
SFTP 2050: STRATEGIC TOPIC PAPER

Transportation Demand Management (TDM) and Long Range Planning

Purpose

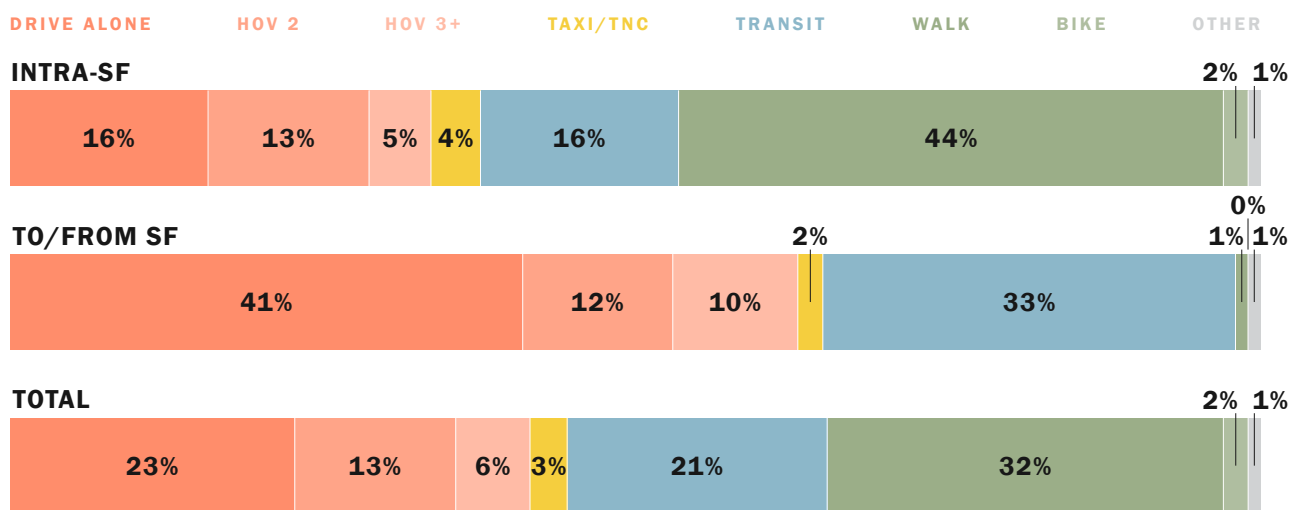
Long range transportation plans (LRTP) coordinate planning projects and prioritize projects, activities, and programs to reach defined goals for a 20 (or more) year period. LRTPs are typically written at a regional or county level and include a financial needs analysis to assess the financial ability to fund the projects included in the plan.

As part of the ConnectSF process, San Francisco will develop the San Francisco Transportation Plan (SFTP) for 2050. The SFTP will recommend a set of policies and projects, under constrained and visionary budget scenarios, that advance the city towards local and regional goals and help create an effective, equitable, and sustainable transportation system in San Francisco. Transportation Demand Management (TDM) is being explored as a policy and program area for the SFTP to support a reduction in vehicle trips and related greenhouse gas emissions.

TDM is a systematic approach to shift how, when, and where people travel through programs and policies and is an effective tool that San Francisco and other cities are using to address the rise in congestion associated with population and job growth. TDM was included in San Francisco’s 2013 SFTP and is included in long range plans for cities across the country because it is a proven tool to decrease the dependence on driving and maximize the efficiency and effectiveness of the transportation system.

Of trips to, from, and within San Francisco on a typical weekday, 45% are taken by driving modes, and roughly half of those are drive-alone. Of trips entirely within the city, 37% are taken by driving modes. More than half of those driving trips are under two miles in length.

Figure 1: San Francisco Mode Share by Travel Market



Source: MTC/SFCTA 2018 - 2019 Travel Survey

Within San Francisco, the lengths of trips made by bicycle are similarly distributed to trips made by car, but there are more than 10 times as many driving trips under one mile as there are bike trips under one mile.

Table 1: Trip Length Distribution of Drive and Bike for Trips within San Francisco

	< 1 MILE	1 - 2 MILES	2 - 3 MILES	3 - 5 MILES	5 - 10 MILES	> 10 MILES
Drive	339,457	280,540	227,418	229,959	117,113	1,359
Bike	30,238	25,439	18,429	18,302	5,405	191
Share of Drive	28.4%	23.5%	19.0%	19.2%	9.8%	0.1%
Share of Bike	30.9%	26.0%	18.8%	18.7%	5.5%	0.2%

Source: MTC/SFCTA 2018 - 2019 Travel Survey

This research considers recent long range plans for regions, counties, and/or cities that cover San Francisco's peer cities – Austin, Seattle, Washington DC, and Portland. These peer cities have made strides in planning for and implementing TDM and have city contexts that are somewhat similar to San Francisco. In some cases, there are multiple plans reviewed for each peer city because the city falls within two plan areas; for example: Seattle, Washington is covered by the Puget Sound 2018 Regional Transportation Plan and the King County Metro 2016 Long Range Transportation Plan.

The purpose of this research is to catalog how the relevant long range plans incorporate TDM, the level of detail on goals, programs, and metrics, and relative funding and monitoring guidance that is established. The outcome of this research recognizes that San Francisco's existing TDM efforts could use improved definition of travel markets and evaluation methods to define potential long range TDM planning efforts that can be considered in SFTP 2050 to address these gaps. Table 2 provides an overview of the peer cities included in this research, relevant long range plans, and the TDM topic areas that each plan includes – TDM goals are defined priority trips or goals to address, programs are specific programs/policies/incentives, implementation includes direction for how to implement programs, monitoring includes direction for how programs will be assessed over time, and funding includes specific funding needs for the TDM program.

Table 2: Peer City Plans Reviewed and Topics Included

PEER CITY	PLAN	AGENCY	TDM GOALS	PROGRAMS	IMPLEMENTATION	MONITORING	FUNDING NEED
Portland, Oregon	2018 Regional Transportation Plan	Oregon Metro ¹	X				X
Seattle, Washington	2018 Regional Transportation Plan	Puget Sound Regional Council ²	X	X*	X*	X*	
Seattle, Washington	2016 Long Range Transportation Plan: "Metro Connects"	County Metro ³	X				
Washington, DC	2014 Multimodal Long Range Transportation Plan: "MoveDC"	District Department of Transportation ⁴	X	X*			
Austin, Texas	2020 Regional Transportation Plan	Capital Area MPO ⁵	X	X*		X*	
Austin, Texas	Strategic Mobility Plan	City of Austin ⁶	X			X	

*notes that topic is included in a TDM action plan appendix item

1 Regional Transportation Plan, Oregon Metro, 2018. https://www.oregonmetro.gov/sites/default/files/2018/07/02/draft2018RTP_publicreviewweb.pdf

2 Regional Transportation Plan, Puget Sound Regional Council, 2018. <https://indd.adobe.com/view/1af394e0-4e37-4982-9155-a2ee1e221b75>

3 Long Range Transportation Plan: Metro Connects, King County Metro, 2016. <http://metro.kingcounty.gov/planning/long-range-plan/>

4 Multimodal Long Range Transportation Plan: MoveDC, District Department of Transportation, 2014. <https://movedc-dcgis.hub.arcgis.com/datasets/c8a5dc8c069e46b1927d7088bec44f28>

5 Regional Transportation Plan, Capital Area MPO, 2020. <https://www.campotexas.org/regional-transportation-plans/2045-plan/>

6 Strategic Mobility Plan, City of Austin, 2019. <https://app.box.com/s/7aiksmwmgymalsty0lm21wingk0slug>

Findings of TDM in Peer City Long Range Transportation Plans

Each of the reviewed plans discuss the need for TDM and recognize it as a way to shift travel behavior away from drive-alone trips and make the transportation system more effective. However, the plans differ in targeted trip types, the inclusion of policy statements and strategic direction, programs, evaluation metrics, and funding needs.

Commuter and resident focused trips are consistently emphasized in the reviewed plans; other trip types include visitors, underserved communities, school trips, and city employees. Plans covering Seattle, Austin, and Washington DC include detailed, regional TDM Plans as appendix reports. These plans define specific programs and guidance for implementation and, in some cases, include monitoring and evaluation guidance; this information is summarized in the relevant plans. The Oregon Metro 2018 Regional Transportation Plan is the only plan to identify funding needs for TDM priority areas, which accounted for 2 percent of the constrained project list. The City of Austin is the only city to establish a 20-year plan (the Strategic Mobility Plan), independent from the region’s LRTP; it includes specific policies and targets to address resident, visitor, and school trips. The variation in how TDM is included in each of the reviewed plans may be a result of each city basing TDM decisions on local travel behaviors and patterns and past TDM initiatives.

Table 3 provides a summary of how each plan incorporates TDM; details of the appendix TDM Plans are not included in this summary.

Table 3: Reviewed Peer City Long Range Transportation Plan Summaries

PEER CITY	REPORT	AGENCY	OVERVIEW OF TDM	TRIP TYPES	PRIORITIES AND PROGRAMS	IMPLEMENTATION GUIDANCE	FUNDING	MONITORING
Portland, Oregon	2018 Regional Transportation Plan	Portland Metro	TDM is included as a component of Transportation System Management and Operations as a way to propose travel options and programs to reduce the demand for drive-alone trips. The established Regional Travel Options program oversees the TDM efforts and the RTP includes policy direction to expand commuter programs, individual marketing, and other tools to increase choice awareness and to increase benefits through partnerships to expand efforts outside of the Portland area and meeting the needs of historically underserved communities.	<ul style="list-style-type: none"> Commuter Residents 	<ul style="list-style-type: none"> Local program implementation Individualized marketing Commuter programs Public awareness campaign Travel options support tool 	Not included	<p>Metro coordinates partner efforts, sets strategic direction, evaluates outcomes and manages grant funding.</p> <p>TDM projects in the RTP account for 2% of the constrained project list; estimated capital cost of \$127M (2016 dollars)</p>	Not included
Seattle, Washington	2018 Regional Transportation Plan	Puget Sound Regional Council	TDM is an efficiency improvement to make lower-cost, higher-efficiency options easier to use and more readily available. The primary objective of TDM in the RTP is to connect people with options that optimize the capacity of the system. The plan includes guidance for the types of strategies to be included and potential funding sources. A Regional TDM Action Plan is included as an appendix item.	<ul style="list-style-type: none"> Commuter Residents 	<ul style="list-style-type: none"> Expand programs Provide information Enhance existing system Maximize new investments Influence policy Research and advocate 	For each of the strategy areas, the Regional TDM Action Plan provides high-level actions and identifies potential implementers	Included as a potential funding allocation from roadway pricing and tolling. No specific budget or potential funding amount is included.	<p>The TDM Action Plan identifies 3 overarching areas to monitor, independent of the performance evaluations for specific actions:</p> <ul style="list-style-type: none"> Overall and commute mode split regionally and by county Transit ridership Number of vanpools

PEER CITY	REPORT	AGENCY	OVERVIEW OF TDM	TRIP TYPES	PRIORITIES AND PROGRAMS	IMPLEMENTATION GUIDANCE	FUNDING	MONITORING
Seattle, Washington	2016 Long Range Transportation Plan: "Metro Connects"	King County Metro	<p>TDM is included as a service quality investment to encourage individual choices that make the system work efficiently.</p> <p>The plan includes the development of new TDM methods using emerging technology and transportation pricing, as well as improvements to walking and biking paths to transit. The plan also identifies three initiatives:</p> <ul style="list-style-type: none"> Research and develop new tools Support local and regional land-use decisions that benefit transit and other non-drive-alone modes Partnerships for implementation 	<ul style="list-style-type: none"> Commuter Residents School 	<ul style="list-style-type: none"> Community based social marketing Shared mobility options Parking management Flexible transit service Emergency Ride Home Pass programs Telework 	Not included	Not included	Not included
Washington DC	2014 Multimodal Long Range Transportation Plan: "Move DC"	District Department of Transportation	<p>TDM is included as a way to make a "smarter system" – efficient and effective – and manage demand to meet capacity. TDM is an individual policy effort in the LRTP and includes two recommended policies:</p> <ul style="list-style-type: none"> Incorporate TDM programs into development projects that impact the ROW Develop policies and incentives to encourage car-light living <p>The 2-year action plan includes Employer Transit Benefits provision. The TDM Action Element is included as an appendix item.</p>	<ul style="list-style-type: none"> Commuter Resident Developer 	<ul style="list-style-type: none"> Strategies included in the TDM Action Element 	The TDM Action Element includes possible program structures but does not include implementation details.	Not included	Not included
Austin, Texas	Austin Strategic Mobility Plan	City of Austin	<p>TDM is defined as a way to quickly reduce impacts on the transportation system. The plan addresses managing demand generally through land use, parking, curb management, TDM, and shared mobility. The TDM component includes two policies.</p> <ul style="list-style-type: none"> Implement community-wide strategies to increase use of all transportation options and manage congestion Lead by example in offering, promoting, and implementing mobility options for City of Austin employees 	<ul style="list-style-type: none"> Commuter Resident School Visitor 	<ul style="list-style-type: none"> Inter-departmental and inter-agency collaboration Transportation equity 	Long list of TDM implementation programs provided; no detailed guidance is provided	Not included	<ul style="list-style-type: none"> Increase understanding of transportation options (by socioeconomic demographic) Increase share of sustainable transportation Reduce VMT Increase work from home Increase carpool work trips Increase off-peak work trips Increase number of people reached through TDM programming
Austin, Texas	2020 Regional Transportation Plan	Capital Area MPO	<p>TDM is intended as a series of programs and infrastructures that contribute to an optimally efficient, multi-modal transportation system. TDM provides travelers, including those who drive alone, with choices. It prioritizes moving people. TDM's goals are to: improve travel reliability and air quality, manage congestion, and stimulate economic development.</p> <p>As such, TDM is included under the "Reliability" objective.</p> <p>The plan includes a Regional TDM Plan as an appendix item. This document includes priorities, vision, goals, strategy selection criteria, and monitoring and evaluation guidance.</p>	<ul style="list-style-type: none"> Commuter Peak hour vehicle trips 	<ul style="list-style-type: none"> Support transit projects Support managed lanes projects Increase outreach, education, and awareness Fund projects that address peak-hour congestion Fund projects that manage work-zone queuing Employer based programs Data collection and sharing 	Establishes goals, Metrics to measure progress, and project selection criteria	Recommends cost-benefit analyses based on data from agencies implementing TDM	Not included

Transportation Demand Management in San Francisco and the Bay Area

As a transit-first city, San Francisco has consistently worked to prioritize public transit and low-carbon modes, and reduce the number of trips made by car. The 2017 TDM Strategy plans through 2020 and identifies a long list of programs and policies in the areas of land-use development, street management, and customer focused campaigns to reinforce desired, sustainable travel behavior.¹

There are also regional TDM efforts to reduce driving trips during the most congested times. MTC and BART TDM programs provide support for people traveling to and from San Francisco. Table 4 shows a sample of primary local and regional TDM programs that exist in the Bay Area region.

Table 4: Overview of Existing TDM Programs in San Francisco and the Region

PROGRAM	DESCRIPTION	RESPONSIBLE ENTITY
TDM Ordinance	Developers must incorporate on-site transportation amenities in new developments (that meet applicability criteria in Planning Code Section 169.3) to reduce vehicle trips; this program includes an evaluation effort.	SF Planning
SFpark	Demand-responsive parking pricing at metered spaces in select areas.	SFMTA
Commuter Benefits Ordinance	Businesses over 50 employees must offer a pre-tax, employer-paid, or employer-provided transportation benefits.	SF Environment
TDM for Tourism	The city works with the tourism industry to promote sustainable modes through maps and communications.	SFMTA
Emergency Ride Home	Covers the cost of a taxi trip or public transit fare for people who experience qualifying emergencies at work; starting in 2020, as a result of the Pandemic, the Essential Trip Card launched to discount essential trips made by taxi for seniors and people with disabilities	SF Environment
Reduced Transit Fares	Reduced fares for seniors, low-income residents, people with disabilities, students (Fast Pass/Class Pass), and youth	SFMTA
Safe Routes to School	Encourages students to walk and bike to school and increases their safety. All 103 SFUSD non-charter schools participate in the program	SFMTA, SFUSD, SFDPH, SF Environment

¹ TDM Strategy 2017-2020, City and County of San Francisco, 2017. https://www.sfmta.com/sites/default/files/reports-and-documents/2017/12/11-7-17_item_11_transportation_demand_management_plan_0.pdf

PROGRAM	DESCRIPTION	RESPONSIBLE ENTITY
Transportation Management Associations (TMA)	Transportation Management Associations are established for the Financial District (TMA SF) and Mission Bay (Mission Bay TMA), and is being established for Treasure Island (TIMMA). TMAs offer a combination of transportation services, information, and incentives for residents, visitors, and/or employees.	TMA SF, Mission Bay TMA, TIMMA
Commuter Benefits Program	Requires all employers with 50 or more full-time employees to offer commuter benefits to their employees	BAAQMD
Bay Area Vanpool Program	Connects employees, provides rented van for shared trips, and subsidizes eligible commutes up to \$350/month	MTC
Rideshare Program ¹	Facilitates carpool matches for people with similar commutes and offers reward points for carpool trips made	MTC and SF Environment
MTC SHIFT ²	Equips employers with 3,000 or more workers with a commute management platform and covers up to 75% of the software subscriptions for up to 3 years	MTC
Regional Pricing	Discount passes for universities and colleges, Variable tolls on SFO Bay Bridge and on some Bay Area freeway lanes	BATA, BAIFA, and other BACTA
BART Perks	Pilot to determine if small incentives could shift travel outside of the morning peak period; ended in June 2019	BART

Applying Findings to the SFTP

As a city and county, San Francisco's long range transportation plan is unique from peer city LRTPs reviewed in this research. In most cases, the reviewed plans are written at a county or regional level and cover multiple cities and jurisdictions or are written by the city, independent of the larger planning area. Despite this difference, the reviewed plans, along with past city-led TDM efforts, provide direction on what TDM elements may be explored in the development of the SFTP.

This research reinforces that the TDM strategy and long range planning approach is unique to each jurisdiction. Consistently, peer cities analyzed travel trends and behaviors to identify target trips, guide program development, and define evaluation needs. While the City's TDM efforts included extensive data analysis, future efforts could include additional data analysis to develop a strategy and more concrete goals for mode shift potential and evaluation guidance to understand the benefits of TDM programs in relation to the ConnectSF vision and goals. This could be further supported in the Transportation Element of San Francisco's General Plan through policies that support TDM implementation.

¹ <https://mtc.ca.gov/our-work/operate-coordinate/traveler-services/ridesharing>

² <https://go.luum.com/mtc/>

The SFTP could pursue three approaches to help guide future updates of the City's TDM Strategy:

- Establish vision and measurable goals for the future TDM strategy to guide development, implementation, and monitoring;
- Identify priority geographic areas, trip types, travel markets, traveler types, and success metrics to guide program selection and implementation details;
- Provide guidance for how to incorporate ongoing evaluation to track impacts on modeshift and cost effectiveness and evolve future iterations.

Based on peer city LRTPs, focus areas for future TDM initiatives may include commute trips, residential trips, visitor trips, and evaluation guidance, which are addressed in the city's 2017 TDM Plan. These focus areas could be further expanded to better understand trip markets, types, and patterns through detailed travel analysis and could establish an overarching, holistic perspective, guidance, and data-based strategic direction for TDM in San Francisco, while also setting concrete targets to evaluate and measure the impact of TDM investments overtime. Importantly, TDM planning and programs should lead with equity, identifying how specific TDM measures benefit low-income individuals and residents of Equity Priority Communities. Evaluation efforts are critical for TDM programs to ensure these programs are advancing both our equity and sustainability goals. Travel analysis and leading with equity will advance city goals, knit together TDM efforts across the city, define TDM priority areas, and support regional programs and policies. Table 5 outlines the consistent peer city trip types that are likely to be established through data analysis.

Table 5: Possible Trip Types Focus Areas and Possible Details to Explore Through Data Analysis, Based on Peer City Research

POSSIBLE TRIP TYPES	POSSIBLE TDM PROGRAMS
Commuter Trips	<ul style="list-style-type: none"> • Existing and new large site/ employer program • Medium and small employers program • Performance standards • Reporting • Compliance requirements
Residential Trips	<ul style="list-style-type: none"> • Guidance to apply emerging mobility to maximize non-driving trips • Prioritization to support neighborhood-level trips, community needs, and equity • Informational efforts to increase awareness of options
Visitor Trips	<ul style="list-style-type: none"> • Informational efforts to increase awareness of sustainable modes for trips to popular destinations • Incentivize sustainable modes
Monitoring and Evaluating	<ul style="list-style-type: none"> • Targets or trends to track to understand TDM impacts • Metrics for comparing and evaluating pilot or small scale TDM programs • Standard data practices to establish baseline and compare efficacy between programs

Next Steps

Based on the findings of this white paper, recommended next steps are outlined below and include lead agencies. These items are intended to lay a foundation for long-term citywide and collaborative efforts to implement successful TDM programs and policies to achieve San Francisco's climate and long-range planning goals around sustainability, equity, economic vitality, safety and livability, and accountability and engagement.

1. Conduct a citywide analysis to define trip types, travel markets, or other travel information to identify concrete goals and targets and identify where TDM efforts are expected to have the biggest impact in achieving goals and targets.

Lead: SFCTA

Support: SFMTA

2. Establish a San Francisco travel information website with existing local and regional travel information with the ability to make adjustments over time that enable all residents, employees, and visitors to find relevant travel information quickly and easily.

Lead: SFMTA

Support: SFE, Planning

3. Create a framework and data reporting structure for ongoing, citywide monitoring of programs collectively at a city scale to track year over year impacts on TDM goal and targets.

Lead: SFCTA

Support: SFMTA