Performance Audit of San Francisco Municipal Transportation Agency's (SFMTA) Revenues, Ridership, and Congestion Management

Prepared for the

Board of Supervisors
of the City and County of San Francisco

by the

San Francisco Budget and Legislative Analyst

July 13, 2020

CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
BUDGET AND LEGISLATIVE ANALYST

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July 13, 2020

Supervisor Gordon Mar, Chair, Government Audit and Oversight Committee and Members of the San Francisco Board of Supervisors
Room 244, City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Dear Chair Mar and Members of the Board of Supervisors:

The Budget and Legislative Analyst is pleased to submit this Performance Audit of San Francisco Municipal Transportation Agency's (SFMTA) Revenues, Ridership, and Congestion Management. In response to a motion adopted by the Board of Supervisors in April 2018 (Motion No. 18-058), the Budget and Legislative Analyst conducted this performance audit, pursuant to the Board of Supervisors powers of inquiry as defined in Charter Section 16.114. We conducted this performance audit in accordance with generally accepted government auditing standards as set forth in the U.S. Government Accountability Office's Yellow Book, 2011 Revision. Those standards require that we plan and perform audits to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained for this report provides a reasonable basis for our findings and conclusions based on our audit objectives.

The objectives of this performance audit included assessments of: (1) Muni ridership trends over time and their causes, (2) SFMTA's congestion management and impacts on Muni operations, and (3) SFMTA operational revenues. Our office prepared a draft report based on analysis of relevant data and documents and other input provided by SFMTA. Our office provided the draft to SFMTA, as well as certain sections of the draft to the City Attorney and the County Transportation Authority, for review and input in January 2020. In March 2020, the Director of Transportation provided a written response to the audit, attached to this report, that constitutes the Agency's response to the audit.

Supervisor Gordon Mar, Chair
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At the audit exit conference, SFMTA staff stated that the Agency agrees with all of the audit's findings. In April 2020, the County Transportation Authority provided detailed feedback on *Section 3: Congestion* and *Section 4: Transportation Network Companies*. The City Attorney's Office provided feedback on *Section 4: Transportation Network Companies*.

Respectfully submitted,

Fred Brousseau, Director of Policy Analysis
Budget and Legislative Analyst's Office

Cc:

President Yee
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Supervisor Haney
Supervisor Mandelman
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Supervisor Preston
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SFMTA Board of Directors
Clerk of the Board of Supervisors
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Executive Summary

The Board of Supervisors directed the Budget and Legislative Analyst's Office to conduct a performance audit of the trends in Muni ridership and revenues, and the effectiveness of the San Francisco Municipal Transportation Agency (SFMTA) in managing traffic congestion and the impact of congestion on Muni through Motion M18-058, passed on April 24, 2018.

The scope of this performance audit includes (1) an assessment of Muni ridership trends over time and their causes, (2) an assessment of SFMTA's congestion management and impacts on Muni operations, and (3) an assessment of SFMTA operational revenues. The audit contains the following five findings pertaining to SFMTA operating revenues, ridership, congestion policy and management, transportation network companies, and transit improvement projects.

Section 1: SFMTA Operating Revenues

Although total SFMTA operating revenues increased between FY 2014-15 and FY 2017-18, the Agency has relied on reserves to balance its operating budget in each fiscal year FY 2016-17 through FY 2018-19. The Agency's projections from March 2019 show ongoing operating deficits through FY 2024-25. Although prior studies have identified potential new revenue sources for SFMTA, there is no plan to address SFMTA's ongoing operating deficits by reversing trends in existing operating revenues and developing new sources of operating revenue. Our conclusion from a benchmark survey of other transit agencies is that cost controls alone are insufficient to cover SFMTA's future operating needs; rather, the Agency needs to enhance its operating revenues if it is going to increase transit service and enhance transit reliability and desirability.

We recommend the following actions to the Board of Supervisors:

Recommendation 1.1: Work with the SFMTA Board of Directors to identify a set of alternative funding sources sufficient to fund SFMTA's operations and take all necessary action to enable and advocate for such new funding sources.

Recommendation 1.2: Request that SFMTA brief the Board of Supervisors regarding any actions SFMTA will take as a result of the 2019 fare evasion study.

Recommendation 1.3: Request additional performance audits of SFMTA to evaluate potential for cost controls in SFMTA operations.

Recommendation 1.4: Request that SFMTA fill the Parking Enforcement's Division vacant Parking Control Officer (8214) and Senior Parking Control Officer (8216) positions and allocate them to parking enforcement duties.

Recommendation 1.5: Request that the SFMTA fully implement SFMTA's plan to expand parking meter hours and locations.

Recommendation 1.6: Request an annual update from SFMTA regarding its evaluation of alternative uses for parking garages.

Section 2: Ridership

Ridership on Muni has not kept pace with population growth in San Francisco since 2010 and has generally been in decline since 2014. Moreover, Muni did not meet its annual transit ridership goals in both FY 2017-18 and FY 2018-19. This is likely because SFMTA has not met transit performance and customer rating targets in both years. At the same time, ridesharing services (such as Uber and Lyft) were the top public transit alternative choice in the SFMTA Ridership Survey for 2016 through 2018. Our audit identified one other city, Seattle, that was able to increase its transit ridership faster than that city's population growth after it dedicated new revenues to improve transit frequency and reliability. If Muni ridership continues to decline, passenger fare revenue will also decline and contribute to SFMTA's projected operating deficit. Because of these risks, the Board of Supervisors should request that SFMTA develop a plan to meet its transit ridership goals that includes (a) how transit ridership goals are determined, (b) specific actions the Agency will undertake to meet its annual ridership goals, and (c) the expected to timeline to complete each of the actions designed to improve ridership.

We recommend the following action to the Board of Supervisors:

Recommendation 2.1: Request SFMTA to develop a three-year plan to meet its annual ridership goals that includes (a) how transit ridership goals are determined, (b) specific actions the Agency will undertake to meet its annual ridership goals, and (c) the expected to timeline to complete each of the actions designed to improve ridership.

Section 3: Congestion

Between 2009 and 2019, evening speeds on major roadways declined by approximately 28 percent, from 16.9 miles per hour in 2009 to 12.2 miles per hour in 2019. Traffic congestion on City roads impacts public transit speed. Over the period 2009 to 2017, average transit speeds decreased by approximately 6.6 percent. Similarly, 56 percent of Muni transit trips were on-time in 2018, which is far below the Charter mandated target that 85 percent of Muni trips be on-time.

Despite these deteriorating traffic conditions, fueled in part by well documented growth in the City's population and jobs, SFMTA, which has jurisdiction over the City's streets, did not and still does not have a congestion management strategy. In addition, State law renders most of the City exempt from key requirements of State-mandated congestion management required in other jurisdictions. As a result, the State-designated Congestion Management Agency, the County Transportation Authority, does not require congestion mitigation efforts by SFMTA that would be required in other jurisdictions.

Reducing congestion would reduce the cost of Muni operations and allow for better service. In 2017, Muni delivered an estimated 219.6 million transit trips. We estimate that a 1.0 mile per hour increase in average road speeds would have allowed Muni to deliver an additional 35 million transit trips, a 16 percent increase above actuals, at

minimal additional cost. These additional transit trips could be implemented by increasing frequency of existing service and/or expanding routes (the latter would likely incur one-time capital costs for street re-design and installation of new power facilities).

Options for the City to reduce congestion include enhancing SFMTA's existing congestion management activities, which include: deploying additional Parking Control Officers to highly congestion intersections, accelerating planned traffic signal upgrades, and improving delivery of transit improvement and other capital projects. Because these efforts have been underway during a marked increase in the City's congestion, we judge that expanding them would only incrementally reduce congestion. To materially reduce traffic congestion, bold new efforts must be undertaken. These efforts could include implementing congestion pricing, requesting SFMTA to develop congestion mitigation plans similar to those required in other jurisdictions, and regulating Transportation Network Companies (discussed in *Section 4: Transportation Network Companies*).

We recommend the following actions to the Board of Supervisors:

Recommendation 3.1: Develop a congestion management policy for all City agencies to follow. The policy should contain specific congestion reduction targets people throughput goals and transit speed improvement targets to be met each year and require annual reporting by SFMTA and CTA.

Recommendation 3.2: In its role as the Board of Directors for the County Transportation Authority, request SFMTA to develop deficiency plans for highly congested areas of San Francisco, and for the CTA to monitor implementation of such deficiency plans, even if the areas are exempt from doing so under State law. The plans should prioritize enhancing the speed of public transit and people throughput.

Recommendation 3.3: Request the members of the State Assembly and State Senate to pass legislation that would allow the City to pilot traffic congestion pricing.

Recommendation 3.4: Request that members of the State Assembly and State Senate revise congestion management legislation to prioritize people throughput, vehicle miles traveled, and greenhouse gas emission reduction in addition to congestion.

Recommendation 3.5: Monitor the results of upcoming CTA study on proposals for congestion pricing in San Francisco.

Section 4: Transportation Network Companies

There is a growing body of research indicating that ridesharing service providers such as Uber and Lyft are a major factor contributing to worsening congestion in US cities, including San Francisco. An October 2018 report released by the San Francisco County Transportation Authority found that between 2010 and 2016, such ridesharing accounted for 51% of the increase in travel delay, 47% of the increase in vehicle miles traveled, and 55% of the decrease in average road speeds. In addition to increasing the number of cars on the road, ridesharing constitutes a disproportionate share of traffic

violations that contribute to congestion and threaten public safety. In September 2017, the San Francisco Police Department reported that ridesharing vehicles made up 64.9% of downtown traffic violations between April 2017 and June 2017. Although ridesharing has negative impacts on the City's traffic congestion and public safety, the City does not regulate these services to the extent the California Public Utilities Commission (CPUC) has asserted regulatory authority.

In 2013, the CPUC designated ridesharing providers, such as Uber and Lyft, Transportation Network Companies (TNCs). At that time, TNCs were a new regulatory category, a subset of Charter Party Carriers which the California Public Utilities Commission already regulated. As result, since 2013, the SFMTA is unable to regulate ridesharing services in areas for which the CPUC has asserted regulatory authority. The SFMTA does have regulatory authority with respect to enforcement of parking and traffic violations as authorized under state law.

Given TNCs impact on congestion and public safety, we recommend that the Board of Supervisors request that City Attorney review the City's ability to regulate TNCs in areas where there is no conflict with State law and advise the Board of Supervisors regarding their findings so that the City could regulate ridesharing services, as appropriate and consistent with state law. Such actions could include special parking and traffic enforcement units dedicated to controlling TNC or programs similar to those imposed on commuter shuttle and tour buses and, to the extent that such regulations are permissible under state law or TNCs agree voluntarily to such regulations, could include limits on where TNCs load passengers, limits on which roads TNCs may use, limits on the number of TNC vehicles that can operate at any one time, requiring TNC operators to obtain locally issued operating permits, imposing operating fees, and requiring more thorough reporting by the TNCs to the City regarding their operations within the City. The Board of Supervisors should then determine specific actions to take in conjunction with or separate from the MTA Board of Directors to enable the City and County of San Francisco to establish regulation of TNCs that does not conflict with State regulatory authority in the interest of reducing congestion in San Francisco

We recommend the following actions to the Board of Supervisors:

Recommendation 4.1: Request that the City Attorney complete a legal analysis of the City's ability to regulate all aspects TNCs operations and advise the Board of Supervisors on their findings and conclusions.

Recommendation 4.2: Determine specific actions to take in conjunction with or separate from the MTA Board of Directors to enable the City and County of San Francisco to establish regulation of TNCs that is not inconsistent with existing State regulations in the interest of reducing congestion in San Francisco.

Recommendation 4.3: Request members of the State Assembly and State Senate to revise State law to grant greater local authority of transportation network carrier operations.

Section 5: Transit Improvement Projects

SFMTA began implementing transit improvement projects in 2011 and was scheduled to have completed all such projects by 2020. However, the projects are only approximately 9.2 percent complete and the total estimated cost is $293.5 million more than the original budget of $91.1 million. Project costs have increased for a variety of reasons, including: changes to project scopes and design due to concerns of residents and businesses, particularly regarding loss of parking spaces; lack of coordination with other City departments delivering capital projects within or near the intended project area, lack of adequate project cost controls, higher than expected costs for contract construction services, and lack of available funding to initiate planned projects. In 2018, SFMTA had to correct $319.7 million of accounting errors in its capital budget, which negatively impacted 104 projects in the FY 2018-20 capital budget.

The delay of full implementation of these transit improvement projects has contributed to SFMTA not meeting its transit performance goals, including customer satisfaction and on-time performance. This has also likely contributed to SFTMTA's flat passenger growth in recent years, undermining the City's Transit First and environmental policy goals. Delays in implementing the transit improvement project raise the cost of implementation (as project delivery costs tend to escalate each year) and prolong the period during which they must complete with other capital needs during the capital budget process.

SFMTA needs to improve its project cost estimation methodology, improve management of its capital revenues to ensure their availability for timely project delivery, and properly account for and endeavor to expedite community outreach efforts in its project and capital planning. The Agency should also consider requesting one-time approval from the SFMTA Board of Directors to complete the transit improvement projects, as detailed in the 2011 Implementation Strategy for the Transportation Effectiveness Project. Not doing so will further imperil the timely delivery of its transit improvement projects, which was designed to improve the reliability of the City's public transit system.

We recommend the Board of Supervisors request SFMTA to take the following actions:

Recommendation 5.1: Develop policies and procedures for data entry and validation into the capital budget system.

Recommendation 5.2: Incorporate capital project delivery staff in planning phase of capital projects in order to provide more accurate scopes and budgets.

Recommendation 5.3: Analyze original project budgets and time estimates after projects are completed to better identify what was inaccurately forecast and develop tools and processes to improve the accuracy of those forecasts.

Recommendation 5.4: Incorporate community outreach efforts and associated re-design impacts on current project timelines.

Recommendation 5.5: Develop approaches for addressing common community concerns that repeatedly delay projects like merchant concerns about losing customer parking such as SFMTA arranging alternative parking or subsidizing shuttle services to affected commercial areas.

Recommendation 5.6: Request authority from Board of Directors to complete all Muni Forward projects as detailed in the 2011 Implementation Strategy such that no further legislative action is necessary to implement those projects.

Recommendation 5.7: Report back to the Board of Supervisors on implementation of the above recommendations after six months and one year from the release of this report.

Introduction

Audit scope, objectives, and mandate

The Board of Supervisors directed the Budget and Legislative Analyst's Office to conduct a performance audit of the trends in Muni ridership and revenues, and the effectiveness of the San Francisco Municipal Transportation Agency in managing traffic congestion and the impact of congestion on Muni through Motion M18-058, passed on April 24, 2018.

The scope of this performance audit includes (1) an assessment of Muni ridership trends over time and their causes, (2) an assessment of SFMTA's congestion management and impacts on Muni operations, and (3) an assessment of SFMTA operational revenues.

Methodology

The performance audit was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS), 2011 Revision, issued by the Comptroller General of the United States, U.S. Government Accountability Office. In accordance with these requirements and standard performance audit practices, we performed the following performance audit procedures:

- Conducted interviews with SFMTA management and staff, the County Transportation Authority (CTA) staff, and San Francisco Public Works staff.
- Reviewed planning documents from SFMTA, CTA, and the Metropolitan Transportation Commission.
- Reviewed the City Charter, Administrative Code, Transportation Code, and Environment Code as well SFMTA policies, procedures, memoranda, and other guidelines governing transit services, performance standards, and capital projects.
- Reviewed SFMTA operational budget data provided by SFMTA, including projections, historical budget and actual revenue data, and associated SFMTA program mandates, policies, and activities that generate operational revenues.
- Reviewed operational data provided by SFMTA related to transit ridership and transit services.
- Reviewed project plans, funding allocations, actual spending, and SFMTA Board of Directors actions related to transit improvement projects.
- Reviewed peer transit agency operational and spending data provided to the Federal Transit Administration, as well as peer agency transit planning and budgets.
- Conducted an extensive literature review of congestion management plans, policies, and best practices.
- Submitted a draft report to SFMTA, with findings and recommendations, to SFMTA on January 22, 2020.

- Submitted a draft for feedback of *Section 4: Transportation Network Companies*, to the City Attorney's Office on January 22, 2020 for feedback.
- Submitted a draft of *Section 3: Congestion* and *Section 4: Transportation Network Companies*, to the County Transportation Authority on January 24, 2020 for feedback.
- Conducted an exit conference with SFMTA on March 13, 2020. At the exit conference, SFMTA stated that it agreed with all of the audit findings and referred to a letter from the Director of Transportation, provided prior to the exit conference, which constitutes SFMTA's response to the audit. That letter is attached as Appendix 6.
- Received input on the draft report from the City Attorney's Office and from the County Transportation Authority in multiple occasions through May 2020.

Acknowledgments

We would like to thank staff at the San Francisco Municipal Transportation Agency for their assistance during the audit process.

Overview of SFMTA

In 1999, San Francisco voters approved Proposition E, which amended the City Charter to create the San Francisco Municipal Transportation Agency (SFMTA). Proposition E combined the Municipal Railway (Muni) and the Department of Parking and Traffic into the SFMTA, overseen by a Board of Directors. SFMTA Board members are appointed by the Mayor and must be confirmed by the Board of Supervisors. Proposition E also guaranteed a minimum level of General Fund support for public transit. In 2007, the voters of San Francisco approved Proposition A, setting new performance standards for public transit and augmenting the SFMTA's autonomous functions. Proposition A also transferred the Taxi Commission to the SFMTA.

SFMTA Mandates

According to Section 8A.100 of the City Charter, the purpose of creating the SFMTA was, among other things, to ensure "roads…are not gridlocked with congestion." Section 8A.113 of the Charter states that SFTMA "shall be responsible for management of parking and traffic functions within the City" by taking the following actions:

1. Provide priority to transit services in the utilization of streets, particularly during commute hours while maintaining the safety of passengers, pedestrians, cyclists and motorists;

2. Facilitate the design and operation of City streets to enhance alternative forms of transit, such as pedestrian, bicycle, and pooled or group transit (including taxis);

3. Propose and implement street and traffic changes that gives the highest priority to public safety and to impacts on public transit, pedestrians, commercial delivery vehicles, and bicycles;

4. Integrate modern information and traffic-calming techniques to promote safer streets and promote usage of public transit;

5. Develop a safe, interconnected bicycle circulation network; and

6. Ensure that parking policies and facilities contribute to the long term financial health of the Agency.

SFMTA's Regulatory Authority

Article 7 of the City Charter and Article 200 of the City's Transportation Code details the responsibilities and authority of SFMTA to regulate San Francisco streets. SFMTA has the exclusive authority to implement traffic control measures and improve traffic flow, manage on-street parking, loading zones and street restrictions for commercial vehicles, establish and manage transit-only lanes, install and manage bicycle lanes, install and manage pedestrian crosswalks. Certain actions require the approval of the SFMTA Board of Directors and may also in certain cases be reviewed by the Board of Supervisors. The SFMTA Board of Directors must approve changes to the City's Transportation Code.

Sections 1100 and 1200 of the Transportation Code regulate the activities of taxis and jitneys, respectively, but specifically exclude Charter Party Carriers, which includes tour buses, limousines, shuttle buses, and Transportation Network Companies such as Uber and Lyft.

San Francisco's Transit First Policy

Section 8A.115 of the City Charter defines the City's Transit-First Policy, which applies to all City officers, boards, commissions, and departments. The Policy states it is City policy to continuously improve transit options (Muni, bicycle, and walking) so that they are an attractive transportation alternative to driving alone. The Transit First Policy also states that the City will strive to reduce traffic congestion to support public health and safety and the City should encourage new methods of transportation except in cases where doing so would adversely affect Muni transit service.

As can be seen from SFMTA mandates noted above and the City's Transit First policy, both SFMTA and the City have voter approved mandates to adequately fund and continuously improve the City's transportation options and to manage street congestion.

San Francisco Climate Goals Related to Transportation

In May 2008, the Board of Supervisors amended the City's Environment Code to establish greenhouse gas emission limits for San Francisco, require City departments to develop plans to meet greenhouse gas limits, and authorize the Department of the Environment to coordinate such efforts (Ordinance 81-08). Per Section 902 of the Environment Code, the greenhouse gas limits for San Francisco are: 25% below 1990 levels by 2017, 40% below 1990 levels by 2025 and 80% below 1990 levels by 2050.

According to a 2018 report by the Department of the Environment,[1] San Francisco reduced its greenhouse gas emissions 30% between 1990 and 2016, exceeding its 25% reduction target set for 2017. According to that report, in 2016 transportation was the largest greenhouse gas emitting sector in San Francisco (contributing 46% of the City's total emissions) and emissions from transportation had only declined by 2% relative to 1990 levels. The 2% decrease in transportation emissions occurred even though vehicle miles traveled within the City increased by 362.6 million miles between 1990 and 2016, primarily as a result of changes to State law requiring enhancing vehicle fuel efficiency standards. The composition of transportation greenhouse gas emissions was as follows in 2016: 71% from passenger vehicles, 17% from ships and boats (non-ferry), 6% from off-road equipment, and 6% from public transportation.

According to SFMTA's 2017 Climate Action Strategy (required by the Environment Code, as noted above), SFMTA must increase its transit ridership in order for the City to meet its greenhouse gas reduction goal of 40% below 1990 levels by 2025. According to the document, implementing the Muni Forward transit improvement program (discussed in Section 5 of this audit) is part of SFMTA's strategies to increase its ridership and meet its climate goals. In addition, SFMTA updated its travel mode share goals from 50% of all trips should be non-private automobile to 80% of all trips should be in "sustainable" modes (transit, walk, bike, taxi and carshare, or low-emission vehicle).

SFMTA's Budget and Staffing

The City Charter requires that SFMTA submit two-year budgets to the SFMTA Board of Directors in even numbered years. The budgets may then be amended in odd-numbered years. The SFMTA budget must be approved by the SFMTA Board of Directors and the Mayor, who then forwards the budget to the Board of Supervisors. The Board of Supervisors cannot change SFMTA'S proposed budgets but may reject them with a minimum of seven votes, though in doing so it must approve an interim budget sufficient for the Agency to fund all of its operations. Any increase in General Fund appropriations for SFMTA above the Charter-mandated annual General Fund transfers require Board of Supervisors' approval.

Exhibit 1 below summarizes SFMTA's adopted operating budgets for FY 2016-17 to FY 2019-20 by revenue source and division.

[1] 2016 San Francisco Geographic Greenhouse Gas Emissions Inventory at a Glance

Exhibit 1: SFMTA Operating Budgets ($ millions)

Operating Budget Revenues	FY 2017	FY 2018	FY 2019	FY 2020
Parking & Traffic Fees/Fines	$324.5	$337.9	$356.4	$366.0
General Fund Transfer	$291.5	$299.3	$336.3	$345.4
Transit Fares	$205.9	$207.9	$204.0	$212.9
Operating Grants	$145.7	$148.5	$170.0	$174.4
Advertising, Interest, Taxi, & Rent	$48.1	$71.0	$48.0	$66.5
Subtotal, Operating Revenues	$1,015.7	$1,064.6	$1,114.7	$1,165.2
Capital Project Reimbursements	$121.2	$142.5	$82.2	$71.2
Use of Fund Balance	$45.0	$47.0	$20.6	$38.0
Total Operating Revenue	$1,181.9	$1,254.1	$1,217.5	$1,274.4

Operating Budget, by Division	FY 2017	FY 2018	FY 2019	FY 2020
Transit	$584.4	$608.4	$647.6	$679.0
Sustainable Streets	$170.2	$155.6	$170.5	$172.7
Agency Wide	$151.4	$171.3	$131.1	$162.0
Finance & Information Technology	$125.1	$109.9	$105.5	$106.4
Capital Programs and Construction	$70.8	$127.7	$80.1	$69.7
Human Resources	$32.6	$33.9	$36.4	$36.7
Taxi & Paratransit	$32.5	$32.1	$32.2	$33.7
Communications	$7.1	$7.2	$7.0	$7.1
Safety	$4.2	$4.3	$4.3	$4.3
Government Affairs	$1.3	$1.4	$1.3	$1.3
Director of Transportation	$1.7	$1.7	$0.8	$0.8
Board of Directors	$0.6	$0.6	$0.7	$0.7
Total Budgeted Expenditures	**$1,181.9**	**$1,254.1**	**$1,217.5**	**$1,274.4**
Annual percent change	16.1%	6.1%	(2.9%)	4.7%

Source: SFMTA adopted budgets

As shown above in Exhibit 1, SFMTA's operating budget increased from $1,181.9 million in FY 2016-17 to $1,274.4 million adopted for FY 2019-20. The operating budget decreased by 2.9% (or $36.6 million) between FY 2017-18 and FY 2018-19, due to decreases in budgeted revenues from transit fares and miscellaneous revenues such as advertising, interest, and taxi services, a reduction in the amount of expected reimbursements for operational expenses related to delivering capital projects, and reduced reliance on fund balance to fund operations.

Exhibit 2 below summarizes SFMTA's capital budget by program.

Exhibit 2: SFMTA Capital Budget ($ millions)

Capital Budget, by Program	FY 2017	FY 2018	FY 2019	FY 2020
Transit Optimization / Expansion	$196.5	$184.4	$141.3	$220.6
Fleet	$504.6	$352.2	$107.8	$191.7
Transit Fixed Guideways	$43.7	$62.9	$13.1	$73.9
Streets	$36.4	$46.8	$33.0	$49.4
Facility	$105.9	$29.6	$26.3	$44.9
Central Subway	$154.0	$150.0	$55.3	$0.0
Traffic & Signals	$23.1	$13.6	$9.1	$19.9
Other	$3.7	$4.7	$4.7	$11.5
Taxi	$0.4	$0.4	$0.5	$0.2
Communications / IT	$8.8	$0.4	$0.0	$0.0
Parking	$1.2	$5.0	$0.0	$0.0
Security	$5.6	$10.1	$0.0	$0.0
Total Capital Budget	**$1,083.9**	**$860.0**	**$391.1**	**$612.1**

Source: SFMTA adopted and amended budgets

Definition of capital programs:

Transit Optimization/Expansion: Plan, design, engineer, and construct infrastructure improvements to improve travel time, increase reliability and expand capacity of the transit system.

Fleet: Purchase and rehabilitate transit vehicles including motor coaches, trolley coaches, light rail vehicles, and paratransit vans.

Transit Fixed Guideways: Plan, design, and construct transit improvements to rail track, overhead wires, and train control technology.

Streets: Plan, design, and construct engineering improvements to improve street safety and promote walking, bicycling, and transit.

Facility: Acquire, develop, and/or rehabilitate transit station areas and maintenance facilities used for transit, traffic, and parking operations.

Central Subway: Plan, design, engineer, and construct the Muni Metro T-Third Line Phase II extension to Chinatown.

Traffic & Signals: Plan, design, engineer, and construct infrastructure and traffic signals to decrease transit travel time and improve mobility and safety on San Francisco streets. Other: Support for non-capital initiatives such as education or traffic enforcement programs that receive capital funds.

Taxi: Implement systems to optimize and support the taxi system in San Francisco to provide a better rider experience and promote low-emissions taxi vehicle use.

Communications / IT: Plan, design, and implement technology infrastructure upgrades to improve the efficiency and effectiveness of the SFMTA and provide a better experience for customers and employees.

Parking: Plan, design, rehabilitate, and construct public parking facilities or street infrastructure related to public parking.

Security: Plan, design, construct or implement systems to improve the security of the transit system.

As shown above in Exhibit 2, SFMTA's capital budget has decreased from $1,083.9 million in FY 2016-17 to $612.1 million adopted for FY 2019-20. SFMTA's original capital budgets for FY 2018-19 and FY 2019-20 were $513.5 million and $630.8 million, respectively, or a total of $141.1 million higher over the two-year period. However, the Agency revised its capital budget in December 2018 due to double-counting capital revenues, loss of federal grants due to lack of spending on prior awards, and overly optimistic assumptions about receiving state grants for capital projects. The audit team learned of this correction during the draft phase of the audit and though we did not have time to fully analyze the causes of these budget errors, SFMTA's capital budgeting and internal controls on financial data and reporting merit further study.

Exhibit 3 below summarizes SFMTA's funded positions between FY 2016-17 and FY 2019-20.

Exhibit 3: SFMTA Funded Positions

SFMTA	FY 2017	FY 2018	FY 2019	FY 2020
Funded Positions (FTES)	5,659.5	5,689.6	5,842.4	5,972.6
Annual Percent Change	6.6%	0.5%	2.7%	2.2%

Source: SFMTA adopted budgets

As shown above in Exhibit 3, SFMTA's funded positions increased from 5,659.5 in FY 2016-17 to 5,972.6 adopted for FY 2019-20. Although not shown in Exhibit 3, in FY 2018-19 the majority of SFMTA positions (4,221.84 of 5,842.4 FTEs) were in the Transit Division, including transit operators, maintenance workers, and mechanics.

Regional Trends

Although SFMTA operations and regulatory authority are limited to San Francisco, demand for San Francisco transit services and streets are regionally determined. Recent data on commuting patterns drawn from the U. S. Census American Community Survey reveal trends about demands on the City's transit system. Exhibit 4 below summarizes changes to commuting flows in and out of the City between 2011 and 2016.

Exhibit 4: Commuting Flows for San Francisco, 2011-2016

	2011	2016	Change
SF Working Population	434,545	477,025	42,480
Less SF residents working outside SF	99,596	115,903	16,307
SF residents working in SF	334,949	361,122	26,173
Commuters working in SF	268,221	324,774	56,553
Total workers in SF	**603,170**	**685,896**	**82,726**

Source: American Community Survey

As shown above in Exhibit 4, between 2011 and 2016, the total number of persons employed in San Francisco grew by 82,726. Over the same period, the number of commuters into San Francisco increased by approximately 56,553 commuters and commuters from San Francisco increased by 16,307 commuters. The additional commuters within and between San Francisco and other jurisdictions has increased demand on local transit service and roads.

Estimates of future demand for San Francisco transit and streets

Estimates of future traffic volume to street capacity generated by the San Francisco County Transportation Agency (CTA) are projecting a growing problem of traffic congestion in the coming decades. According to the CTA, increased population and employment will result in about 30 percent more automobile trips in San Francisco by 2040 relative to 2013. Exhibit 5 below, produced from congestion model estimates prepared by CTA, indicate that many of the City's main major streets will be over capacity during peak travel time hours by 2040.

Exhibit 5a: Projected Congestion in San Francisco (2012 base)

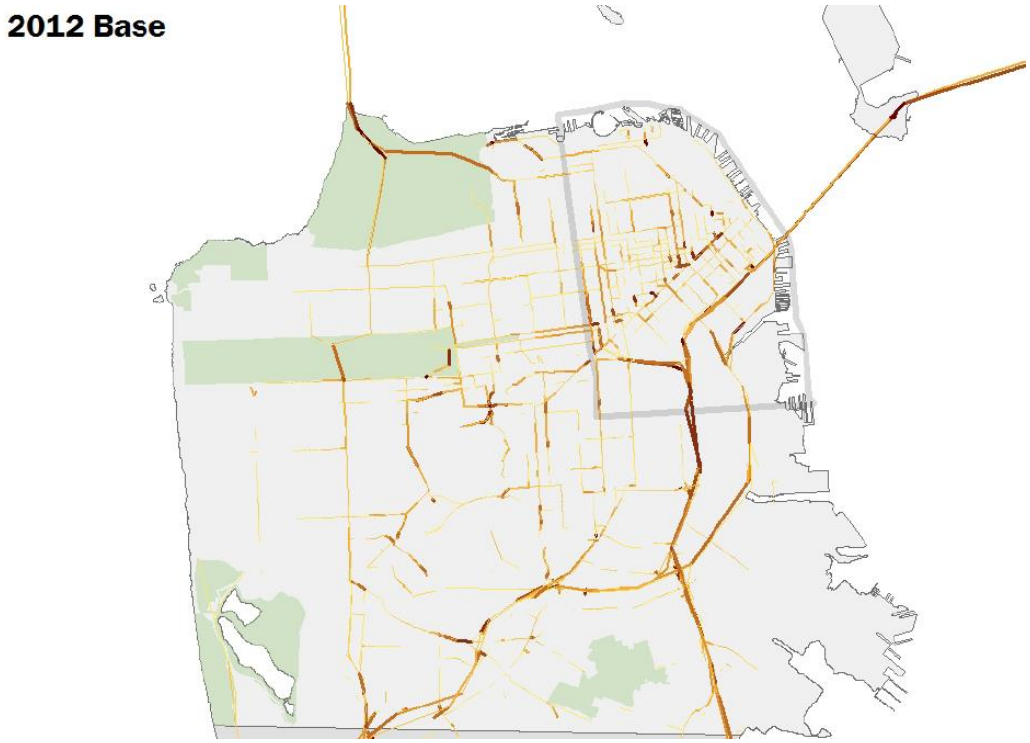
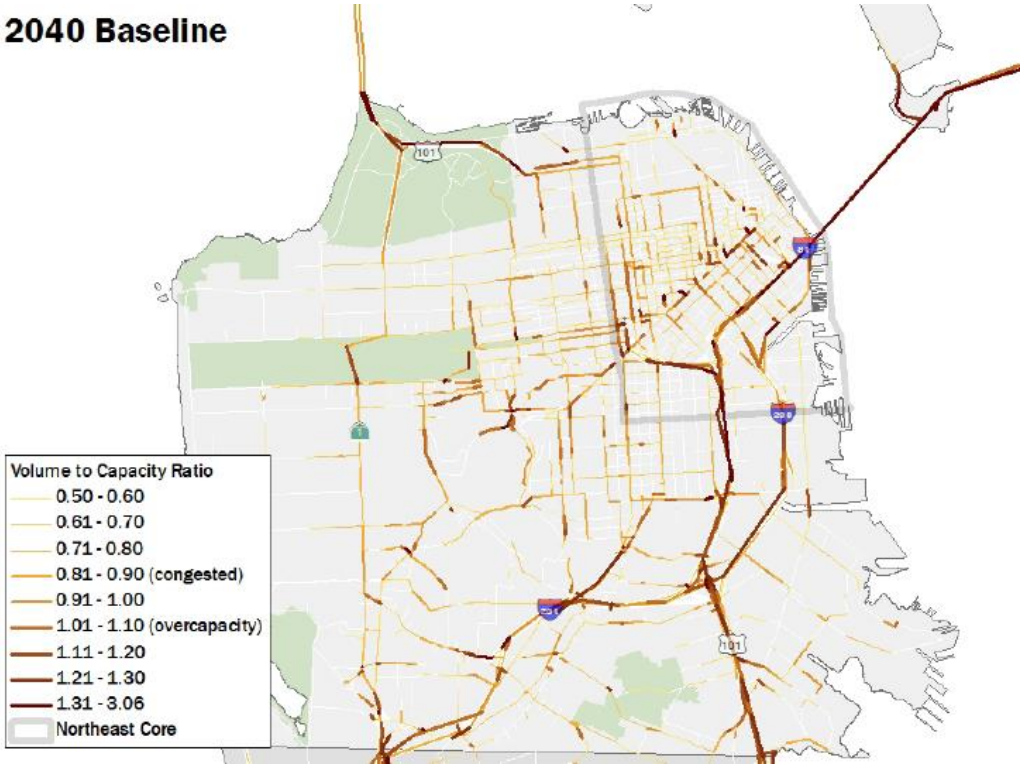


Exhibit 5b: Projected Congestion in San Francisco (2040 baseline)



Source: San Francisco Transportation Plan 2040

Impact of COVID-19 on Transit Services

Field work for this audit was conducted prior to the COVID-19 pandemic and stay-at-home orders. The change in Muni ridership, as many commuters and riders stay home, resulted in SFMTA reducing service hours. As the economy slowly reopens, the SFMTA is bringing some of the transit service back. In May and June, the Agency increased service, and by mid-August expects to have additional service hours restored, including restoring Muni Metro. However, the SFMTA reports it won't be able to restore much of pre-COVID service hours for at least six months through December, 2020 or longer due to reduced revenues and budget constraints. The long term impact on Muni service and SFMTA revenues and operations is not yet known.

1. SFMTA Operating Revenues

Although total SFMTA operating revenues increased between FY 2014-15 and FY 2017-18, the Agency has relied on reserves to balance its operating budget in each fiscal year from FY 2016-17 through FY 2018-19. The Agency's projections from March 2019 show ongoing operating deficits through FY 2024-25. Although prior studies have identified potential new revenue sources for SFMTA, there is no plan to address SFMTA's ongoing operating deficits by reversing trends in existing operating revenues and developing new sources of operating revenue. Our conclusion from a benchmark survey of other transit agencies is that cost controls alone are insufficient to cover SFMTA's future operating needs; rather, the Agency needs to enhance its operating revenues if it is going to increase transit service and enhance transit reliability and desirability.

Overview of SFMTA operating revenues

The SFMTA's operations are supported from the following revenue sources: 1) General Fund transfers, 2) passenger fares, 3) federal, state, regional and local grants, 4) traffic and parking fines, fees, and permits, 5) revenues from parking meters and garages, 6) such as advertising and other miscellaneous revenues, and 7) revenues from taxi-related services. Only three sources, the General Fund Transfer, operating grants, and traffic fines and fees, have materially increased in the five-year period between FY 2013-14 and 2017-18. All others have remained fairly stable or have decreased, while SFMTA costs have continued to rise.

In FY 2017-18, revenues from the City General Fund (36.8% of total revenues), passenger fares (19.3%), and federal, state, regional and local grants (14.8%) together comprised approximately 70% of all total operating revenue sources. Exhibit 1.1 below shows SFMTA operating revenue sources from FY 2013-14 through FY 2017-18.

Exhibit 1.1. Actual SFMTA Operating Revenues FY 2017-18 ($ millions)

Operating Revenue Sources	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018*	% Total
General Fund transfers	$310.7	$342.1	$353.5	$380.0	$388.9	36.8%
Passenger Fares	212.9	214.7	206.8	197.2	203.8	19.3%
Federal, State, Regional and Local Operating Grants	141.3	147.8	145.9	149.4	157.1	14.9%
Traffic and Parking Fines, Fees and Permits	119.9	119.0	122.2	138.9	144.5	13.7%
Parking Garages	70.1	72.1	71.8	68.9	70.7	6.7%
Parking Meters	61.3	58.2	64.9	68.4	65.7	6.2%
Other (includes advertising, rent, interest)	26.0	27.6	28.9	29.6	26.4	2.5%
Taxi Fees	15.2	9.5	3.3	1.3	0.6	0.1%
Total Operating Revenues	$957.4	$991.0	$997.3	$1,033.7	$1,057.6	**100.0%**

Source: SFMTA revenue data

* Note: FY 2017-18 are projections. During field work, SFMTA had not finalized its FY 2017-18 actual spending due to ongoing issues related to the transition to the City's new financial system, F$P.

Exhibit 1.2 below shows the percentage change in SFMTA's operating revenues between FY 2013-14 and FY 2017-18.

Exhibit 1.2: Change in SFMTA Operating Revenues Relative to FY 2013-14

	FY 2015	FY 2016	FY 2017	FY 2018
General Fund transfers	10.1%	13.8%	22.3%	25.2%
Passenger Fares	0.9%	(2.9%)	(7.3%)	(4.3%)
Federal, State, Regional and Local Operating Grants	4.6%	3.2%	5.7%	11.1%
Traffic Fines, Fees and Permits	(0.8%)	1.9%	15.8%	20.5%
Parking Garages	2.9%	2.5%	(1.7%)	0.9%
Parking Meters	(5.0%)	5.9%	11.6%	7.3%
Other (includes advertising, rent, interest)	6.2%	11.0%	13.9%	1.4%
Taxi Fees	(38.0%)	(78.1%)	(91.5%)	(96.1%)
Total Operating Revenues	**3.5%**	**4.2%**	**8.0%**	**10.5%**

Source: SFMTA revenue data

As shown above in Exhibit 1.2, the General Fund transfers increased by 25.2% between FY 2013-14 and FY 2017-18. General Fund transfer are, per the City Charter, automatic transfers to SFMTA based on the City's discretionary General Fund revenues and population growth. Operating grants increased by 11.1% % between FY 2013-14 and FY

2017-18. These include formulaic transfers from sales tax, gasoline tax, bridge tolls, and federal funding for paratransit. Revenue from traffic fines, fees, and permits increased between FY 2013-14 and FY 2017-18 by 20.5%, consisting of an increase from parking meters of 7.3% and from parking garages by 0.9%, all which are discussed in detail later in this section. Two sources of revenue decreased between FY 2013-14 and FY 2017-18: passenger fares declined by 4.3% and revenue from taxi fees declined by 96.1%, both of which will also be evaluated later in this section. Miscellaneous "other" revenue, which is mostly composed of various streams of advertising revenues (on vehicles, in stations, and on bus shelters) has fluctuated but has not materially changed in the past four fiscal years.

There is no plan to address SFMTA's projected operating deficit

Between FY 2013-14 and FY 2017-18, SFMTA's operating surplus decreased each year from $106 million in FY 2013-14 to $22.7 million in FY 2017-18. Exhibit 1.3 below summarizes the Agency's historical operating results.

Exhibit 1.3: SFMTA Historical Operating Results

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Revenues	$957,383,153	$990,970,288	$997,293,148	$1,033,684,563	$1,057,614,756
Expenses	851,379,218	906,060,093	950,792,514	991,667,367	1,034,910,993
Surplus	**$106,003,935**	**$84,910,195**	**$46,500,634**	**$42,017,196**	**$22,703,763**

Source: SFMTA

According to the Controller's 9-month budget report from FYs 2016-17 and 2017-18, SFMTA's operating surplus those years was primarily due to higher than expected Charter-mandated General Fund transfers.

While its operating surplus has been decreasing, SFMTA has been increasingly relying on its operating fund balance to balance its operating budget and has had a decreasing ending fund balance every year between FY 2014-15 and FY 2018-19.

Exhibit 1.4: Use of SFMTA Fund Balance for SFMTA Operations ($ millions)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Beginning Balance	$185.3	$243.2	$276.1	$242.0	$244.5
Use of Fund Balance *	(20.0)	(20.0)	(45.4)	(47.1)	(33.2)
Return to Fund Balance *	77.9	52.9	11.3	49.6	13.7
Ending Fund Balance	$243.2	$276.1	$242.0	$244.5	$224.9

Sources: Controller's Nine Month Budget Reports, FY 2013-14 – 2018-19

*Note: Return to Fund Balance refers to operating surplus and other transfers to SFMTA's operating fund balance at the end of each fiscal year. Use of fund balance refers to SFMTA's use of fund balance at the beginning of each fiscal year.

As shown above in Exhibit 1.4, SFMTA more than doubled its use of fund balance in FY 2016-17 and FY 2017-18 relative to the annual amounts in FYs 2014-15 and 2015-16. Use of fund balance in these years was required to balance the Agency's operating budget. In

its FY 2018-19 – FY 2019-20 biennial budget, SFMTA included $33.2 million in fund balance in the FY 2018-19 budget and $38 million in fund balance for FY 2019-20 budget.

The Agency's most recent long-term projections from March 2019 show a continued operating deficit after FY 2019-20, as shown in Exhibit 1.5 below. Values for FY 2017-18 and FY 2018-19 do not include use of SFMTA fund balance.

Exhibit 1.5: SFMTA's "Baseline" Operating Budget Projections ($ millions)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Revenue	$1,098	$1,134	$1,165	$1,192	$1,225	$1,254	$1,286	$1,318
Expenditures	1,125	1,146	1,203	1,227	1,272	1,320	1,369	1,419
Surplus (Deficit)	($27)	($12)	($38)	($35)	($47)	($66)	($82)	($101)

Source: SFMTA Five Year Operating Projections (March 2019)

When the "Additional Needs" of the agency were taken into account, the projected deficits increased by $193m in FY 2020-21 and continued to increase after, as shown below in Exhibit 1.6.[1] The Additional Needs are determined from each of SFMTA division's portion of budget requests that were unfunded in the FY 2018-19 - FY 2019-20 biennial budget with various inflationary adjustments (depending on cost type). Additional Needs include enhancements in operating areas such as repair and maintenance, staff increases for transit system performance improvements, staffing for construction support, and other enhancements. The Additional Needs do not include capital projects. Additional sources refer to expected additional passenger fares from the opening of the Warriors Arena in October 2019 and additional passenger fares from the Central Subway opening in late 2020.

Exhibit 1.6: SFMTA Baseline & Additional Sources/Needs Operating Projections ($ millions)

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Baseline Surplus (Deficit)	($35.03)	($47.05)	($66.04)	($82.76)	($101.62)
Additional Sources & Needs	(193.57)	(208.97)	(210.54)	(219.65)	(225.83)
Operating Surplus (Deficit)	(228.60)	(256.02)	(276.58)	(302.41)	(327.45)
Capital Project Reimbursements	16.00	17.85	18.98	20.00	20.65
Net Annual Operating Surplus (Deficit)	($228.60)	($256.02)	($276.58)	($302.41)	($327.45)

Source: SFMTA Five Year Operating Projections (October 2018 and March 2019)

The additional operational needs directly related to revenues, ridership, and congestion are summarized below in Exhibit 1.7. Of particular note is that current and projected budget allocations do not allow for any increase in transit service or transit reliability.

[1] SFMTA's "Additional Needs" were projected in October 2018 as part of the Agency's five-year financial planning process.

Exhibit 1.7: SFMTA's Unfunded Additional Needs, FY 2020-21 – 2024-25

Division	Program	Baseline funding
Transit	Transit Service	No additional transit service beyond FY 2018 levels
Transit	Safety & Maintenance	Staffing and resources to only the most safety and service critical elements. It will continue to defer or delay proactive and routine repair and maintenance
Transit	Transit Performance	No improvement in on-time performance (Charter mandated at 85% but was 56.1% in 2018)
Transit	Fleet Cleanliness	No improvement in fleet cleanliness
Transit	Special Event & Construction Coordination	Limited staffing and support to the Special Events and Construction Coordination teams. The understaffing will continue to impact and delay construction projects
Transit	Operations Center	Limited and skeletal staffing and operating hours, resulting in service delays, redirected maintenance delays, and greatly underutilized facilities
Transit	Overtime	700 non-platform staff working beyond the 25% overtime limit in City Administrative Code in FY 2018
Sustainable Streets	Parking Enforcement	No Parking Control Officers for special events; limited coverage and delays in redeploying PCOs
Sustainable Streets	SFPark (dynamic pricing and real-time parking occupancy data)	Slow, error-prone parking price adjustments, no real-time parking availability data; aging IT infrastructure

Source: SFMTA Five Year Operating Projections (October 2018)

Prior analysis has identified funding opportunities for SFMTA

In 2013, the Mayor created a task force composed of City staff and community stakeholders to review the City's transportation needs, analyze associated funding gaps, and identify potential revenue solutions to meet those gaps. The Transportation 2030 Task Force Report found that 63% ($6.3 billion) of SFMTA's capital funding needs through 2030 were not met. The report recommended two $500 million General Obligation bonds, increasing the City's vehicle license fee to 1.35% (it is currently at 0.65%), and increasing the sales tax by 0.5%, which would produce an estimated $2.95 billion over fifteen years. While a big boost, these increased revenues would still not be sufficient to cover the $6.3 billion in unfunded capital needs.

New SFMTA revenue initiatives since 2013

After the publication of the Transportation Task Force 2030 Report in 2013, voters approved one $500 million General Obligation bond in 2014 for transportation improvements. In addition, voters authorized a Transportation Sustainability Fee on all new development projects to offset their impact on transit. The fee took effect in

December 2015 and raised $15,543,197 in FY 2017-18. This funding can be used to offset the cost of expanding transit service. Also in 2014, voters approved Proposition B, a population-based General Fund transfer to SFMTA (in addition to existing General Fund transfer based on annual General Fund revenues).

However, voters rejected a sales tax measure in 2016 that would have allocated funds to SFMTA and the City has not taken any steps to increase the vehicle license fee recommended in the Transportation Task Force 2030 Report.

A follow up report, Transportation 2045, prepared by the County Transportation Authority and City staff, was issued in January 2018. The Transportation Task Force 2045 Repot reviewed SFMTA capital funding need for 2018 – 2045 and found $21.9 billion in unfunded needs. The Transportation 2045 Task Force Report identified 29 potential revenue sources (both ongoing and one-time). They include five vehicle-related taxes, three property-related taxes, six commercial and/or business taxes, two event related fees, and eleven other taxes, some of which would require changes to state law. Transportation 2045 Task Force members conducted ranked choice voting on the potential revenue sources. Exhibit 1.8 summarizes the six ongoing revenue sources that were broadly supported by task force members.

Exhibit 1.8: Previously Identified New Revenue Sources for SFMTA

Potential New Revenue	Estimated Annual Revenue
Increase Vehicle License Fee to Maximum Allowable Amount	$73m annually
Commercial Property Rent Tax Increase	$3m - $100m annually
Platform/Gig Economy Tax	$8m - $30m annually
Increase Sales Tax	$51m - $157m annually
Congestion Pricing	$60m - $80m annually
Transportation Network Company Fee	$12.5m - $62.5m annually
Total New Ongoing Revenue	**$207.5m – $502.5m**

Source: San Francisco Transportation 2045 Task Force Report

A combination of the six ongoing revenue sources that were broadly accepted by the Transportation 2045 Task Force could provide between $207.5 and $502.5 annually and fund SFMTA's "Additional Needs" for operations noted above.

The City's current intention to increase SFMTA's operating revenues is insufficient to close the projected operating deficit

Section 8A.109 of the San Francisco Charter requires SFMTA, the Mayor, and the Board of Supervisors to "diligently" develop sources of funding for SFMTA operations. However, the City does not have a plan to address SFMTA's projected operating deficit. Although voters passed a new tax on Transportation Network Vehicle rides in November 2019, the Controller estimated it would generate approximately $32 million in additional ongoing revenues for SFTMA, which would not be sufficient to fund the Agency's Additional Needs

(as described in Exhibits 1.6 & 1.7 above). The City is not actively pursuing any of the 28 other additional revenue sources identified in the Transportation 2045 Task Force Report, including the five other ongoing revenue sources that were broadly supported by Task Force members. Without additional operational funding and reduced operational costs, it is very unlikely that SFMTA will be able to improve or expand its service, which in turn would likely cause the continuation of lackluster ridership growth (discussed in *Section 2: SFMTA Ridership*) and worsening congestion (discussed in *Section 3: Congestion*).

SFMTA's revenue from passenger fares has declined

At $203.8 million in FY 2017-18, SFMTA's passenger fare revenues comprised almost 20% of total operating revenue sources in FY 2017-18. Passenger fare revenues consist of fares paid by transit riders and paratransit users[2] as well as proof of payment citation fine revenue.[3] Exhibit 1.9 below shows passenger fare revenue and Muni ridership between FY 2013-14 and FY 2017-18.

Exhibit 1.9: Change in Passengers and Fare Revenue between FY 2013-14 and FY 2017-18

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	% Change
Passengers	227,977,367	219,326,138	232,348,185	225,786,000	227,350,000	(0.28%)
Passenger Revenues	$212,860,559	$214,698,259	$206,757,542	$197,226,565	$203,786,447	(4.26%)

Source: SFMTA

As shown above in Exhibit 1.9, Muni ridership fluctuated between FY 2013-14 and FY 2017-18 but changed little between FY 2016-17 and 2017-18 (see Section 2 for additional detail on ridership trends). However, during that same period, fare revenue declined by 4.3%.

If passenger fares remain flat or continue to decline and the agency does not control its operating costs, it will worsen SFMTA's projected operating deficit. SFMTA's five year projections assume fare revenues increase 2.5% annually. If this had been the case between FY 2013-14 and FY 2017-18, fares would have increased 7.7% over the five-year period instead of the actual 4.3% decrease.

Free and reduced fare programs have contributed to the decline in SFMTA passenger fare revenue

Although SFMTA adopted a fare indexing policy in 2010 which allowed the Agency to raise fare prices in proportion to regional inflation and Muni operating costs, over the same period it also adopted free and discounted fare programs that have contributed to the decline in passenger revenue. Youth between the ages of 5 and 18, senior citizens over

[2] Passengers who are unable due to their disability to independently use accessible fixed route services some or all of the time. Services include shared ride, group van, and taxi services.

[3] Based on Section Division I. 7.2.101 and 7.2.104 of the San Francisco Transportation Code, the SFMTA collects fines from citations issued on fare evasions. The fine is set at $116 per violation in FY 2017 and $120 in FY 2018, with effective dates on July 1, 2016 and July 1, 2017.

age 65, persons with disabilities, and low-income residents qualify for free or discounted fares. SFMTA estimated that the cumulative impact of these programs was $30.7 million in FY 2017-18. Had these programs not been in effect, SFMTA fare revenue in FY 2017-18 would have been higher than it was in FY 2013-14 even though ridership was virtually the same in both years. The Agency has not developed an alternative revenue source to backfill the loss of passenger fare funding from these programs.

SFMTA is conducting its first system-wide fare evasion study since 2014

The most recent system-wide fare evasion study was completed in 2014. At that time, fare evasion was 7.9% of observed boarding and had an estimated cost of $17.1 million. More recently, in 2017, the Controller evaluated fare evasion on cable cars and found that fares were not collected from conductors 37% of the time. In a follow up audit in 2018, the Controller found that cable car fares were not collected 24% of the time, an improvement of 13 percentage points. Observed instances of failure to collect fares also improved.

According to SFMTA management, the Agency is conducting a comprehensive fare evasion study on all of its transit lines and the results will be available in the summer of 2019. Once the results of that study are known, SFMTA should take action necessary to ensure required fares are collected from all passengers.

Most research shows that Transportation Network Companies are holding back ridership growth on public transit

The introduction of transportation network companies (TNCs) such as Uber and Lyft very likely contributed to the flat Muni ridership trends and the associated decrease in revenue since FY 2013-14. Theoretically, TNCs could increase transit use by making it easier for customers to get to and from transit stops. However, they may also decrease transit use as riders switch to TNCs for trips that would otherwise have been completed using public transit. In any case, the City has not imposed any regulations on TNC operations. City officials have stated they believe municipal regulation of TNCs is preempted by the California Public Utilities Commission's decision to regulate TNCs. However, as discussed in Section 4, we recommend that the City Attorney conduct additional legal analysis of the City's ability to regulate TNC operations.

There is no definitive study of TNC's impact on transit use in San Francisco, though the County Transportation Authority is as of this writing conducting such an analysis and planned to publish its findings in 2020. However, there is some evidence from surveys that TNC use has contributed to a decrease in potential transit use in San Francisco. According to an October 2017 report from the UC Davis Institute for Transportation Studies,[4] a survey of seven major metropolitan regions in the United States, including the San Francisco Bay Area, found that cities with TNCs experience an average 6% reduction in transit use. The SFMTA Travel Decision Survey Comparison Report 2013-2017 cites

[4] Regina Clewlow and Gouri Mishra, "Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States," Research Report – UCD-ITS-RR-17-07, UC Davis Institute of Transportation Studies, October 2017.

research conducted in 2014 which estimated that 30% of TNC trips were mode shifts from transit.

As noted below in our evaluation of Taxi Fee Revenue, SFMTA surveys of transit mode choice reported that TNCs' share of total trips increased from less than 1% in 2013 to 4% in 2017. TNC use in 2017 was larger than for car shares, bicycling, and private shuttles' portions of trips taken, according to the survey. Finally, research published in November 2018[5] by researchers at Kentucky University examined transit data from 2002 – 2018 in various urban areas in the United States, including San Francisco, to estimate the impact the introduction of TNCs had on public transit ridership. That study found "that for each year after TNCs enter a market…bus ridership can be expected to decrease by 1.7%. This effect increases with time as TNCs increase in use." That study accounted for changes in transit service and gasoline prices.

Other research has reached different conclusions. A January 2018 report commissioned by the Southern California Association of Governments concluded that TNC use does not explain decreasing transit ridership in southern California because (a) the ridership decline began prior to the introduction of TNCs, (b) surveys of transit riders and TNC users demonstrate that they are demographically distinct populations, (c) most TNC trips occur between 10 p.m. and 4 a.m., when transit runs infrequently, and (d) TNC users report in surveys no change in their transit use. The conclusions applied to transit ridership trends in Los Angeles, Orange, Riverside, San Bernardino, Ventura and Imperial counties, not San Francisco.

SFMTA's passenger fares cover a lower proportion of operating expenses than its peers

A common measure of efficiency, the farebox recovery ratio, is the proportion of the amount of revenue generated through fares divided by operating expenses. Exhibit 1.10 compares the farebox recovery by transit mode of SFMTA and its peers.

[5] Michael Graehler, Richard Mucci, and Gregory Erhardt, "Understanding the Recent Transit Ridership Decline in Major US Cities: Service Cuts or Emerging Models?", 98th Annual Meeting of the Transportation Research Board, November 2018.

Exhibit 1.10: Benchmark Farebox Recovery Ratios

Agency	Demand Response[6]	Light Rail	Bus	Street Car Rail	Trolleybus	Fare Revenue/ Operating Expenses
SEPTA	9.2%		27.1%	35.5%	40.5%	35.7%
MBTA	5.9%	44.5%	22.5%		15.9%	43.3%
MTA - NYC	2.5%		34.1%			55.3%
LA Metro		14.3%	19.3%			19.2%
WMATA	8.1%		20.4%			37.8%
King County Metro	1.4%		26.8%	14.0%	32.2%	25.7%
VTA	6.9%	7.6%	10.3%			9.3%
BART						77.4%
Sound Transit		41.7%		0.0%		34.0%
Omnitrans	12.9%		17.1%			16.4%
NJ Transit	3.6%	18.4%	44.6%			47.6%
Average (excl. SF)	**6.3%**	**25.3%**	**24.7%**	**16.5%**	**29.5%**	**36.5%**
SF MUNI	**5.3%**	**18.3%**	**25.2%**	**24.1%**	**24.8%**	**24.0%**
SF Difference form Average	1.0%	7.0%	(0.5%)	(7.6%)	4.7%	12.5%

Source: 2017 National Transit Database Agency Profiles. Cable Car data was excluded because none of the other peer transit agencies provided that service.

As shown in Exhibit 1.10, SFMTA has a lower farebox recovery ratio for demand response transit, light rail, and trolleybuses when compared to its peers. These three transit modes account for 49% of SFMTA's transit operating expenses. Overall, SFMTA's total fare revenues fund 24% of its operating expenses which is 12.5% lower than the benchmark average of its peers of 36.5% of total operating expenses.

A low farebox recovery ratio means that operating expenses are funded mostly from non-fare revenues. A relatively low ratio could indicate a number of problems, including:

- Fares that are too low
- Higher operating costs than peers
- High fare evasion
- Lack of cost controls
- Low utilization of existing transit services

Exhibit 1.11 below summarizes the potential savings for SFMTA if it achieved farebox recovery ratios equal to the benchmark average for each mode in which the agency was underperforming. The savings estimates below assumes SFMTA improves its farebox

[6] Demand response referred to dispatched non-taxi passenger transport service, usually paratransit.

recovery ratios through cost controls, rather than raising fares. Although SFMTA's operating costs per trip is lower than the average of its peers (as shown in Appendix 1.1), SFMTA executive management stated to auditors that the Agency's operational costs could be better controlled.

Exhibit 1.11: Potential Savings in 2017 if SFMTA's Farebox Recovery Was Equal to Benchmark Average through Cost Control Measures

SFMTA	Cable Car	Demand Response	Light Rail	Bus	Street Car Rail	Trolleybus	Total
Fare revenue	$27,016,038	$1,091,770	$39,220,045	$82,908,312	$5,746,779	$40,995,246	
Operating Expense	$66,854,982	$20,609,984	$213,773,526	$329,281,264	$23,796,259	$165,409,220	
2017 farebox ratio	40.4%	5.3%	18.3%	25.2%	24.1%	24.8%	
Benchmark farebox ratio	N/A	6.3%	25.3%	24.7%	16.5%	29.5%	
Savings if SFMTA performed at benchmark	N/A	$3,269,495	$58,747,676	N/A*	N/A*	$26,537,593	**$88,554,764**

Source: BLA Analysis of National Transit Database 2017 Agency Profiles

Note: Total fare revenue shown in Exhibit 1.10 is different than in Exhibits 1.1 and 1.8 because those data include fare evasion fines.

*Actual revenue was greater than benchmark farebox ratio.

Based on this high-level farebox recovery analysis, if SFMTA achieved farebox recovery ratios for demand response, light rail, and trolleybus that were equal to the benchmark averages, it could make approximately $88.6 million available for other purposes if it achieved the benchmark level of farebox recovery. These estimated savings are illustrative only as the audit's scope did not include an evaluation of the Agency's cost controls. However, even if SFMTA achieved the $88.5 million in estimated potential cost savings, it alone would not be enough to fund its $228.60 million operating deficit projected for FY 2020-21 (including the Agency's "Additional Needs").

Although revenues from traffic and parking fines, fees and permits increased by 20% between FY 2013-14 to FY 2017-18, opportunities exist to increase revenue from parking citations

At $144.5 million, revenue from all traffic fines, fees and permits comprised approximately 14% of total SFMTA operating revenue sources in FY 2017-18. This includes revenues from sources such as parking citations, residential parking permits, special traffic permits, boot removal fees, automobile towing and fees from various enforcement programs. As shown in Appendix 1.2, approximately $96 million (or 66.4%) of all revenue from fines, fees and permits in FY 2017-18 came from parking citations.

Revenue from parking citations increased by only $7.9 million between FY 2013-14 and FY 2017-18

According to SFMTA parking enforcement data, citations for street cleaning accounted for 39.9% of total citations in FY 2017-18. The next largest category of violations was citations for expired parking meters in the Downtown area (11.6%), followed by citations of residential parking requirements (9.3%). Together these three categories accounted for 60.8% of parking citations issued by SFMTA in FY 2017-18. Exhibit 1.12 summarizes trends in parking citations between FY 2013-14 and FY 2017-18.

Exhibit 1.12: Number of parking violation citations, by type

Violation	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Change FY 2014 - 2018
Street Cleaning	504,870	520,496	544,295	528,535	525,795	20,925
Downtown Meter	215,748	174,219	145,380	146,099	153,396	(62,352)
Residential Overtime	141,984	163,995	136,701	133,093	122,665	(19,319)
Other	518,827	536,056	482,785	491,007	516,257	(2,570)
Total	**1,381,429**	**1,394,766**	**1,309,161**	**1,298,734**	**1,318,113**	**(63,316)**
Parking Fine Revenue	$88,034,218	$86,654,721	$87,981,134	$92,041,077	$95,973,763	$7,939,545

Source: SFMTA Parking Enforcement Division

Note: the "Other" category is generally composed of area specific parking violations.

As shown above in Exhibit 1.12, the number of citations for cars parked in street cleaning areas was 20,925 higher in FY 2017-18 than it was in FY 2013-14. However, this was overwhelmed by the decrease in citations for overstaying downtown parking meters and exceeding parking time limits in areas requiring residential parking permits, resulting in a net decrease of 63,316 in parking citations in FY 2017-18 compared to FY 2013-14.

Revenues increased most years despite the decrease in citations because fees for such violations increased. Overall, revenue from parking fines increased by $7.9 million between FY 2013-14 and FY 2017-18. However, if in FY 2017-18 citations for downtown meters and residential overtime equaled their levels in FY 2013-14, SFMTA would have raised an additional $6.8 million in operating revenues.[7] In addition to foregone revenue, decreased enforcement of parking violations can worsen congestion, as motorists spend a longer amount of time searching for scarce parking spaces and illegally parked cars block traffic.[8]

[7] Calculated by adding the difference in downtown meter citations between FY 2013-14 and FY 2017-18 (62,352) and residential overtime (19,319) multiplied by $84, the FY 2017-18 fees for both violations.

[8] For example, in May 2015 SFMTA announced enhanced enforcement of illegally parked cars and delivery trucks during rush hour as part of an effort to ease congestion during rush hour commute times.

SFMTA stated that parking violation revenue has decreased because, since the beginning of FY 2016-17, Parking Control Officers have been directed to focus a greater portion of their time on traffic management, such as controlling heavily travelled intersections, rather than enforcing parking regulations. This was done to support Vision Zero and mitigate traffic congestion. However, this does not fully explain the decrease in parking citations which began prior to that change in policy.

Parking Control Officer vacancies limit SFMTA's enforcement capacity

In addition to the changes in Parking Control Officer duties noted above, SFMTA has not filled all of its budgeted positions for Parking Control Officers and Senior Parking Control Officers, who are responsible for parking enforcement. Exhibit 1.13 summarizes the extent to which these positions have been filled between FY 2012-13 and FY 2018-19.

Exhibit 1.13: Budget and Actual Staffing for Parking Control Officers *

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Budgeted staff	360.00	360.00	374.00	374.00	352.62	357.00	360.00
Actual staff	268.39	276.72	298.83	285.87	284.86	340.00	349.00
Vacant positions	91.61	83.28	75.17	88.13	67.76	17.00	11.00
Vacancy rate	25.4%	23.1%	20.1%	23.6%	19.2%	**	**

Source: Controller and SFTMA. Staff refer to Parking Control Officers and Senior Parking Control Officers.

* FY 2016-17 as of June 30, 2017 (point in time), and FY 2017-18 as of June 30, 2018 (point in time)

** Unavailable

As shown above, between FY 2012-13 and FY 2016-17, SFMTA had between 67.76 and 91.61 vacant Parking Control Officer and Senior Parking Control Officer positions, on average, during the fiscal year. Data for FYs 2017-18 and 2018-19 are point in time counts from June 30 of each year and do not represent annual vacant positions. However, as of June 30, 2017 SFMTA had 17 vacant Parking Control Officer Senior Parking Control Officers. Similarly, on June 30, 2018, SFMTA had 11 vacant Parking Control Officers Senior Parking Control Officer positions.[9] These vacancies have contributed to SFMTA's decrease in parking enforcement and the associated foregone revenue. As shown in Exhibit 1.12, the decline has particularly been significant in citations for expired downtown parking meters.

According to the SFMTA Director of Parking Enforcement, Parking Control Officers generate two to three times parking enforcement revenue relative to their total cost (including salary and benefits), so filling these vacant positions will generate net operational revenue. The revenue from these positions will also offset the cost of the

[9] These vacancies likely changed during the course of each fiscal year, though actual annual spending on these positions is unavailable due to ongoing data reliability issues after the City transitioned its financial system in June 2017 from FAMIS to FSP.

Senior Parking Control Officers, who generate less parking enforcement revenue as a result of their supervision responsibilities.

Opportunities exist for SFMTA to increase revenue from parking meters and garages

At $136.4 million, revenue from all SFMTA parking meters and garages comprised approximately 13% of total SFMTA operating revenue sources in FY 2017-18. SFMTA oversees 38 off-street parking facilities with more than 15,000 total spaces, on-street parking through the use of approximately 28,000 on-street parking meters, and sells parking meter cards. According to SFMTA, the parking garage and lot spaces managed by the SFMTA constitute approximately 30% of all spaces downtown and approximately 15% of all spaces Citywide. In December 2017, SFMTA implemented SF*park*, a parking demand-responsive approach to setting parking rates at SFMTA-administered parking garages and meters in certain areas of the City.

SFMTA reversed or never implemented its plans to expand parking meter areas and hours of operation

As shown below in Exhibit 1.14, revenue from parking meters increased by 7.3% between FY 2013-14 and FY 2017-18.

Exhibit 1.14: Parking Meter Revenue ($ millions)

	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	% Change
Total	$61.27	$58.23	$64.91	$68.40	$65.74	7.30%

Source: SFMTA

While revenue from parking meters has increased during the four fiscal years shown in Exhibit 1.14, proposals to extend parking meter hours and to expand the number of parking meters, which would have generated additional operating revenue, have not been implemented.

Limited hours and range of parking meters

In addition to the demand-based parking rates implemented in December 2017, two policy choices have impacted SFMTA's parking meter revenue. First, during FY 2013-14, SFMTA began enforcing parking rules on Sundays but stopped after that year at the request of the Mayor's Office. SFMTA estimates that the program would have generated $6.7 million in net revenue during calendar year 2013 if the program had not been rolled back.

In 2016, SFMTA staff proposed an expansion of parking meters and their hours of operation beyond the default end time of 6pm. However, that proposal has only been partially implemented. At the time, SFMTA estimated that extended parking meter hours and adding additional parking meters would generate an additional $4 million annually. SFMTA has added parking meters in Showplace Square and Dogpatch and is planning to

add parking meters to the area surrounding the Warriors Arena, but has not added the number of parking meters it originally proposed in 2016. Similarly, SFMTA has generally not extended parking meter hours beyond 6pm. According to SFMTA, the Agency planned to extend parking meter evening hours in FY 2018-19. We surveyed other cities and found several have parking meter hours that extend beyond San Francisco's default end time of 6pm: Boston (8pm), New York City (10pm), Seattle (10pm), and San Jose (10pm).

Revenue from parking garages did not grow between FY 2013-14 and FY 2017-18

As shown in Exhibit 1.15, revenue from SFMTA parking garages increased by just less than 1% between FY 2013-14 and FY 2017-18.

Exhibit 1.15: Parking Garage Revenue ($ millions)

	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	% Change
Total	$70.07	$72.13	$71.82	$68.88	$70.74	0.95%

Source: SFMTA

Appendix 1.3 shows revenues from each SFMTA parking garage since FY 2013-14. As shown in Appendix 1.3, the decline in parking garage revenues has generally occurred in garages located downtown and in the Financial District. A business organization representative stated to the audit team that privately operated parking garages in that area are also experiencing a decline in revenue and speculated that it was caused by the citywide increase in the public using ride-sharing services or Transportation Network Companies (TNCs) such as Uber and Lyft users. An October 2018 report by the County Transportation Authority, "TNCs & Congestion," showed TNC use concentrated in the downtown area, which is consistent with this theory.

SFMTA also believes that TNCs have contributed to the decrease in downtown garage use and is exploring alternative uses for those spaces. In April 2018 the Agency issued a request for proposals to develop the area currently occupied by Moscone Center garage into a mixed-use hotel, affordable housing, and parking garage. SFMTA staff stated that the Agency is exploring alternative uses for other parking lots on City owned property given the decrease in utilization in some of its parking garages.

Taxi-related revenue declined by 96% between FY 2013-14 and FY 2017-18. SFMTA has not backfilled this operating revenue and there is no indication that this trend will be reversed or that this source of revenue will reemerge in the foreseeable future

The $595,948 in SFMTA operating revenue from taxi-related services comprised approximately 0.1% of total SFMTA operating revenue sources in FY 2017-18, a significant decline from the $15.2 million in taxi-related revenue in FY 2013-14, then representing 1.6% of total operating revenue.[10]

Every taxi on the road at any given time must have an SFMTA-issued medallion card to be considered a legal operation. The City, through SFMTA, determines the total number of medallions, which controls the supply of taxis authorized to operate. As of 2018, there were 1,575 authorized medallions available for San Francisco taxis.

Starting in 2010 with a pilot program, which was fully implemented in 2012, SFMTA began a program allowing medallion holders to surrender their medallions to the Agency and receive a fee of $200,000 as long as there was a qualified buyer who could purchase the medallion from SFMTA for $250,000. This program provided a financial incentive and reward to some individuals to surrender their medallions, a means for more taxi drives to obtain medallions (the program replaced a waiting list system that often required waiting years to obtain a medallion from a driver who had retired or died), and a financial benefit for SFMTA as they retained the $50,000 difference between the purchase price for surrendered medallions ($200,000) and the selling price to the new owner ($250,000). These revenues were used to pay for the Agency's taxi administration program, but also provided funding for Agency overhead costs and transit support.

The emergence of Transportation Network Companies (TNCs) in approximately 2009 changed the market for taxi medallions in San Francisco. These new business entities provided ride services that competed with taxis but were not regulated by the City and therefore did not require medallions and had no limit on the number of vehicles that could be in operation at any time. The State Public Utilities Commission asserted itself as having regulatory authority over TNCs in 2012, classifying them as "charter party carriers", and different than taxis regulated by municipalities because the TNCs' ride services are provided on a "pre-arranged" basis, accessed through smartphones only, and cannot be accessed by being hailed on the streets like taxis.

Between 5,700 and 6,500 TNC vehicles were estimated to be operating in San Francisco at any one time by the County Transportation Authority[11] in 2017. This significant increase in competition for the 1,575 medallions for taxicabs has resulted in SFMTA's taxi-related revenue decreasing by 96 percent between FY 2013-14 and FY 2017-18. There is no end in sight for this change as TNCs continue to operate with no limit on the number of

[10] In December 2008, the Board of Supervisors transferred the powers, duties and functions of the Taxi Commission to the SFMTA. In March 2009, the SFMTA assumed responsibility for regulating the taxi industry within the City.
[11] "TNCs Today", San Francisco County Transportation Authority, June 2017.

vehicles in service at any time, often offering lower cost and more convenient service than public transit and hailing taxis. A 2018 report from the County Transportation Authority, "TNCs and Congestion," found that TNCs accounted for 55% of the average road speed decline between 2010 and 2016.

Exhibit 1.16 below shows revenues from all taxi-related services from FY 2013-14 through FY 2017-18.

Exhibit 1.16: Taxi Related Revenues

Taxi-Related Revenue Sources	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	% Change
Taxi Medallion Sales	$10,285,000	$6,022,500	$2,422,410	($1,372,035)	($1,201,806)	(111.7%)
Taxi New Driver Permits	74,883	47,905	38,416	15,596	0	(100.0%)
Color Scheme Permit-Lease Payment	1,729,530	823,897	549,998	227,725	62,175	(96.4%)
Taxi Enforcement – Permit Holder Fine	28,436	53,548	61,494	24,448	4,787	(83.2%)
Other Taxi Permit Renewal Fees	2,234,409	1,743,019	158,180	1,797,184	1,110,020	(50.3%)
Taxi Driver Permit Renewal Fee	700,781	646,522	13,686	510,658	487,086	(30.5%)
Other Taxi Permit Fees	191,258	120,095	92,050	85,216	133,686	(30.1%)
Total	**$15,244,297**	**$9,457,486**	**$3,336,234**	**$1,288,793**	**$595,948**	**(96.1%)**

Source: SFMTA

Note: Negative values for taxi medallion sales in FY 2016-17 and FY 2017-18 are the result of loan write-offs for down payment assistance for taxi medallion sales in prior years.

As the demand for taxi services has decreased, the value of taxi medallions, the sale of which constitutes the largest portion of SFMTA's taxi-related revenues, has decreased from $10,285,000 in FY14 to negative $1,201,806 in FY 2017-18. In addition, according to a May 2018 SFMTA memo on the SFMTA's effort to stimulate demand for the taxi services, the Agency has forgone $9,534,895 between FY 2013-14 and FY 2017-18 in waived taxi fees in order to reduce costs for taxi providers.

Conclusion

SFMTA has a projected operating deficit of $228 million in FY 2020-21 and is projecting increasing operating deficits through at least FY 2024-25. Prior analysis has identified 29 new revenue sources for SFMTA but the City is not actively pursuing any of them (with

the exception of a TNC ride fee, which was approved by voters in November 2019) nor does it have a plan to address SFMTA's projected operating budget deficit.

Although this audit has identified areas of improvement for existing operating revenues, over time they will not be sufficient to cover SFMTA's projected operating deficit, as shown in Exhibit 1.17 below.

Exhibit 1.17: SFMTA's Projected Operating Deficit for FY 2020-21 Persists after Audit Observations without Additional New Revenue Sources ($ millions)

FY 2020-21 Deficit	($228.6)
Cost Controls	$88.5
Fill Vacant PCO Positions	$6.8
Expand Parking Meters	$10.7
Remaining Deficit	**($122.6)**

Source: Budget and Legislative Analyst

Without additional operating revenues, SFMTA will not be able to improve its service and passenger growth will likely continue to be incremental, which would be in conflict with the City's Transit First Policy and environmental goals.

Recommendations

The Board of Supervisors should:

1.1 Work with the SFMTA Board of Directors to identify a set of alternative funding sources sufficient to fund SFMTA's operations and take all necessary action to enable and advocate for such new funding sources.

1.2 Request that SFMTA brief the Board of Supervisors regarding any actions SFMTA will take as a result of the 2019 fare evasion study.

1.3 Request additional performance audits of SFMTA to evaluate potential cost controls in SFMTA operations.

1.4 Request that SFMTA fill the Parking Enforcement's Division vacant Parking Control Officer (8214) and Senior Parking Control Officer (8216) positions and allocate them to parking enforcement duties.

1.5 Request that the SFMTA fully implement SFMTA's plan to expand parking meter hours and locations.

1.6 Request an annual update from SFMTA regarding its evaluation of alternative uses for parking garages.

2. Ridership

Ridership on Muni has not kept pace with population growth in San Francisco since 2010 and has generally been in decline since 2014. Moreover, Muni did not meet its annual transit ridership goals in both FY 2017-18 and FY 2018-19. This is likely because SFMTA has not met transit performance and customer rating targets in both years. At the same time, ridesharing services (such as Uber and Lyft) were the top public transit alternative choice in the SFMTA Ridership Survey for 2016 through 2018. Our audit identified one other city, Seattle, that was able to increase its transit ridership faster than that city's population growth after it dedicated new revenues to improve transit frequency and reliability. If Muni ridership continues to decline, passenger fare revenue will also decline and contribute to SFMTA's projected operating deficit. Because of these risks, the Board of Supervisors should request that SFMTA develop a plan to meet its transit ridership goals that includes (a) how transit ridership goals are determined, (b) specific actions the Agency will undertake to meet its annual ridership goals, and (c) the expected to timeline to complete each of the actions designed to improve ridership.

Transit ridership has not kept pace with population growth in San Francisco

Transit ridership in the City has not kept pace with population growth. San Francisco's population increased by 9.4% from 2010 to 2018 but annual transit ridership increased by 4.0% during the same timeframe, as shown in Exhibit 2.1 below. Overall Bay Area ridership, which includes transit rides from Muni, BART, AC Transit, and Golden Gate Transit, grew by 4.2% between 2010 and 2018.

Exhibit 2.1: San Francisco Population and SFMTA Ridership Growth, 2010 – 2018

Year	Population	SFMTA Ridership	Bay Area Ridership
2010	805,235	215,982,240	392,184,971
2011	816,453	213,748,395	388,747,380
2012	827,370	222,125,944	401,115,578
2013	841,341	222,991,006	411,400,324
2014	849,421	227,977,367	416,204,901
2015	858,708	219,326,138	413,472,344
2016	865,992	232,348,185	427,349,380
2017	873,352	225,786,174	414,413,016
2018	880,980	224,610,591	408,833,084
% Change	**9.4%**	**4.0%**	**4.2%**

Sources: California Department of Finance Population Estimates, National Transit Database ridership data (cable car, rail, and bus modes only)

Note: Bay Area ridership includes SFMTA, Bay Area Regional Transportation Agency (BART), AC Transit, and Golden Gate Transit, to ensure a reasonable comparison with Seattle's ridership data, which include regional transit routes, presented in Exhibit 2.3 below.

As shown above in Exhibit 2.1, SFMTA ridership has increased between 2010 and 2018, but peaked in 2016 with 232 million riders and declined in 2017 and in 2018.

Exhibit 2.2 below shows he breakout of SFMTA ridership by mode between 2010 and 2018.

Exhibit 2.2: SFMTA Ridership by Transit Mode

Year	Cable Car	Rail	Bus	Total Ridership
2010	8,008,382	49,396,925	158,576,933	215,982,240
2011	7,042,503	51,021,623	155,684,269	213,748,395
2012	7,270,191	51,685,964	163,169,789	222,125,944
2013	6,813,349	53,749,159	162,428,498	222,991,006
2014	7,331,777	56,951,602	163,693,988	227,977,367
2015	6,834,184	56,932,671	155,559,283	219,326,138
2016	5,800,222	59,580,128	166,967,835	232,348,185
2017	6,224,072	58,465,020	161,097,082	225,786,174
2018	6,292,346	57,309,366	161,008,879	224,610,591
Change	(1,716,036)	7,912,441	2,431,946	8,628,351
% Change	(21.4%)	16.0%	1.5%	4.0%

Source: National Transit Database (cable car, rail, and bus modes only)

As shown above, ridership on Muni rail system grew by 16 percent between 2010 and 2018. Over the same period, bus ridership, the most frequently used SFMTA transit mode, only increased by 1.5 percent. These increases were partially offset by a decline in cable car ridership by 21.4 percent. Overall, SFMTA ridership between 2010 and 2018 has been erratic but generally in decline since 2014 (except for a jump in 2016). In addition, as noted below in Exhibit 2.4, the City did not meet its annual ridership goals for FY 2017-18 and FY 2018-19.

Most metro areas are experiencing a decline in transit ridership; however, at least one city, Seattle, has been able to increase its ridership faster than population growth

In 2017, transit ridership fell in 23 of the 30 largest major metropolitan areas in the United States.[12] However, unlike the national trend, Seattle's transit ridership, like San Francisco's, continues to grow. However, unlike San Francisco, the Seattle Area's ridership growth of 27.9% from 2010 to 2017 has outpaced the area's population growth of 18.7% during the same timeframe, as shown in Exhibit 2.3 below.

[12] Analysis conducted by TransitCenter using U.S. Department of Transportation's National Transit Database (NTD) data

Exhibit 2.3 Seattle Population and Transit Ridership Growth, 2010 – 17

Year	Population	Seattle Area Ridership[13]
2010	610,333	132,386,327
2011	622,532	137,846,120
2012	635,974	143,439,652
2013	654,176	149,009,086
2014	669,641	153,947,209
2015	685,447	156,709,972
2016	707,255	164,286,157
2017	724,745	169,264,914
% Change	**18.7%**	**27.9%**

Sources: American Community Survey, 2010 – 2017 1-Year Population Estimates and Seattle Department of Transportation 2018 Traffic Report

During this period, Seattle has invested in bus service as well as rail expansions. In November 2014, voters approved the Seattle Transportation Benefit District measure to expand transit service by adding a $60 vehicle registration fee and increasing the sales tax by 0.1%, generating an additional $51.4 million in annual revenues for transit in FY 2018. According to the Fall 2018 annual report on the Seattle's Transportation Benefits District, an additional 6,780 weekly transit trips have been implemented since 2015, primarily on high volume routes. According to the manager of Seattle's Transportation Benefit District, while the transit system increased its service area, including to a high volume previously underserved area near a university, the increase in Seattle's ridership is attributable to the increase in service frequency and reliability.

Washington DC's Plan to Increase Transit Ridership

In May 2018, the Washington Metropolitan Area Transit Authority (the public transit provider for Washington DC) developed a plan to increase its ridership. The plan was prepared to address an approximately 20% decrease in its bus and rail ridership between 2009 and 2018. In designing the plan, DC Metro concluded that the major drivers of transit ridership are fares, location of service, as well as service frequency and reliability and perceptions of cleanliness and safety. The plan includes strategies to improve service reliability and frequency, expand the agency's service area, increase transit speeds by expanding transit-only street lanes. The plan to increase ridership would require additional funding and had not been implemented at the time of this writing.

As discussed in *Section 5: Transit Improvement Projects*, SFMTA finalized a plan in 2011 to improve Muni's service and increase ridership that was scheduled to be complete by 2020 but was only 9.2 percent complete as of June 2017.

[13] Comparable to Bay Area ridership shown in Exhibit 2.1

The City Charter includes rules and regulations governing SFMTA performance standards and accountability

The City Charter specifically delineates on-time performance and service delivery standards for Muni service in Section 8A.103 – Standards and Accountability. This includes the following minimum standards for on-time performance and service delivery standards:

1) On-time performance: at least 85 percent of vehicles must run on-time, where a vehicle is considered on-time if it is no more than one minute early or four minutes late as measured against a published schedule that includes time points; and

2) Service delivery: 98.5 percent of scheduled service hours must be delivered, and at least 98.5 percent of scheduled vehicles must begin service at the scheduled time.

The City Charter also states that the SFMTA Board of Directors shall adopt Agency rules setting additional measurable standards for system performance, system reliability, customer service, and staffing performance. The SFMTA Strategic Plan, which was last updated on April 3, 2018, includes performance objectives intended to measure agency progress, monitor ongoing evaluation and reporting, and guide the agency's planning efforts. Specific measures are also included as part of the Controller's Office San Francisco Performance Scorecards in the Transportation policy area.

SFMTA did not meet performance standards for measures on transit service and ridership in FY 2017-18 and in FY 2018-19

Service reliability, frequency, speed and affordability are some of the key drivers of ridership. In addition, the passenger experience – such as satisfaction, perception of safety, cleanliness, and communication – have an impact on ridership. [14]

However, in FY 2017-18 and FY 2018-19, SFMTA did not meet targets for City Charter mandated measures for on-time performance and service delivery, as well as measures on ridership and service quality. Exhibit 2.4 below shows the specific measures for which performance standards were not met in FY 2017-18 and FY 2018-19. Of note also is that certain performance targets, such as annual ridership goals and the percentage of trips with bunching or gaps, were reduced or made easier to obtain between FY 2017-18 and FY 2018-19 but both still missed their targets.

[14] Perk, V., Flynn, J., and Volinski, J., "Transit Ridership, Reliability and Retention" State of Florida Department of Transportation. (2008)

Exhibit 2.4 SFMTA Measures that Did Not Meet Performance Standards in FY 2017-18 and FY 2018-19

Performance Measure	FY 2017-18 Target	FY 2017-18 Actual	FY 2018-19 Target	FY 2018-19 Actual
Transit On-Time Performance[15]	85%	56.1%	85%	55%
Trips with Bunching or Gaps Between Vehicles[16]	10.6%	22.8%	17%	17.3%
Annual Ridership	237 million	225 million	230 million	223 million
Percentage of Scheduled Service Hours Delivered	98.5%	97.5%	98.5%	94.3%

Source: Controller's Office Annual Performance Scorecards Reports for FY 2017-18 & FY 2018-19

SFMTA also did not meet targets for eight out of nine customer ratings of Muni service in FY 2017-18, continuing a pattern started in FY 2014-15. Exhibit 2.5 below shows the specific customer ratings of Muni service on a scale of 1 to 5 from FY 2014-15 to FY 2017-18. According to SFMTA, the target for customer ratings is to achieve 0.5-point improvement over baseline (based on FY 2014 performance) during each two-year budget cycle.

[15] The percentage of observed time point arrivals that are between one minute early and four minutes late.

[16] The percentage of observed time point arrivals on the Rapid Network with spacing of less than two minutes (one minute for scheduled headways of less than five minutes) or gaps of greater than 5 minutes beyond their scheduled headway (time between vehicles) times. The Rapid Network includes the 5R-Fulton Rapid, 7R-Haight/Noriega Rapid, 9R-San Bruno Rapid, 14R-Mission Rapid, 28R-19th Avenue Rapid, 38R-Geary Rapid, J-Church, KT-Ingleside/Third Street, L-Taraval, M-Ocean View and N-Judah lines.

Exhibit 2.5 Customer Rating Measures of Muni Service (FY 2014 – 17)[17]

Customer Rating	FY 2017 Performance Target	FY 2014	FY 2015	FY 2016	FY 2017
Measures of Muni Service that Did Not Meet Performance Standards					
Overall satisfaction with Muni	Greater than 3.4 for Each Rating Rating Scale: Very Satisfied = 5, Satisfied = 4, Neutral = 3, Dissatisfied = 2, Very Dissatisfied = 1	3.0	3.1	3.2	3.2
Service frequency		2.8	2.8	3.0	3.0
Service reliability		2.6	2.7	2.9	2.9
Cleanliness of Muni facilities (stations, elevators, escalators)		2.6	2.6	2.5	2.5
Cleanliness of Muni vehicles		2.7	2.7	2.9	3.0
Feeling safe and secure from crime while waiting at a Muni stop		3.1	3.3	3.4	3.2
Communication with riders (including any type of communication from Muni)		2.8	2.8	2.9	2.9
Feeling safe and secure from crime while on a Muni vehicle		3.3	3.3	3.4	3.4
Measures of Muni Service that Met Performance Standards					
Safe operation of Muni vehicles		3.7	3.7	3.8	3.9

Source: SFMTA Customer Rating of Overall Satisfaction with Muni Service Data (FY 2014-17)

In addition, 2019 City Survey ratings for Muni were at its lowest point since 2013. Overall, Muni received a grade of "C+" in 2019, in contrast to a grade of "B-" in 2015 and 2017. Of all ratings in the 2019 City Survey, Muni's ability to manage crowding received the lowest rating, a "C" average, with only 33 percent of respondents assigning an "A" or B" rating.

Transportation network companies (TNCs) are becoming an increasingly popular alternative transportation option.

Results from multiple surveys (SFMTA Ridership Survey, SFMTA Travel Decision Survey, and the City Survey) show that the City has a diverse and growing set of transportation options. This is particularly true for the use of transportation network companies (TNCs), which has increased significantly over the past few years. Key findings from each of these surveys are described below.

[17] Q1 data for FY 2014 was not collected.

Although one of the least used alternative choices in 2014, ridesharing service was the top transportation alternative choice in the SFMTA Ridership Survey for 2015 through 2018

SFMTA's Ridership Survey is conducted annually by SFMTA among adult City residents who had used Muni in the past six months. In 2014, survey respondents were asked what transportation alternatives they would choose if Muni were not available for their last Muni trip. Only 5 percent reported that they would "use a ridesharing service such as Uber." In 2018, however, this increased by 39 percentage points to 44 percent, making it the top choice for transportation alternatives. The survey showed that the increased use of TNCs was coupled with declines in walking, taxis, biking, and using other transit.

Exhibit 2.6 below shows a summary of responses for this annual survey question from 2014 to 2018.

Exhibit 2.6: Ridership Survey Response Percentages for Muni Alternatives Question, 2014 - 2018

Survey Response Options	2014	2015	2016	2017	2018
Use a ridesharing service such as Uber/Lyft	5%	18%	29%	34%	44%
Drive (myself)	24%	21%	14%	17%	13%
Walk	24%	20%	21%	17%	17%
Use a taxi	17%	12%	9%	9%	7%
Get a ride	9%	9%	6%	8%	8%
Would not have made trip	8%	8%	5%	7%	7%
Use other transit such as BART	8%	9%	12%	5%	5%
Ride a bicycle	4%	3%	4%	3%	3%

Sources: SFMTA Ridership Surveys from 2014 through 2018

In 2018, survey respondents were also asked the main reason they choose a ride hailing service like Uber or Lyft rather than Muni. Exhibit 2.7 below shows the responses for this question (from highest to lowest percentage).

Exhibit 2.7: Ridership Survey Response Percentages for Choosing Ride Hailing Services, 2018

Survey Response Options	Respondent Percentage
Faster/goes directly to destination	41%
In a hurry/don't have to wait	28%
Door to door service	17%
Safer than Muni	11%
Cheaper/nearly the same price as Muni	9%
More reliable than Muni	9%
Limited night/early morning service on Muni	6%
Muni is crowded	5%
Cleaner than Muni	4%
More comfortable than Muni	2%
Had to carry multiple or large items	2%
Disability/age issues	<1%
Been drinking	<1%

Source: 2018 SFMTA Ridership Survey

As shown above, 70 percent of respondents said they chose TNCs over Muni because it is faster than Muni. To the extent Muni service could be made more frequent and achieve higher transit speeds, it could better compete with TNCs as a transportation option.

Bicycling is declining as a transportation option

According to the SFMTA's 2018 San Francisco Mobility Trends Report, bike commute trips in the City increased by 140 percent between 2005 and 2015. However, since 2015, bicycle commuting has declined from 126,000 average bicycle trips per day in 2015 to 95,000 trips in 2017.[18]

Conclusion

Muni ridership declined between 2014 and 2018 and Muni did not meet its Charter-mandated on-time performance and service delivery targets during that time. Other cities' plans to increase public transit ridership emphasize service frequency and reliability. If Muni cannot deliver transit service that effectively competes with other transportation options, its ridership will continue to decline and to drag down the Agency's operating revenues. Because of the risk of a self-reinforcing downward spiral of decreased ridership and revenues, the Board of Supervisors should engage and monitor SFMTA to ensure it develops and follows through with a plan to increase its ridership.

[18] The report counts trips where a bike was the sole mode of transportation and does not include commutes over multiple modes of transit, such as a bike trip to a BART station.

Recommendations

The Board of Supervisors should:

2.1. Request SFMTA to develop a three year-plan to meet its annual ridership goals that includes: (a) how transit ridership goals are determined, (b) specific actions the Agency will undertake to meet its annual ridership goals, and (c) the expected to timeline to complete each of the actions designed to improve ridership.

3. Congestion

Between 2009 and 2019, evening speeds on major San Francisco roadways declined by approximately 28 percent, from 16.9 miles per hour in 2009 to 12.2 miles per hour in 2019. Traffic congestion on City roads impacts public transit speed. Over the period 2009 to 2017, average transit speeds decreased by approximately 6.6 percent. Similarly, only 56 percent of Muni transit trips were on-time in 2018, which is far below the Charter mandated target that 85 percent of Muni trips be on-time.

Despite these deteriorating traffic conditions, fueled in part by well documented growth in the City's population and jobs, SFMTA, which has jurisdiction over the City's streets, did not and still does not have a congestion management strategy. In addition, State law renders most of the City exempt from key requirements of State-mandated congestion management required in other jurisdictions. As a result, the State-designated Congestion Management Agency, the County Transportation Authority, does not require congestion mitigation efforts by SFMTA that would be required in other jurisdictions.

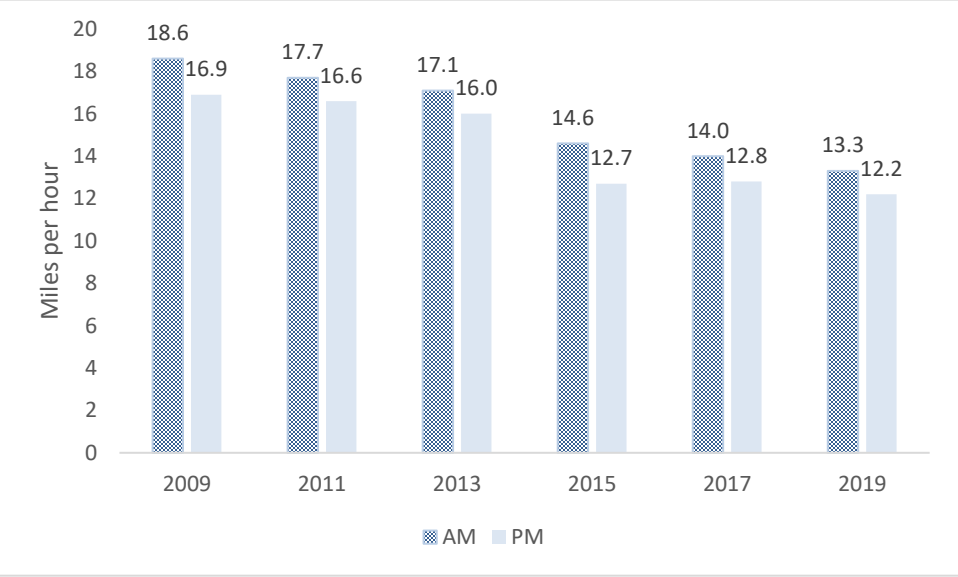
Reducing congestion would reduce the cost of Muni operations and allow for better service. In 2017, Muni delivered an estimated 219.6 million transit trips. We estimate that a 1.0 mile per hour increase in average road speeds would have allowed Muni to deliver an additional 35 million transit trips, a 16 percent increase above actual transit trips delivered, at minimal additional cost. These additional transit trips could be implemented by increasing frequency of existing service and/or expanding routes (the latter would likely incur one-time capital costs for street re-design and installation of new power facilities).

Options for the City to reduce congestion include enhancing SFMTA's existing congestion management activities, which include: deploying additional Parking Control Officers to highly congested intersections, accelerating planned traffic signal upgrades, and improving delivery of transit improvement and other capital projects. Because these efforts have been underway during a marked increase in the City's congestion, we judge that expanding them would only incrementally reduce congestion. To materially reduce traffic congestion, bold new efforts must be undertaken. These efforts could include implementing congestion pricing, requesting SFMTA to develop congestion mitigation plans similar to those required in other jurisdictions, and regulating Transportation Network Companies (discussed in *Section 4: Transportation Network Companies*).

Congestion in San Francisco has gotten worse every year since at least 2009

Although no single measure is universally regarded as the optimal congestion measurement metric, for the purposes of this audit, which seeks to evaluate SFMTA's approach to congestion management and the impacts of traffic congestion on public transit, the most useful measures are based on average travel speed of all vehicles. These measures can be used to assess how congestion impacts not only private motorists but the reliability of transit service. Exhibit 3.1 below shows average arterial (high capacity roads) travel speeds estimated by the San Francisco County Transportation Authority.

Exhibit 3.1: Average Rush Hour Travel Speed (mph), 2009 - 2019



Source: Controller County Transportation Authority

As shown above, average travel speeds on arterial roads fell each year between 2009 and 2019. There was a particularly marked deterioration in average rush hour speed between 2013 and 2015. In 2019, both AM and PM arterial speeds were 28 percent lower than in 2009.

Traffic congestion on City roads impacts public transit speed. Over the period between 2009 and 2017, average SFMTA system-wide transit speeds (weighted by miles traveled per mode) have decreased by approximately 6.6 percent as shown in Exhibit 3.2 below. Transit speeds are derived by dividing SFMTA revenue miles by revenue hours, as reported by SFMTA in the Federal Transit Administration's National Transit Database.[19]

Exhibit 3.2: Average SFMTA Transit Speed (mph), by Transit Mode

Mode	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change
Light Rail	9.0	9.2	9.2	9.6	9.5	10.8	9.5	9.5	9.8	8.1%
Motor Bus	8.7	8.6	8.3	8.3	8.2	8.1	7.9	8.1	7.8	(10.4%)
Streetcar Rail	Unavailable			5.7	5.7	5.8	4.5	5.7	5.4	(6.2%)
Trolleybus	6.7	6.6	6.5	6.5	6.4	6.3	6.1	6.3	6.3	(6.6%)
Weighted Average System Speed	**8.3**	**8.2**	**8.1**	**8.1**	**8.0**	**8.1**	**7.7**	**7.9**	**7.9**	**(6.6%)**

Source: BLA analysis of National Transit Database

Notes: Streetcar Rail data was unavailable for 2009-2011, so % change is shown for 2012-2017.

As shown above in Exhibit 3.2, average motor bus speeds decreased by 10.4 percent and trolley bus speeds decreased by 6.6 percent between 2009 and 2017. Similarly, average

[19] Revenue miles and hours refer to time and distance for transit vehicles in service. They do not include training, maintenance, not time/distance spent traveling over a distance with no expectation of carrying passengers.

streetcar rail speeds declined by 6.2 percent between 2009 and 2017. However, light rail speeds, which are less susceptible to being delayed by traffic congestion, increased by 8.1 percent over the same period.

As discussed further below, the increase in the City's overall traffic congestion and its impact on the speed at which transit vehicles move has a corresponding impact on transit service.

Though State law requires counties to develop programs to minimize private vehicle congestion, San Francisco is exempt from this requirement and has not elected to develop specific goals or a congestion reduction program on its own accord.

The City Charter and the Transit First policy designates the San Francisco Municipal Transportation Agency (SFMTA) as the agency responsible for:

- regulating roadway usage and ensuring high quality public transit service,
- implementation of policies pertaining to traffic management,
- establishing and enforcing rules regarding access and roadway usage, and
- regulation of commercial service vehicles.

Although SFMTA's FY 2018 – FY 2020 Strategic Plan includes goals to increase Muni ridership and other sustainable modes of transportation, increase speed on SFMTA transit service, and manage metered parking hours, neither the City nor SFMTA has a strategy or policy to reduce overall congestion, which is primarily caused by private motorists but also has a major impact on the speed with which public transit can move within San Francisco. The absence of programs to directly reduce private motorist congestion in San Francisco is due, in part, to the City being exempt from State requirements to develop and implement deficiency plans to offset congestion in areas that are found to be worse than certain minimum congestion standards. Most of San Francisco is exempt from this requirement because its areas of serious congestion are all within Infill Opportunity Zones, defined by the State as areas within a half mile of major transit stops or transit corridors. State law waives the requirement for preparing and implementing deficiency plans to offset congestion on roadways within Infill Opportunity Zones.

Though exempt from the State requirement to prepare deficiency plans to reduce congestion on major roads, as discussed above, SFMTA could still develop plans to take actions to reduce private motorist congestion Measurement of "people throughput" could be an important and more comprehensive additional measure of improvement to collect along with changes in Vehicle Miles Travelled. A people throughput measurement would allow for project offsets so if more people are able to move faster in net through a congested corridor on public transit or some other form of transportation even if private vehicles are not moving faster, a project could be deemed beneficial. SFMTA's approach has instead been to make improvements that encourage more walking, biking, and use of public transit on a Citywide basis but do not include actions to reduce congestion in

specific areas of the City. In interviews with auditors, SFMTA management stated they are not responsible for managing traffic congestion and directed our inquiries to the San Francisco County Transportation Authority.

The San Francisco County Transportation Authority is the State designated Congestion Management Agency responsible for monitoring traffic congestion in the City and County of San Francisco and for preparing plans to reduce congestion as per requirements set out in the Assembly Bill 471 and the voter approved Proposition 111.[20] As the San Francisco Congestion Management Agency, the duties of the CTA include:

- Producing a biennial Congestion Management Program
- Defining San Francisco's performance measures for congestion management
- Reporting congestion monitoring data for San Francisco County to the public and the Metropolitan Transportation Commission (MTC), using the Level of Service measure
- Describing San Francisco's congestion management strategies and efforts

The State's congestion management requirements were further modified in 2002 when Infill Opportunity Zones were created by law along with exemptions for road segments in Infill Opportunity Zones from the requirement to prepare or implement a deficiency plan. The vast majority of the segments of roadways used to monitor congestion in San Francisco are located within one-half mile of Infill Opportunity Zones. As mentioned above, these areas, as well as roads that were highly congested as of 1991 are exempt from any need to prepare deficiency plans to reduce congestion and will suffer no foregone gas tax revenue from failure to reduce congestion.

State law allows counties and municipalities to receive their proportionate share of the State administered 9 cents per gallon gas sales tax revenue only if they prepare deficiency plans for highly congested segments of major roads (or ones that are expected to be highly congested in the future). Deficiency plans must be prepared by the local jurisdiction where the congestion is occurring and approved and monitored by the local Congestion Management Agency. Congestion remedies may not include widening roads in order to increase traffic capacity. Instead, deficiency plans allowed by State law are specific strategies such as changes to street use, improved bicycle and pedestrian measures, improved transit service, preferential treatment for shared vehicles, and changes to land use that would minimize traffic. As noted above, San Francisco is largely exempt from developing deficiency plans. Although the City would be drawing from the same "toolbox" of congestion management options if it were to develop deficiency plans, the benefit of the deficiency plan process outlined in State law is that such efforts are specific to highly congested areas and are monitored by a separate authority (in San Francisco, it would be the County Transportation Authority and its Board of Directors, rather than the SFMTA Board of Directors, which monitors SFMTA activities).

[20] CA Government Code 65088 – 65089.10

Despite these exemptions, CTA prepares a biennial Congestion Management Program and other reports that include extensive data and analysis of the extent, causes and impacts of congestion. The CTA reports it is currently updating the countywide transportation plan (the SFTP), through ConnectSF, a long-range transportation planning collaboration with SFMTA and the Planning Department.

CTA also administers and must approve the funds made available as a result of the voter approved Proposition K in 2003, which instituted a one-half cent sales tax to raise funds for investing in transit-related capital projects. Proposition K funds are apportioned by CTA between SFMTA, the Bay Area Rapid Transit District (BART), and Caltrans.

However, because of the exemptions noted above in State law, San Francisco's Congestion Management Program does not have specific or binding guidance for SFMTA transit operations, street use decisions, or the City's land use decisions as would be found in deficiency plans in other jurisdictions that are subject to State-required deficiency plan requirements and SFMTA has not elected to set specific goals aimed at reducing traffic vehicle congestion. Neither SFMTA nor CTA see their mandate as reducing traffic congestion within San Francisco which has contributed to the lack of a Citywide approach to developing and implementing a coherent congestion management strategy that is incorporated into SFMTA decisions. CTA does report that congestion management and the City's other transportation-related goals, such as reducing traffic fatalities and ensuring equitable and affordable access to transportation services, sometimes conflict with one another.

Congestion reduces transit reliability

Traffic congestion makes it harder to provide reliable public transit. Less frequent and irregular arrival times, and the existence of large gaps between successive transit vehicles that create unanticipated travel delay are major factors impacting service quality and public perceptions of transit desirability.

Section 8A.103 of the City Charter requires 85 percent of SFMTA transit vehicles are no more than one minute early or four minutes later than the scheduled arrival time. However, as noted in *Section 2: SFMTA Ridership*, SFMTA achieved on-time performance in only 56.1 percent of its rides in FY 2017-18.

Another measure of transit performance that is impacted by traffic congestion is the amount of transit arrivals that occur in "bunching" or "gaps." Successive transit arrivals are defined as *bunched* if the second vehicle arrives more than two minutes *ahead* of the planned route headway, and as having a *gap* if the second vehicle arrives more than five minute *behind* planned route headway (headway is the planned frequency of transit vehicles). As noted in *Section 2: SFMTA Ridership*, 22.8 percent of SFTMA transit arrivals occurred as a bunch or a gap in planned headway during FY 2017-18, which is more than double the Agency's goal of 10.6 percent in its FY 2018 – FY 2020 Strategic Plan. SFMTA has not met its transit performance targets in the past five fiscal years, which can at least partially be explained by congestion.

As noted in *Section 2: SFMTA Ridership*, transit users cite frequency and reliability as the key factors in their overall assessment of service quality. Because perceptions of frequency and reliability are the critical determinants of users' evaluation of overall service quality, achieving improvements in these measures is critical to preserving the systems longer-term vitality, and to achieve the objectives and mandates set out in the Transit First Policy of ensuring that public transit is an attractive mode of transportation.

Reducing congestion would increase transit service without increasing operating costs

We present two methods for evaluating the impact of slower travel speeds on SFMTA's ability to meet desired improvements in transit service levels. Our first estimate of the impact of congestion levels of transit service delivery is presented in Exhibit 3.3. The table compares SFMTA's actual headways for major transit routes in 2018 with target and actual headways in 2013, as documented in the 2013 environmental review of the Transportation Effectiveness Project, a suite of transit improvement projects (discussed in *Section 5: The Transit Improvement Projects*). As can be seen, actual AM headways improved in 2018 compared to actual headways in 2013 for 12 of 17 lines, but they were still worse than the proposed headways for 2013 for all but four lines. Part of the reason for not meeting the 2013 service goals is that the SFMTA's transit improvement projects are behind schedule. However, increased congestion in the City has made more difficult for SFMTA to meet its Muni service performance goals.

Exhibit 3.3: Planned and Actual Improvements in Service Frequency (Headways)

	2013 am		2013 pm		2018 actual		Meets or exceed target	
Route	(actual)	(proposed)	(actual)	(proposed)	am	pm	2013 am	2013 pm
5R-Fulton Rapid	4	4	4.5	4	5	7	No	No
9R-San Bruno Rapid	12	10	12	12	9	9	Yes	Yes
14R-Mission Rapid	9	7.5	9	7.5	8	8	No	No
28R-19th Avenue Rapid	12	9	N/A	N/A	10	10	Yes	N/A
38R-Geary Rapid	5.5	5	5.5	5	4	5	Yes	Yes
J-Church	9.5	8	8	9	9	10	No	No
KT-Ingleside/Third	9.5	8.5	9.5	8.5	8	9	Yes	No
L-Taraval	8	7.5	7	7.5	9	10	No	No
M-Ocean View	8.5	8.5	9.5	8.5	9	10	No	No
N-Judah	7.5	5.5	7	6	7	9	No	No
1-California	7	7	7	6	4	4	Yes	Yes
14-Mission	6	7.5	7.5	7.5	8	9	No	No
22-Fillmore	9	6	8	5.5	8	9	No	No
28-19th Avenue	11	9	10	9	10	10	No	No
30-Stockton	N/A	4	N/A	4	8	6	No	No
38-Geary	12	7.5	8	6	8	8	No	No
47-Van Ness	10	7.5	10	7.5	8	9	No	No

Source: 2013 Environmental Impact Report of Transportation Effectiveness Project and SFMTA website as of December 2018

As shown above in Exhibit 3.3, of the seventeen major lines we selected to review, only three – the 1 California, the 38 Geary Rapid, and the 9R San Bruno – have seen full

implementation of the increased frequency set as SFMTA intended in 2013. Most lines experienced less frequent service (longer headways) in PM service and increase in AM headways (more frequent transit service). Despite these gains, overall the Agency is operating below desired levels of service frequency relative to its 2013 service frequency goals. As discussed in *Section 5: Transit Improvement Projects*, this is due in part to delays in implementing transit improvement projects that were designed to improve transit service. It is also a result of worsening traffic congestion in the City as well as operator staff shortages, as noted in our December 2018 report, *Transit Operator Staffing Shortages*.

Quantifying the impact of congestion on transit frequency

Congestion-induced reductions in travel speeds reduce the level of transit service provided by SFMTA. There is a tradeoff between average travel speeds and the number of vehicles and working hours that must be put into service to maintain the planned frequency of transit service. In other words, if transit vehicles can move faster, headways can be shortened on any given route. Exhibit 3.4 below shows how increases in travel speed (i.e. a reduction in congestion) impacts transit service frequency, with transit arrivals scheduled to occur every 10 minutes, using the 2017 average SFMTA transit speed of 7.9 miles per hour (mph) derived from National Transit Database data (and shown in Exhibit 3.2 above). These numbers are approximate system wide estimates; actual improvement in headway would vary across transit routes.

Exhibit 3.4: Impacts of Reducing Congestion on Transit Vehicle Frequency (headways, or minutes between arrivals)

	Impact of Reduced Congestion on Average Transit Vehicle Speed			
	Gain of + 0.25 mph	**Gain of + 0.5 mph**	**Gain of + 0.75 mph**	**Gain of + 1.0 mph**
Transit vehicle frequency (baseline = 10 minutes)	9.7	9.4	9.0	8.7
% reduction in frequency (baseline = 10 minutes)	3.2%	6.3%	9.5%	12.7%

Source: BLA Analysis; National Transit Database

As shown above in Exhibit 3.4, for routes with 10 minute headways, a gain of 1.0 mph for transit vehicles would result in vehicles arriving every 8.7 minutes, or a 12.7% increase in frequency. Of particular note is that 71 percent of SFMTA's 2013 service frequency targets noted in Exhibit 3.3 would be met if the routes achieved a 1.0 mph increase in average vehicle travel speed. We conclude that achieving SFMTA's desired transit frequencies set in 2013 will require adopting and implementing a far more aggressive congestion management strategy than is currently underway.[21]

[21] According to interviews with SFMTA, the inability of the Agency to meet desired headways set out in 2013 is not due to limitations in transit vehicle availability. These statements are corroborated by the triennial Federal

Reducing congestion would allow for additional transit service with minimal new operating costs

It is also possible to develop estimates of how reducing congestion would impact SFMTA's ability to deliver additional transit service. Exhibit 3.5 below shows SFMTA's actual revenue miles, revenue hours, derived transit speed, and transit trips for 2017. The transit modes shown are bus, light rail, and street car. Taxis, paratransit, and cable cars are excluded.

Exhibit 3.5: Actual 2017 SFMTA Transit Miles, Hours, Speed, & Trips

	Revenue Miles	Revenue Hours	Average Speed	Transit Trips	Trips per Mile
Light Rail	5,667,554	579,417	9.8	50,993,166	9.0
Bus	14,922,469	1,910,010	7.8	107,795,832	7.2
Street Car Rail	629,009	116,979	5.4	7,471,854	11.9
Trolleybus	5,481,374	872,395	6.3	53,301,250	9.7
Total	**26,700,406**	**3,478,801**	**7.9**	**219,562,102**	**8.2**

Source: BLA Analysis of 2017 National Transit Data.

Note: Revenue miles and hours refer to time and distance for transit vehicles in service. They do not include training, maintenance, and time/distance spent traveling over a distance with no expectation of carrying passengers. Speed is derived by dividing revenue miles by revenue hours. Total speed is an average weighted by each mode's revenue miles.

As shown above in Exhibit 3.5, in 2017 it took SFMTA approximately 3.5 million hours to provide 219.5 million transit trips over 26.7 million miles. On average, each revenue mile produced 8.2 transit trips.

Exhibit 3.6 below uses SFMTA's actual 2017 transit data shown in Exhibit 3.5 and adjusts the average transit speed while holding the revenue hours constant in order to simulate the impact that reducing congestion would have on the ability to provide additional transit service. The result is how many additional transit miles could be produced given the same amount of working hours, or staffing, but just allowing the transit vehicles to move faster.

Transportation Administration (FTA) review conducted in May of 2016, wherein the FTA mandated that SFMTA submit a plan for reducing the ratio of used to unused transit vehicles to 20%. We conclude that SFMTA currently has ample spare vehicle capacity, and hence does not have any fleet restrictions that would limit the ability to put additional vehicles in service to achieve desired reductions in headway.

Exhibit 3.6: Additional Transit Trips made Possible by Reduced Congestion (holding operating hours constant)

	Impact of Reduced Congestion on Average Transit Vehicle Speed			
	+ 0.25 mph	**+ 0.50 mph**	**+ 0.75 mph**	**+ 1.00 mph**
Additional Revenue Miles (baseline = 26,700,406)	1,651,822	2,521,522	3,391,223	4,260,923
Additional Transit Trips (baseline = 219,562,102)	13,583,222	20,734,919	27,886,616	35,038,313
% Increase Above 2017 Trips (baseline = 219,562,102)	6.2%	9.4%	12.7%	16.0%

Source: BLA Analysis of 2017 National Transit Data

As shown above in Exhibit 3.6, an increase in average transit speeds of 1.0 mph would result in approximately 4,260,923 additional transit miles (assuming the same amount of working hours as in 2017). Using the 2017 actual average 8.2 trips per mile shown in Exhibit 3.5, this increase in transit trips from reduced congestion would allow for a roughly 16 percent increase in the number of transit trips, assuming no increase in the number of revenue hours or staffing, provided. In other words, a 1.0 mph reduction in congestion could increase SFMTA transit service by roughly 16% without materially increasing operating costs. These additional service units could be implemented by increasing frequency of existing service and/or expanding routes (the latter would likely incur one-time capital costs for street re-design and installation of new power facilities).

Options to reduce congestion

SFMTA undertakes a variety of activities, that, while not solely focused on managing traffic congestion, help to improve traffic flow within the City ("people throughput"). According to an SFMTA September 2017 report to the Board of Supervisors Land Use and Transportation Committee, activities that reduce congestion and also improve the performance of Muni transit service include:

- deploying Parking Control Officers to dangerous intersections
- dynamically priced parking
- advocating for regional transit improvements
- additional state and federal transit funding,
- upgrading traffic signals, and
- coordinating with other entities that deliver large capital projects.

Nevertheless, as shown above in Exhibit 3.1, traffic congestion has gotten worse in the City since at least 2009 and actions taken by SFMTA were not sufficient to keep up with factors such as growth in City population and jobs. SFMTA staff stated to auditors that even if all of these existing programs were enhanced, it would likely not be sufficient to reverse the trend of worsening congestion. To effectively combat traffic congestion, bold

new efforts must be undertaken. A number of such ideas have been studied by CTA and SFMTA but not implemented.

Congestion Pricing

Congestion pricing has been found to be a cost-effective means for achieving goals such as reduction in vehicle miles traveled, increasing average travel speeds, reducing greenhouse emissions, and incentivizing greater public transit usage. Currently, the only congestion pricing locally is the time varying toll for the Bay Bridge and Golden Gate Bridge. SFMTA states in its 2017 Climate Action Strategy that these tolls have reduced congestion and encouraged mode shift from driving to public transit.

In 2010 the San Francisco CTA conducted a detailed scenario modeling project that attempted to estimate the likely impact of implementation of a congestion pricing program in San Francisco.[22] The CTA report reviewed data on effects of congestion pricing schemes instituted in London and Stockholm, which have found significant benefits in terms of reductions in vehicle miles travelled, improvements in average travel speed during peak usage periods, reductions in carbon emissions, the ability to generate net revenue that could be used to fund public transit investments, and pedestrian and bicycle safety improvements. The study concluded congestion pricing would likely result in significant improvements across all the selected assessment variables. Under the various coverage areas and pricing structures, the SFCTA scenario analysis estimated that vehicle miles traveled were likely to be reduced by between 3 and 5 percent. Average peak period travel speeds were predicted to increase by between 20 to over 25 percent.

Congestion pricing was estimated to have positive impacts on incentives to use public transit, with 12 percent fewer peak time auto trips. The scenario analysis also showed a positive net revenue benefit. The CTA concluded that congestion pricing was technologically feasible, and would result in significant reductions in auto usage, increased peak period travel speeds, and greater public transit usage.

Other Developments in Congestion Pricing

In February 2019, the CTA Board of Directors approved funding for an updated congestion pricing study, which is expected to be completed in summer 2020. The purpose of the new study is to develop proposals for congestion pricing in San Francisco. In addition, the California Legislature considered a bill in the 2017-2018 session that that would have allowed Bay Area municipalities to develop congestion pricing programs but the bill was not adopted. A comparable bill has not been proposed since.

Equity Concerns Related to Congestion Pricing

Concerns have been raised by opponents of congestion pricing that these programs will discriminate against lower income drivers and make it harder for businesses to operate within the area targeted by congestion pricing programs. Equity concerns can be

[22] "San Francisco Mobility, Access, and Pricing Study", San Francisco County Transportation Authority, December 2010

addressed through a variety of strategies to insure congestion pricing does not impose economic hardship on low income residents. Options include some combination of subsidies, discounts, credits, and exemptions from the program for low-income travelers and/or for residents living within the area targeted by the program.[23] For example, London's current pricing program provides waivers for persons with disabilities and major fee reductions for those residing within the cordoned areas. Funding for such initiatives, if provided in the form of subsidy payments, could come for revenues generated through the congestion fee itself.

Other Approaches

Other initiatives that could be considered to address congestion include addressing Transportation Network Company impacts (discussed further in Section 4), coordinating with other transit and regional agencies in the Bay Area to enhance regional transit solutions, preparing and implementing deficiency plans for areas that are highly congested. The current multi-agency ConnectSF initiative and CTA's work updating the San Francisco Transportation Plan is an important step toward this end that will, ideally, identify major improvements in the City and region's transit systems to expand capacity, connections, and travel time as well as initiatives that will reduce Vehicle Miles Traveled.

Conclusion

Although SFMTA undertakes certain activities that improve vehicle traffic flow, congestion in San Francisco has gotten worse each year over the ten-year period 2009 to 2019. The has made public transit less reliable as average vehicle speeds have slowed down during that period. During our audit, we found that neither SFMTA nor County Transportation Authority, the City's Congestion Management Agency, see their mandate as reducing traffic congestion within San Francisco, which has contributed to the lack of a Citywide approach to developing and implementing a coherent congestion management strategy. Our analysis found a 1.0 mph reduction in congestion could increase SFMTA transit service by roughly 16% without materially increasing operating costs. To manage traffic congestion and help ensure effective public transit, the Board of Supervisors should request the changes to City and State policy outlined below, including allowing congestion pricing.

Recommendations

The Board of Supervisors should:

3.1. Develop a congestion management policy for all City agencies to follow. The policy should contain specific congestion reduction targets such as people throughput and transit speed improvement goals to be met each year and should require annual reporting by SFMTA and CTA.

3.2. In its role as the Board of Directors for the County Transportation Authority, request SFMTA to develop deficiency plans for highly congested areas of San Francisco, and for the CTA to monitor

[23] "Pricing Roads, Advancing Equity", TransForm, January 2019

implementation of such deficiency plans, even if the areas are exempt from doing so under State law. The plans should prioritize enhancing the speed of public transit and people throughput.

3.3. Request the members of the State Assembly and State Senate to pass legislation that would allow the City to pilot traffic congestion pricing.

3.4. Request that members of the State Assembly and State Senate revise congestion management legislation to prioritize people throughput, vehicle miles traveled, and greenhouse gas emission reductions in addition to congestion.

3.5. Monitor the results of upcoming CTA study on proposals for congestion pricing in San Francisco.

4. Transportation Network Companies

There is a growing body of research indicating that ridesharing service providers such as Uber and Lyft are a major factor contributing to worsening congestion in U.S. cities, including San Francisco. An October 2018 report released by the San Francisco County Transportation Authority found that between 2010 and 2016, such ridesharing accounted for 51% of the increase in travel delay, 47% of the increase in vehicle miles traveled, and 55% of the decrease in average road speeds. In addition to increasing the number of cars on the road, ridesharing constitutes a disproportionate share of traffic violations that contribute to congestion and threaten public safety. In September 2017, the San Francisco Police Department reported that ridesharing vehicles made up 64.9% of downtown traffic violations between April 2017 and June 2017. Although ridesharing has negative impacts on the City's traffic congestion and public safety, the City does not regulate these services as the California Public Utilities Commission (CPUC) has asserted regulatory authority.

In 2013, the CPUC designated ridesharing providers, such as Uber and Lyft, Transportation Network Companies (TNCs). At that time, TNCs were a new regulatory category, a subset of Charter Party Carriers which the California Public Utilities Commission already regulated. As result, since 2013, the SFMTA is unable to regulate ridesharing services in areas for which the CPUC has asserted regulatory authority. The SFMTA does have regulatory authority with respect to enforcement of parking and traffic violations as authorized under state law.

Given TNCs' impact on congestion and public safety, we recommend that the Board of Supervisors request that the City Attorney review the City's ability to regulate TNCs in areas where there is no conflict with State law and advise the Board of Supervisors regarding their findings so that the City could regulate ridesharing services, as appropriate and consistent with state law. Such regulations could be similar to those imposed on commuter shuttle and tour buses and, to the extent that such regulations are permissible under state law or TNCs agree voluntarily to such regulations, could include limits on where TNCs load passengers, limits on which roads TNCs may use, limits on the number of TNC vehicles that can operate at any one time, requiring TNC operators to obtain locally issued operating permits, imposing operating fees, and requiring more thorough reporting by the TNCs to the City regarding their operations within the City . The Board of Supervisors should then determine specific actions to take in conjunction with or separate from the MTA Board of Directors to enable the City and County of San Francisco to establish regulation of TNCs that does not conflict with State regulatory authority in the interest of reducing congestion in San Francisco.

Overview of transportation regulations

In September 2013, the California Public Utilities Commission (CPUC) issued a decision that classified application-based ride-sharing service providers such as Uber and Lyft as "Transportation Network Companies". The CPUC classified TNCs as one of the types of Charter Party Carriers that the Commission regulates. Charter Party Carriers are defined in State law as transportation services for hire on a pre-arranged basis[24] The CPUC determined that Uber and Lyft and other ride-sharing companies were operating a type

[24] California Public Utilities Code Section 5381

of commercial transportation service that, while having aspects similar to both taxis and limousines, had sufficient specificity to warrant the designation of a new regulatory category subject to CPUC's regulatory authority.

TNC regulations are detailed in Sections 5430 – 5450 of the California Public Utilities Code and include, among other things, insurance requirements, operating permits issued by the CPUC, rules regarding data privacy, oversight of accessibility programs, driver background checks, and trip fees payable to the CPUC.

Limousines, airport shuttles, commuter shuttles, and tour buses are also classified by the CPUC to be Charter Party Carriers. The CPUC has regulations for these types of transit operators that include: insurance requirements, operating permits and certificates issued by the CPUC, vehicle safety, registration requirements, driver training, and other requirements. In addition to being regulated by the State, aspects of Charter Party Carrier operations are also regulated by the City, which is allowed under State law. The portion of the State's Public Utilities Code pertaining to Charter Party Carriers states:

> "the governing body of any city, county, or city and county may impose a business license fee on, and may adopt and enforce any reasonable rules and regulations pertaining to operations within its boundaries for, any charter-party carrier domiciled or maintaining a business office within that city, county, or city and county." [25]

San Francisco regulates Charter Party Carrier operations with respect to parking and traffic enforcement as authorized by state law. For example, any vehicle for hire which is registered or required to be registered with the CPUC cannot be left unattended on certain residential streets in excess of four hours.[26] Commuter shuttle buses (sometimes referred to as "Google buses") are Charter Party Carriers and are regulated by the CPUC but, under a program to better manage parking and traffic, may also participate in the Commuter Shuttle program adopted by the SFMTA. In January 2014, SFMTA created a pilot program, which was later made permanent in February 2017, regulating commuter shuttle bus activity. In creating the program, SFMTA cited the commuter shuttle buses' impact on SFMTA transit operations and traffic congestion. SFMTA regulations for commuter shuttle buses include issuing operating permits and collecting associated fees, designating locations for passenger loading, regulating where such buses can travel within the City, driver training requirements, and vehicle emission standards.[27] The program is voluntary for shuttle bus operators, however, SFMTA allows participating operators to use curb space that is otherwise designated for Muni passenger loading. In addition, SFMTA has designated additional curb space for shuttle passenger loading other than Muni bus zones. When the SFMTA Board of Directors made the program permanent in February 2017, SFMTA had designated 111 commuter shuttle loading zones in San Francisco.

[25] California Public Utilities Code Section 5371.4
[26] San Francisco Transportation Code Section 7.2.80
[27] See SFMTA Board Resolution 170221-023, February 21, 2017

Limousines, which are also Charter Party Carriers, are subject to the San Francisco Airport's (SFO) Rules and Regulations, which are adopted by the Airport Commission. These regulations include designated pick-up and drop-off zones, operating permits issued by the Airport, trip fees payable to the Airport which are used to defray road and garage maintenance costs, and other requirements. At least one other California city, Beverly Hills, also regulates limousine activities on its streets.[28] SFO has adopted similar regulations for TNCs since it has regulatory authority over roads located on airport property.

Taxis are not classified as Charter-Party Carriers as passengers can arrange for taxi services on a pre-arranged basis or on an impromptu basis such as hailing a cab on the street or at a taxi stand. State law delegates authority for regulation of taxis to cities or counties by ordinance or resolution.[29] In San Francisco, taxis are regulated by Section 1100 of the City's Transportation Code. SFMTA regulates taxis by issuing operating permits for drivers and dispatchers, requiring driver background checks and driver training, insurance requirements, regulating prices, and regulating vehicle emissions.

State and Local Powers

Based on our review[30] of public documents and State and local codes, cities cannot adopt ordinances that conflict with State law. A local ordinance conflicts with state law when it attempts to regulate an area that the state occupies. Determination of the actual scope of what constitutes an area which can be regulated by local law is a matter about which the City Attorney's Office can provide legal advice to the Board of Supervisors pursuant to the City Charter.

The Scope of the 2013 CPUC Decision and Subsequent Legislation

In 2013, the CPUC enacted regulations that in many respects preclude local regulation of TNC operations. In particular, the 2013 decision establishes insurance requirements, establishment of driver background checks, driver safety, and driver training, the attributes of vehicles TNC operators may use, ensuring that all TNC trips are pre-arranged, requiring TNCs to seek approval from airports prior to operating within airport boundaries, and collecting fees for CPUC oversight. In addition, the CPUC has proposed rules to ensure wheelchair users have sufficient access to TNC services, including imposing a per-ride fee to fund improve such access, consistent with California Public Utilities Code Section 5440.5. Local authorities do, however, maintain authority to enforce parking and traffic regulations as authorized by state law.

TNCs Impact on Congestion and Public Safety

As noted in *Section 3: Congestion*, there is a growing body of research indicating that TNCs are a major factor contributing to worsening congestion in US cities, including San

[28] For example, the City of Beverly Hills Traffic, Parking, & Transportation Code prohibits limousines from parking in residential areas and allows the City to designate where limousines can load passengers.
[29] California Public Utilities Code Section 5353(g)
[30] Our analysis is not a legal conclusion and was not conducted by the San Francisco City Attorney's Office.

Francisco. An October 2018 report released by the San Francisco County Transportation Authority (CTA) concluded that TNCs are responsible for a significant share of the increase in vehicle miles travelled, congestion-related reductions in average travel speeds, and hours of vehicle delay.[31] Specifically, the CTA study estimates that between 2010 and 2016, TNCs accounted for 51% of the observed increase in travel delay, 47% of the increase in vehicle miles traveled, and 55% of the decrease in average road speeds. The balance of change in congestion was attributable to and roughly split between population and employment growth over the same period. The study indicates that TNCs are a major contributor to the recent increase in congestion, and are currently having greater impacts then either population or employment growth on all of the commonly used measures of congestion.

In addition to increasing the number of cars on the road, TNCs make up a disproportionate share of traffic violations that contribute to congestion and threaten public safety. In September 2017, the San Francisco Police Department reported to the Board of Supervisors' Land Use and Transportation Committee on its traffic enforcement efforts in the downtown area for the period of April 2017 – June 2017. The results are shown in Exhibit 4.1 below.

Exhibit 4.1: TNC Share of Downtown San Francisco Traffic Violations, April 2017 – June 2017

Violation	Total Violations	TNC Share	% TNC
Drive in Transit Only Lane	1,715	1,144	66.7%
Drive in Bike Lane	18	15	83.3%
Obstruct Bike Lane	10	7	70.0%
Obstruct Bike or Traffic Lane	239	183	76.6%
Failure to Yield to Pedestrian	50	26	52.0%
Illegal U-Turn	57	42	73.7%
Other	567	306	54.0%
Total	**2,656**	**1,723**	**64.9%**

Source: San Francisco Police Department September 25, 2017 Presentation to San Francisco Board of Supervisors Land Use & Transportation Committee

As shown above in Exhibit 4.1, TNCs overall made up 64.9% of downtown traffic violations between April 2017 and June 2017. These traffic violations create additional risk for pedestrians, bicyclists, and other drivers. In addition, of particular note is that approximately two-thirds of all drivers illegally using transit-only lanes were TNC operators. This, combined with the increase in the number of cars using City streets, contributes to the slowdown in SFMTA transit speeds noted in *Section 3: Congestion*. While providing a service that has proven a popular alternative to using a personal vehicle, public transit, and other modes of travel, ridesharing has negative impacts on the

[31] TNCs and Congestion, October 2018, San Francisco County Transportation Authority

City's traffic congestion and public safety and the City does have authority to enforce parking and traffic violations as authorized under state law.

Conclusion

Given the City's limited regulatory authority over Charter Party Carriers, as well as the City's ability to enforce TNCs' compliance with parking and traffic regulations as authorized under state law, we recommend that the Board of Supervisors request that the City Attorney review and advise the Board of Supervisors about the City's ability to regulate TNCs so that the SFMTA Board of Directors and Board of Supervisors can take action when appropriate. Such actions could be special parking and traffic enforcement units dedicated to controlling TNCs or programs similar to those imposed on commuter shuttle and tour buses, which are voluntary, including regulations regarding where TNCs load passengers, limits on which roads TNCs may use, limits on the number of TNC vehicles that can operate at any one time, requiring TNC operators to obtain locally issued operating permits, collecting fees, and requiring more thorough reporting by the TNCs to the City regarding their operations within the City. Given state preemption, these regulations would likely need to be voluntary, similar to the commuter shuttle bus program noted above, and/or the City could increase enforcement of existing parking and traffic regulations as authorized under state law.

Recommendations

The Board of Supervisors should:

4.1. Request that the City Attorney complete a legal analysis of the City's ability to regulate all aspects TNCs operations and advise the Board of Supervisors on their findings and conclusions.

4.2. Determine specific actions to take in conjunction with or separate from the MTA Board of Directors to enable the City and County of San Francisco to establish regulation of TNCs that does not conflict with State regulatory authority in the interest of reducing congestion in San Francisco.

4.3. Request that members of the State Assembly and State Senate to revise State law to grant greater local authority of transportation network carrier operations.

5. Transit Improvement Projects

SFMTA began implementing transit improvement projects in 2011 and was scheduled to have completed all such projects by 2020. However, the projects are only approximately 9.2 percent complete and the total estimated cost is $293.5 million more than the original budget of $91.1 million. Project costs have increased for a variety of reasons, including: changes to project scopes and design due to concerns of residents and businesses, particularly regarding loss of parking spaces; lack of coordination with other City departments delivering capital projects within or near the intended project area, lack of adequate project cost controls, higher than expected costs for contract construction services, and lack of available funding to initiate planned projects. In 2018, SFMTA had to correct $319.7 million in accounting errors in its capital budget, which negatively impacted 104 projects in the FY 2018-20 capital budget.

The delay of full implementation of these transit improvement projects has contributed to SFMTA not meeting its transit performance goals, including customer satisfaction and on-time performance. This has also likely contributed to SFTMTA's flat passenger growth in recent years, undermining the City's Transit First and environmental policy goals. Delays in implementing the transit improvement projects raise the cost of implementation (as project delivery costs tend to escalate each year) and prolong the period during which they must complete with other capital needs during the capital budget process.

SFMTA needs to improve its project cost estimation methodology, improve management of its capital revenues to ensure their availability for timely project delivery, and properly account for and endeavor to expedite community outreach efforts in its project and capital planning. The Agency should also consider requesting one-time approval from the SFMTA Board of Directors to complete the transit improvement projects, as detailed in the 2011 Implementation Strategy for the Transportation Effectiveness Project. Not doing so will further imperil the timely delivery of its transit improvement projects, which were designed to improve the reliability of the City's public transit system.

The Transportation Effectiveness Project (TEP), finalized in 2008, is behind schedule and is over budget

Between calendar years 2006 and 2007, the SFMTA and the Controller's Office undertook a detailed analysis of the Muni transit system to identify how to improve services, attract passengers, and increase efficiency, the Transportation Effectiveness Project (TEP). The analysis was updated in 2008 and the conceptual framework for the project was endorsed by the SFMTA Board of Directors that year. However, progress on developing an implementation strategy was halted in 2009, when the SFMTA Board of Directors declared a fiscal emergency in light of the City's decline in revenues resulting from the nationwide economic recession. In 2011, SFMTA completed an implementation guide detailing the cost, scope, and timeline to deliver the TEP and initiated an environmental review process required by the California Environmental Quality Act (CEQA), which was certified by the Planning Commission and then by the SFMTA Board of Directors in March 2014. The TEP was later renamed Muni Forward in 2015.

Exhibit 5.1 compares the budget and timelines of the TEP projects from the 2011 Implementation Strategy, as presented to the Board of Supervisors in April 2011, against

the budget and timelines of TEP projects completed or underway as of January 2019. As can be seen, total budgeted costs for the same projects increased by $293.5 million, or 322%, between 2011 and 2019.[32]

The budgets shown cover the same projects though the timeline for those projects has been extended by four years in the current version. Though the newer budget covers a longer time span, it represents an increase in total spending. Average expenditures per year increased from $13 million in 2011 to $32 million in 2019, a 146% increase.

Exhibit 5.1: Original vs. Current TEP/Muni Forward Project Budgets and Timeline

Budget		Time Span	Total Years	Budget per Year
Original TEP Budget	$91,157,000	FY 2012 – FY 2019	7	$13,022,429
Current TEP/Muni Forward Budget	$384,657,242	FY 2012 – FY 2023	12	$32,054,770
Change	**$293,500,242**	**+ 4 Years**		**$19,032,342**
% Change	*322%*	*71%*		*146%*

Source: 2011 TEP Implementation Strategy and SFMTA TEP project data from Ecosys

Note: Current budget refers to the project budgets reviewed and approved by the SFMTA Transportation Capital Committee, not appropriated funds. Of the $384,657,242 estimated capital costs, only $69,331,469 had been appropriated in SFMTA's capital budget as of January 2019.

The project cost estimated in the 2011 Implementation Strategy included costs for all phases of the capital project, including: planning/environmental costs, conceptual engineering, detailed design, procurement/construction, start-up costs, and evaluation and refinement. We excluded eight projects currently in the Muni Forward project portfolio (the 7, 10, 27, 31, and 38 bus lines, the M rail line, and the Central Subway) but that were not in the original 2011 Implementation Strategy as well as 31 projects that were not specific to a transit line, all of which totaled $198,747,079 in estimated capital costs as of January 2019.

Of the $384,657,242 in capital costs, only $35,205,266 (or 9.2% of the current estimated total) had been spent as of June 2017, or six years in to the 15 year project timeline.[33] Because more than 90% of the project remains incomplete, the current estimated cost and completion year of FY 2022-23 for the TEP/Muni Forward projects appears unrealistic.

Project costs increase for a variety of reasons

[32] The TEP projects include transit improvement projects for the following routes: 1, 5, 8, 9, 14, 22, 28, 30, 33, L, and N.

[33] SFMTA has been unable to validate its actual spending on projects since the June 2017 Citywide transition to the F$P financial system. The Agency is currently in the process of validating its reporting on actual project spending.

The audit team interviewed capital program managers to discuss common challenges to project delivery and adherence to project budgets and timelines. The interviewees noted the following problems were widespread among the TEP project portfolio:

- Changes to project scopes and design due to concerns of residents and businesses, particularly regarding loss of parking spaces
- Lack of coordination with other City departments delivering capital projects within or near the intended project area
- Lack of adequate project cost controls
- Lack of adequate and reasonable project cost estimates[34]
- Lack of available funding

Our review of the TEP project records revealed that all of these issues impacted project delivery in our two case studies, detailed further below.

Review of Transportation Capital Committee actions

In 2011, the SFMTA adopted Capital Plan and Program Policies "to guarantee projects remain within their approved scope, schedule and budget." Section 4 of the Policies created the Transportation Capital Committee (TCC), an 11- member body that is composed of SFMTA division directors (or their representatives). The TCC meets monthly and must approve inclusion and prioritization of capital projects in SFMTA's capital plan and any changes to project budgets, scopes, and timelines.

The audit team reviewed TCC meeting materials for CY 2018 and noted the following issues impairing on-time and on-budget project delivery for the projects reviewed by TCC that year:

- 2 instances where bids for contracted work were 30% - 40% higher than anticipated
- 85 projects that did not have defined scopes or needed scope clarification
- 1 instance where previously unknown contaminants in the project area had to be mitigated (at an added cost of $4.2 million)
- 3 instances of contract extensions beyond previously budgeted amounts (adding $50.6 million to original budgets of $92.8 million)
- 1 instance of a project delay due to invalid financial data in the City's financial system (FSP)
- A $319.7 million shortfall in the current SFMTA capital budget due to double-counting capital revenues, loss of federal grants due to lack of spending on prior awards, and overly optimistic assumptions about receiving state grants. The impact for the current capital budget totaled $85.3 million in reductions for capital projects in FY 2018-19 and $9.6 million in FY 2019-20, with the remaining $224.8 million in project reductions to be realized in subsequent fiscal years. For FY 2018-19 and FY 2019-20, the reduction negatively impacted 104 projects for which funded had previously been appropriated.

[34] In March 2018, SFMTA issued updated project cost policies and procedures, however they do not require project managers, who develop project cost estimates, to consult with project delivery staff.

Though the summary of causes of delay for projects reviewed by the TCC and presented below may appear low relative to 196 projects in SFMTA's $1.049 billion FY 2019 – FY 2020 Capital Budget, per SFMTA policy, the TCC only needs to approve project budget adjustments if they exceed 10% of the originally approved budget. The observations noted below therefore likely understate the frequency of their occurrence since not all project changes are brought to the TCC.

Case studies

The audit team reviewed two Muni Forward projects from project initiation through the end of CY 2018: the 14 Mission and 22 Fillmore bus lines. As detailed below, both projects are: not yet completed, behind schedule, over budget, and have not yet achieved their intended outcomes. These two projects were selected out of 72 active TEP projects because they represent different facets of SFMTA project delivery and are representative of how Transit Effectiveness Projects have been executed by SFMTA.

Case Study: 14 Mission Project

The 14 Mission bus route is one of the most frequently used bus lines in the City. The 14 Mission TEP project was conceived to provide transit changes along the entire bus route, from the Ferry Building to the Daly City BART station in order to make the service faster and more reliable. However, as shown in Exhibit 5.2 below, only the Inner Mission portion of the project had been completed as of January 2019.

Exhibit 5.2: Original vs. Implemented Project Area: 14 Mission Project

Source: SFMTA project data

Exhibit 5.3 below summarizes the original and currently implemented scope of the 14 Mission Project.

Exhibit 5.3: Original and Implemented Scope of 14 Mission Project

Intended Outcomes	Actual Outcomes as of January 2019
Transit and street changes on 7.5 miles of Mission Street between Steuart Street near the Ferry Building and San Jose Avenue in Daly City	Transit and street changes to 2.5 miles of Mission Street and Otis Streets between 11th Street and Randall Street.
Reconfiguring roadway to add transit only lanes outbound and northbound	Transit only lane southbound between 11th Street and Randall Street
Increasing bus stop spacing from one to two blocks for entire length of route	Completed between 11th Street and Randall Street only
Optimizing transit stop locations at six intersections	SFMTA did not provide this information
Adding transit bulbs at seven intersections	Pedestrian bulbs at two intersections only
Extending existing transit stops at two locations	Not started
Replacing all-way STOP-controlled intersections with traffic signals at two intersections	Not started
Turn Restrictions at 14 intersections	Turn restrictions at 18 intersections (5 right turn restrictions, 13 left turn restrictions),or four more than originally planned
Reduce the travel time of the 14 Mission **by about 8-10 minutes** in each direction	**Actual travel time change 2011 - 2018: 6 minute increase vs. anticipated 8-10 minute decrease;** from 53 minutes to 59 minutes total for the route.
Improving the average operating speed to 7-8 miles per hour and improving service reliability.	**Actual speed per trip change 2011 - 2018: 0.8 mph decrease;** from 7.9 mph to 7.1 mph vs. anticipated increase of up to 8 miles per hour.

Sources: 2014 TEP Implementation Guide, MTA Board of Directors Resolutions dated 12/1/2015 and 8/16/2016; SFMTA performance data

As detailed in Exhibit 5.3 above, much of the originally scoped elements of the 14 Mission project remain incomplete as of January 2019. This is largely, though not entirely, because the downtown and southern portions of the project have not been implemented. Despite this, as shown in Exhibit 5.4 below, spending on the 14 Mission Project of $10,461,364 for only 2.5 miles is only $579,636 less than the original 2011 estimated budget *for the total 7.5-mile project.* Projected spending per mile when the project is done will be $4.8 million compared to originally budgeted spending per mile of $1.5 million

Exhibit 5.4: Comparison of Original and Current Budget and Timeline for 14 Mission Project

Total Original Budget	$11,041,000		
Total Current Budget	$46,309,932	Original Timeline	FY 2012 - FY 2015
Total Current Spending*	$10,461,364	Current Timeline	FY 2011 - FY 2022+
Est. Remaining Spending	**$35,848,568**	**Change in Timeline**	**At least 7+ years**

Source: 2011 TEP Implementation Guide; SFMTA Ecosys project data

* Note: Spending is current as of June 2017

SFMTA staff stated to the audit team that the primary delay for initiating the 14 Mission Project was the longer than expected time it took to complete the Final Environmental Impact Report for the TEP (originally estimated to be completed by 2013, but not actually complete until March 2014). In addition to delays initiating the 14 Mission Project, the portion of the project that was completed between 11th Street and Randall Street was subject to concerns of businesses along that portion of Mission Street, particularly related to loss of parking and turn restrictions onto and from Mission Street. In response, numerous community meetings were held, further delaying project initiation. Although the original project scope included transit-only lanes for buses in both directions on Mission Street, the final project implementation only included one southbound transit only lane.

After the project was implemented, project staff conducted additional community outreach and design analysis, which resulted in modifications[35] after the project was implemented, some of which required SFMTA Board of Directors' approval, causing additional delay. As a result of these scope modifications, extensive community outreach, and delays in completing the entire scope of the project, travel time on the 14 Mission has increased since 2011, rather than decreased as the project intended, as shown in Exhibit 5.3 above.

The longer than expected environmental review process does not explain the delay in initiating the portion of the project south of Randall Street to the Daly City BART station. The southern portion of the 14 Mission Project was originally expected to occur between

[35] The modifications approved by the SFMTA Board of Directors were: rescinding two of the six originally approved right-turn only rules; establishing one additional no left-turn rule; moving a bus stop; and re-establishing a loading zone.

FYs 2012-13 and 2013-14 but is now expected to begin in FY 2021-22, or eight years later than originally anticipated, with no estimated end date.

In addition, SFMTA decided to delay the downtown portion of the 14 Mission Project, originally expected to be completed by FY 2014-15, to align with the SFMTA Better Market Street Project, which is currently still in its early design phase and not expected to be completed until FY 2020-21. According to the Five Year Capital Plan approved by the SFMTA Board of Directors in December 2018, the downtown portion of the 14 Mission Project is now expected to take five years, rather than three estimated in 2011, and is scheduled to occur between FYs 2018-19 – FY 2023-24, or a completion date nine years later than originally planned.

The Better Market Street project was delayed due to the capital revenue accounting errors discussed above. In December 2018, the SFMTA Board of Directors reduced the Better Market Street project budget from $141,609,219 to $47,784,165 (or a reduction of $93,825,054 to that project budget) as part of a broader effort to re-balance SFMTA's capital budget which required reductions totaling $122.7 million in FY 2018-19 and $18.7 million in FY 2019-20. The downtown portion of the 14 Mission transit improvement project was also decreased by $3,144,504, from $11,525,250 to $8,380,746 in the FY 2018-19 – FY 2019-20 capital budget.

Case Study: 22 Fillmore

According to the 2014 TEP Implementation Guide, the 22 Fillmore bus line requires street use modifications and re-routing so that it will travel through the beginning of 16th Street and connect to the recently upzoned Mission Bay neighborhood. Currently, the 22 Fillmore finishes its route south of Mission Bay, at 20th Street and 3rd Streets. Exhibit 5.5 below shows the original scope of the project, covering the entire 22 Fillmore bus line, and the current extent of the work on the project.

Exhibit 5.5: Original vs. Current Implementation of 22 Fillmore Project

Source: SFMTA project data

Exhibit 5.6 below details the original and currently implemented scope of the 22 Fillmore Project.

Exhibit 5.6: Original and Implemented Scope of 22 Fillmore Project

Intended Outcomes	Actual Outcomes
Provide a direct transit connection between development at Mission Bay and the 16th Street BART Station, the Mission District, and Fillmore Street. This project would facilitate an important east-west transit connection for the rapidly developing Mission Bay neighborhood. Project to be executed in FY 2013 – FY 2017	Project still in design phase
Midday headway frequency change from 10 to 7.5 minutes	Current headway is 8 minutes (AM) and 9 minutes (PM)
Street use changes (transit-only lanes, turn restrictions, etc.) on Fillmore Street portion of the 22 bus line	Project element abandoned; not in capital budget
Line rerouted to continue along 16th Street to Third Street, creating new connections to Mission Bay from the Mission District	Re-route to Mission Bay not started; Mission Bay currently served by 55 16th Street Bus (discussed below)
Moving the route off of 17th and 18th streets and onto 16th Street between Kansas Street and 3rd Street to connect to the Mission Bay neighborhood and to provide continuous transit service along 16th Street	Re-route to Mission Bay not started; Mission Bay currently served by 55 16th Street Bus (discussed below)
Reduce the travel time of the 22 Fillmore by about 5 minutes in each direction (10 minutes total) within the study area (25 percent reduction)	**Actual Travel time change 2011 – 2018:** **6 minute increase** in average travel time: from 45 minutes to 51 minutes

Sources: 2014 TEP Implementation Plan; SFMTA Ecosys project data; SFMTA performance data

As detailed above in Exhibits 5.5 and 5.6, the original project area and scope of the 22 Fillmore/16th Street Improvement Project was originally intended to make transit improvements along the entire length of route but is now only focused on the 16th Street portion, which is still currently in its design phase. Delay in implementation has meant that the project's intended outcome of reducing travel time by five minutes has not been

met; instead, travel time has increased by six minutes. Exhibit 5.7 below summarizes the original and current project timeline and budget.

Exhibit 5.7: Comparison of Original and Current Budget and Timeline for 22 Fillmore Project

Total Original Budget	$16,675,000		
Total Current Budget	$109,968,148	Original Timeline	FY 2013 - FY 2016
Total Current Spending*	$4,685,496	Current Timeline	FY 2016 - FY 2022
Est. Remaining Spending	**$105,282,652**	**Change in Timeline**	**+6 years**

Source: 2011 TEP Implementation Guide; SFMTA Ecosys project data

* Note: Spending is current as of June 2017

According to interviews with SFMTA staff and the audit team's review of project documents, this project was originally estimated to take place between FY 2012-13 and FY 2015-16. However, funding was not available for this project until FY 2015-16 and it is now estimated to take six years (rather than three) to complete.

Once this project was authorized and funding was made available, design analysis for this project was scheduled to be complete in June 2017. However, design is still ongoing because prior analyses did not include a thorough survey of utilities that would have to be relocated. This in turn required coordination with SFPUC, DPW, telecommunications providers, and PG&E, as well as re-scoping the project. In addition, starting in approximately 2017, SFMTA has started requiring more extensive community outreach on projects to ensure concerns of residents and businesses are incorporated into project design. This has created additional design work for the project team.

In addition, as noted above and in the Introduction to this report, in December 2018 SFMTA reduced a number of project budgets in order to accommodate accounting errors in the capital budget. The reductions totaled $85.3 million in FY 2018-19 and $9.6 million in FY 2019-20 and included a reduction of $1,050,000, from $1,200,000 to $150,000, that had been appropriated to begin transit improvements on the portion of the 22 Fillmore between Church Street and Bay Street. Funding for the portion of the project along 16th Street was enhanced by $13,321,045, from $32,665,741 to $45,986,786. As noted above, the total budget for all of the improvements on the 22 Fillmore is estimated to be $105,282,652 as of January 2019.

Effects of Delayed 22 Fillmore Project

According to the Office of Community Investment and Infrastructure January 2017 project status update, major development of the Mission Bay area of San Francisco has taken place:

> "As of January 2017, 5,096 housing units, including 848 affordable units, have been constructed in Mission Bay. An additional 812 units are under construction or entitled. More than 1.9 million square feet of commercial, office, clinical and biotechnology lab space has been built, another 1 million square feet is under construction, and 1.5 million square feet is planned or proposed."

According to the January 19, 2016 staff report to the SFMTA Board of Directors on this project, "over 43,000 people (51 percent minority, 25 percent low-income) live within a quarter-mile of the project area. Approximately 2,800 businesses employing over 23,000 individuals call the area home. Over 10,000 daily average boardings currently take place along the Project Corridor."

This increase in residential and commercial development in the Mission Bay has not been met with a commensurate increase in transit service, as originally intended by SFMTA. Because of the delay of the 22 Fillmore re-route, SFMTA launched a new bus route, the 55 16th Street, between Mission Bay and the 16th Street BART station to accommodate passengers seeking to travel west of Mission Bay. The 55 bus headway is 20 minutes whereas the intended headway for the re-routed 22 bus is 7.5 minutes.

Delays in completing the TEP projects, which were designed to improve transit service, have contributed to SFMTA's performance challenges

According to the TEP implementation guides, the goals of the project were to:

- Improve Muni travel speed, reliability and safety
- Make Muni a more attractive transportation mode
- Improve cost-effectiveness of Muni operations
- Implement the City's Transit First Policy

Transit Speed

Exhibit 5.8 below shows the change in the average minutes per trip and average transit speeds between CY 2011 and CY 2018, the period during which the TEP was supposed to have been largely implemented, for the entire Muni system. As can be seen, average systemwide time per Muni trip increased slightly by approximately 1.1 minutes while average speed decreased by approximately 0.7 miles per hour. Had the TEP been delivered as planned, trip lengths would have decreased and transit speeds would have increased. As noted in *Section 3: Congestion Management*, transit speeds are related to overall traffic congestion as well as delivery of transit improvement projects.

Exhibit 5.8: Speed of Muni Services, 2011-2018

	Average minutes per trip			Average speed per trip		
	2011	**2018**	**Change**	**2011**	**2018**	**Change**
Total	40.4	41.4	1.1	9.5	8.8	(0.7)

Source: SFMTA performance data

Cost Effectiveness of Muni Operations

As shown in Appendix 5.1, the operating costs of all Muni transit services have been increasing since 2011 as measured by cost per passenger trip. This is contrary to the TEP's intention to increase the cost effectiveness of transit service.

Reliability and Transit First: FY 2013 – FY 2018

According to SFMTA performance data, the agency did not meet its goal to improve overall customer rating, transit performance, and reduced private auto use during the time period of the FY 2013 - FY 2018 Strategic Plan. Exhibit 5.9 below summarizes transit performance indicators tracked by SFMTA between FY 2012-13 and FY 2017-18, when the TEP was supposed to have been largely implemented.

Exhibit 5.9: Actual transit performance relative to Strategic Plan objectives: FY 2013 – FY 2018 *

Goal	Objective	Target	FY13 Avg.	FY14 Avg.	FY15 Avg.	FY16 Avg.	FY17 Avg.	FY18 Avg.
Improve transit performance	Overall customer rating	3.4	**	3.0	3.1	3.2	3.2	**
	Percentage of transit trips with <2 min bunching on Rapid Network	1.8%	4.0%	4.0%	4.8%	5.4%	5.9%	5.9%
	Percentage of transit trips with + 5 min gaps on Rapid Network	8.8%	17.8%	18.6%	17.2%	16.9%	18.1%	16.9%
	Non-private auto mode share (all trips)	50.0%	50.0%	54.0%	52.0%	54.0%	57.0%	**

Source: SFMTA Performance Data

* Green = at or above target; Red = below target

** Not reported

Note: "Non-private auto mode share" refers to the portion of all trips that not taken in cars with only one passenger.

As shown above, SFMTA did not meet either of its objectives of reducing vehicle bunching (vehicles arriving less than two minutes apart at the same stop) or reducing gaps (vehicles arriving more than five minutes later than scheduled). The percentage of trips in which bunching occurred worsened from 4.0 percent in FY 2013 to 5.9% in FY 2017-18, which was more than triple the 1.8% performance target. The percentage of trips in which gaps occurred improved from 17.8% in FY 2012-13 to 16.9% in FY 2018, but still nearly double the 8.8% performance target. Finally, customer ratings of transit performance fell below the performance target 3.4 in each of the four years in which data was reported though ratings improved from 3.0 in FY 2012-13 to 3.2 in FY 2016-17.

Although there are likely other additional causes contributing to SFMTA not meeting its transit performance objectives during FY 2012-13 – FY 2017-18, the delay in delivering the TEP was a significant factor. As noted above, the purpose of the TEP was to "make Muni service more reliable, quicker, and more frequent."

One area in which SFMTA met its transit performance targets was the portion of trips conducted by non-private automobiles. According to SFMTA performance data, the non-private auto mode share (which includes TNCs, taxis, bicycles, walking, and SFMTA transit) increased from 50% of all trips in FY 2012-13 to 57% in FY 2017, or seven percentage points above the 50% performance target.

Community buy-in

As discussed above, community resistance to transit improvement projects has been a cause of project delays in at least the two case studies presented, and many more projects according to SFMTA staff. The source of delay is often related to concerns by merchants about reduced customer parking associated with transit improvement projects. While SFMTA conducts community outreach before projects are initiated, project plans do not always provide alternative solutions to these parking concerns at the outset. By incorporating such approaches to dealing with reduced parking in their project plans, SFMTA staff could potentially assuage some merchant concerns and reduce project delays. Alternative low-cost approaches could include presentation of information about actual available parking spaces and/or garages close by at community meetings, making arrangements with other businesses or institutions to allow for merchant parking at institutions such as schools nearby when their parking spaces are not being used, group valet service, possibly subsidized by project funds, and discounts for ride-share services to be provided to impacted merchants for their customers. The costs for approaches such as these and others could be more than offset if they enabled transit improvement projects to move ahead more quickly.

Conclusion

The original plan for the Transportation Effectiveness Project underestimated the total project costs by at least $293.5 million out of the total budget of $384,657,242. The Project, which was supposed to be largely finished by FY 2019-20, is only 9.2% complete (as measured by spending against the current estimated budget). Our review of two sample projects and interviews with SFMTA staff found that reasons for the TEP's increase in cost and delays include:

- Inadequate estimates of project costs by SFMTA staff
- Underestimating the extent of utility relocations required for street modifications by SFMTA staff
- A lack of community buy-in to project designs and scopes, requiring extensive additional community outreach (beyond what occurred during the planning phase of the project)

- Project re-design in addition to what had already occurred during TEP planning between 2006 -2011
- Problems with interagency coordination between SFMTA, SF Public Works, and the SFPUC
- Lack of available funding necessary to initiate planned projects, and
- Higher than estimated costs for contract construction services

The delay of full implementation of the TEP has contributed to SFMTA not meeting its transit performance goals, including customer satisfaction and on-time performance. This has also likely contributed to SFTMTA's flat passenger growth in recent years, undermining the City's Transit First and environmental policy goals. Delays in implementing the TEP raise the cost of implementation (as project delivery costs tend to escalate each year) and prolong the period during which they must complete with other capital needs during the capital budget process.

SFMTA needs to improve its project cost estimation methodology, improve management of its capital revenues to ensure their availability for timely project delivery, and properly account for and endeavor to expedite community outreach efforts in its project and capital planning. Not doing so will further imperil the timely delivery of the TEP, which was designed to improve the reliability of the City's public transit system.

Recommendations

The Board of Supervisors should request SFMTA to:

5.1. Develop policies and procedures for data entry and validation into the capital budget system to minimize the chance for future accounting errors in the capital budget.

5.2. Incorporate capital project delivery staff in the planning phase of capital projects in order to provide more accurate scopes and budgets.

5.3. Analyze original project budgets and time estimates after projects are completed to better identify what was inaccurately forecast and develop tools and processes to improve the accuracy of those forecasts.

5.4. Incorporate community outreach efforts and associated re-design impacts on current project timelines.

5.5. Develop approaches for addressing common community concerns that repeatedly delay projects, like merchant concerns about losing customer parking, such as SFMTA arranging alternative parking or subsidizing shuttle or ride-share services to affected commercial areas.

5.6. Request authority from Board of Directors to complete all Muni Forward projects as detailed in the 2011 Implementation Strategy such that no further legislative action is necessary to implement those projects.

5.7. Report back to the Board of Supervisors on implementation of the above recommendations after six months and one year from the release of this report.

Benchmark Operating Cost per Trip

Transit Agency	Demand Response	Light Rail	Bus	Street Car Rail	Trolleybus
SEPTA	$37.26		$3.86	$2.73	$2.36
MBTA	$52.13	$3.00	$4.11		$6.07
NYC MTA	$81.89		$3.65		
LA Metro		$5.41	$4.13		
WMATA	$49.66		$5.13		
King County Metro	$74.19		$5.15		$3.66
VTA	$50.00	$11.61	$8.49		
BART					
Sound Transit		$3.96		$5.19	
Omnitrans		$29.31	$5.92		
NJ Transit	$60.29	$5.35	$5.62		
Avg. excl. SFMTA	**$57.92**	**$9.77**	**$5.12**	**$3.96**	**$4.03**
SF MUNI	$43.32	$4.19	$3.05	$3.18	$3.10
Excess cost	($14.60)	($5.58)	($2.07)	($0.78)	($0.93)

Source: 2017 National Transit Database Agency Profiles

Traffic Fines, Fees and Permits Revenue Sources

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	% Change FY 2014-18
Traffic Fines - Parking	$88,034,218	$86,654,721	$87,981,134	$92,041,077	$95,973,763	9.02%
Tow Surcharge Fee[i]	$9,723,295	$9,628,271	$11,788,153	$20,794,563	$22,599,565	132.43%
Neighborhood Parking Permits	$11,079,444	$11,731,187	$12,596,045	$14,870,569	$15,161,888	36.85%
Temporary Sign Fees	$1,714,930	$1,971,879	$1,938,642	$2,270,609	$2,567,549	49.72%
Special Traffic Permit	$1,114,735	$916,326	$1,248,095	$1,433,182	$1,956,635	75.52%
Traffic Fines - Moving	$0	$0	$1,757,314	$3,311,724	$1,690,079	N/A
Curb Painting Fees	$1,156,607	$896,081	$1,158,969	$1,248,519	$1,490,801	28.89%
Traffic Fines – Boot Program	$1,588,674	$1,606,499	$955,243	$1,211,392	$1,137,567	-28.40%
Other General Government Charge	$145,346	$964,626	$268,673	$828,660	$992,779	583.05%
Abandoned Vehicle Fee	$505,417	$509,055	$509,871	$512,537	$510,698	1.04%
Street Closing Fee	$182,510	$147,816	$207,835	$245,527	$229,636	25.82%
Safe Path Of Travel	$24,500	$24,500	$35,550	$49,600	$81,097	231.01%
Truck Permits	$59,192	$63,655	$52,836	$55,567	$58,162	-1.74%
Contractor's Per Tow Fee	$1,043,354	$1,022,242	$733,427	$0	$0	-100.00%
Red Light Fine-Camera Violation	$2,822,769	$2,063,167	$593,875	$0	$0	-100.00%
Red Light Fine	$545,426	$610,033	$238,223	$0	$0	-100.00%
Other Public Safety Charges	$161,155	$158,277	$119,583	($4,832)	$0	N/A
Total	**$119,901,572**	**$118,968,334**	**$122,183,468**	**$138,868,695**	**$144,450,219**	**20.47%**

Source: SFMTA

[i] According to SFMTA, tow surcharge fees reflect gross amounts in FY 2017 and FY 2018 and net amounts from FY 2014 – 16.

Revenue from Parking Garages

Parking Facilities	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	% Change FY 2014-18
Saint Mary's Sq. Garage - Commercial	$22,060	$22,240	$20,070	$15,236	$15,718	-28.8%
Sutter-Stockton Garage Uptown	$12,232,320	$12,250,788	$11,993,983	$11,175,230	$10,396,634	-15.0%
Golden Gateway Garage	$7,295,943	$7,032,445	$6,842,261	$6,495,249	$6,208,663	-14.9%
Lombard – Retail	$396,977	$362,236	$327,363	$339,274	$341,726	-13.9%
Ellis - O'Farrell Garage - Commercial	$1,012,538	$966,189	$855,042	$855,232	$888,752	-12.2%
St. Mary's Garage	$2,666,638	$2,637,254	$2,545,769	$2,516,226	$2,390,322	-10.4%
Moscone Center Garage	$3,443,679	$3,737,274	$3,645,809	$3,485,949	$3,317,602	-3.7%
Ellis - O'Farrell Garage	$5,635,953	$5,382,361	$5,450,641	$5,350,887	$5,441,760	-3.5%
Vallejo St. Garage	$935,062	$914,984	$965,562	$924,087	$926,074	-1.0%
5th & Mission Garage	$19,517,837	$19,837,907	$20,195,752	$18,953,810	$19,432,087	-0.4%
Lombard Garage	$813,677	$803,067	$811,934	$821,767	$844,868	3.8%
16th & Hoff Parking Garage Rev	$649,049	$651,030	$678,288	$674,145	$678,919	4.6%
Mission Bartlett Garage	$2,256,497	$2,477,583	$2,507,448	$2,366,933	$2,394,451	6.1%
SFGH Garage-Commercial	$68,690	$123,949	$71,166	$73,301	$75,500	9.9%
Performing Arts Retail	$154,828	$292,982	$182,114	$166,547	$173,324	12.0%
North Beach Garage	$1,410,964	$1,556,984	$1,594,931	$1,667,153	$1,622,819	15.0%
Performing Arts Garage	$3,540,288	$3,936,708	$3,935,890	$4,030,628	$4,277,571	20.8%
5th & Mission Garage - Commercial	$1,173,010	$1,344,488	$1,236,897	$1,449,707	$1,426,480	21.6%
Pierce Street Garage - Commercial	$51,533	$193,044	$89,412	$63,575	$62,727	21.7%
SFGH Campus Garage	$3,741,046	$3,946,864	$4,018,040	$4,065,334	$4,600,857	23.0%
Seventh & Harrison Lot	$352,237	$338,496	$356,772	$417,855	$455,666	29.4%
Polk-Bush Garage	$566,752	$640,238	$675,450	$722,453	$759,222	34.0%
Japan Center Garages	$1,826,972	$2,309,428	$2,462,023	$1,737,619	$2,507,395	37.2%
Polk Bush Retail	$77,707	$94,689	$114,471	$118,070	$121,612	56.5%
Vallejo Retail	$110,690	$147,538	$134,669	$187,125	$205,306	85.5%
Golden Gateway Garage - Commercial	$50,165	$77,505	$79,365	$92,776	$117,519	134.3%
Moscone Retail	$71,740	$49,323	$24,872	$112,125	$181,951	153.6%
Pierce Street Garage	$0	$0	$0	$0	$506,140	N/A
Sutter-Stockton Retail	$0	$0	$0	$0	$368,437	N/A
Total	**$70,074,850**	**$72,127,595**	**$71,815,993**	**$68,878,293**	**$70,740,102**	**1.0%**

Source: SFMTA

Note: "Retail" refer to sales of goods at parking garages and "Commercial" refers to lease revenue from commercial tenants

SFMTA Operating Costs per Trip, by Transit Mode

	2011	2012	2013	2014	2015	2016	2017	Change
Light rail	$3.61	$4.06	$4.24	$4.05	$3.88	$4.20	$4.19	$0.58
Motor bus	$3.04	$2.76	$2.80	$2.98	$3.17	$3.12	$3.05	$0.02
Trolley	$2.34	$2.22	$2.28	$2.42	$2.85	$2.76	$3.10	$0.77

Source: National Transit Data (adjusted for 2017 dollars)

Written Response from Director of Transportation

March 4, 2020

Harvey M. Rose, CPA
Budget and Legislative Analyst
Board of Supervisors
City and County of San Francisco
1390 Market Street, Suite 1150
San Francisco, Ca 94102

Dear Mr. Rose:

Thank you for the diligent work of you and your staff regarding your performance audit of Muni ridership trends, the impacts of congestion on Muni operations, and assessment of San Francisco Municipal Transportation Agency's (SFMTA) revenue.

The SFMTA acknowledges its challenges meeting Muni performance measures and more importantly, the expectations of our riders in recent years. San Francisco's booming economy, housing policy failures, and national trends towards declining transit ridership in the face of Transportation Network Company (TNC) usage have strained our ability to hire workers and provide high-quality reliable transit.

Since Motion M18-058 passed and your audit began in April 2018, we have taken key steps to chart a path forward. We have new leadership at the Agency; I have assumed the role of Director of Transportation, Julie Kirschbaum has been appointed Director of Transit, and Kimberly Ackerman has been appointed Human Resources Director. Furthermore, Mayor London Breed, the Board of Supervisors, advocates, and transit experts established a Muni Reliability Working Group to provide key recommendations to improve service, increase ridership, and address many of the challenges raised by this audit. The SFMTA Board of Directors has accepted these recommendations and we have begun to implement them.

Across the country and locally, public transit ridership has declined; however, where SFMTA has made investments in transit reliability through Muni Forward, ridership has grown rapidly. To address congestion impacts on transit service, Muni Forward prioritizes frequency and reliability improvements on our most heavily used lines. Going forward, we will be accelerating the pace of delivery through the adoption of the Transit Reliability Quick-Build program, which will allow us to make changes to speed up transit service more quickly. The Transit Priority Quick-Build improvements will also be expanded to address the top ten delay hot spots in the system.

The Better Market Street Project is a prime example of the Agency addressing congestion on San Francisco's most important transit corridor. At peak times, Market Street sees more than 200 buses an hour and serves as the main artery of our bus network. Better Market Street will transform our city's busiest street for people walking, biking, taking a taxi, and riding transit over the next few years to make it safer and improve Muni. We are already seeing benefits. The quick-build phase of Better Market Street Muni has improved travel times up to 12 percent since most of Market Street became car-free east of Van Ness Avenue in January. With these Muni lines branching throughout San Francisco, boosting transit reliability on Market Street is positively affecting the whole city.

To make these changes, the SFMTA needs stable, reliable sources of revenue. We concur strongly with the BLA's conclusion that "the Agency needs to enhance its operating revenues if it is going to increase transit service and enhance transit reliability and desirability." While we are always looking for ways to operate more efficiently, the great majority of our costs are labor-related. Due to a booming local economy and tight labor market, we are struggling to fill operator, parking control officer, and other positions across the agency. We expect our labor costs to continue to rise based on our regional economic trends. In our upcoming budget, we will be seeking new revenue to offset the high costs of providing transit in one of the nation's most expensive cities. We will look to implement the recommendation from Mayor Breed and your audit to extend parking meter hours where it is aligned with the Agency's goal of reducing parking congestion.

As we look to improve agency-wide, our next steps include implementing the near-term Muni Reliability Working Group (MRWG) recommendations including:

- Proposing a budget for Fiscal Year 2021/22 that will support implementing the MRWG recommendations
- Continuing to focus on Operator hiring and training (goal of stabilizing service levels by Summer 2021)
- Expanding the SFMTA's existing security contract, which is currently at the Board of Supervisors for approval
- Right-sizing transit supervision staffing by June 2020
- Creating an SFMTA and citywide program to reduce the significant vacancy rates in maintenance, crafts and engineering classes by June 2020
- Continuing to explore the development of regional and industry coordination efforts for training, certification, apprenticeship and career ladders in the skilled trades that are needed by the SFMTA
- Finalizing a package of interim subway service solutions by June 2020 to improve subway performance over the next two years.

- Continue the SFMTA's and City's strong efforts to address City and state goals, including mitigating TNC impacts on congestion, greenhouse gas emissions, disability access, the taxi industry and other areas, through ongoing efforts. Work with key stakeholders, including the City Attorney's Office, to seek legislation to improve the regulation of TNCs at both state and local levels, to further advance City and state goals.

Once implemented, these changes will help us deliver the high-quality transit service San Franciscans expect from Muni. The SFMTA will continue to work with the Controller's Office and Department of Human Resources to implement the recommendations of the MRWG.

Reliable and effective Muni service is integral to a successful San Francisco. We cannot meet our goals of ending traffic fatalities, fighting climate change, and becoming a more equitable city without more people taking transit. We thank you for your work and recommendations, and we are eager to work with your office and the Board of Supervisors to provide the level and reliability of Muni Service that San Franciscans need to stay competitive in our booming economy while meeting our safety and climate goals.

Sincerely,

Jeffrey Tumlin
Director of Transportation