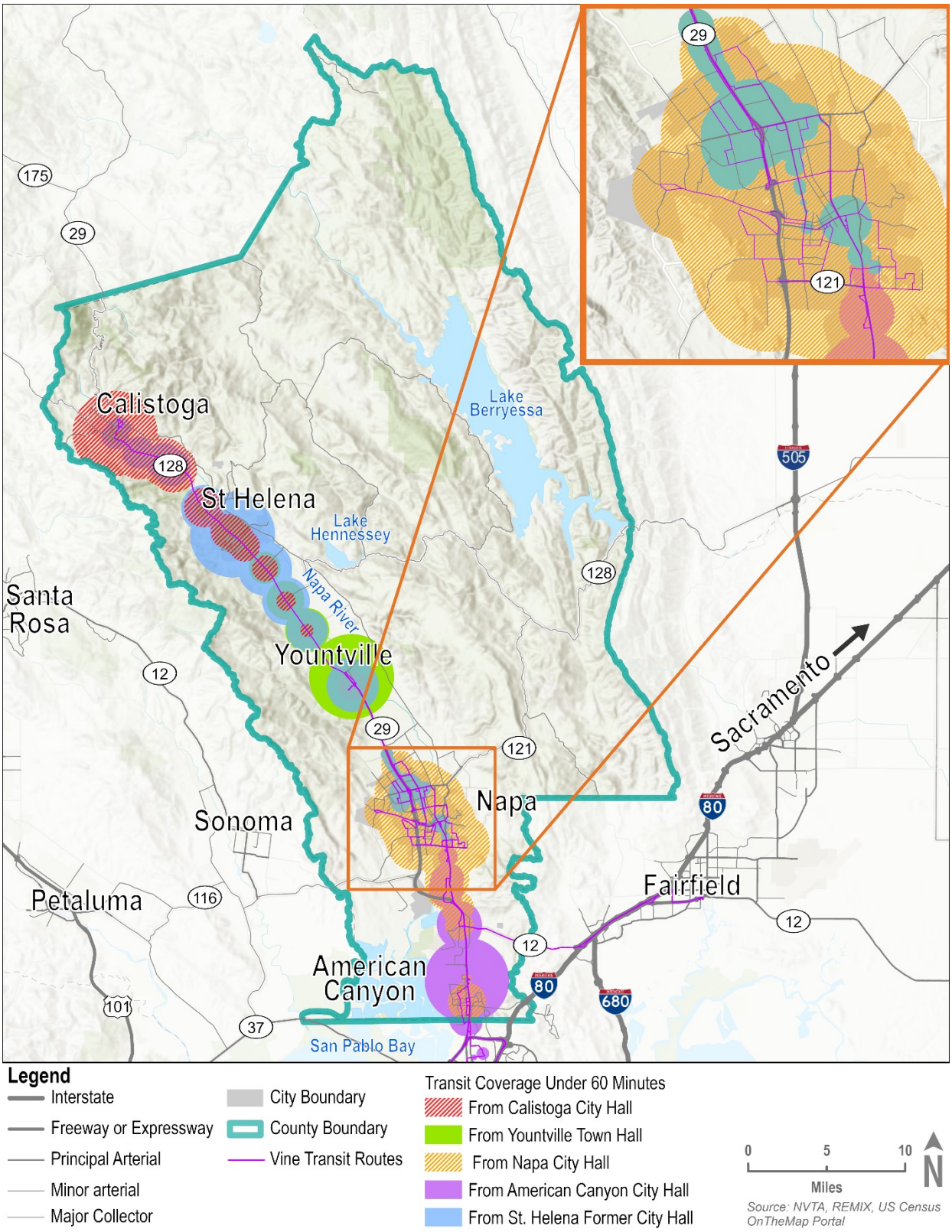


Figure 2-12: Mid-Plan Review Calistoga Number of Jobs Accessible by Transit Within One Hour During the Morning Commute

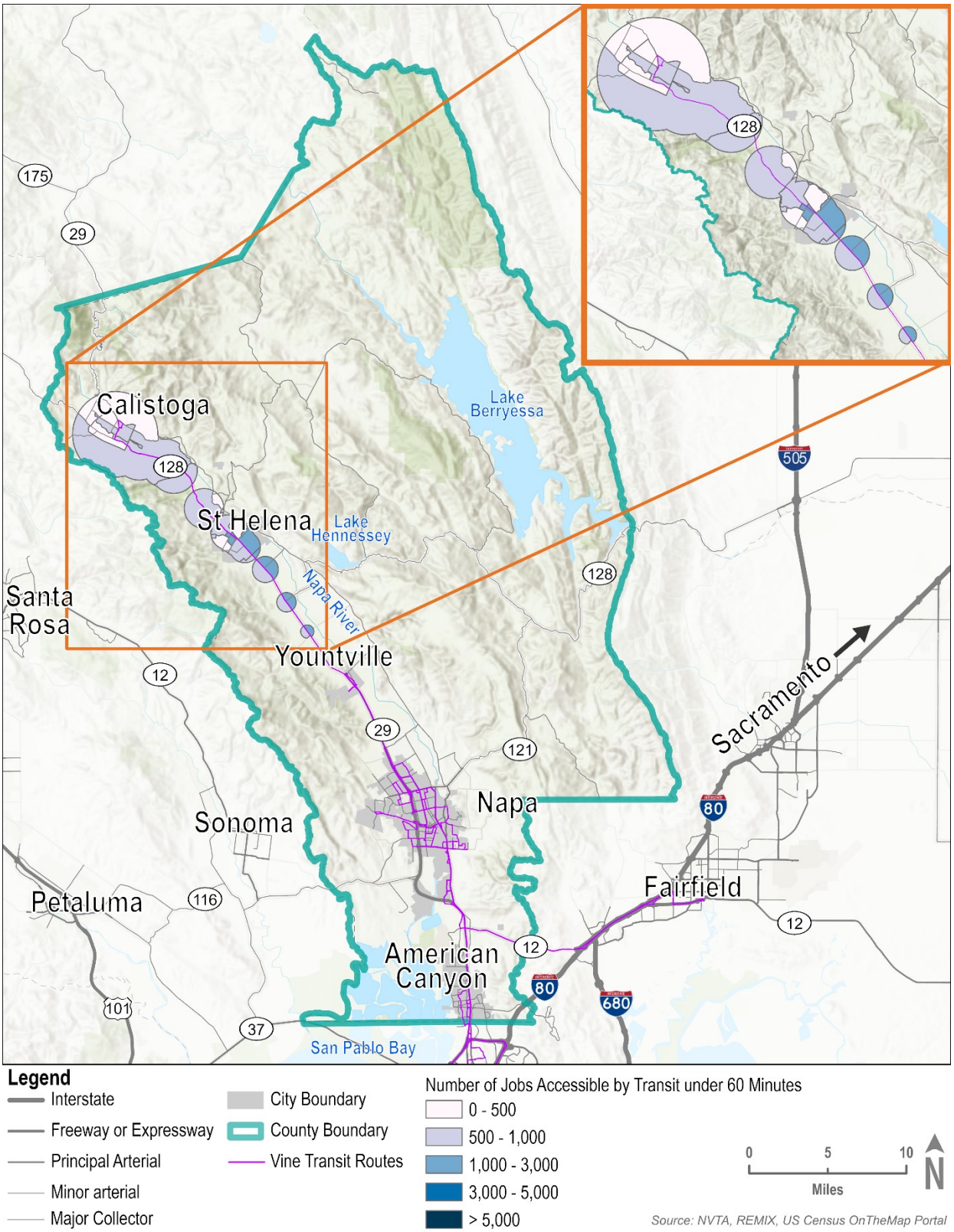


Figure 2-13: Mid-Plan Review St. Helena Number of Jobs Accessible by Transit Within One Hour During the Morning Commute

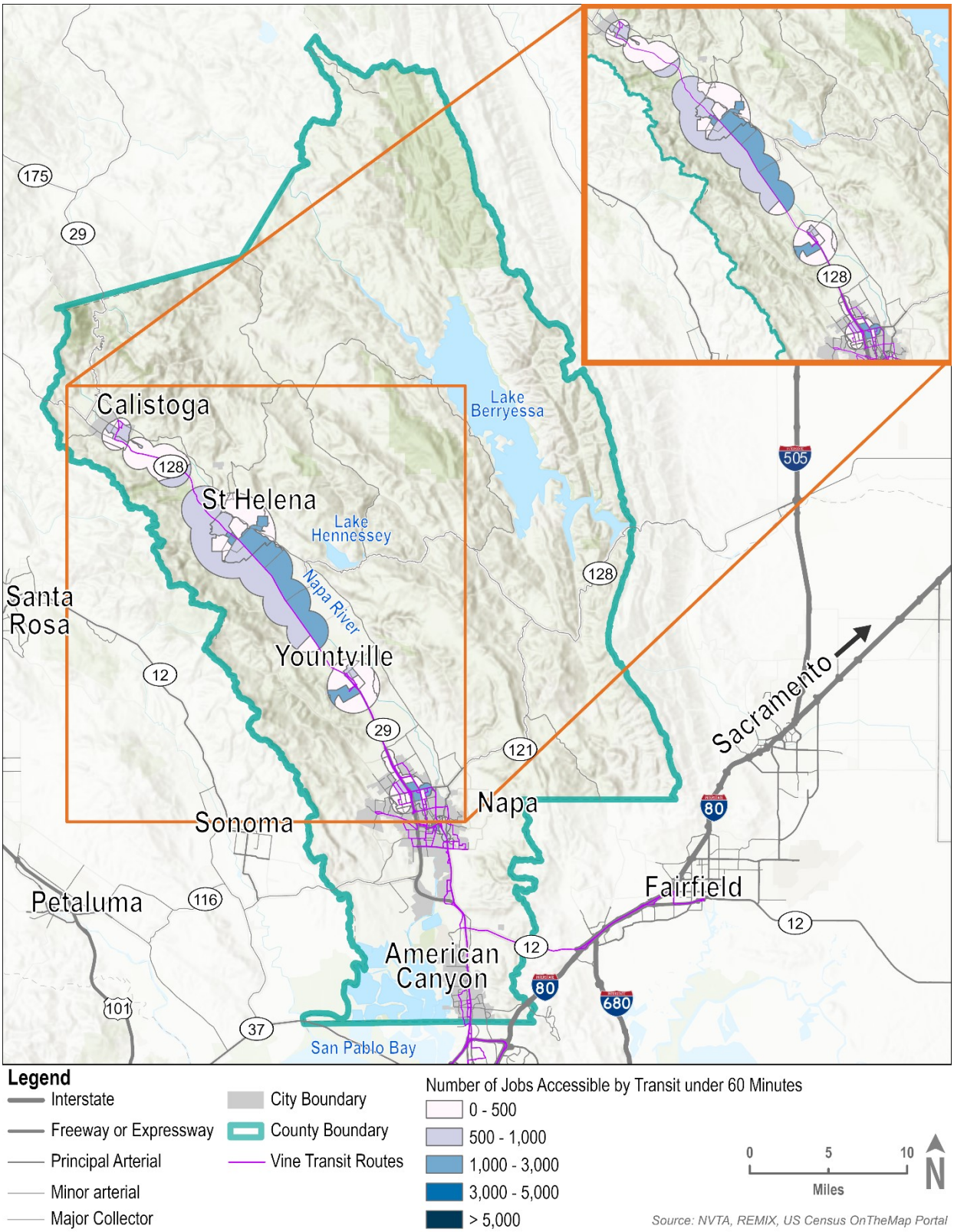


Figure 2-14: Mid-Plan Review Yountville Number of Jobs Accessible by Transit Within One Hour During the Morning Commute

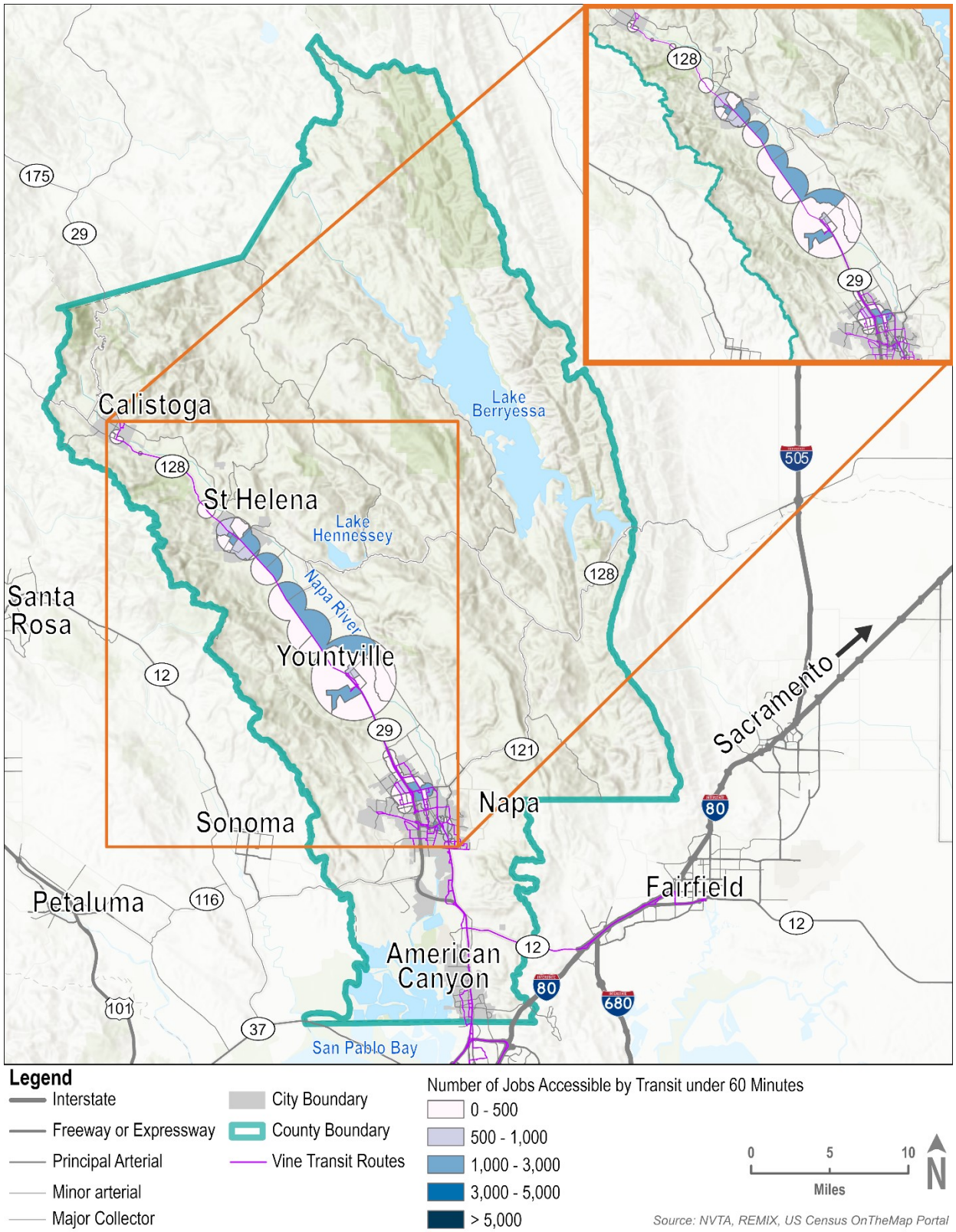


Figure 2-15: Mid-Plan Review Napa Number of Jobs Accessible by Transit Within One Hour During the Morning Commute

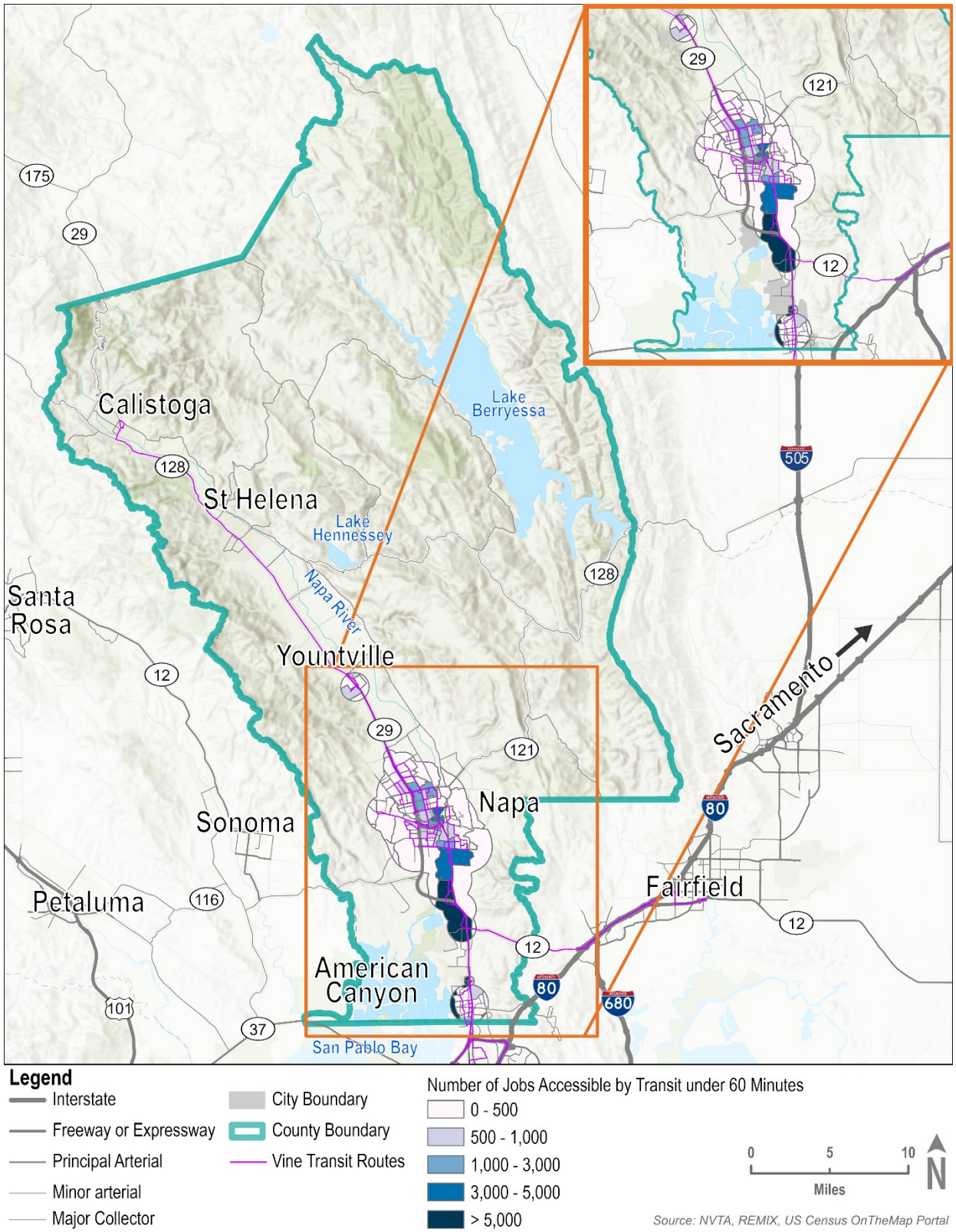
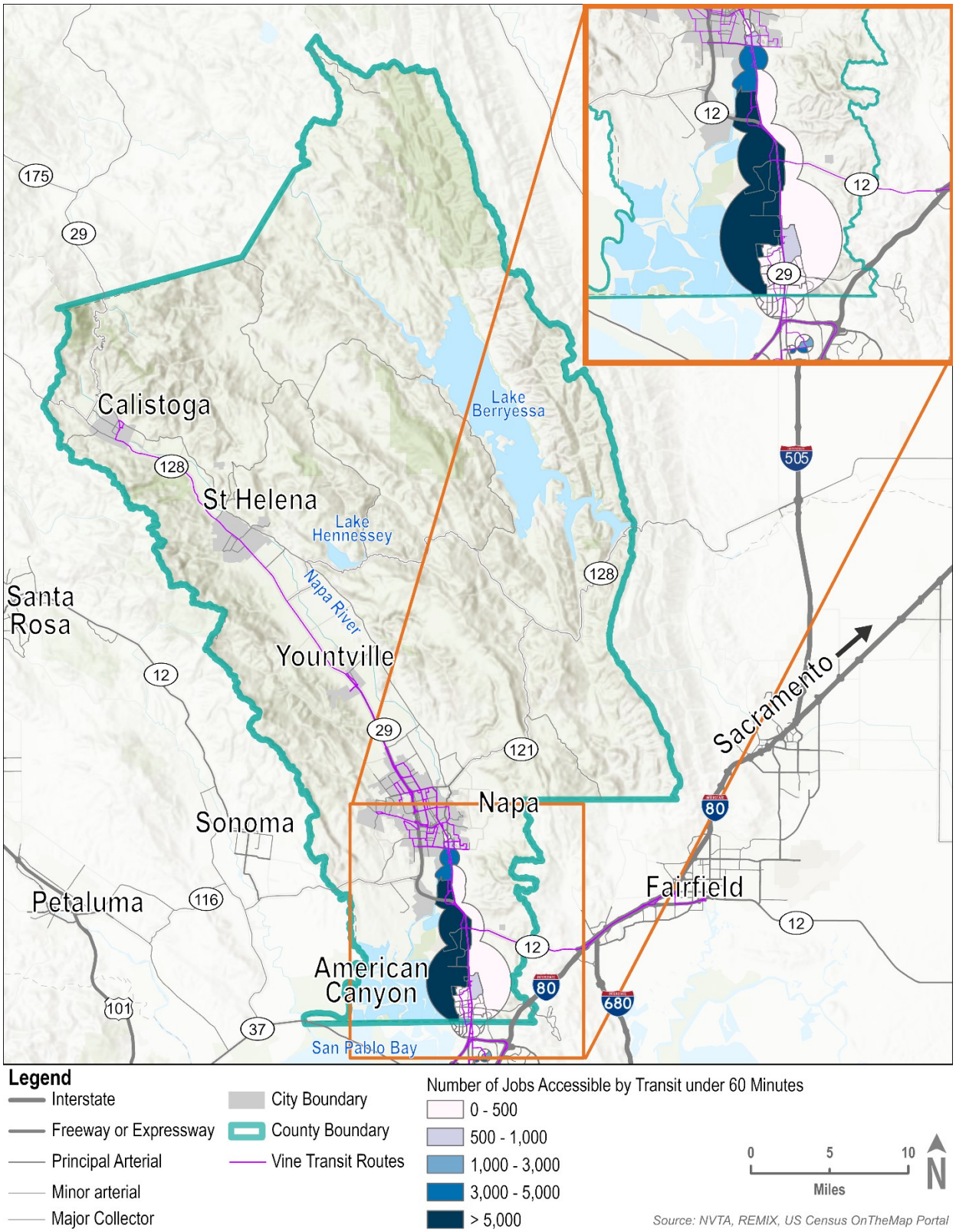


Figure 2-16: Mid-Plan Review American Canyon Number of Jobs Accessible by Transit Within One Hour During the Morning Commute



GOAL: SUSTAINABILITY

MEASURE #1: GREENHOUSE GAS EMISSIONS (GHG)

Metric Achieved.

Baseline Performance Measurement:	**1.5** Metric tons of GHG emissions per capita in Napa County in 2015
Goal:	Sustainability
Target:	Reduce GHG emissions by 19% per capita in Napa County from 2015 levels
Mid-Plan Review:	GHG emissions reduced 20% from 1.5 metric tons in 2015 to 1.2 metric tons in 2022

Key Data Sources CTP 2021:

- GHG emissions data for surface transportation from MTC's Vital Signs: https://www.vitalsigns.mtc.ca.gov/greenhouse-gas-emissions

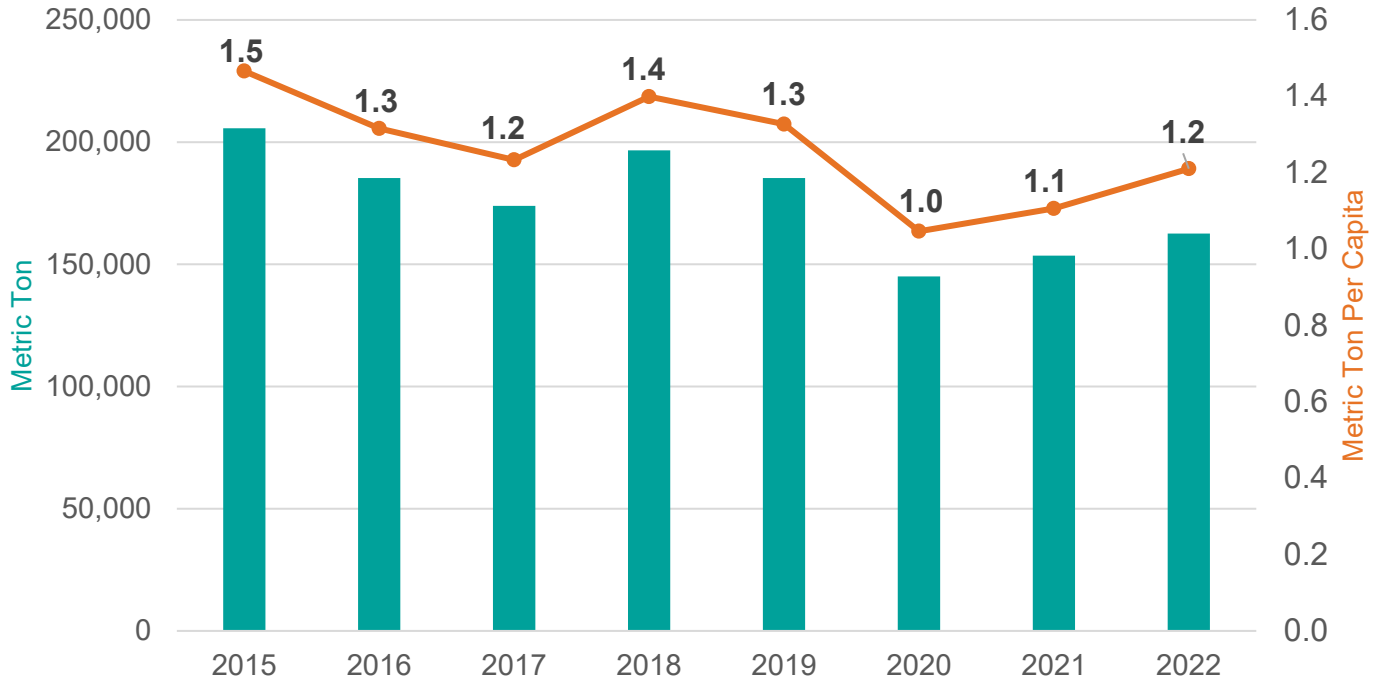
Key Data Sources CTP Mid-Plan Review:

- California Annual Retail Fuel Outlet Report Results (CEC-A15) (Gasoline and Diesel sales)
- American Community Survey (ACS) Five Year Estimates; Table B01001 (Sex by Age)

This performance measure captures GHG emissions from transportation sources and is calculated based on gallons of gasoline and diesel sales in Napa County. Consistent with Plan Bay Area 2040—the most recent MTC Regional Transportation Plan—the target is to reduce GHG emissions per capita from 2015 levels by 19 percent. As shown in **Figure 2-17** NVTA met this metric due to reducing GHG emissions from 1.5 metric tons to 1.2 metric tons, a 20 percent decrease.

Due to emissions data not being available from Vital Signs during this Mid-Plan Review, California Annual Retail Fuel Outlet Reports from the California Energy Commission were utilized to update performance. Utilization of this source is recommended for future CTP updates and Mid-Plan reviews.

Figure 2-17: Transportation-Related Greenhouse Gas Emissions Per Capita in Napa County (2015-2022)



COVID-19, Electric Vehicles, and Other influencing Factors – Greenhouse Gas Emissions

As noted in the VMT Metric, overall vehicle miles travelled in Napa County reduced from 17.3 miles per capita per day to 14.2, a 17 percent decrease. This reduction in vehicle miles travelled likely resulted in a reduction in gasoline and diesel sales that are baseline datasets for this metric. It is likely the overall number of vehicle miles traveled was reduced initially by the COVID-19 pandemic, reductions in employment, and increased incidences of remote work and telecommuting that are still occurring today. The reduction in greenhouse gasses may also be correlated to ever-increasing electric vehicle (EV) sales and usage that doesn't require the purchase of gasoline or diesel fuel. According to the California Energy Commission, in 2022, there were 1,123 light-duty Zero Emission Vehicles (ZEVs) sold in Napa County equating to 21 percent of all vehicle sales.[10] Throughout Napa County, local and state governments and businesses have been installing EV charging stations at a rapid rate, assisting with the EV transition and reducing greenhouse gasses. According to The California Energy Commission, in 2023, there are 400 Level 2 charging ports and 42 DC Fast charging ports totaling 442 EV charging ports within Napa County[11]. NVTA and member agencies will continue to look for opportunities to expand availability of EV charging infrastructure that will improve this metric and reduce greenhouse gas emissions into the future.

[10] New ZEV Sales in California. California Energy Commission, https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/new-zev-sales
[11] Electric Vehicle Chargers in California. California Energy Commission, https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/electric-vehicle

Finally, according to an Economics and Forensic Analytics presentation shared with the Napa City Council in September 2023, the City's hotel occupancy rate as of June 2023 is 63.2 percent which is an 11.9 percent decrease from occupancy rates experienced during 2022 and a 10.4 percent decrease from 2021.[12] This overall trend indicates softness in the tourism market in the post-pandemic era.

[12] Economic Development Dashboard. Napa, CA, www.cityofnapa.org/1172/Economic-Development-Dashboard.

GOAL: SUSTAINABILITY

MEASURE #2: VEHICLE MILES TRAVELED

Metric Achieved.

Baseline Performance Measurement:	Vehicle Miles Traveled: **17.3** Miles per capita
Goal:	Sustainability
Target:	**15%** reduction in vehicle miles traveled from baseline level
Mid-Plan Review: Vehicle Miles Traveled reduced to **14.2** per capita from **17.3** for a reduction of **17%**	
Key Data Sources CTP 2021: • Napa Valley Transportation Authority VMT Tool, 2021 **Key Data Sources CTP Mid-Plan Review:** • Napa Valley Transportation Authority VMT Tool, 2022	

The environmental sustainability of the transportation system is measured by Vehicle Miles Traveled (VMT) Per Capita. This metric aligns with energy consumption and the use of personal vehicles over more sustainable modes. The target is to reduce VMT per capita by 15 percent from baseline levels in accordance with state policy on climate change and GHG reduction. **Figure 2-18** shows the home-based VMT for Napa Valley residents during the CTP 2021 analysis period while **Figure 2-19** shows results from the Mid-Plan Review analysis period. **Table 2-14** shows an average of a 17.5 percent decrease between all Napa County jurisdictions with the Unincorporated Napa County area having the largest decrease at slightly over 20 percent. This metric is achieved by the jurisdictions having a collective decrease of over 15 percent in VMT between 2021 and the Mid-Plan Review.

Figure 2-18: CTP 2021 Home-Based Vehicle Miles Traveled Per Capita by Jurisdiction

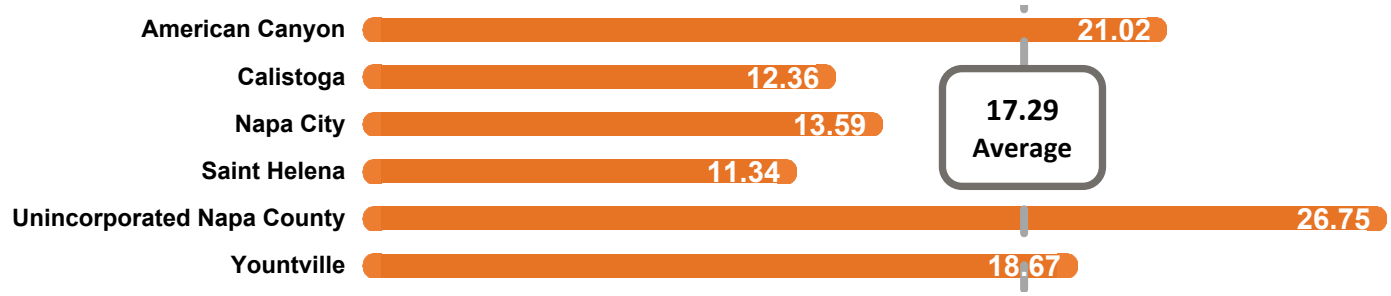


Figure 2-19: Mid-Plan Review Home-Based Vehicle Miles Traveled Per Capita by Jurisdiction

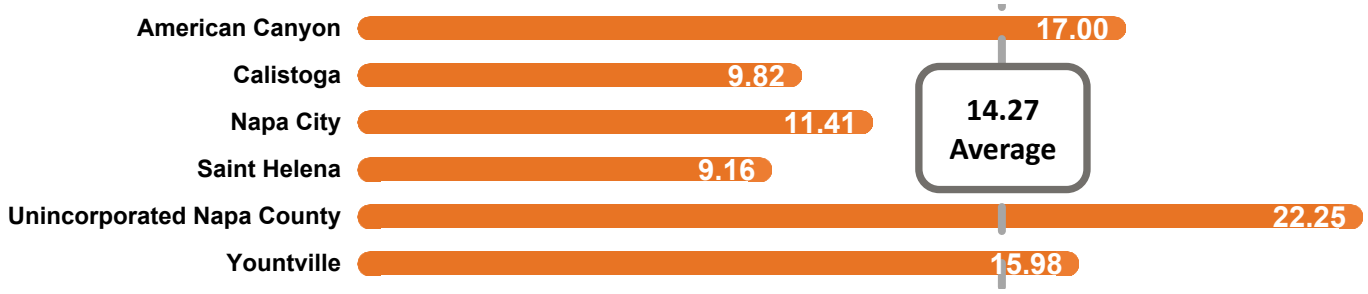


Table 2-14: Home-Based Vehicle Miles Traveled Per Capita by Jurisdiction Percent Change from CTP 2021 Adoption to Mid-Plan Review

Jurisdiction	CTP 2021	Mid-Plan Review	Percent Change
American Canyon	21.02	17.00	**-14.4%**
Calistoga	12.36	9.82	**-16.8%**
Napa City	13.59	11.41	**-19.2%**
St Helena	11.34	9.16	**-16.0%**
Unincorporated Napa County	26.75	22.25	**-20.5%**
Yountville	18.67	15.98	**-19.1%**
Average	**17.29**	**14.27**	**-17.5%**

COVID-19, Gas Prices and Inflation – Vehicle Miles Traveled

As the impacts of COVID-19 generally began to wane in 2021 with the roll out of vaccinations, the population was eager to travel and get outside their homes to experience the world and life again which likely led to a temporary uptick in travel during 2021. The uptick in travel may have been somewhat short-lived due to gas prices and inflation placing a strain on personal finances and the ability of the public to travel for discretionary purposes. According to the U.S. Energy Information Administration, the California statewide average price for a gallon of gas rose from $4.10 in 2021 to $5.41 in 2022.[13] This likely had a dampening effect on VMT due to increased strain on household finances.

In addition to rising gas prices, according to the U.S. Bureau of Labor Statistics, the United States and California experienced rapid inflation on consumer goods between 2021 and 2022 with an average inflation rate of 4.7 percent in 2021 with a major uptick in the latter half of the year, and a further increase in inflation to 8 percent for 2022.[14] This overall increase in consumer prices likely placed downward pressure on VMT due to the reduced ability of households to spend dwindling discretionary income on non-essential travel.

To continue realizing the observed positive VMT reduction trend, NVTA and member agencies will continue prioritizing delivering quality transit service, biking and walking infrastructure, and encourage alternative mode usage via the V-Commute Travel Demand Management Program.

[13]California All Grades All Formulations Retail Gasoline Prices (Dollar per Gallon), www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emm_epm0_pte_sca_dpg&f=a
[14] Charts Related to the Latest Consumer Price Index, U.S. Bureau of Labor Statistics, www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm

GOAL: SUSTAINABILITY

MEASURE #3: SHARE OF ACTIVE TRANSPORTATION FOR COMMUTE TRIPS

Metric Not Met.

Baseline Performance Measurement:	Percentage of work trips made by bicycling or walking for Napa County residents: **5%**
Goal:	Sustainability
Target:	Increase the percentage of work trips made by bicycling or walking for Napa County residents to **10%** by 2045
Mid-Plan Review:	Percentage of work trips made by bicycling or walking for Napa County residents reduced from **5%** to **3.9%**
Key Data Sources CTP 2021: • American Community Survey 5-year estimates (2014-2018): Commuting Characteristics by Sex; Table S0801 **Key Data Sources CTP Mid-Plan Review:** • American Community Survey 5-year estimates (2017-2021): Commuting Characteristics by Sex; Table S0801	

Active modes of transportation support a healthy lifestyle in communities and are typically environmentally friendly in efforts to reduce vehicle traffic and dependence. The percentage of work trips made by bicycling or walking for Napa County residents is an indicator of overall active transportation use. **Figure 2-20** (CTP 2021) and **Figure 2-21** (Mid-Plan Review) examine the baseline percentage of work trips that Napa County residents made by bicycling or walking. The target is to increase the active transportation commute mode share to 10 percent.

Figure 2-20: CTP 2021 Active Transportation for Commute Trips ACS 2014-2018

Figure 2-21: Mid-Plan Review Active Transportation for Commute Trips ACS 2017-2021

Although the total number of commute trips via all modes increased by 404 total trips or 0.6 percent, there was a 1.1 percent decrease in walking and biking commute trips. It is difficult to correlate this decrease to COVID since the overall number of work trips for the 2017-2021 period increased. The reduction in trips could be correlated to a variety of factors including inclement weather or greater geographic physical dispersion of jobs within the region, making it more difficult to walk or bike to work. To improve this metric, it will be important for NVTA and member agencies to continue delivering on-street and off-street bike facilities and amenities, apply traffic calming techniques where feasible, improve intersection safety, mitigate sidewalk gaps and other features. NVTA will continue on-going efforts to increase enrollment in NVTA's V-Commute Transportation Demand Management Program that encourages people to walk and bike as an alternative means of transportation.

For future Countywide Transportation Plans, NVTA may want to consider changing the metric to include all trips, not just work trips.

GOAL: SUSTAINABILITY

MEASURE #4: TRANSIT RIDERSHIP BY ANNUAL BOARDINGS AND ALIGHTINGS

Metric Not Met.

Baseline Performance Measurement:	Annual Transit Ridership (Fiscal Year 2018-2019): **1,039,462**
Goal:	Sustainability
Target:	Maintain or increase from baseline annual ridership
Mid-Plan Review:	Annual ridership reduced from **1,039,462** to **413,166**

Key Data Sources CTP 2021:

- Vine Transit Ridership data (Fiscal Year 2018-2019)

Key Data Sources CTP Mid-Plan Review:

- Vine Transit Ridership data (Fiscal Year 2022-2023)

Improving transit infrastructure and service can lead to mode shift from cars to buses, thereby reducing congestion on roads. Transit is a more environmentally sustainable transportation mode than private vehicle use, especially when considering the planned electrification of the bus fleet. **Table 2-15** shows the percent change between the 2018-2019 fiscal year and the 2022-2023 fiscal year while **Figure 2-22** illustrates the fiscal year ridership data by service type. The target is to maintain or increase transit ridership from baseline levels.

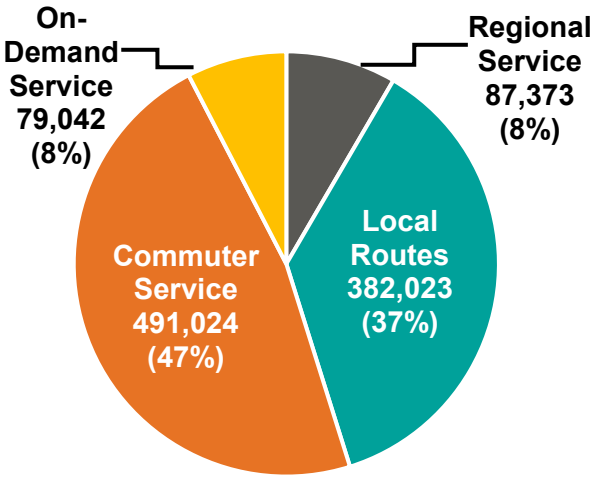
Table 2-15: Napa County Vine Transit Annual Ridership

Transit Service	Fiscal Year 2018-2019	Fiscal Year 2022-2023	Percent Change
Regional Service (21 and 29)	87,373	48,646	**-44.32%**
Local Routes (City of Napa Local and On-Demand Routes)	382,023	121,367	**-68.23%**
Commuter Service (10, 11, 11X)	491,024	259,983	**-47.05%**
On-Demand*	79,042	44,659	**-43.50%**
Total	**1,039,462**	**474,655**	**-54.34%**

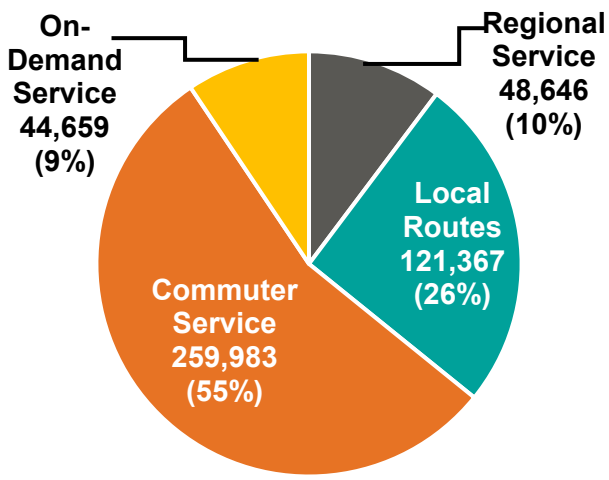
**Calistoga, St. Helena, Yountville, and American Canyon Shuttles*

Figure 2-22: Napa County Transit Ridership by Annual Boardings and Alightings

CTP 2021 Total: **1,039,462**



Mid-Plan Review: **474,655**



COVID-19 Impacts – Transit Ridership by Annual Boardings and Alightings

Transit ridership was impacted by the COVID-19 pandemic and NVTA continues to make strides to improve ridership across all routes. Local fixed routes were reduced to primarily offer on-demand service between March 2020 and August 2021. During this period, ridership was at its lowest due to the limited capacity of on-demand transit service, alongside community concerns about the spread of COVID-19.

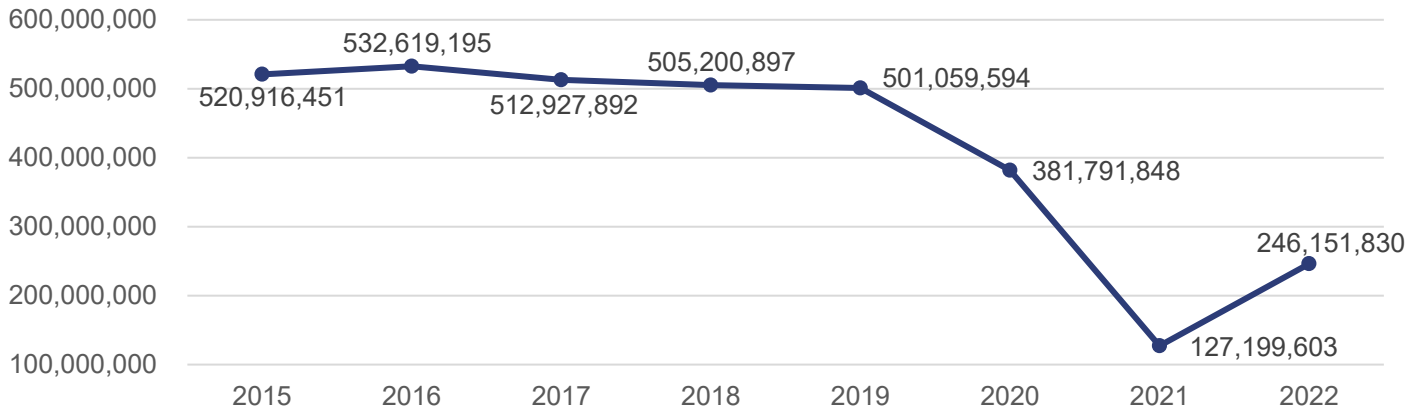
By the start of 2022 a limited number of fixed routes returned including transit routes N, S, E and W. This was less than the eight fixed routes in 2018-19. During January to March 2022, ridership was 89,641 across all fixed routes. By July to September of 2022 ridership climbed to 112,332, an increase of 22,691 passengers. Ridership increased across all routes in 2022 by 71 percent. This trend demonstrates the Vine is slowly recovering.

Transit ridership continues to slowly bounce back, as transit agencies across the Bay Area work to adjust service to changing regional travel demands. Vine Transit increased the number of local fixed routes in operation from 4 to 6 on August 13, 2023, in an effort to return to normal pre-pandemic service patterns, and as a result, has seen increased ridership across all routes. NVTA expects ridership to continue to improve over time based on post-pandemic trends and will continue to monitor route performance and make adjustments as necessary to ensure it is meeting the needs of the community.

The Bay Area has seen transit ridership transition between periods of growth and decline, which is usually connected with the state of the regional economy. Similar to Napa County, during COVID-19, Bay Area public transportation ridership dropped significantly. As shown in **Figure 2-23** there is a 94 percent increase in public transportation weekday boardings from roughly 127 million in 2021 to 246 million in 2022. Even though there was a significant increase in ridership from 2021 to 2022, the

levels remain well below, nearly 50 percent of 2019 total boardings (1,670,199) that were seen prior to the pandemic.[15]

Figure 2-23: Bay Area Annual Boardings



Source: Vital Signs Bay Area Transit Ridership

[15] Vital Signs Bay Area Transit Ridership. https://vitalsigns.mtc.ca.gov/indicators/transit-ridership

GOAL: MAINTENANCE AND PRESERVATION

MEASURE #1: MILES BETWEEN BUS ROAD CALLS (BREAKDOWNS)

Metric Not Met.

Baseline Performance Measurement:	Average miles between road calls (2015-2018): **42,750**
Goal:	Maintain and Preservation
Target:	Maintain or improve the average number of miles between road calls
Mid-Plan Review:	Average miles between road calls (2019-2022) decreased from **42,750** to **38,873**

Key Data Sources CTP 2021:

- Miles between road calls data from National Transit Database (NTD) (2015-2018)

Key Data Sources CTP Mid-Plan Review:

- Miles between road calls data from National Transit Database (NTD) (2019-2022)

Miles between road calls is a bus maintenance performance indicator that measures the miles between mechanical failures of a public transit vehicle used during revenue service. **Figure 2-24** and **Figure 2-25** examine the number of bus breakdowns between 2015 – 2018 and 2019 – 2022 respectively. Road calls for bus breakdowns may cause a delay in service, and even lead to removing the vehicle from service until repairs are made. This performance measure reflects the maintenance and preservation of the bus fleet and the more miles between road calls, the better. This is an indicator of adequate investment in transit service.

Between the time of the CTP 2021 update and the Mid-Plan Review, NVTA experienced a 9.07 percent decrease in the four-year average miles between road calls. NVTA's transit fleet continues to age and with age comes more mechanical issues. The Federal Transit Administration assigns a useful life of twelve years (12) to heavy-duty vehicles and a useful life of seven (7) years to all medium-duty vehicles. This means that ideally vehicles would be retired after this point as they become less reliable. At the end of 2022, NVTA has 24 of its 67 vehicles past their useful life (35.5 percent). When transit vehicles break down in the field, NVTA and Transdev staff work to immediately send out a relief bus to finish the journey, ensuring passengers can make it to their destinations with minimal delay.

NVTA has been working to address the aging fleet through the purchase of new transit vehicles, including six (6) used 2016 CNG transit buses; eight (8) new electric Gillig transit buses; and four (4) new paratransit vehicles in 2023 and 2024. Due to electric buses requiring a longer time to manufacture compared to buses that utilize other fuel types, it is sometimes necessary for NVTA to purchase used CNG buses for continuation of transit service until new electric buses are received. As NVTA receives these new vehicles, buses that have outlived their useful life will be retired. As of March 2024, NVTA moved to its new bus maintenance facility. The increased access to additional battery electric vehicle (BEV) chargers enables NVTA to utilize the full fleet of electric buses. The current maintenance facility only has one BEV charger with two ports, limiting NVTA's ability to run electric buses more often. Once new vehicles are in service, miles between road calls will increase leading to improved reliability, sustainability and overall cost of maintenance, resulting in an improvement to the Miles Between Bus Road Calls metric.

Figure 2-24: CTP 2021 2015 – 2018 Average Number of Miles Between Bus Calls

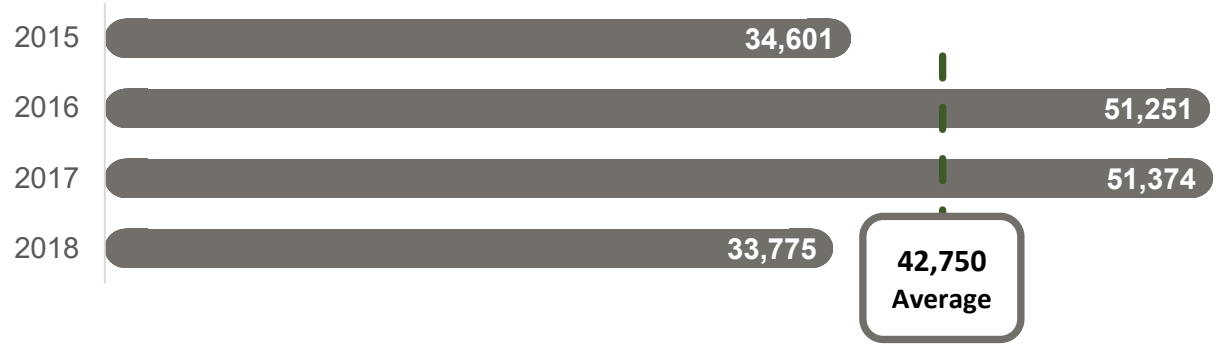


Figure 2-25: Mid-Plan Review 2019 – 2022 Average Number of Miles Between Bus Calls

GOAL: MAINTENANCE AND PRESERVATION

MEASURE #2: PAVEMENT CONDITION INDEX

Metric Not Met.

Baseline Performance Measurement:	PCI Score for Napa County: **58**
Goal:	Maintenance and Preservation
Target:	PCI Score for Napa County: **80**
Mid-Plan Review:	PCI Score for Napa County reduced from **58** to **54**

Key Data Sources CTP 2021:

- Pavement Condition Index at street level and at county level from MTC's Vital Signs (2018)

Key Data Sources CTP Mid-Plan Review:

- Pavement Condition Index at street level and at county level from MTC's StreetSaver (2022)

The Pavement Condition Index (PCI) is a numerical index between 0 to 100, used to indicate the general condition of a pavement section, with 0 being the worst possible condition and 100 being the best. This performance measure monitors the condition of road surfaces, identifies maintenance and rehabilitation needs, and demonstrates when road maintenance is needed. The target for this metric was set to align with Senate Bill 1 funding rules – jurisdictions with an average PCI of 80 gain the flexibility to direct certain funds to projects other than repaving. **Figure 2-26** shows the percentage of roadway segments in Napa County in each condition category. **Figure 2-27** shows a 6.9 percent decrease in PCI from 58 to 54 between 2018 and 2022. **Figure 2-28** maps the condition of each roadway segment within Napa County.

Figure 2-26: Napa County Pavement Condition Index by Category

Napa County Pavement Index Condition
CTP 2021

Napa County Pavement Index Condition
Mid-Plan Reveiw

Failed / Poor (0-49)
At Risk (50-59)
Fair / Good (60-79)
Very Good / Excellent (80-100)

Figure 2-27: Napa County Pavement Index Condition Between 2018 CTP 2021 Data and 2022 Mid-Plan Review Data

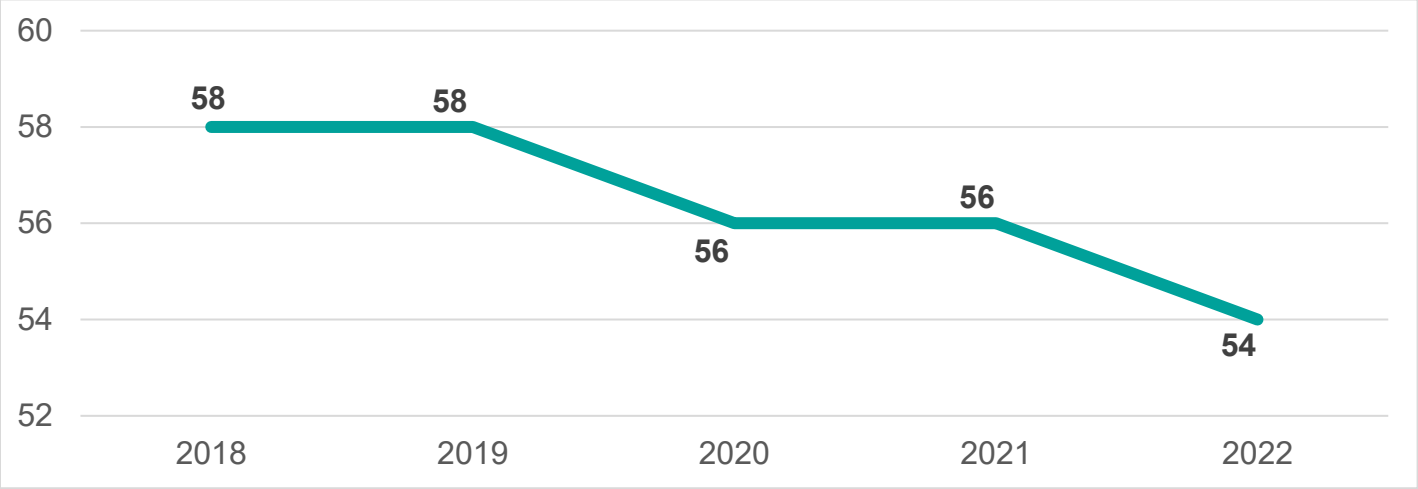
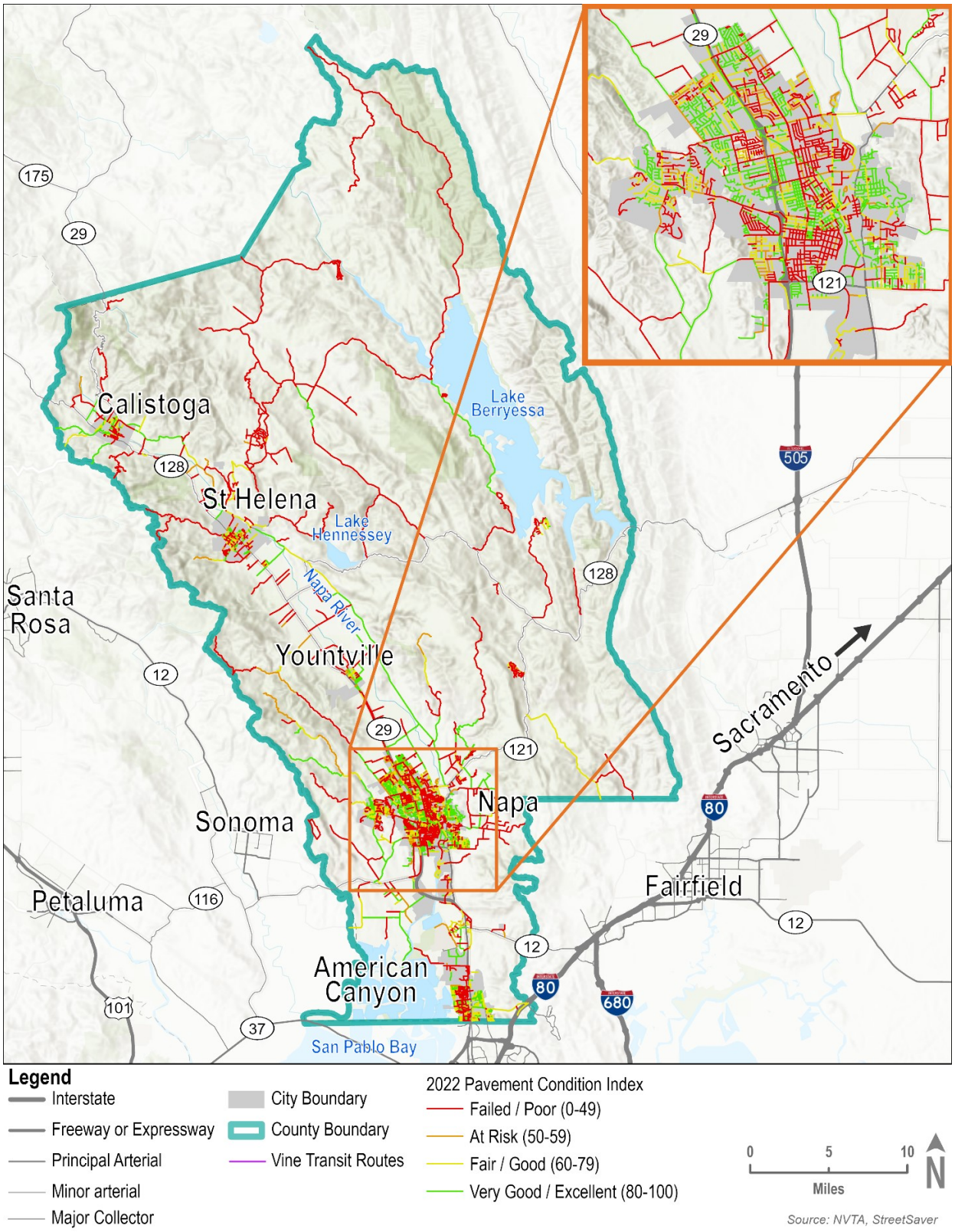


Figure 2-28: Mid-Plan Review 2022 Pavement Condition Index



Measure T

Measure T Is a 1/2 cent sales tax expected to generate roughly $500 million over a 25-year period. Funds generated under Measure T are for the reconstruction and rehabilitation of local streets and roads and related transportation improvements such as sidewalks, ADA ramps, curbs, and gutters.

Napa County, the Town of Yountville, and the Cities of Napa, American Canyon, St. Helena, and Calistoga received the first Measure T revenue disbursement in January 2019.

Measure T COVID-19 Impacts and Other Factors

Over the past several years fires and inclement weather have damaged much of Napa County's road infrastructure. Years of deferred maintenance and not enough revenue have caused Napa's roads to diminish despite the influx of Measure T revenues. FY 2019-20 revenues were projected to be $19.8 million, but revenues came in 6 percent lower than projected at roughly $18.6 million. In addition, many jurisdictions have competing needs including curb, gutter and sidewalks that Measure T funds are used for but are not accurately accounted in the StreetSaver program or pavement condition score. It is estimated that the City of Napa spends 25 percent of road funds on sidewalk construction and non-asphalt facilities, demonstrating the many competing priorities for road funds. NVTA is proposing to reform Measure T in the November 2024 election to allow for bonding against future sales tax revenue. This will allow jurisdictions to bring money forward and make significant progress towards the CTP 2021 goal of 80. Between FY 18-19 and FY 23-24, 160 projects have been delivered totaling a $96 million regional investment in infrastructure preservation projects equating to 65.44 miles of pavement and rehabilitation treatments on the countywide system that consists of 927 road miles. This equates to roughly $16 million annually spent on Napa County roads and multimodal infrastructure preservation projects. In addition to pavement rehabilitation, Measure T also maintained or installed 4.54 miles of sidewalks, installed or repaired 357 curb ramps, and striped 9.31 miles of bike lanes.

Table 2-16: Fiscal Year 2018-2019 through Fiscal Year 2023-2024 Measure T Funding Allocations by NVTA Member Agencies

Jurisdiction	FY 18-19 Number of Projects	FY 18-19 Expenditures	FY 19-20 Number of Projects	FY 19-20 Expenditures	FY 20-21 Number of Projects	FY 20-21 Expenditures	FY 21-22 Number of Projects	FY 21-22 Expenditures	FY 22- 23 Number of Projects	FY 22-23 Expenditures	FY 23-24 Number of Projects	FY 23-24 Expenditures	Miles of Pavement Rehab	Miles of Sidewalk	Curb Ramps	Miles of Class II or III Bike Lanes
American Canyon	3	$713,367	0	$0	2	$1,143,254	0	$0	9	$1,089,060	2	2,467,466	3.16	0.42	77	1.31
Calistoga	3	$243,354	0	$0	2	$153,621	0	$0	3	$590,512	0	$0	2.32	0.79	47	0
City of Napa	7	$15,154,970	5	$8,879,000	1	$1,485,818	7	$11,800,000	2	$1,150,000	0	$0	4.14	1.9	123	2.01
County of Napa	21	$11,007,545	7	$10,766,287	3	$5,936,930	13	$10,300,070	6	$2,158,696	2	$2,953,492	47.10	1.11	20	5.99
St. Helena	35	$3,170,836	2	$265,140	0	$0	0	$0	2	$1,349,981	0	$0	5.49	0.22	68	0
Yountville	2	$464,898	4	$578,676	10	$1,049,325	0	$0	5	$332,686	2	$738,532	3.23	0.1	22	0
Annual Totals	**71**	**$30,754,970**	**18**	**$20,489,103**	**18**	**$9,768,948**	**20**	**$22,100,070**	**27**	**$6,670,935**	**6**	**$6,159,490**	**65.44**	**4.54**	**357**	**9.31**
Total FY 18-19 to FY 23-24 Expenditures	**$95,943,516**															

Source: Napa Valley Transportation Authority Measure T Funding

Bay Area PCI Comparison

Overall, pavement conditions of the Bay Area's 44,000 lane miles of local streets and roads are described as "fair" with a typical stretch of roadway showing serious wear and likely to require rehabilitation soon. According to the Metropolitan Transportation Commission (MTC), the region's PCI is at 67 out of a maximum possible 100 points, as computed on a three-year moving average basis. The Bay Area score of 67 is significantly higher than the Napa County PCI of 54 in 2022.[16] The Bay Area score has stayed steady at 67 for 7 consecutive years, underscoring the continuing challenges faced by city and county public works departments. Napa County roadway PCI can be described as "at risk." PCI scores of 90 or higher are considered "excellent." These are newly built or resurfaced streets that show little or no distress. Pavement with a PCI score in the 80 to 89 range is considered "very good" and shows only slight or moderate distress, requiring primarily preventative maintenance. The "good" category ranges from 70 to 79, while streets with PCI scores in in the "fair" 60-69 range are becoming worn to the point where rehabilitation may be needed to prevent rapid deterioration. Because major repairs cost 5 to 10 times more than routine maintenance, these streets are at an especially critical stage. Roadways with PCI scores of 50 to 59 are deemed "at-risk," while those with PCI scores of 25 to 49 are considered "poor." These roads require major rehabilitation or reconstruction. Pavement with a PCI below 25 is considered "failed."

For a future Countywide Transportation Plan, it is recommended that NVTA adopt a revised goal of PCI in the "good" category range which many jurisdictions would be able to meet if the Measure T sales tax reform is approved by the voters in November 2024.

[16] Street Pavement Condition, Vital Signs – SF Bay Area. https://vitalsigns.mtc.ca.gov/indicators/street-pavement-condition

3 CIP

NVTA COMPLETED AND PROGRAMMED PROJECTS PERFORMANCE METRIC CORRELATION

Table 3-1 shows the correlation of all NVTA completed and programmed projects to CTP performance metrics. This table is intended to highlight how all projects have or will positively impact CTP performance metrics, serving as a baseline for consideration when prioritizing and programming future NVTA regional investments. **Table 3-2** highlights all funding secured and unfunded needs associated with completed and programmed NVTA regional investments including an overall synopsis of the number of performance metrics that have benefitted or will benefit from each project.

Table 3-1: NVTA Regional Completed and Programmed Projects CTP Performance Metrics Relevance

Project Details			Countywide Transportation Plan Performance Metrics													
			Equity	Safety	Congestion Relief				Economic Sustainability		Sustainability				Maintenance and Preservation	
Agency	Project	Description	Number of Households below the County Median Income that are within a Quarter of a Mile of Transit*	Number of Severe Injury and Fatal Collisions*	Peak Period Delay Index	Average Weekday Person Hours of Delay on Napa Roadways*	On-Time Bus Performance Weighted by Ridership*	Number of Users in NVTA's Transportation Demand Management Program	Reliability of Truck Travel Times	Number of Jobs Accessible by Transit Within One Hours During the Morning Commute*	Greenhouse Gas Emissions	Vehicle Miles Traveled	Share of Active Transportation for Commute Trips*	Transit Ridership by Annual Boardings and Alightings*	Miles Between Bus Road Calls (Breakdowns)*	Pavement Condition Index*
NVTA	Vine Maintenance Facility	Build new 6-bay maintenance facility in Napa County to support the Vine transit System, replacing 50-year-old obsolete facility. The project includes modern bus wash and electric fueling infrastructure.	x		x	x	x		x	x	x	x		x	x	
NVTA	Imola Park and Ride and Express Bus Stop Improvement	The Imola Park and Ride is located adjacent to SR 29 and is a state-owned facility. The project includes a complete rehabilitation of the park and ride to improve safety and transit operations and adds pedestrian access to two new SR 29 on highway transit passenger facilities and related pedestrian facilities.	x		x	x	x		x	x	x	x	x	x		
American Canyon	Green Island Industrial Road and Complete Street Enhancement Project	Reconstruct and widen Green Island Road in American Canyon. This is a major industrial road serving one of Napa Valley's growing industrial areas adjacent to SR 29. The project includes constructing a class 1 commuter facility. (This project is in a Priority Production Area).			x	x			x				x			x
St. Helena	St. Helena Downtown Pedestrian Improvement Project (SR 29)	The St. Helena Downtown Pedestrian Improvement project on SR 29/St. Helena (Main Street) upgrades and replaces sidewalks on both sides of State Route 29. The project also includes safety upgrades including seventeen curb ramps, bulb-outs, crosswalk enhancements including crosswalk striping/markings. The project also includes landscape improvements, landscape irrigation and street furnishings.		x						x	x	x	x	x		
NVTA	Soscol Junction (SR 29/SR 221 Interchange)	Construct interchange at SR 29/SR 221 in Napa County. Replaces signaled intersection with an overpass on SR 29 and double roundabouts underneath the superstructure to allow multi-modal turning operations in all directions. (This project is adjacent to a Priority Production Area)		x	x	x	x		x	x	x					

Project Details			Countywide Transportation Plan Performance Metrics													
			Equity	Safety	Congestion Relief				Economic Sustainability		Sustainability				Maintenance and Preservation	
Agency	Project	Description	Number of Households below the County Median Income that are within a Quarter of a Mile of Transit*	Number of Severe Injury and Fatal Collisions*	Peak Period Delay Index	Average Weekday Person Hours of Delay on Napa Roadways*	On-Time Bus Performance Weighted by Ridership*	Number of Users in NVTA's Transportation Demand Management Program	Reliability of Truck Travel Times	Number of Jobs Accessible by Transit Within One Hours During the Morning Commute*	Greenhouse Gas Emissions	Vehicle Miles Traveled	Share of Active Transportation for Commute Trips*	Transit Ridership by Annual Boardings and Alightings*	Miles Between Bus Road Calls (Breakdowns)*	Pavement Condition Index*
NVTA	St. Helena to Calistoga Vine Trail (Class 1)	Complete a 9-mile Class 1 bike and pedestrian facility connecting the cities of Calistoga and St. Helena. When completed, the Vine Trail will be a 47-mile facility connecting the Napa Valley to the Vallejo Ferry Terminal. (This project is in a Priority Conservation Area)		x	x	x	x		x	x	x	x	x	x		
NVTA	SR 29 Complete Street Improvements	Would make multimodal complete streets improvements between Napa Junction and American Canyon Road on SR 29 in American Canyon, including bus queue jumps and passenger facilities, Class 1 multiuse facility, intersection improvements and corridor beautification. The project also proposes a pedestrian overpass.		x	x	x	x		x	x	x	x	x	x		
NVTA	Soscol Gateway Transit Center TOD Development and Oxbow Pedestrian Bridge	Access improvements between the SGTC to the affordable housing development on Soscol and Oxbow Pedestrian Bridge over the Napa River adjacent to the Wine Train alignment connecting SGTC to downtown Napa	x		x	x			x	x	x	x	x	x		
NVTA	Highway Operation Control Center and Emergency Battery Storage	Construct facility adjacent to new Vine Maintenance Facility to include a highway control center and emergency battery farm to ensure Vine power during emergencies and Public Safety Power Shutoff events by PG&E.			x	x	x		x	x	x	x		x	x	
City of Napa	Silverado Five-way Intersection Improvements	Double roundabout at Silverado Trail, 3rd Street, Coombsville Rd., and East Avenue		x	x	x	x		x	x						
County of Napa	Vine Trail - St. Helena to Calistoga (Class I)	Complete the Class I segment from St. Helena to Calistoga		x	x	x			x	x	x	x	x	x		
American Canyon	Newell Drive Extension	Extend Newell Drive from the current limits at Donaldson Way E to South Kelly Rd in southern Napa County.			x	x			x							

Project Details			Countywide Transportation Plan Performance Metrics													
			Equity	Safety	Congestion Relief				Economic Sustainability		Sustainability				Maintenance and Preservation	
Agency	Project	Description	Number of Households below the County Median Income that are within a Quarter of a Mile of Transit*	Number of Severe Injury and Fatal Collisions*	Peak Period Delay Index	Average Weekday Person Hours of Delay on Napa Roadways*	On-Time Bus Performance Weighted by Ridership*	Number of Users in NVTA's Transportation Demand Management Program	Reliability of Truck Travel Times	Number of Jobs Accessible by Transit Within One Hours During the Morning Commute*	Greenhouse Gas Emissions	Vehicle Miles Traveled	Share of Active Transportation for Commute Trips*	Transit Ridership by Annual Boardings and Alightings*	Miles Between Bus Road Calls (Breakdowns)*	Pavement Condition Index*
NVTA	Napa Forward	Intersection and Operational safety improvements on SR 29/Oakville Crossroad and SR 29/Rutherford Rd		x	x	x	x		x	x						
NVTA	Replace Rolling Stock	Fleetwide: Replace rolling stock for fixed-route, paratransit, and community shuttle fleet	x		x	x	x		x	x	x	x		x	x	
NVTA	Equipment Replacement and Upgrades	Napa Vine service area: Replacement and upgrades to transit equipment	x		x	x	x		x	x	x	x		x	x	
NVTA	Vine Transit Bus Maintenance Facility	At an 8-acre site in south Napa County: Construct a new transit maintenance facility for Vine Transit operations to improve reliability, service, and charge electric vehicles to provide for service expansion	x		x	x	x		x	x	x	x		x	x	
NVTA	COVID-19 Emergency Transit Operations	Systemwide: Capital, planning and operating assistance related to coronavirus public health emergency including costs to shutdown, maintain, and restart service, purchase of PPE and supplies, and administrative leave	x		x	x	x		x	x	x	x		x	x	
American Canyon Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x
Calistoga Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x
City of Napa Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x
County of Napa Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x
St. Helena Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x
Yountville Measure T	Pavement Preservation	FY 2018 – FY 2024 Pavement Rehabilitation Projects											x			x

** Metric not met, or progress not made since CTP 2021 adoption.*

Table 3-2: NVTA Regional Projects and Anticipated Benefits in Metric Areas

Project ID	Agency	Project	Description	Funding Secured	Unfunded Needs	Number of Metric Areas Addressed	Delivery Status
1	NVTA	Vine Maintenance Facility	Build new 6-bay maintenance facility in Napa County to support the Vine transit System, replacing 50-year-old obsolete facility. The project includes modern bus wash and electric fueling infrastructure.	$32,000,000	$0	6	Complete
2	NVTA	Imola Park and Ride and Express Bus Stop Improvement	The Imola Park and Ride is located adjacent to SR 29 and is a state-owned facility. The project includes a complete rehabilitation of the park and ride to improve safety and transit operations and adds pedestrian access to two new SR 29 on highway transit passenger facilities and related pedestrian facilities.	$4,000,000	$0	6	Complete
3	NVTA	St. Helena to Calistoga Vine Trail (Class 1)	Complete a 9-mile class 1 bike and pedestrian facility connecting the cities of Calistoga and St. Helena. When completed, the Vine Trail will be a 47-mile facility connecting the Napa Valley to the Vallejo Ferry Terminal. (This project is in a Priority Conservation Area).	$15,000,000	$0	6	Construction
4	County of Napa	Vine Trail - St. Helena to Calistoga (Class I)	Complete the Class I segment from St. Helena to Calistoga	$5,000,000	$25,000,000	6	Environmental
5	NVTA	SR 29 Complete Street Improvements	Would make complete street improvements between Napa Junction and American Canyon Road on SR 29 in American Canyon, including bus queue jumps and passenger facilities, class 1 facility, intersection improvements and corridor beautification. The project also includes a pedestrian overpass.	$4,000,000	$46,000,000	6	Environmental
6	NVTA	Replace Rolling Stock	Fleetwide: Replace rolling stock for fixed-route, paratransit, and community shuttle fleet.	$28,390,000	$0	6	In-Progress
7	NVTA	COVID-19 Emergency Transit Operations	Systemwide: Capital, planning and operating assistance related to the coronavirus public health emergency including costs to shutdown, maintain and restart service, purchase of PPE and supplies, and administrative leave.	$10,002,000	$0	6	Complete
8	NVTA	Imola Park & Ride and Express Bus Stop Improvement	Ata park and ride at SR 29 and Imola Avenue: Make improvements including in-line passenger loading and alighting at Imola Avenue on/off ramps, improved pedestrian facilities, and safety improvements.	$1,793,000	$961,000	6	Conceptual
9	NVTA	Soscol Gateway Transit Center TOD Development and Oxbow Pedestrian Bridge	Access improvements between the SGTC to the affordable housing development on Soscol and Oxbow Pedestrian Bridge over the Napa River adjacent to the Wine Train alignment connecting SGTC to downtown Napa	$0	$8,000,000	5	Conceptual
10	NVTA	Highway Operation Center and Emergency Battery Storage	Construct facility adjacent to new Vine Maintenance Facility to include a highway control center and emergency battery farm to ensure Vine power during emergencies and PSPS.	$0	$12,000,000	5	Conceptual
11	NVTA	Equipment Replacement and Upgrades	Napa Vine Service Area: Replacement and upgrades to transit equipment.	$3,511,000	$0	5	Complete
12	NVTA	Vine Transit Bus Maintenance Facility	At an 8-acre site in south Napa County: Construct a new transit maintenance facility for Vine Transit operations to improve reliability, service and charge electric vehicles, provide for service expansion.	$19,238,000	$21,637,000	5	Conceptual
13	City of Napa/NVTA	Imola Complete Streets Improvements	Complete streets corridor improvements on SR 121 (Imola) between Golden Gate Drive and Skyline Park. The project would make bicycle and pedestrian improvements, including a class 1 facility west of SR 221 to Skyline Park, and enhance this burgeoning state highway to enhance economic opportunities and rendering it safe for all users. The project also connects the Bay Trail, Vine Trail, and Ridge Trails.	$5,000,000	$15,000,000	5	Pre-Construction
14	NVTA	Napa Forward	Intersection and Operational safety improvements on SR 29/Oakville Crossroad and SR 29/Rutherford Rd.	$8,000,000	$4,000,000	4	Environmental

Project ID	Agency	Project	Description	Funding Secured	Unfunded Needs	Number of Metric Areas Addressed	Delivery Status
15	St. Helena	St. Helena Downtown Pedestrian Improvement Project (SR 29)	The St. Helena Downtown Pedestrian Improvement project on SR 29/St. Helena (Main Street) upgrades and replaces sidewalks on both sides of State Route 29. The project also includes safety upgrades including seventeen curb ramps, bulb-outs, crosswalk enhancements including crosswalk striping/markings. The project also includes landscape improvements, landscape irrigation and street furnishings.	$5,800,000	$9,200,000	4	Pre-Construction
16	NVTA	Soscol Junction (SR 29/SR 221 Interchange)	Construct interchange at SR 29/SR 221 in Napa County. Replaces signaled intersection with an overpass on SR 29 and double roundabouts underneath the superstructure to allow multi-modal turning operations in all directions. (This project is adjacent to a Priority Production Area)	$47,000,000	$0	4	Construction
17	NVTA	SR 29/SR 12, Airport/ Devlin, SR 12/ Kelly Road Improvements	The project would create a north/south underpass on SR 29 and double roundabouts above grade on SR 12/ Airport. It would also add at grade standard roundabouts at SR 12/ Kelly Road and Airport/ Devlin Road.	$0	$145,000,000	4	Conceptual
18	NVTA	SR 29/SR 12 Sonoma Highway	Intersection improvements at SR 29/SR12/SR121 Sonoma Highway	$3,000,000	$12,000,000	4	Conceptual
19	City of Napa/NVTA	Silverado Five-way Intersection Improvements	Double roundabout at Silverado Trail, 3rd Street, Coombsville, and East Street	$11,000,000	$3,000,000	4	Environmental
20	American Canyon	Green Island Industrial Road and Complete Street Enhancement Project	Reconstruct and widen Green Island Road in American Canyon. This is a major industrial road serving one of Napa Valley's growing industrial areas adjacent to SR 29. The project includes constructing a class 1 commuter facility. (This project is in a Priority Production Area).	$16,000,000	$0	3	In-Progress
21	American Canyon	Newell Drive Extension	Extend Newell Drive from the current limits at Donaldson Way E to South Kelly Rd in southern Napa County.	$0	$50,000,000	1	Conceptual
22	NVTA Totals			**$218,734,000**	**$351,798,000**		

4 APPENDIX CTP 2021 PERFORMANCE METRICS MID-PLAN REVIEW METHODOLOGY MODIFICATION

This appendix and the table below highlight CTP 2021 updated performance metric methodology modifications resulting from changes in baseline data availability and/or identification of beneficial methodology clarifications that will make it easier for data practitioners to replicate performance metric calculations during future performance reviews.

Performance Metric	Measure	Metric Modification
Equity	1. Number of Households below the County Median Income that are within a Quarter of a mile of transit	Yes
Safety	1. Number of Severe Injury and Fatal Collisions	No
Congestion Relief	1. Peak Period Delay Index	No
	2. Average Weekday Person Hours of Delay on NAPA Roadways	No
	3. On-Time Bus Performance Weighted by Ridership	No
	4. Number of Users in NVTA's Transportation Demand Management Program	No
Economic Sustainability	1. Reliability of Truck Travel Times	No
	2. Number of Jobs Accessible by Transit Within one Hour During the Morning Commute	Yes
Sustainability	1. Greenhouse Gas Emissions	Yes
	2. Vehicle Miles Traveled	No
	3. Share of Active Transportation For Commute Trips	No
	4. Transit Ridership by Annual Boardings and Alightings	No
Maintenance and Preservation	1. Miles between Bus Road Calls (Breakdowns)	No
	2. Pavement Condition Index	No

EQUITY

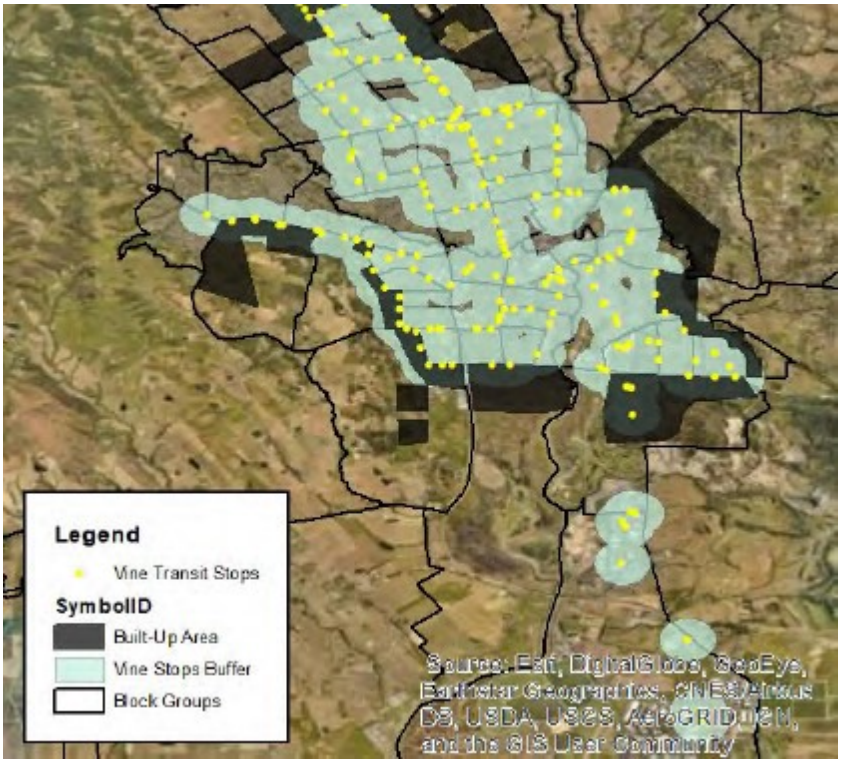
MEASURE: NUMBER OF HOUSEHOLDS BELOW THE COUNTY MEDIAN INCOME THAT ARE WITHIN A QUARTER OF A MILE OF TRANSIT

Methodology

A combination of Microsoft Excel and ESRI's ArcGIS was used for this analysis.

1. Load the Napa County Basemap file in ESRI's ArcMap or ArcGIS Pro format.
2. Add the Vine Transit Stops shapefile to the map.
3. Use the Geoprocessing → Buffer tool in ArcMap or ArcGIS Pro to create a 1/4th mile buffer around Vine stops. Select the dissolve option to merge overlapping buffers. Save this buffer polygon feature class in the desired geodatabase.
4. Load the Block Groups shapefile. Using the Geoprocessing →Clip tool, clip the Block Groups to the existing Napa County boundary. This will create a subset of the Block Groups that only lie within Napa County's boundary.

5. Certain block groups have houses built only over a small portion of their entire area. This is especially evident in block groups outside the dense city center, where built-up area does not cover the entire block group. To obtain the number of households within such transit buffers that lie along the periphery of cities, we calculate the ratio of area covered by transit buffers to the area of residential build-up in the block group and multiply by the total number of households in that block group. Polygons around built-up residential area are created in Google Maps and imported into ArcMap or ArcGIS Pro as shown below. The built-up residential area shapefile used is available within the ArcGIS Pro packaged maps and layers for the mid-plan review.



6. Load the residential built-up area polygons onto ArcMap or ArcGIS Pro.
7. Using the Geoprocessing → Clip tool, join the Block Groups and Residential Polygons. Save as shapefile. Let's call this "BlockGroup_Poly" for purposes of referencing. The Clip tool will attach the Block Group's GeoID field to the Polygons shapefile, for easy cross-referencing later.
8. Using the Geoprocessing → Intersect tool, create an intersect between the Block Groups and Transit Buffers. This will split the buffers and divide them across block groups as highlighted in teal below. Save as shapefile and call this "BlockGroup_Buffer_Intersect".
9. Using the Geoprocessing → Clip tool, join the BlockGroup_Poly and BlockGroup_Buffer_Intersect obtained in Step 8. Save this as a shapefile and name it as "BlockGroup_Poly_Buffer". This gives the residential area that is intersected by transit buffers. Area of these polygons can be found under the field "Shape_Area".
10. Export the table data of shapefiles BlockGroup_Poly and BlockGroup_Poly_Buffer.
11. In an Excel Worksheet, import the data from Blockgroup_Poly, BlockGroup_Poly_Buffer and the Demographic data obtained from ACS. Note that GeoID in ACS data is in a slightly different format than that in Block Groups. Edit the ACS GeoID field to match the Block Groups.

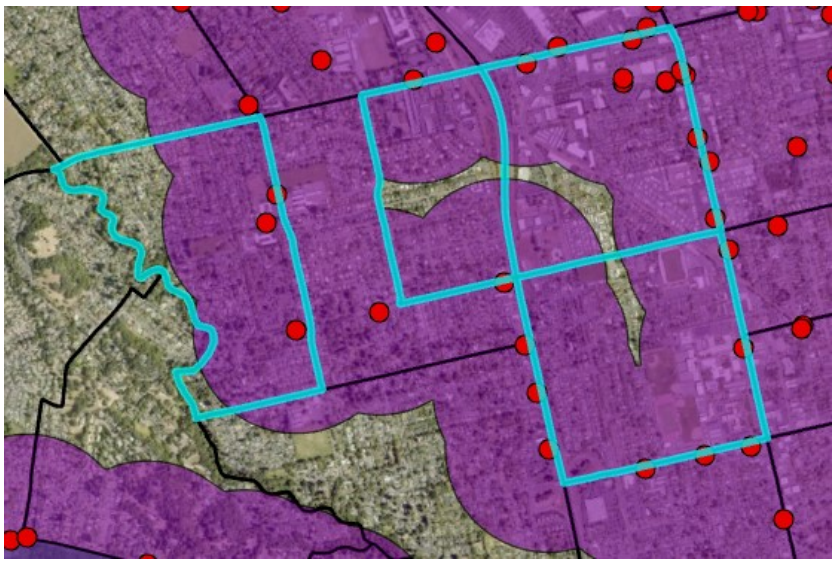
GeoID Field in ACS 2017-2021

GEO_ID
id
1500000US060552015001
1500000US060552015002
1500000US060552020004

GeoID in Block Groups

GEOID
60552008031
60952518031
60952519031
60552008032

12. Using VLOOKUP function in Excel, for every block group obtain the built-up area i.e. Shape_Area of BlockGroup_Poly, and the built-up area intersecting the transit buffers, i.e. Shape_Area of BlockGroup_Poly_Buffer.
13. Calculate the ratio of “Built-up area intersecting transit buffer” to “Built-up area”. Let’s call this “Area Ratio”.
14. Again, using the VLOOKUP function obtain the total number of households for every block group. Multiply these by the Area Ratio to obtain an estimate of the number of households served by Vine Transit in that block group.
15. Summarize the number of households within 1/4th mile of Vine transit stops by income category.
16. Obtain the number of households that lie below the median income of Napa. Note that Napa’s median income is $97,498; however, ACS income bins are broad, therefore $75,000 has been considered as the threshold income.
17. There were 44 census block groups analyzed individually to determine if the total number of households should be included as 100 percent rather than a percentage of land coverage multiplied by total households for that block group even though technically the census block group isn’t fully within a 1/4th mile distance of a bus stop, see table below example image. There were technical discussions around these block groups and policy decisions were made due to unique nuances of land uses. An example below illustrates a handful of these census block groups, shown in teal blue. The purple buffers show the 1/4th mile distance from the bus stops (red circles).



Census Block Group List	Census Block Group	GEOID
1	Block Group 2, Census Tract 2002.01, Napa County, California	60552002012
2	Block Group 1, Census Tract 2003.01, Napa County, California	60552003011
3	Block Group 2, Census Tract 2003.01, Napa County, California	60552003012
4	Block Group 2, Census Tract 2004, Napa County, California	60552004002
5	Block Group 1, Census Tract 2005.01, Napa County, California	60552005011
6	Block Group 2, Census Tract 2005.01, Napa County, California	60552005012
7	Block Group 1, Census Tract 2005.03, Napa County, California	60552005031
8	Block Group 2, Census Tract 2005.03, Napa County, California	60552005032
9	Block Group 2, Census Tract 2005.04, Napa County, California	60552005042
10	Block Group 1, Census Tract 2006.01, Napa County, California	60552006011
11	Block Group 2, Census Tract 2006.01, Napa County, California	60552006012
12	Block Group 3, Census Tract 2006.01, Napa County, California	60552006013
13	Block Group 4, Census Tract 2006.01, Napa County, California	60552006014
14	Block Group 1, Census Tract 2006.02, Napa County, California	60552006021
15	Block Group 3, Census Tract 2006.02, Napa County, California	60552006023
16	Block Group 1, Census Tract 2007.03, Napa County, California	60552007031
17	Block Group 2, Census Tract 2007.03, Napa County, California	60552007032
18	Block Group 1, Census Tract 2007.04, Napa County, California	60552007041
19	Block Group 3, Census Tract 2007.04, Napa County, California	60552007043
20	Block Group 1, Census Tract 2007.05, Napa County, California	60552007051
21	Block Group 1, Census Tract 2007.06, Napa County, California	60552007061
22	Block Group 2, Census Tract 2007.06, Napa County, California	60552007062
23	Block Group 2, Census Tract 2007.07, Napa County, California	60552007072
24	Block Group 3, Census Tract 2008.04, Napa County, California	60552008043
25	Block Group 3, Census Tract 2010.03, Napa County, California	60552010033
26	Block Group 1, Census Tract 2010.04, Napa County, California	60552010041
27	Block Group 3, Census Tract 2010.04, Napa County, California	60552010043
28	Block Group 2, Census Tract 2010.05, Napa County, California	60552010052
29	Block Group 1, Census Tract 2010.06, Napa County, California	60552010061
30	Block Group 2, Census Tract 2010.06, Napa County, California	60552010062
31	Block Group 1, Census Tract 2010.07, Napa County, California	60552010071
32	Block Group 2, Census Tract 2010.07, Napa County, California	60552010072
33	Block Group 1, Census Tract 2011.01, Napa County, California	60552011011
34	Block Group 2, Census Tract 2011.01, Napa County, California	60552011012
35	Block Group 1, Census Tract 2013, Napa County, California	60552013001
36	Block Group 2, Census Tract 2013, Napa County, California	60552013002
37	Block Group 1, Census Tract 2014.01, Napa County, California	60552014011
38	Block Group 2, Census Tract 2015, Napa County, California	60552015002
39	Block Group 6, Census Tract 2017, Napa County, California	60552017006
40	Block Group 1, Census Tract 2019, Napa County, California	60552019001
41	Block Group 1, Census Tract 2020, Napa County, California	60552020001

42	Block Group 2, Census Tract 2020, Napa County, California	60552020002
43	Block Group 3, Census Tract 2020, Napa County, California	60552020003
44	Block Group 4, Census Tract 2020, Napa County, California	60552020004

CONGESTION RELIEF

MEASURE #3: ON-TIME BUS PERFORMANCE WEIGHTED BY RIDERSHIP

No changes from the CTP 2021 methodology. It should be noted that transit routes changed between the CTP 2021 and the Mid-Plan Review. The City category went from eight routes to four routes (N, S, E, W) while the Intercity category went from two in the CTP 2021 to three (10, 11, 11X) for the Mid-Plan Review and the Regional category remains the same with two routes (21, 29).

ECONOMIC SUSTAINABILITY

MEASURE #1: RELIABILITY OF TRUCK TRAVEL TIMES (TTTR)

No changes from the CTP 2021 methodology. The table below shows each of the segment's lengths and TTTR index between 2019 and 2022.

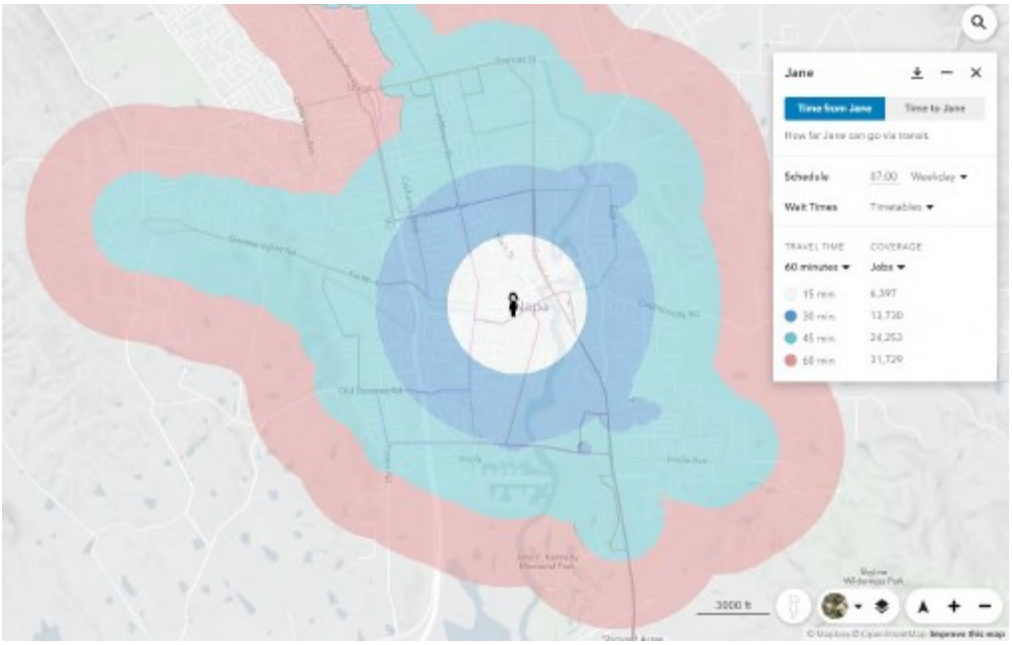
		2019		2020		2021		2022	
Highway Road	Direction	Length (Miles)	TTTR Index	Length (Miles)	TTTR Index	Length (Miles)	TTTR Index	Length (Miles)	TTTR Index
SR -12	EB	9.48	2.74	1.53	1.62	0.11	3.63	3.94	3.47
	WB	8.68	2.88	3.79	1.83	3.79	1.83	3.93	2.27
SR-121	NB	26.87	1.74	5.91	1.76	5.91	1.88	5.91	2.05
	SB	27.06	2.15	6.31	1.72	6.31	2.01	6.31	2.04
SR-29	NB	50.36	1.96	16.6	1.73	16.6	1.58	18.02	1.60
	SB	53.75	2.06	18.05	1.68	16.48	1.88	18.05	1.85
Napa-Vallejo Highway	NB	2.73	2.46	2.73	2.01	2.73	2.07	2.73	2.05
	SB	2.73	3.10	2.73	2.52	2.73	2.22	2.73	1.98
TTTR Index Average			**2.39**		**1.86**		**2.14**		**2.16**

MEASURE #2: NUMBER OF JOBS ACCESSIBLE BY TRANSIT WITHIN ONE HOUR DURING THE MORNING COMMUTE

Methodology

Go to www.remix.com. Add the Vine Transit lines using Add Transit Line option. Place the isochrone marker "Jane" at the desired location (Town / City Hall, post office). Select the desired start time, wait times based on 'Timetables', travel time of 60 minutes and coverage option for jobs. The locations used for the Mid-Plan Review are shown below in the table.

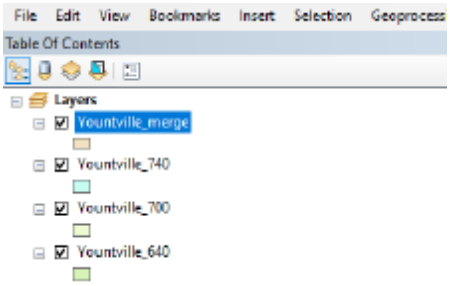
City	Location	Address	Latitude	Longitude
American Canyon	City Hall	4381 Broadway, American Canyon, CA 94503	38.1839164	-122.255999
Calistoga	City Hall	1232 Washington St, Calistoga, CA 94515	38.5790056	-122.579706
Napa	City Hall	955 School St, Napa, CA 94559	38.2967759	-122.289358
St. Helena	Post Office	1461 Main St, St Helena, CA 94574	38.5058173	-122.471526
Yountville	Town Hall	6550 Yount St, Yountville, CA 94599	38.4037467	-122.361551



Using the export option, download the isochrone shapefile. Repeat this for all desired start times and then for each jurisdiction.

Merging Exported Shapefiles

Import isochrones for all desired start times into Esri software, one jurisdiction at a time. Merge isochrones pertaining to all start times of a given jurisdiction using the Geoprocessing → Merge tool.

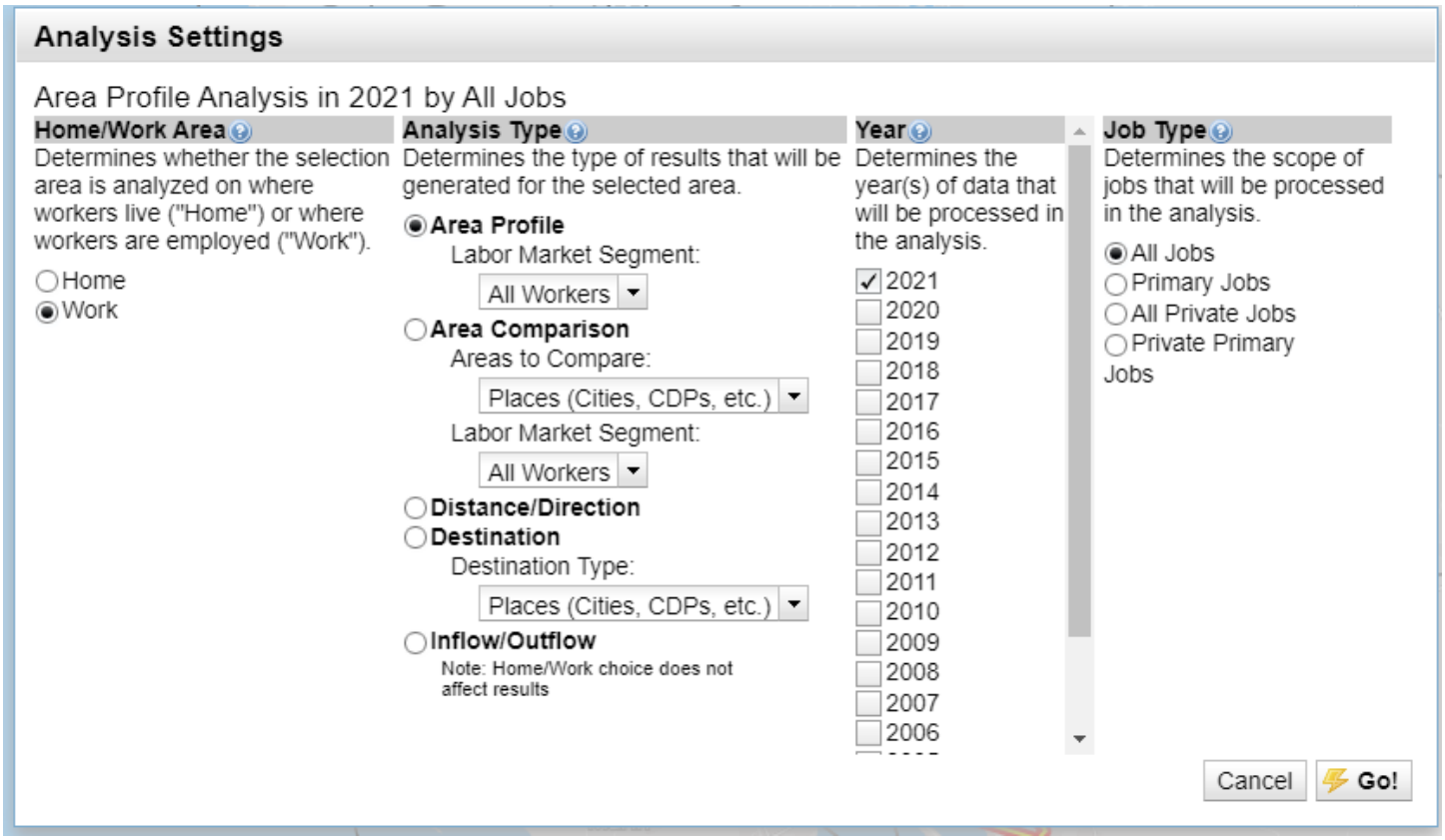


Select the polygons for “60 minutes” travel time and merge them using the Edit layer option. Save this merged transit coverage shapefile.

Downloading Census Job Data

Go to the U.S. Census Bureau OnTheMap portal: https://onthemap.ces.census.gov/ and upload the study area boundary (all counties within the isochrone limits created from Remix).

Perform Analysis on Selected Area (study area boundary). The Analysis Settings pop up, shown below, will allow the user to select the desired information for the analysis. The Home/Work Area is checked as “Work” showing where workers are employed. The Analysis Type is checked as “Area Profile” and “All Workers” which will be all workers in the labor market. The third section, Year, is the desired year and the fourth section, Job Type, should be marked for all jobs. Click Go.



Export the Point Overlay to shapefile. This layer contains all jobs within the study area boundary for each census block. Upload this layer into Esri software.

Joining Jobs (Point Overlay) Data to Census Block Groups.

Using the Summarize Within Geoprocessing tool combine the point overlay jobs layer with the polygon census block group layer. This output contains a count of the total number of points within each census block group. The Summarize Within tool also has the option to add a summary field and statistic. The summary field should be the number of jobs field found within the point overlay layer and the statistic should be “Sum”. The output of this contains a sum of the total number of jobs from each point found within each census block group.

Using the Geoprocessing tool in Esri’s software, Clip the census block group job data (Summarize Within Tool output) by the transit coverage isochrone for each of the five jurisdictions. There will be an output layer for each jurisdiction. The output of each clip will have the total number of jobs accessible by transit within an hour from each of the city or town halls.

City	Number of Jobs
American Canyon	23,661
Calistoga	8,911
Napa	45,938
St. Helena	8,942
Yountville	24,043

SUSTAINABILITY

MEASURE #1: GREENHOUSE GAS EMISSIONS (GHG)

Methodology

Go to https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Download the California Annual Retail Fuel Outlet Report Results (CEC-A15) The Excel file downloaded contains annual CEC-15 results and analyses summarized in county level tables for gasoline and diesel sales. Filter for Napa County within the Retail Gasoline Sales by County sheet and the Retail Diesel Sales by County sheet.

The data available is in Millions of Gallons which will need to be converted to metric tons (1,000 kilograms). A single gallon of gasoline is roughly 2.8391 kilograms while a single gallon of diesel is roughly 3.3501 kilograms. The Napa County total population from the American Community Survey (ACS) Five-Year Estimates Table B01001 will need to be collected for calculating the metric tons per capita. The table below shows the Napa County gasoline and diesel sales and metric tons per capita between 2010 and 2022.

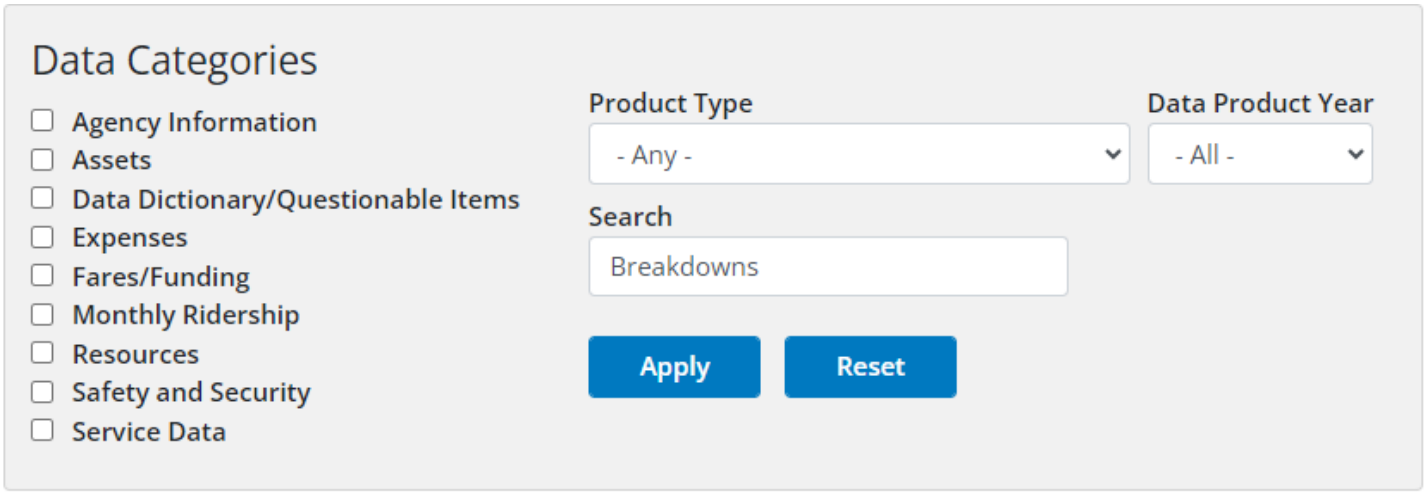
Napa County	Number of Gasoline Gallons Sold	Gasoline Gallons to metric tons (1,000 kilo) (1 US gallon = 2.8391 Kilo)	Number of Diesel Gallons Sold	Diesel Gallons to metric tons (1,000 kilo) (1 US gallon = 3.3501 Kilo)	Total Gasoline and Diesel Metric Tons	Napa County Population ACS 5-year Estimates	Metric Ton Per Capita
2010	52,000,000	147,633	2,000,000	6,700	154,333	134,051	1.2
2011	47,000,000	133,438	2,000,000	6,700	140,138	135,377	1.0
2012	58,000,000	164,668	7,000,000	23,451	188,119	136,644	1.4
2013	52,000,000	147,633	3,000,000	10,050	157,684	137,837	1.1
2014	39,000,000	110,725	3,000,000	10,050	120,775	139,253	0.9
2015	63,000,000	178,863	8,000,000	26,801	205,664	140,295	1.5
2016	57,000,000	161,829	7,000,000	23,451	185,279	140,823	1.3
2017	53,000,000	150,472	7,000,000	23,451	173,923	141,005	1.2
2018	61,000,000	173,185	7,000,000	23,451	196,636	140,530	1.4
2019	57,000,000	161,829	7,000,000	23,451	185,279	139,623	1.3
2020	44,000,000	124,920	6,000,000	20,101	145,021	138,572	1.0
2021	47,000,000	133,438	6,000,000	20,101	153,538	138,795	1.1
2022	49,000,000	139,116	7,000,000	23,451	162,567	134,300	1.2

MAINTENANCE AND PRESERVATION

MEASURE #1: MILES BETWEEN BUS ROAD CALLS (BREAKDOWNS)

Methodology

No changes from CTP 2021 methodology; however, the information below clarifies how to replicate this metric. Go to this link here: https://www.transit.dot.gov/ntd/ntd-data to download the data tables needed for this metric. Type “Breakdowns” in the search bar as shown in the image below. This will provide a list of Breakdown Annual Data Tables back to 2015. Download the csv table for the years needed.



Open the csv and filter for Napa Valley Transportation Authority under the Agency column → Sum the Total Mechanical Failures column → Sum the Vehicle/Passenger Car Miles column → Divide the total Vehicle/Passenger Car Miles by the Total Mechanical Failures to get the Number of miles between bus breakdowns as shown in the image below.

Agency	UZA Name	Total Mechanical Failures	Vehicle/Passenger Car Miles	Number of Miles between Bus Breakdowns
Napa Valley Transportation Authority	Napa, CA	12	469,062	
Napa Valley Transportation Authority	Napa, CA	10	347,031	
Napa Valley Transportation Authority	Napa, CA	16	699,608	
	Total	38	1,515,701	39,887