



RESOLUTION APPROVING THE 2021 SAN FRANCISCO CONGESTION MANAGEMENT PROGRAM (CMP) AND ISSUING AN OFFICIAL FINDING THAT THE CITY AND COUNTY OF SAN FRANCISCO IS IN CONFORMANCE WITH THE CMP

WHEREAS, As the Congestion Management Agency for San Francisco, the Transportation Authority is required by state law to update the CMP on a biennial basis; and

WHEREAS, The legislative intent of state congestion management law is to tie transportation project funding decisions to measurable improvements in mobility and access, while taking into account the impacts of land use decisions on local and regional transportation systems; and

WHEREAS, The CMP has several required elements, including a designated congestion management roadway network, biennial monitoring of automobile level of service on this network, a multimodal performance element, a uniform transportation analysis database, travel demand management provisions, a land use impacts analysis program, and a multimodal capital improvement program; and

WHEREAS, The 2021 CMP update reflects developments pertaining to the Transportation Authority's Congestion Management Agency activities since 2019, including system performance data collection and analysis, transportation policy changes and initiatives at the regional and state levels, and progress of the Transportation Authority's planning and project oversight efforts; and

WHEREAS, The 2021 CMP was prepared to comply with all pertinent requirements of State law, including relevant amendments, and, by agreement with the Metropolitan Transportation Commission (MTC), to comply with implementation of portions of Federal surface transportation law; and

WHEREAS, Adoption of the 2021 CMP is essential to achieve compliance with state congestion management mandates, as well as to ensure the City's continued eligibility for various state and federal transportation funding sources; and

WHEREAS, The 2021 CMP needs to be submitted to the MTC for adoption; and

WHEREAS, At its December 1, 2021 meeting, the Community Advisory Committee was briefed on the 2021 CMP and unanimously adopted a motion of support for its approval; now, therefore, be it



RESOLVED, That the Transportation Authority hereby approves the 2021 San Francisco CMP; and be it further

RESOLVED, That the Transportation Authority hereby finds that the City and County of San Francisco is in conformance with the requirements of the CMP, pursuant to Section 65089 of the California Government Code; and be it further

RESOLVED, That the Executive Director is hereby authorized to prepare the document for final publication and distribute the document to the MTC for approval and to all other relevant agencies and interested parties.

Attachment:

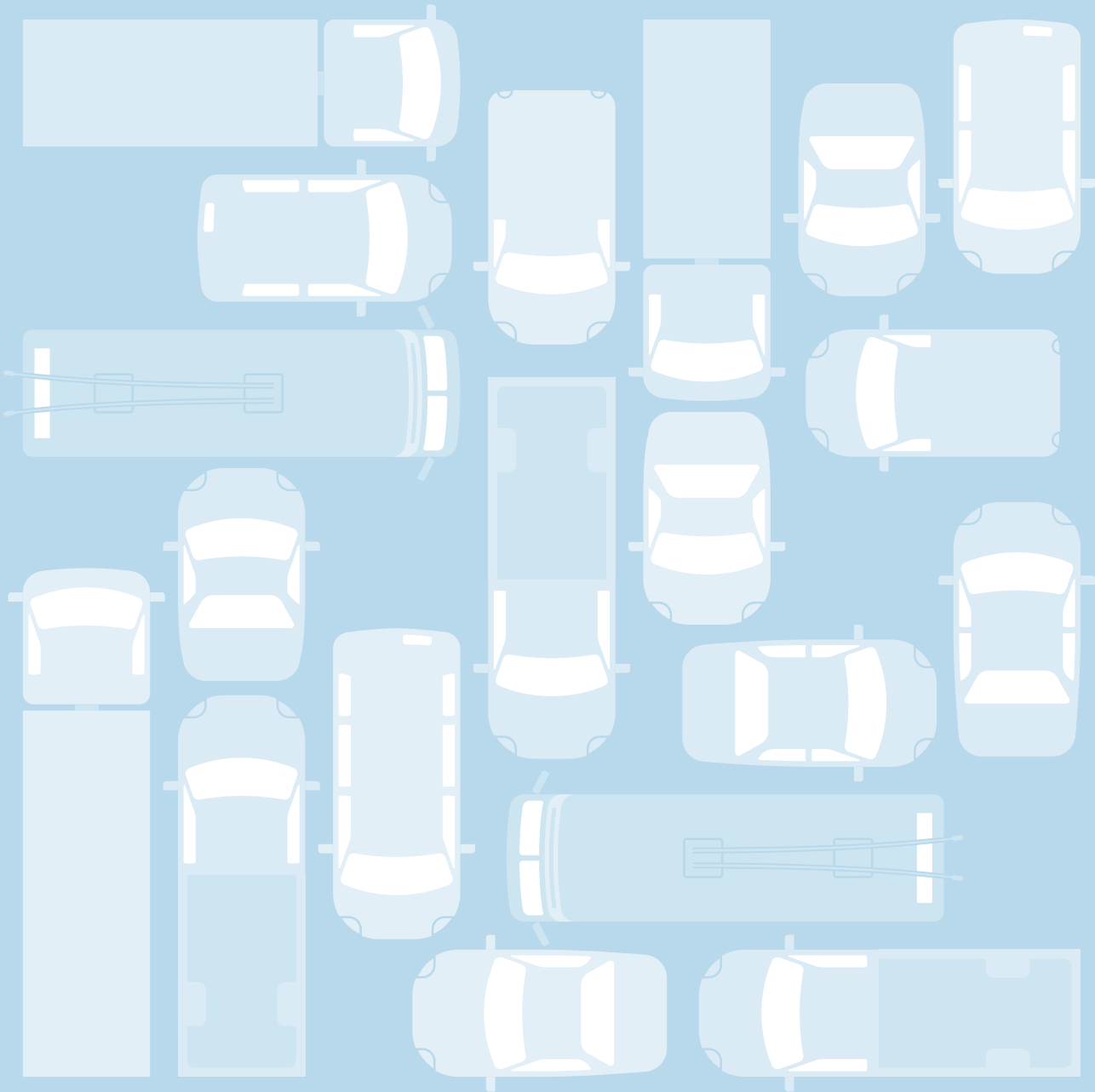
1. Attachment 1 - CMP Executive Summary

Enclosures (2):

1. 2021 San Francisco Congestion Management Program
2. CMP Technical Appendices

CONGESTION MANAGEMENT PROGRAM DECEMBER 2021

Executive Summary



Introduction

Every two years, the San Francisco County Transportation Authority (SFCTA) prepares the San Francisco Congestion Management Program (CMP). This program is conducted in accordance with state law to monitor congestion and adopt plans for mitigating traffic congestion that falls below certain thresholds. By statute, the CMP legislation originally focused its requirements on measuring traffic congestion, specifically through Level-of-Service (LOS), which grades roadway facilities by vehicle delay. The SFCTA has since evolved its CMP to include more multimodal and system performance monitoring, in keeping with San Francisco's Transit First Policy, and in recognition that automobile-focused metrics such as LOS result in a limited view of transportation issues, which can result in inefficient, modally biased, and often, unintentionally, counter-productive solutions.¹

State CMP legislation aims to increase the productivity of existing transportation infrastructure and encourage more efficient use of scarce new dollars for transportation investments in order to effectively manage congestion, improve air quality, and facilitate sustainable development. The purpose of the 2021 San Francisco Congestion Management Program is to:

- Define San Francisco's performance measures for congestion management;
- Report congestion monitoring data, including transit performance, for San Francisco county to the public and the Metropolitan Transportation Commission (MTC);
- Describe San Francisco's congestion management strategies and efforts; and
- Outline the congestion management work program for fiscal years 2021/22 and 2022/23.

The past year and a half are without precedent in the past century, as the COVID pandemic disrupted peoples' health, livelihoods, activities, and the economy overall. These changes have, in turn, had a profound effect on peoples' travel, as shelter-in-place orders reduced the number and type of activities people were able to participate in publicly, as employers responded with reduced workforces and with the widespread implementation of telecommute policies for some types of workers, as some residents relocated (at least temporarily) to other parts of the region, state, and country, and as transit agencies reduced and reconfigures service offerings. All of these changes, as well as many others, affected the performance of San Francisco's transportation system, as reflected in this

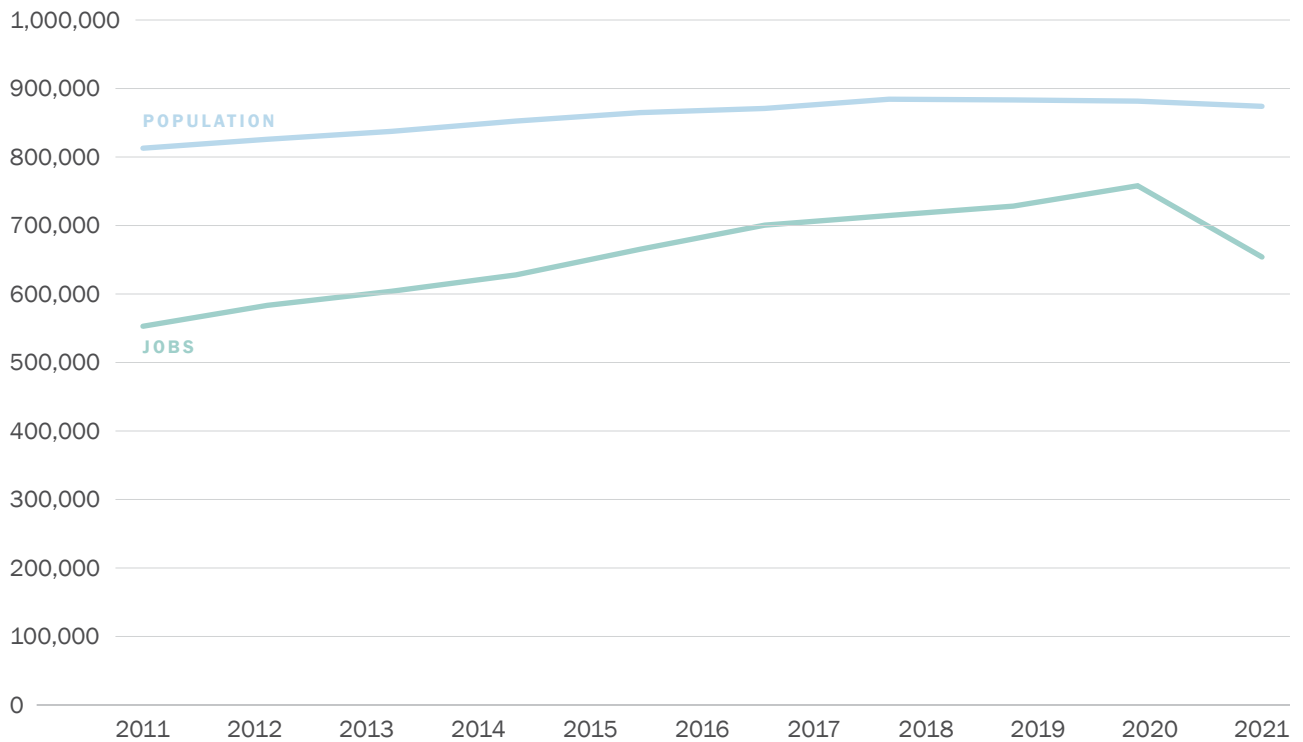
¹ In order to reduce vehicle delay and improve LOS, without considering strategies that encourage shifts to other modes, the increased roadway capacity is the implied solution, which, in turn, has been shown to lead to more driving (induced demand).

update to San Francisco’s CMP. The following sections document the unique changes observed over the past year. This report presents a wide variety of multimodal metrics that have been previously reported, such as roadway travel times, transit travel times, transit reliability, vehicle miles travelled (VMT), pedestrian and bicycle counts, and safety. It also introduces a few new measures, including roadway travel time reliability, transit coverage, and mode shares. Wherever possible, the document presents longer term trends so as to provide readers additional context to help understand current conditions.

State of Transportation

San Francisco has been an employment and population hub in the Bay Area, and in the decade prior to the COVID pandemic experienced tremendous growth (see Figure 0-1). Between 2011 and 2019, job growth significantly exceeded population growth in San Francisco by a factor of more than three to one, with over 200,000 new jobs and 60,000 new residents added during this period. However, as a result of the COVID pandemic these growth trends were halted and reversed, with employment dropping for the first time in over a decade, and population declining as well. More than 100,000 jobs were lost between 2019 and 2020, though there are indications that employment is increasing in recent months as the spread of COVID is curtailed and the economy reopens.

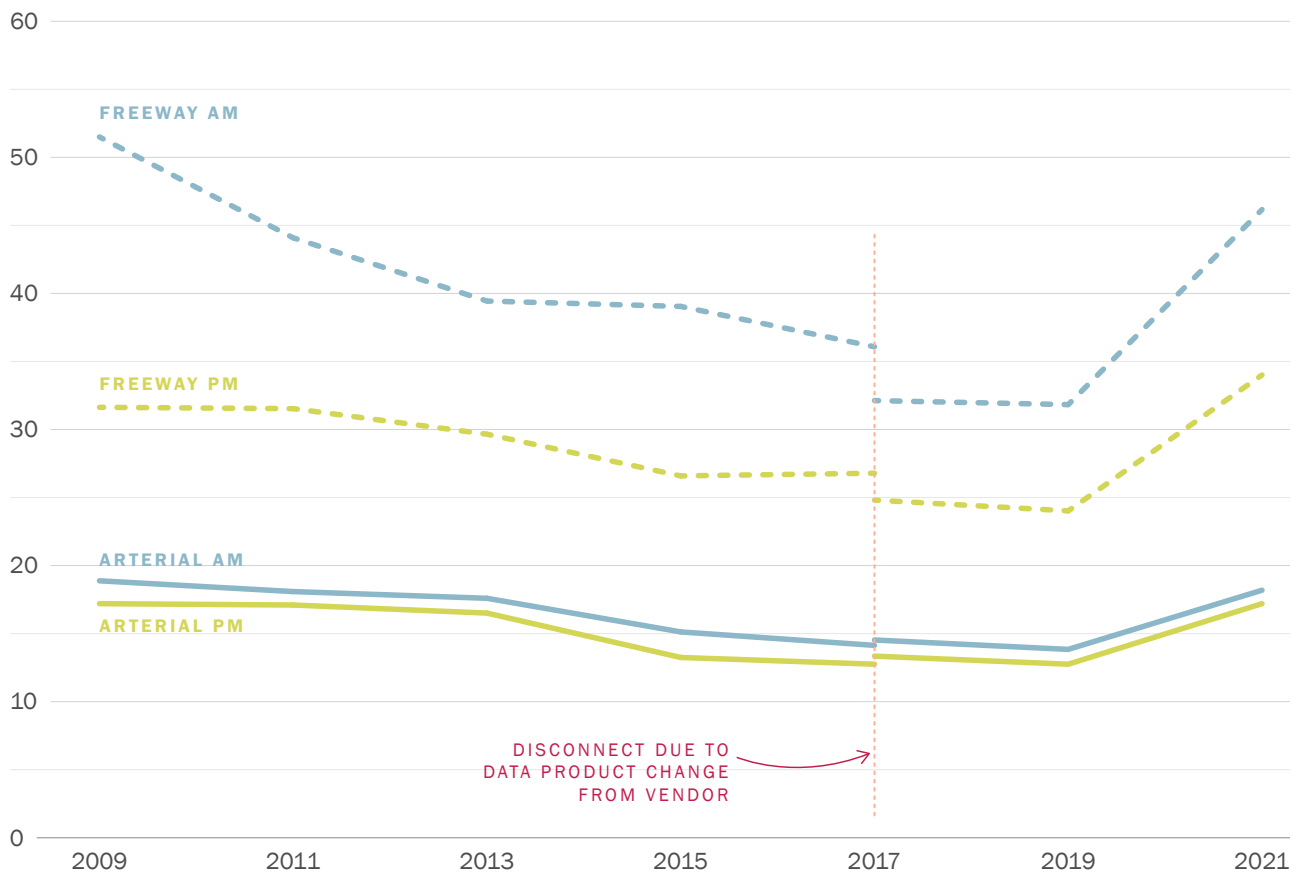
Figure 0-1. San Francisco Population and Job Growth since 2011



ROADWAY LEVEL OF SERVICE AND RELIABILITY

The CMP legislation defines roadway performance primarily by using the LOS traffic engineering concept to evaluate the operating conditions on a roadway. LOS describes operating conditions on a scale of A to F, with “A” describing free flow, and “F” describing bumper-to-bumper conditions. For the current monitoring period, average travel speeds on the CMP network have increased since 2019 for all measured time periods and road types, as shown in Figure 0-2. This represents the first time in the past decade when overall average roadway speeds have improved between CMP updates, and are certainly attributable to greater levels of remote work and telecommuting, reductions in activity participation by individuals due either to personal preference or restrictions, reluctance to use public transit, and overall higher levels of unemployment. Average arterial travel speeds have increased 33% from 13.3 mph to 17.7 mph in the AM peak and increased 36% from 12.2 mph to 16.7 mph in the PM peak. The average travel speed on freeways increased 46% from 31.5 mph to 46.0 mph in the AM peak and increased 42% from 23.6 mph to 33.7 mph in the PM peak. The overall increases in speeds are a reversal in the trend of declining roadway performance observed during most part of this decade.

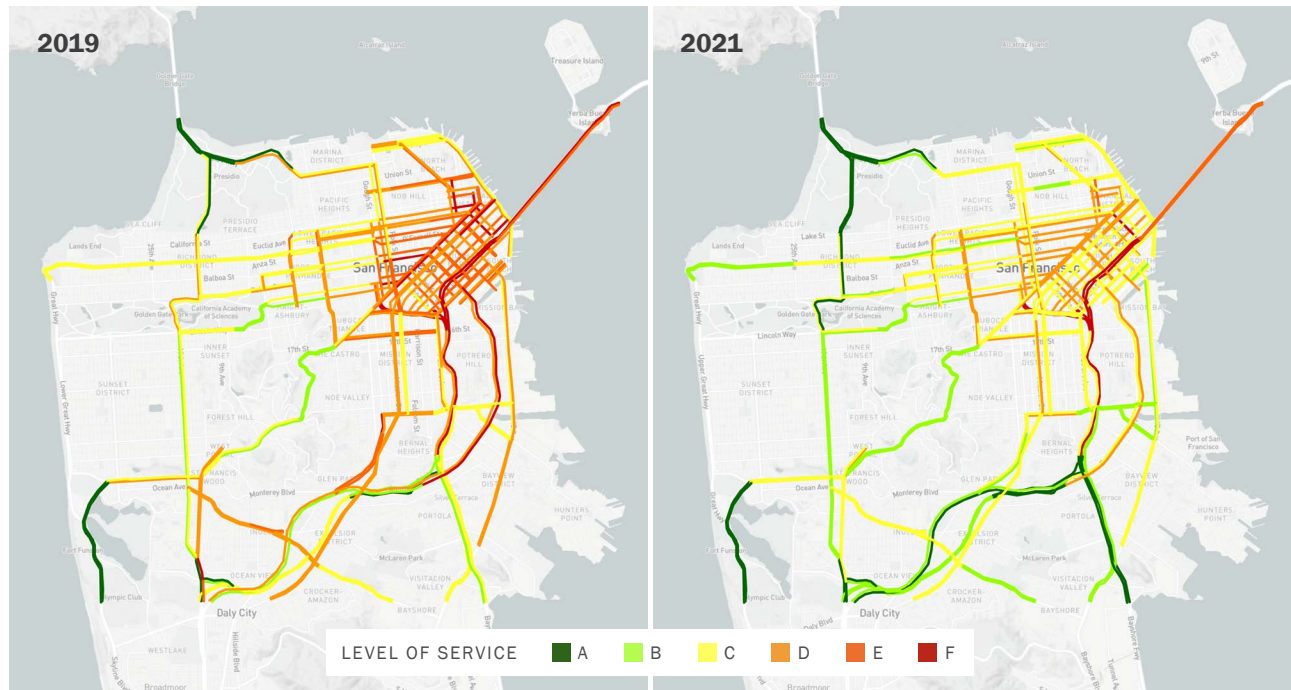
Figure 0-2. CMP Network Average Travel Speed Change



Note: data collected April - May each year

Figure 0-3 shows a comparison between LOS in 2019 and 2021 in the PM peak. There is significant improvement in the majority of Downtown arterials, as well as arterials in San Francisco’s western and southern neighborhoods, but LOS is back to 2019 levels on several freeway segments. An interactive version of this map that allows users to view historical trends for the City overall, as well as for all the individual CMP segments, can be found at congestion.sfcta.org.

Figure 0-3: 2019 and 2021 PM Peak Roadway Level-of-Service

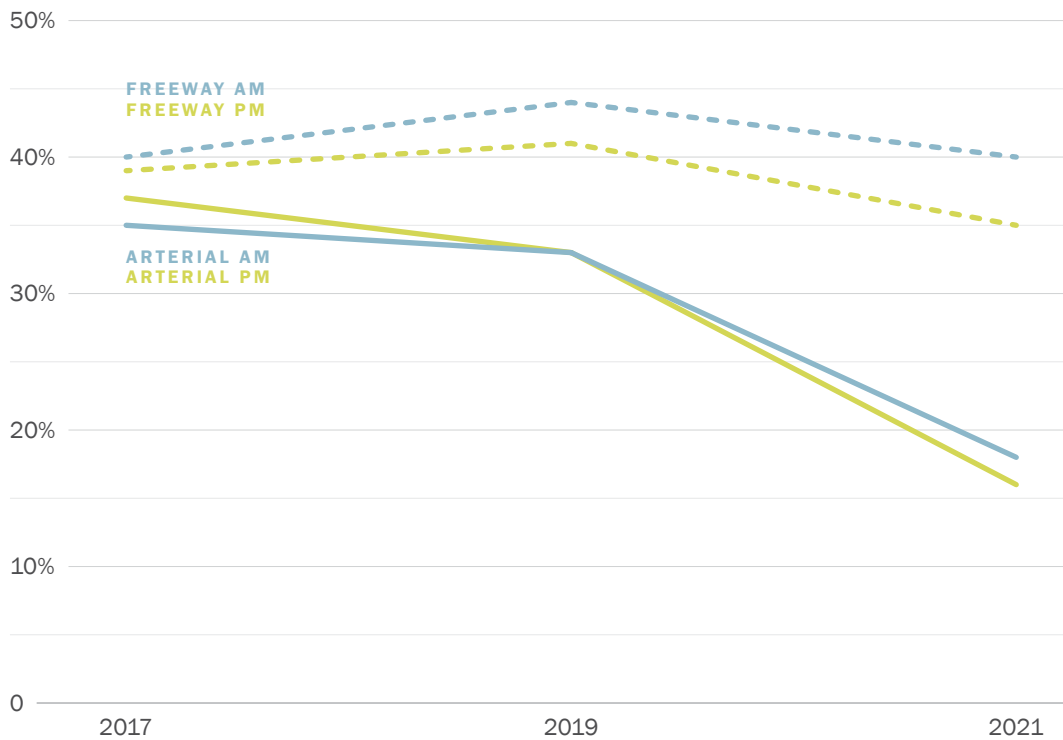


Note: data collected April - May each year

While the average travel speeds and LOS reported provide useful insights into congestion, they do not capture a critical aspect of peoples’ perception of congestion, which is the reliability of travel times. For example, a traveler is likely to perceive the congestion on roadway where the travel is always 15 minutes differently that they perceive the congestion on a roadway where half the time the travel time is 5 minutes and the other half the time the travel time is 25 minutes. The unreliability of the travel time on this second roadway is onerous because it forces travelers to change their schedule so as to ensure that they aren’t late to their destinations. In order to capture this aspect of congestion, a new metric for measuring roadway reliability is introduced in this CMP update called the Buffer Time Index (BTI). This is calculated as the amount of extra travel time (expressed as a percent of average travel time) that the travelers need to additionally budget so that they have a 95% chance of arriving on time. In other words, it is the buffer time needed if one does not want to be late more than once a month. Like auto speed, reliability has improved significantly

from 2019 to 2021 (Figure O-4). Note that a lower value of BTI indicates higher reliability. For example, the BTI for arterials in the PM period was 33% in 2019, and 15% in 2021. This means that, on average, a traveler making a 20 minute trip of San Francisco arterials in 2019 would have needed to anticipate 6.6 minutes of extra time so as not to be late, while in 2021 they would have needed to anticipate only 3 minutes of extra time to not be late.

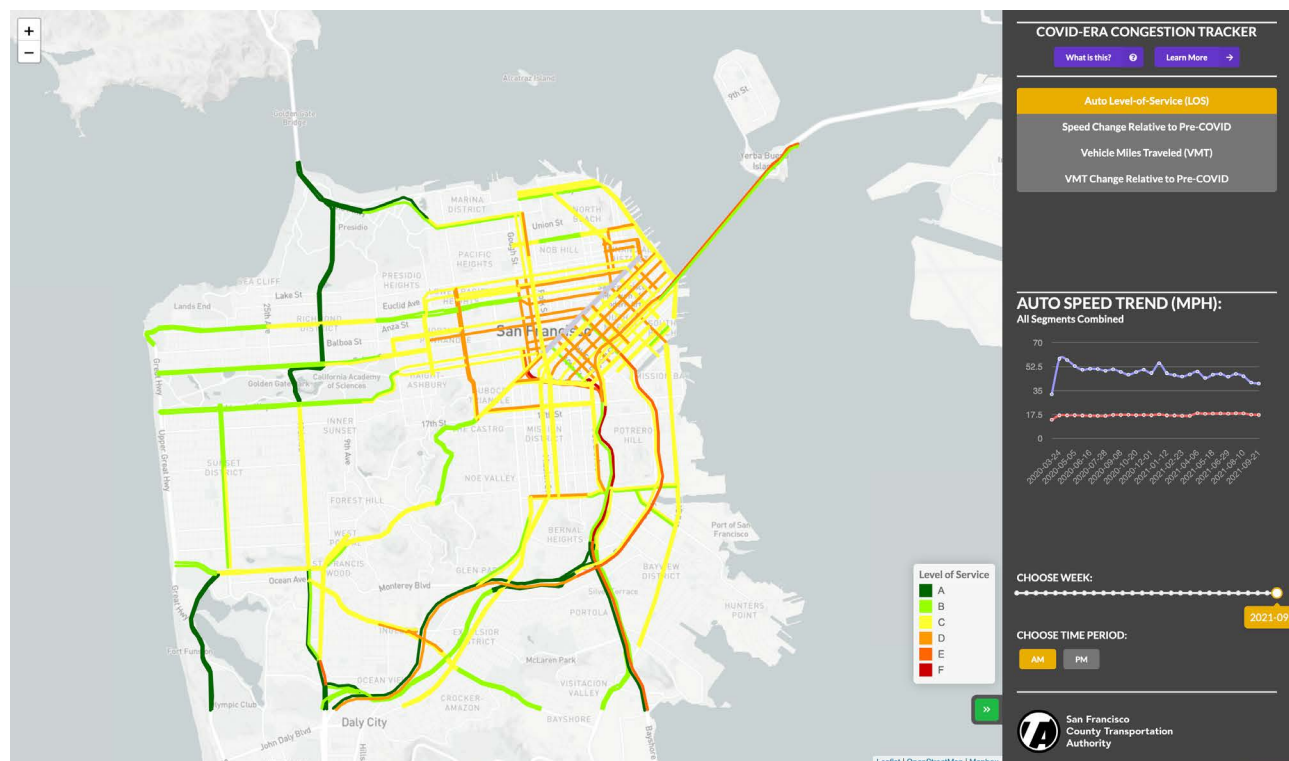
Figure O-4. CMP Network Average Reliability (BTI) Change



Note: data collected April - May each year

Due to rapid and uncertain changes in traffic conditions after COVID, the Transportation Authority developed a new tool for short-term monitoring called the "COVID-Era Congestion Tracker" ([covid-congestion.sfcta.org](https://www.sfmta.org/covid-congestion)), shown in Figure O-5. This tool tracks reports many of the same roadway performance metrics as reported the CMP congestion visualization, but with a much greater frequency (every three weeks instead of biennially) and over a shorter time frame (from March 2020 through the present instead of from Spring 1991 through Spring 2021). This tool is being used by the Transportation Authority and other City agencies to help inform pandemic recovery plans. While the biennial CMP monitoring, which is always performed in the spring of odd-numbered years, shows significantly higher speeds than past years ([congestion.sfcta.org](https://www.sfmta.org/congestion)), the COVID-Era Congestion Tracker shows that since this past spring auto speeds on many streets have already dropped close to pre-pandemic levels and in some cases even slower than pre-pandemic.

Figure 0-5. covid-Era Congestion Tracker



Source: <https://covid-congestion.sfcta.org/>

Strategies to managing congestion are key to maintaining our accessibility as the city recovers. These include: improving public transportation, bicycling and walking routes and facilities; coordinating new development to support walkable and transit-oriented neighborhoods; and managing vehicle use, parking, and traffic signals to ensure safety and efficiency.

TRANSIT SPEEDS

In addition to monitoring roadway speeds, the Transportation Authority also tracks surface transit speeds, and the ratio of private vehicle speeds to bus speeds, as our primary system performance metric. Transit speeds on the CMP network increased since 2019 (Figure 0-6). Compared to 2019, the average transit speed (collected for buses only) in 2021 increased 15% from 8.4 to 9.7 mph in the AM peak. In the PM peak period transit speeds also increased 24% from 7.6 to 9.4 mph. Like roadway speeds, most of the increase in transit speeds may be attributable to overall lower levels of demand due to reduced activity participation and increased telecommuting, which in turn increased travel speeds on the roadway network that the buses travel on. Improved transit speeds may be attributable also to increased deployment of transit priority lanes, and to less delay resulting from fewer boardings and alightings, during COVID-19.

TRANSIT TRAVEL TIME RELIABILITY

Transit speed information is also used to calculate the variability of speed as a measure of transit travel time reliability. Figure 0-7 shows that transit travel time reliability has worsened (variability has increased) since 2019 despite improvements in average transit speed. However, this worsening of travel time variability should be understood within the context of an overall improvement in transit travel speeds. For example, average transit performance improved from 7.6 mph and 21% variability in 2019 to 9.4 mph and 25% variability in 2021, which means approximately 70% of the time, a 3 mile transit trip in 2019 would take between 18.7 minutes and 28.7 minutes, while this same trip in 2021 would take between 14.4 minutes and 23.9 minutes. While transit was slightly less reliable in 2021, the overall improvements in transit speeds far offset this effect.

AUTO-TRANSIT SPEED RATIO

In order to assess the competitiveness of transit with driving, the ratio of auto to transit speeds is calculated by comparing auto to transit speeds on the portions of the CMP network for which Muni data is available. A ratio of 2 would indicate that, for a particular segment, on-board transit travel time is twice that of auto travel time. As shown in Figure 0-8, the average auto-transit speed ratio increased between 2019 and 2021. Both average auto and transit speeds improved this year but auto speeds improved more than transit speeds which resulted in transit being less competitive relative to auto.

MULTIMODAL VOLUMES

The SFCTA has placed a high priority on shifting travelers' modes to increase the number of trips made by walking and bicycling. Figure 0-9 and Figure 0-10 respectively show bicycle and pedestrian

Figure 0-6. Overall Average Transit Speeds Trend for CMP Network

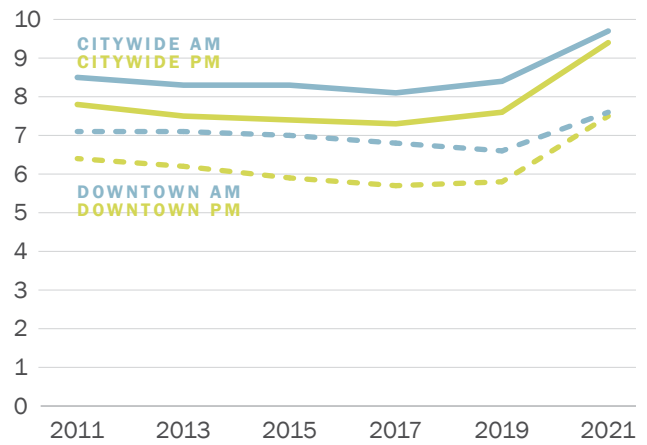


Figure 0-7. Transit Travel Time Reliability

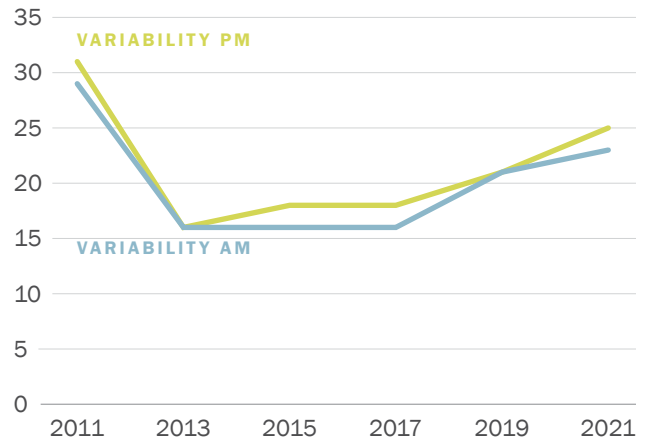
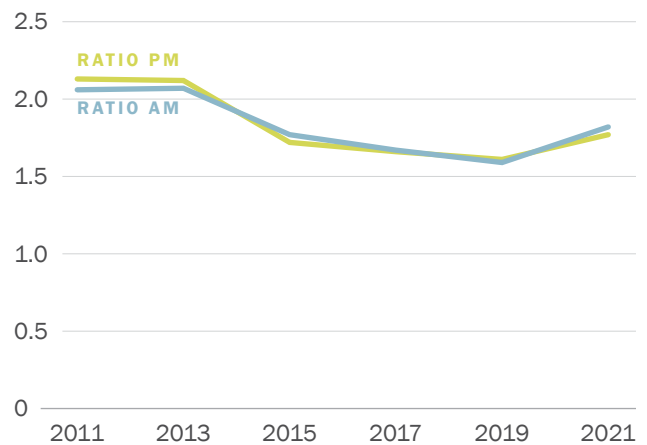


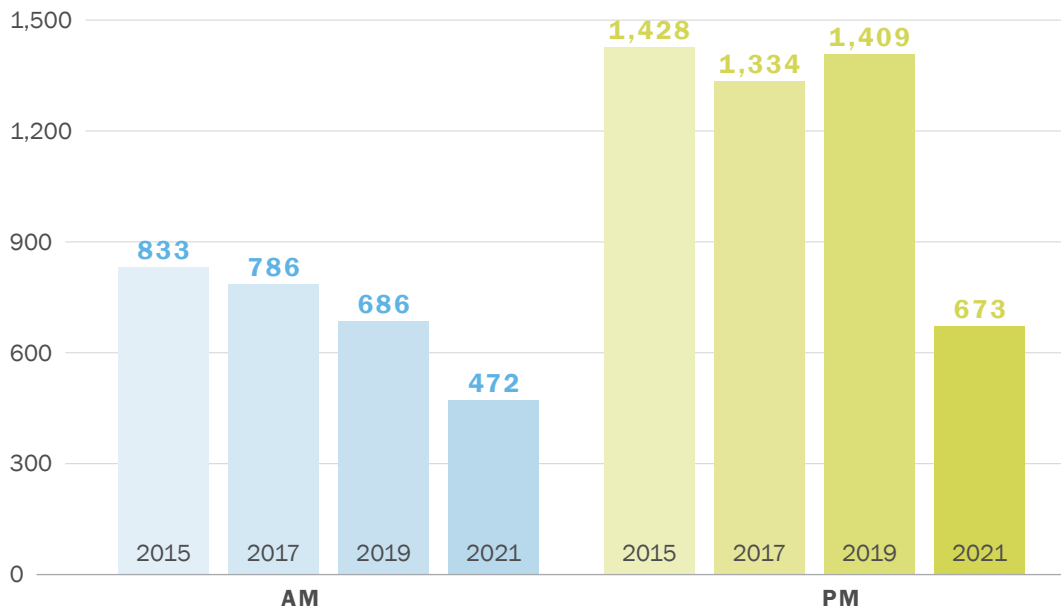
Figure 0-8. Auto-Transit Speed Ratio



Note: data for Figures 0-6, 0-7 and 0-8 collected April - May each year

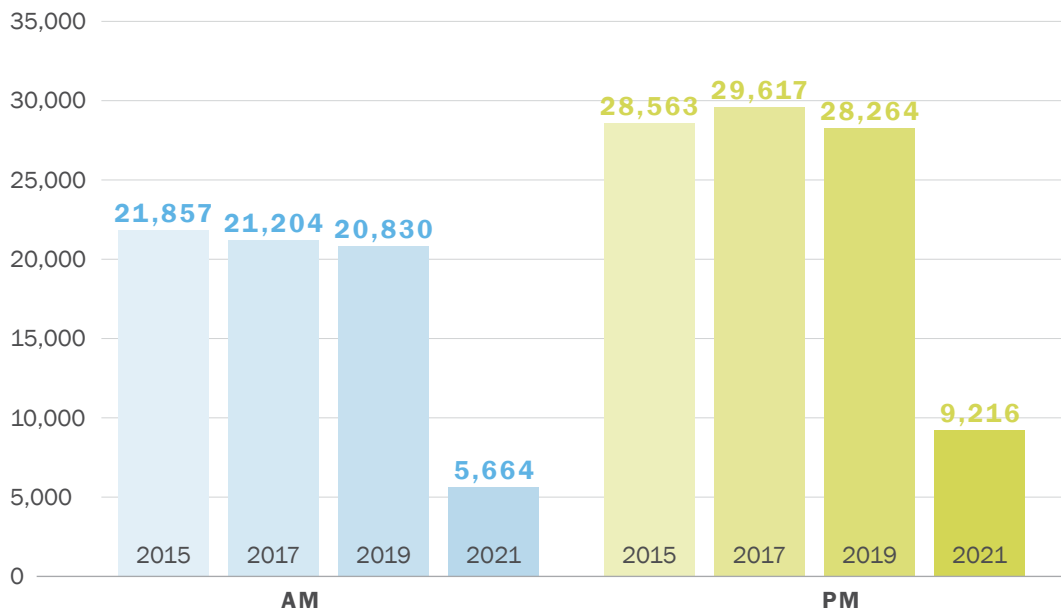
counts collected by SFCTA between 2015 and 2021. At these locations, bicycle and pedestrian volumes dropped by 45% and 70% respectively compared to a 22% reduction in vehicle volumes. All of these reductions are likely a reflection of greater levels of remote work and telecommuting, reductions in activity participation by individuals due either to public health-related personal preference or restrictions.

Figure 0-9. SFCTA Intersection Bicycle Counts 2015 - 2021



Note: data collected April - May each year

Figure 0-10. SFCTA Intersection Pedestrian Counts 2015 - 2021

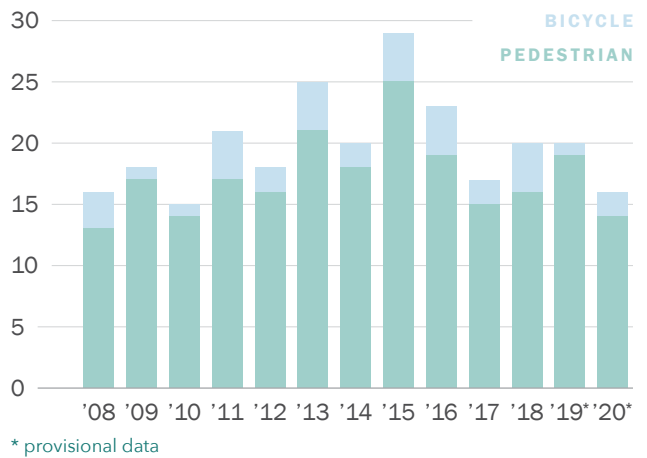


Note: data collected April - May each year

PEDESTRIAN AND BICYCLE SAFETY

Safety for pedestrians and cyclists are key measures of non-motorized transportation performance, and a critical policy priority for San Francisco. San Francisco adopted Vision Zero as a policy in 2014, committing to build better and safer streets, educate the public on traffic safety, enforce traffic laws, and adopt policy changes that save lives. Figure 0-11 illustrates the number of pedestrian and bicycle fatalities in San Francisco since 2008. It shows that while pedestrian fatalities decreased between 2019 and 2020, there was an increase in bicycle fatalities in the same period. Overall, the total non-motorized fatalities were lower in 2020 than 2018 and 2019.

Figure 0-11. Pedestrian and Bicycle Fatalities

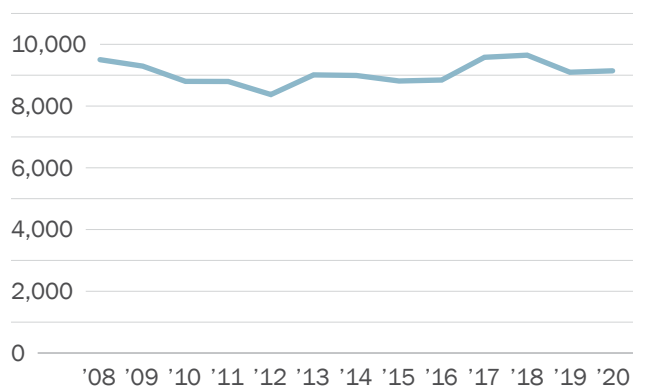


OTHER MEASURES

Vehicle Miles Traveled (VMT)

In 2016, the San Francisco Planning Commission adopted new guidelines for evaluating the transportation impacts of new projects. Critically, additional automobile delay as measured by level-of-service (LOS) is no longer considered an environmental impact, and environmental impact determinations now use vehicle miles travelled. Figure 0-12 illustrates the trend in estimated VMT on all San Francisco roadways. It shows that VMT dipped about 5% between 2017 and 2019. Note that there is a two-year lag in this estimate provided by Caltrans.

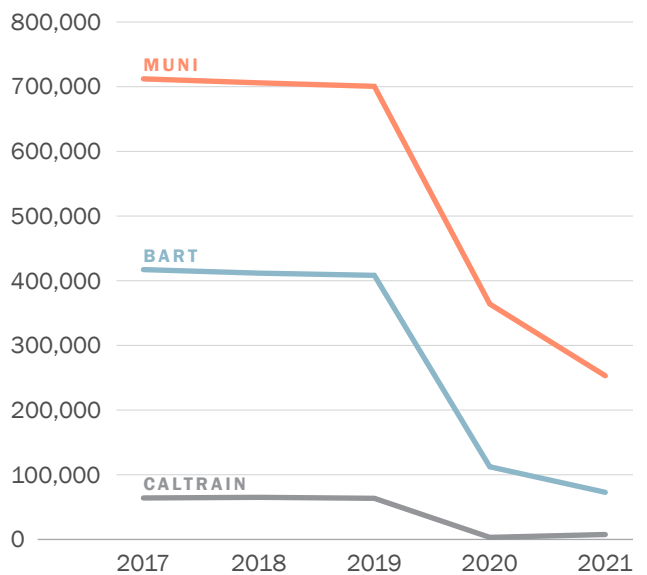
Figure 0-12. Vehicle Miles Traveled on all SF roadways



Transit Volumes

San Francisco’s strong backbone of local and regional transit has been key to our ability to manage congestion. Muni, BART, Caltrain, and commuter bus lines help move people into and around the city efficiently. Figure 0-13 shows ridership trends for the three largest transit systems serving San Francisco as of April - May

Figure 0-13. Average Daily Passengers by Transit Operator

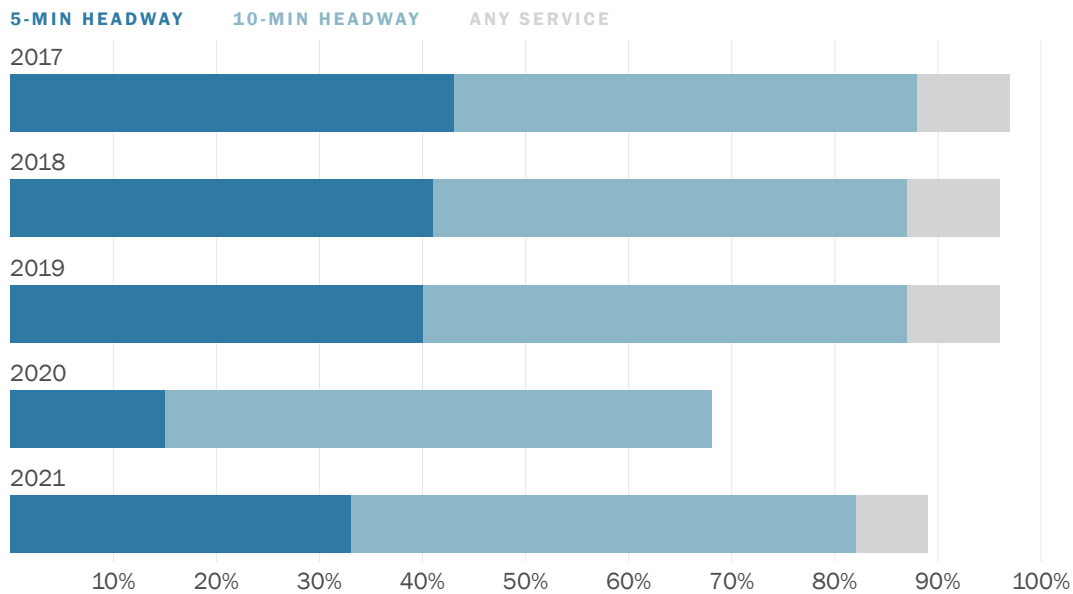


2021. Ridership on all three operators dropped significantly during shelter-in-place orders in April - May of 2020. Since then, ridership has been gradually climbing back up every month. More recent data indicates that ridership on Muni and BART has increased since the time of the data reported in this document but remains well below historical levels.

Transit Coverage

This year, a new metric to quantify and track transit coverage by walk access to different transit service frequency levels has been added to the report. This new transit coverage metric reports the percent of total population and total jobs that are within a 5-minute walk of transit service. Figure 0-14 shows transit coverage in terms of population for AM peak period. Prior to COVID-19, over 95% of the population had access to some level of transit service. During 2020, when substantial cuts to transit service were made, this was reduced to about 70%. In Spring 2021, as service was restored, 90% of the population had access to transit. Similarly, access to high-frequency transit (5-minute headway or better) dropped from 40% to 15% of the population between 2019 and 2020. This improved to over 30% in Spring 2021. Muni has proposed more service restoration in early 2022 that this analysis does not reflect.

Figure 0-14. Population Transit Coverage by Service, Weekday AM Peak



Note: data collected April - May each year

Mode Share

Mode share describes the mix of modes, such as transit, biking, walking, and driving, used to travel to, from and within San Francisco. Figure 4-35 and Figure 4-36 summarize the share of trips by mode for two different travel markets: Intra-SF, which are all trips that both start and end in San Francisco (3 million trips approx.), and To/From SF, which are trips where one of the trip ends is in San Francisco and the other trip end is not (1.5 million trips approx.). Walking is by far the most prevalent mode used to get around within San Francisco (43.4%), followed by various types of driving such as driving alone, sharing a ride, or using a TNC (37.3%), and using transit (15.8%). In contrast, travel to/ from San Francisco is dominated by driving (59.6%), but with a large transit share as well (39%). Figure 0-17 shows mode shares for the two markets (Intra-SF and To/From SF) combined. These data were derived from a large scale survey completed in 2019 prior to the pandemic. The Transportation Authority anticipates that this survey will be deployed again in 2022/2023, so that trends in mode shares can begin to be tracked on a more regular basis.

Figure 0-15. Mode Split for Intra-San Francisco Person Trips

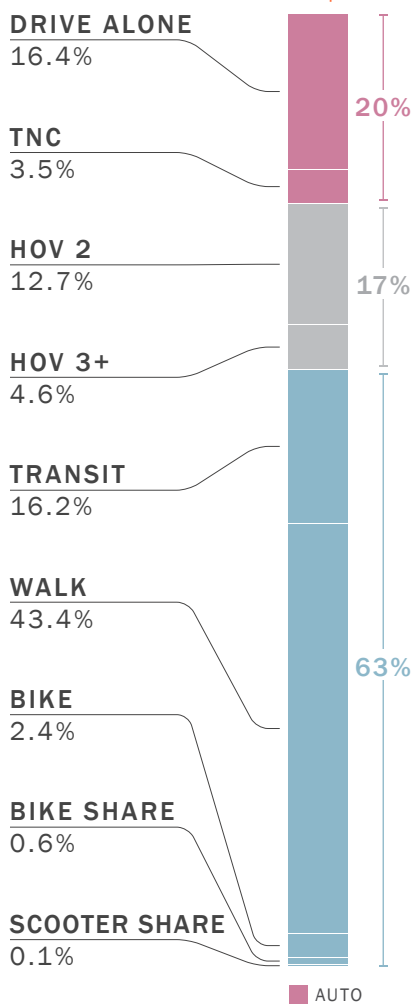


Figure 0-16. Mode Split for Regional To/From San Francisco Person Trips

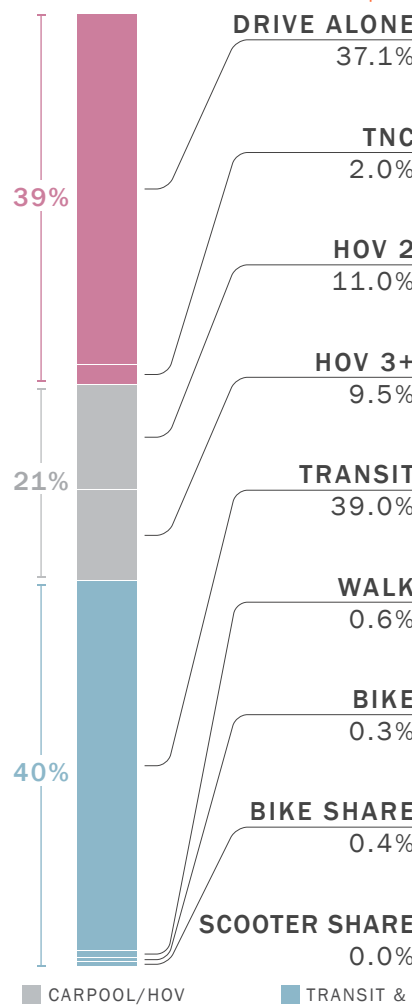
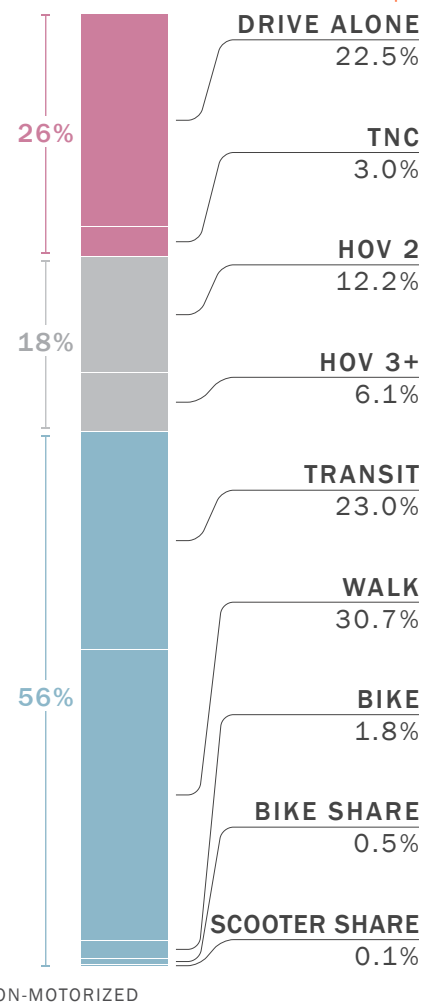


Figure 0-17. Combined mode split for Intra/To/From San Francisco Person Trips



What are we doing to manage congestion?

MANAGING DEMAND FOR TRAVEL

San Francisco has a multi-sector strategy for managing congestion, including land use, transit, bicycle & pedestrian investment & on-street prioritization, and demand management (including parking management, HOV/bus priority and in some locations, road pricing). These include a focus on new development as well as on managing congestion in existing neighborhoods and built up areas:

- Coordinating transportation aspects of area plans, development agreements, and other requirements on new development, including:
 - » Central SoMa Land Use Plan
 - » Central Waterfront development projects
 - » Treasure Island, Hunter's Point /Shipyard, Schlage Lock, Parkmerced
 - » Transportation Sustainability Program
- Policies and programs to manage trips in existing neighborhoods and built-up areas, including:
 - » School Access Plan
 - » SF Business Relocation TDM Project
 - » Commuter Benefits Ordinance and Emergency Ride Home Program
 - » SFMTA Commuter Shuttle Policy
 - » SFMTA Carsharing Policy
 - » SFMTA Bayview Community Based Transportation Plan
 - » Travel Demand Management Ordinance
 - » Downtown Congestion Pricing Study (paused until 2022)
 - » Traffic Congestion Mitigation Tax
 - » District 4 Mobility Improvements Study
 - » Octavia Boulevard Circulation and Accessibility Study Update

Furthermore, San Francisco is encouraging efficient land use planning by supporting development at higher densities in areas that are mixed-use (closer to jobs and retail) and are well served by transit. Plan Bay Area 2050 identifies Priority Development Areas (PDAs) where densities and transit levels can more readily support transit-oriented development. The Transportation Authority prepared a Transportation Investment and Growth Strategy, which describes how San Francisco will support PDAs through transportation investment. This is currently being updated for December 2021. The city's use of Metropolitan Transportation Commission PDA planning funds is supporting the following planning efforts and studies in line with the Transportation Investment and Growth Strategy:

- PDA Planning Projects
 - » Caltrain Southeast Rail Station Study
 - » District 4 Mobility Improvements Study
 - » Octavia Boulevard Circulation and Accessibility Study Update

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- » Embarcadero Multimodal Design
 - » Bayshore Multimodal Facility Location Study
 - » M-Oceanview Realignment
 - » Ocean Avenue Streetscape Plan
 - » Market/Noe Streetscape Design and EIR update
 - » Balboa Reservoir TDM
 - » Transit Corridors Study (ConnectSF)
 - » Streets and Freeways Study (ConnectSF)
 - » Downtown/Van Ness (Central Corridor)
 - » Treasure Island Mobility Management Study

PLANNING PROJECTS

ConnectSF is a multi-agency collaborative process to build an effective, equitable, and sustainable transportation system for San Francisco's future. ConnectSF has defined a 50-year vision of San Francisco's future that represents our priorities, goals, and aspirations as a city within the larger Bay Area. That vision is guiding plans for the city and its transportation system as agencies work to identify needed transit, streets, and highway improvements. ConnectSF developed a long-range vision for 2065 that serves as the underpinning of the next San Francisco Transportation Plan, SFTP 2050. The Transportation Authority is also coordinating with numerous local, regional state and Federal agencies and with the private sector to address congestion.

Key initiatives include:

- Vision Zero Program
- Caltrain Downtown Rail Extension to Salesforce Transit Center
- New Transbay Rail Crossing (Link21)
- 101/280 Managed Lanes Equity Study and MAP 101 coordination
- Transportation Sustainability Program (including the Transportation Sustainability Fee and the Travel Demand Management Ordinance))
- Van Ness, Geary, and Geneva/Harney Bus Rapid Transit
- Better Market Street Project
- Treasure Island Mobility Management Program
- Neighborhood Transportation Improvement Program (planning and capital improvement grants)
- School Access Study
- SFMTA Quick Build and MuniForward projects

FUNDING AND DELIVERING PROJECTS

The Transportation Authority is addressing near- and long-term transportation needs for San Francisco by funding projects and programs – mainly capital infrastructure, through grant programs such as the Proposition K transportation sales tax, Proposition AA vehicle registration fee and regional One Bay Area Grants (OBAG) programs, as well as coordinating with other local and regional agencies to apply for State and Federal funding to match local investments. Below are a few signature projects supported with Transportation Authority programmed funds.

- Muni New and Renovated Vehicles
- Muni Central Subway
- Caltrain Downtown Rail Extension to Salesforce Transit Center
- Caltrain Peninsula Corridor Electrification Project

The Transportation Authority is also overseeing and leading the delivery of key projects, many of which support infill transit-oriented development, including serving as lead agency for the construction of the Yerba Buena Island Southgate Road Realignment and West Side Bridges Seismic Retrofit Projects.

Finally, the Transportation Authority is undertaking two additional planning and funding efforts: updating our countywide transportation plan known as the San Francisco Transportation Plan (SFTP) – a third phase of ConnectSF – and preparing to seek voter support to extend the transportation sales tax program another 30 years through development and approval of a new transportation sales tax Expenditure Plan.



Memorandum

AGENDA ITEM 8

DATE: December 2, 2021
TO: Transportation Authority Board
FROM: Joe Castiglione - Deputy Director for Technology, Data & Analysis
SUBJECT: 12/7/21 Board Meeting: Approve the 2021 San Francisco Congestion Management Program

<p>RECOMMENDATION <input type="checkbox"/> Information <input checked="" type="checkbox"/> Action</p> <p>Approve the 2021 San Francisco Congestion Management Program (CMP).</p> <p>SUMMARY</p> <p>As the Congestion Management Agency (CMA) for San Francisco, the Transportation Authority is responsible for developing and adopting a CMP for San Francisco on a biennial basis. The CMP is the principal policy and technical document that guides the Transportation Authority’s CMA activities and demonstrates conformity with state congestion management law. This year’s CMP was unlike any other in the past due to the profound effect of the COVID-19 pandemic on peoples’ travel. The performance monitoring element of CMP 2021 shows that roadway and transit speeds have improved for the first time in a decade. However, congestion is returning gradually to the streets and strategies to managing congestion are key to maintaining accessibility as the city recovers. In addition to updated and expanded performance monitoring, the 2021 CMP also provides updates on initiatives to manage demand through pricing, incentives, and other strategies; Transportation Authority and City efforts to integrate land use and transportation planning in key locations; and other significant policy and planning progress since 2019.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Fund Allocation <input type="checkbox"/> Fund Programming <input type="checkbox"/> Policy/Legislation <input checked="" type="checkbox"/> Plan/Study <input type="checkbox"/> Capital Project Oversight/Delivery <input type="checkbox"/> Budget/Finance <input type="checkbox"/> Contract/Agreement <input type="checkbox"/> Other: _____
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BACKGROUND

The inaugural CMP was adopted in 1991, and the Transportation Authority Board has approved subsequent updates on a biennial basis. The CMP is the principal policy and technical document that guides the Transportation Authority's CMA activities. Through the CMP, the Transportation Authority also monitors the City's conformity with CMP requirements, per state congestion management law. Conformance with the CMP is a requirement for the City to receive state fuel tax subventions and for the City's transportation projects to qualify for state and federal funding.

State congestion management statutes aim to tie transportation project funding decisions to measurable improvement in mobility and access, while considering the impacts of land use decisions on local and regional transportation systems. CMPs also help to implement, at the local level, transportation measures that improve regional air quality.

The original CMP laws were enacted in 1989; since then, multiple legislative actions have amended the CMP requirements. For instance, Senate Bill (SB) 1636 (Figueroa), passed in 2002, granted local jurisdictions the authority to designate Infill Opportunity Zones (IOZs) in areas meeting certain requirements. Within a designated IOZ, the CMA is not required to maintain traffic conditions to the adopted automobile level of service (LOS) standard. Most recently, SB 743 (Steiner) modified the criteria for local jurisdictions to designate IOZs and eliminated the previous December 2009 deadline to do so. The San Francisco IOZ, covering most of San Francisco based on transit frequency and land use criteria, was adopted by the Board of Supervisors in December 2009, but additional areas may now qualify for designation under the new legislation.

CMP Elements. The CMP has several required elements, including:

- A designated congestion management network and biennial monitoring of automobile LOS on this network;
- Assessment of multimodal system performance, including transit measures;
- A land use impact analysis methodology for estimating the transportation impacts of land use changes; and
- A multimodal CIP.

The CMP also contains the Transportation Authority's technical and policy guidelines for implementing CMP requirements, including deficiency plans, travel demand forecasting, and transportation fund programming.

DISCUSSION

The past year and a half are without precedent in the past century, as the COVID pandemic disrupted peoples' health, livelihoods, activities, and the economy overall. These changes have, in turn, had a profound effect on peoples' travel, as shelter-in-place orders reduced the number and type of activities people were able to participate in publicly, as employers



responded with reduced workforces and with the widespread implementation of telecommute policies for some types of workers, as some residents relocated (at least temporarily) to other parts of the region, state, and country, and as transit agencies reduced and reconfigured service offerings. All of these changes, as well as many others, affected the performance of San Francisco’s transportation system, as reflected in this update to San Francisco’s CMP. The 2021 CMP is a substantive update, reflecting new data collection and expanded reporting, activities related to important policy developments at various levels, and significant planning progress since 2021. Key updates are summarized in the sections below.

Roadway Performance.

- Roadway Level-Of-Service (LOS) Results:** The Transportation Authority, through its consultant team, conducted roadway LOS monitoring on the CMP network during the spring of 2021. Combined average weekday speeds over all CMP segments in the morning and evening peak periods for 2019 and 2021 are shown in Figure 1. Average arterial travel speeds have increased 33% from 13.3 miles per hour (mph) to 17.7 mph in the AM peak and also increased 36% from 12.2 mph to 16.7 mph in the PM peak. In the AM peak, the average travel speed on freeways increased 46% from 31.5 mph to 46.0 mph. In the PM peak, the average travel speed for freeways increased 42% from 23.6 mph to 33.7 mph. The overall increases in speeds are a reversal in the trend of declining roadway performance observed during the past decade. Most of the change is attributable to COVID-19 impacts on the economy and peoples’ daily travel patterns.

Figure 1. CMP Network Average Peak Period Automobile Travel Speed		
Facility Type	Spring 2019	Spring 2021
Arterial AM	13.3 mph	17.7 mph
Arterial PM	12.2 mph	16.7 mph
Freeway AM	31.5 mph	46.0 mph
Freeway PM	23.6 mph	33.7 mph

- Roadway Travel Time Reliability:** A new metric for roadway reliability is introduced this year call the Buffer Time Index (BTI). This is calculated as the amount of additional travel time (expressed as a percent of average travel time) that the travelers need to additionally budget so that they have a 95% chance of arriving on time. BTI improved by about 15% on arterials and 5% on freeways between 2019 and 2021.



Transit Performance.

- **Transit Speeds:** The Transportation Authority performed an analysis of Muni bus speeds using data provided by the San Francisco Municipal Transportation Agency (SFMTA) from on-vehicle Automatic Passenger Counters. Average bus speeds on the CMP network during the 2021 monitoring period were 9.7 mph in the AM peak period and 9.4 mph in the PM peak. Compared to the last monitoring cycle in 2019, speeds increased by approximately 15% and 24% in the AM peak and the PM peak periods respectively, continuing the trend of improvements in transit speeds that was observed between 2017 and 2019.
- **Transit Travel Time Reliability:** This is measured in terms of transit speed variability calculated as the ratio between the standard deviation of transit speeds and the average transit speeds, expressed as a percentage. Lower percentages indicate less variability and more reliable service. Between 2019 and 2021 transit speed variability worsened further from 21% to 23% in AM and from 21% to 25% in the PM peak.
- **Transit Coverage:** This CMP update introduces a new metric that quantifies transit coverage by walk access to various transit service frequency levels. The metric indicates that in 2019, prior to COVID-19 pandemic, over 95% of the population had access to some level of transit service. In 2020, during the beginning of the pandemic this was reduced to about 70%. By Spring 2021, as service was restored, 90% of the population had access to transit. Similarly, access to high-frequency transit (5-minute headway) service has improved from 15% of the population in Spring 2020 to about 30% in Spring 2021. This analysis does not reflect the service restoration that Muni is proposing for early 2022.
- **Automobile to Transit Speed Ratio:** In order to assess the competitiveness of transit with driving, the ratio of auto to transit speeds is calculated by comparing auto to transit speeds on the portions of the CMP network for which Muni data was available. Average Muni bus speeds on the CMP network increased between 2019 and 2021, continuing the trend of improvement in transit speeds that was observed in between 2017 and 2019. However, this increase in transit speed was lower in magnitude compared to increase in auto speeds. As a result, transit to became less competitive with driving, as indicated by an increase in the ratio of auto speed to transit speed in AM peak from an average of 1.58 in 2019 to 1.82 in 2021, and by an increase in the PM peak from an average of 1.61 in 2019 to 1.77 in 2021.

Other CMP Elements.

- **Transportation Demand Management (TDM):** The TDM Element has been updated to include the city's efforts to implement TDM programs for new developments, through area plans, developer agreements, and planning code requirements. The Planning Department refined TDM Ordinance program standards in June 2018 to



clarify and strengthen the TDM program based on experience from the first year of implementation. The Transportation Authority has initiated the School Access Plan for San Francisco to recommend transportation solutions for K-5 students and their families. Solutions will seek to close equity gaps and provide sustainable transportation options to help reduce vehicle travel.

- **Land Use Impacts Analysis Program:** This chapter documents updates to the Regional Growth Framework, including updated criteria for Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs), and a new Priority Production Area (PPA) pilot program. San Francisco most recently adopted new PDA and PCA designations in 2019 in support of the recently adopted Plan Bay Area 2050 and is working with the Metropolitan Transportation Commission (MTC) to promote development within PDAs in the Bay Area. These efforts include discussions of neighborhood- and community-level transportation planning through the Prop K-funded Neighborhood Transportation Improvement Program and MTC's Community Based Transportation Planning program. Finally, the chapter provides updates to Transportation Authority's coordination efforts with other City agencies to develop consistent measures for assessing land use impacts on transportation.
- **CIP:** The CMP must contain a seven-year CIP that identifies investments that maintain or improve transportation system performance. The CMP's CIP is amended concurrently with relevant Transportation Authority Board programming actions. Thus, the 2021 CMP reflects program updates since adoption of the 2019 CMP, most notably 2018 and 2019 Transportation Fund for Clean Air county programs, Cycle 5 of the Lifeline Transportation Program, OBAG Cycle 2, the 2021 Prop K Strategic Plan and the 2017 Prop AA Strategic Plan and associated 5-Year Prioritization Programs. Also, as required by state law, the CMP confirms San Francisco's project priorities for the Regional Transportation Improvement Program, which is adopted by MTC for submission to the state.
- Over the next two years, the Transportation Authority will continue to coordinate transportation investments and support all aspects of project delivery across multiple agencies and programs, from smaller neighborhood pedestrian, bicycle and traffic calming projects to major projects including the Caltrain Downtown Rail Extension, Caltrain Electrification, the Central Subway, Yerba Buena Island West Side Bridges, and proposed bus rapid transit improvements on Van Ness Avenue and Geary Boulevard.
- **Modeling:** State law requires CMAs to develop, maintain, and utilize a computer model to analyze transportation system performance, assess land use impacts on transportation networks, and evaluate potential transportation investments and policies. The Transportation Authority's activity-based travel demand model, SF-CHAMP, has been updated since 2019, and model enhancements are discussed in



the 2021 CMP, along with required documentation of consistency with MTC modeling practices.

Next Steps. After approval from the Transportation Authority Board, the 2021 CMP report will be submitted to MTC for a review of consistency. MTC has not provided updated CMP guidance this year. However, the Transportation Authority intends to submit the report to MTC as it has done for the past CMP updates.

FINANCIAL IMPACT

The recommended action would not have an impact on the adopted Fiscal Year 2021/22 budget.

CAC POSITION

The CAC considered this item at its December 1, 2021 meeting, and unanimously adopted a motion of support for the staff recommendation. The CAC appreciated the data and analysis prepared for the CMP and encouraged staff to develop an outreach approach to ensure that information about the congestion tracker, in particular, is made available to people and communities who might not have internet access.

SUPPLEMENTAL MATERIALS

- Attachment 1 - Draft 2021 CMP Executive Summary
- Enclosure A - Draft 2021 San Francisco Congestion Management Program
- Enclosure B - CMP Technical Appendices