



MTA

Municipal Transportation Agency

A partnership between the San Francisco Controller's Office and the Municipal Transportation Agency, which oversees Muni.

San Francisco Transit Effectiveness Project

BRIEFING BOOK



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TABLE OF CONTENTS

Introduction to the TEP	1-1
Introduction.....	1-1
TEP Goals.....	1-1
Major Tasks.....	1-2
Who is Involved.....	1-2
Schedule.....	1-3
About this Briefing Book.....	1-3
Muni System Overview	1-4
Key Issues for the TEP	2-2
Introduction.....	2-1
Key Issues for the TEP	2-2
Transportation in San Francisco.....	3-1
Introduction.....	3-1
Who Rides Muni?	3-7
Who Rides Muni and Who Doesn't?	3-8
How Do People Access Muni?.....	3-9
Where Riders Come From	3-10
Where Riders are Going.....	3-10
Summary of Stakeholder Interviews.....	4-1
Peer Review.....	5-1
Introduction	5-1
System Operations	5-6
Bus Transit Operations.....	5-9
Light Rail Transit (LRT) Operations	5-13
Compendium of Peer Data.....	5-19
Muni Performance Review	6-1
Introduction.....	6-1
Basic Measures of Muni Success	6-2
Underlying Causes	6-8
Compendium of Muni Proposition E Data	6-17
Appendix A: San Francisco Transit Policies.....	A-1
Transit First policy.....	A-1
Proposition E	A-2
Muni Service Standards.....	A-12
Muni's 2001 Vision Plan	A-15
City Planning Policies	A-23
SFCTA Countywide Plan Summary.....	A-25
Appendix B: Glossary.....	B-1

TABLE OF FIGURES

Figure 1-1	Stakeholder Input Structure.....	1-2
Figure 1-2	Muni Transit Vehicles and Lines	1-4
Figure 1-3	Schematic Diagram of Current Muni Service Network.....	1-4
Figure 5-1	Peer Comparison: Transit Agency (including bus and rail)	5-3
Figure 5-2	Percent of Passenger Trips Carried by Each Mode	5-5
Figure 5-3	Cost Effectiveness (Cost per passenger trip)	5-6
Figure 5-4	Average System Operating Speed.....	5-8
Figure 5-5	Productivity: Bus	5-9
Figure 5-6	Cost Effectiveness: Bus	5-9
Figure 5-7	Average Operating Speed: Bus	5-9
Figure 5-8	Peer Comparison: Bus Operations	5-11
Figure 5-9	Light Rail vs. Bus Cost per Person Trip....	5-13
Figure 5-10	Light Rail Average Speed	5-13
Figure 5-11	Peer Comparison: Light Rail (LRT) Operations	5-15
Figure 5-12	Peer Fare Information	5-17
Figure 5-13	Muni's Current Fare Structure	5-17
Figure 6-1	Muni's Ridership and Mode Share, 1986–2005.....	6-3
Figure 6-2	Demographics Affecting Muni Mode Share	6-3
Figure 6-3	Percent of Intra-SF Trips Made on BART ..	6-3
Figure 6-4	Muni System Cost Efficiency (Cost Per Revenue Vehicle Hour), 1991–2005.....	6-5
Figure 6-5	Muni System Cost Effectiveness (Cost Per Passenger Trip), 1991–2005.....	6-5
Figure 6-6	Muni Light Rail Cost Efficiency, 1991–2005.....	6-6
Figure 6-7	Muni Light Rail Cost Effectiveness, 1991–2005.....	6-6
Figure 6-8	Muni Bus (Electric and Diesel) Cost Efficiency, 1991–2005.....	6-7
Figure 6-9	Muni Bus (Electric and Diesel) Cost Effectiveness, 1991–2005	6-7
Figure 6-10	Muni's System Speed, 1975–2005	6-8
Figure 6-11	Percent of Scheduled Service Hours that Muni Delivered, 2001–2006	6-11
Figure 6-12	Miles Between Road Calls (by Mode), 2001–2005.....	6-12

Continued on next page

TABLE OF FIGURES (CONT'D.)

Figure 6-13	Muni Headway Adherence	6-13
Figure 6-14	Muni Schedule Adherence.....	6-13
Figure 6-15	Muni Vehicle and Operator Availability	6-14
Figure 6-16	Muni Operator Unscheduled Absences.....	6-14
Figure 6-17	Muni Late Pull Outs.....	6-14
Figure A-1	Muni's Policy Headways	A-13
Figure A-2	Muni's Planning Load Factors.....	A-13



Introduction to the TEP

1. Introduction to the TEP and briefing binder
2. Goals
3. Major tasks
4. Who is involved
5. Schedule
6. Muni system overview

Introduction to the TEP

INTRODUCTION

This chapter provides a brief overview of the Transit Effectiveness Project (TEP), including its goals, its major tasks, who is involved, and schedule.

TEP GOALS

The TEP is an 18-month effort (expected to end in December 2007) jointly undertaken by the City's Controller's Office and the Municipal Transportation Agency (MTA) to conduct a comprehensive review of the existing Municipal Railway (Muni) transit system. Its goals are to:

- Improve Muni's overall performance and promote the long-term financial stability of MTA.
- Strengthen Muni's ability to respond to current travel needs, and provide a blueprint for future service.
- Make Muni service more attractive.
- Make Muni service more economical and cost-effective.
- Develop a multi-year action plan for MTA that clearly articulates goals, strategies and resources, and provides a 5 to 7 year road map for the MTA Board and management.

MAJOR TASKS

The major tasks of the TEP include:

- Define a vision for public transit in San Francisco.
- Review Muni’s performance trends and explore best transit planning practices in comparable areas.
- Conduct a major study of travel patterns and markets including a survey of San Francisco residents to determine how Muni can be attractive to more people for more trips.
- Revisit service design policies to ensure alignment with current and projected realities.
- Complete a comprehensive review and benchmarking study ensuring that Muni is properly staffed and utilizes best practices in transportation management and delivery.
- Develop cost allocation model and financial plan.
- Develop recommendations for improved service, improved service delivery, and provide an implementation road map for management and staff.

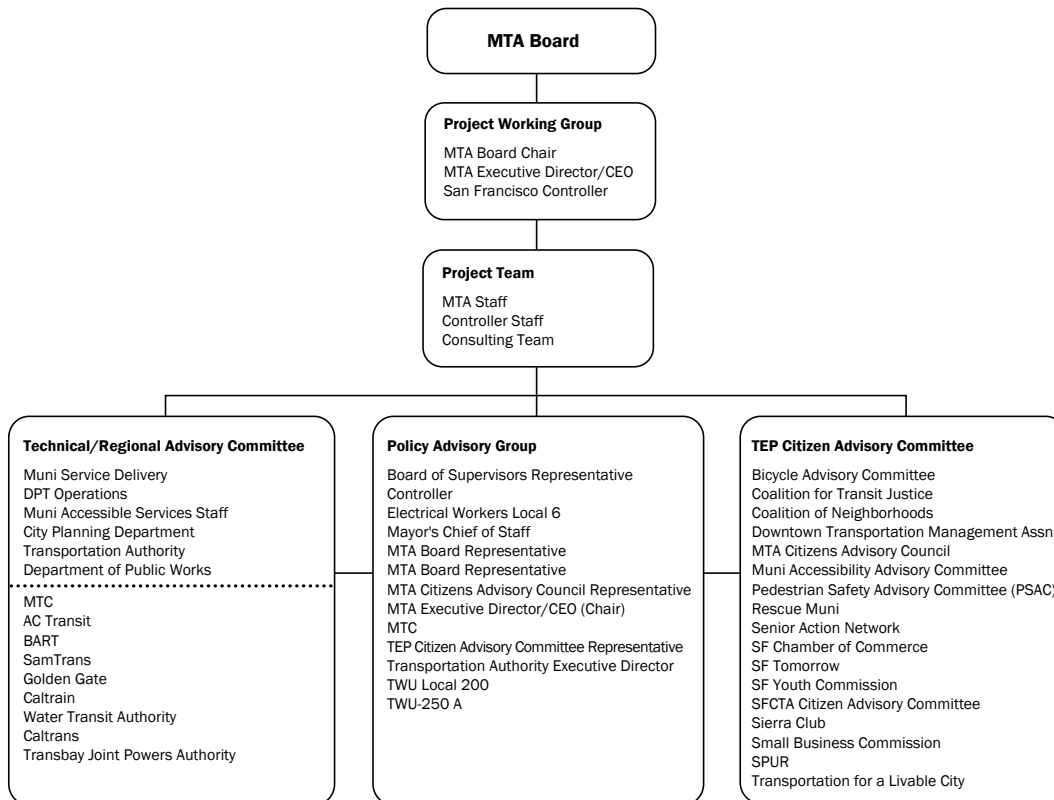
WHO IS INVOLVED

As a comprehensive review of Muni, the TEP will require the participation of a wide range of MTA staff, as well as staff from other city departments. A stakeholder input plan was developed to help the TEP process achieve the best results possible. Its structure is illustrated in Figure 1-1.

The consulting team includes:

- Transportation Management & Design, Inc. (TMD)
- AECOM Consulting
- Cambridge Systematics
- CHS Consulting Group
- Circle Point
- EIP Associates
- Jungle Communications
- Nelson/Nygaard Consulting Associates Inc.

Figure 1-1 Stakeholder Input Structure



SCHEDULE

What follows is a high level overview of the TEP schedule:

- Spring 2006 – Project Initiation
- Summer 2006 – Visioning and goal setting
- Summer to Fall 2006 – Service evaluation and city wide market research
- Fall 2006 – Early action items
- Fall 2006 to Summer 2007 – Planning
- Fall to December 2007 – Revisions and approvals

ABOUT THIS BRIEFING BOOK

This briefing book has been assembled to provide the necessary background information and performance data to make well-informed decisions about Muni and, more generally, the future of transportation in San Francisco. It will be particularly useful for the Policy Advisory Group and other key stakeholders during the TEP's initial visioning and goal setting, but is likely to remain a useful reference throughout the project.

It contains the following sections:

- Chapter 2 – Summary of key issues that have emerged from the creation of this briefing book that the TEP will address
- Chapter 3 – High level overview of transportation in San Francisco and profile of who currently uses Muni (and who does not)
- Chapter 4 – Summary of the results of stakeholder interviews.
- Chapter 5 – Comparison of Muni to its peers to provide context for understanding Muni's performance, and compendium of peer data for easy reference
- Chapter 6 – Review of Muni's past performance and high level examination of the underlying factors. Includes compendium of relevant Muni data as reported for Proposition E.
- Appendix – San Francisco's existing transportation policies

MUNI SYSTEM OVERVIEW

The San Francisco Municipal Railway (Muni) operates public transportation in San Francisco. It is the Bay Area’s largest transit operation and seventh largest in the U.S. It carries about 686,000 trips every weekday – 216 million trips per year – with 4,800 employees and an annual budget of over \$600 million.

Muni’s fleet of about 1,000 vehicles, over half of which are electric, consists of subway-surface light-rail vehicles (Metro streetcars), electric trolley buses, diesel buses, cable cars, and historic streetcars (see Figure 1-2 for more fleet information).

Figure 1-2 Muni Transit Vehicles and Lines

Type	Vehicles	Lines	Round-Trip Route Miles
Diesel bus	495	54	789
Trolley bus	333	17	191
Metro streetcar	151	5	78
Historic streetcar	26	1	6
Cable car	40	3	10
Total	1045	80	1074

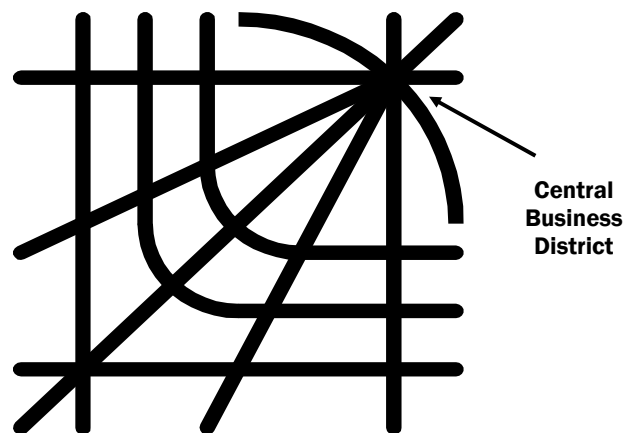
Service Design

Muni’s service is based on service design standards. These standards guide decisions to determine the spacing of routes through the City, the frequency of buses and streetcars, the spacing of stops along a line, and the average loads experienced by passengers on vehicles (Muni’s current standards are listed in the Appendix). The standards also guide development of other programs that contribute to improved transit service.

In 1982, Muni’s service network was overhauled to create the current network. This overhaul entailed changes on 25 lines and was the single largest set of route changes in Muni’s history. The new route structure succeeded in serving the existing riders and attracting new riders.

Because San Francisco’s Central Business District (CBD) is not in the center, but on the edge of the city with water on two sides, the transit network is a modified grid, illustrated by the conceptual diagram in Figure 1-3. The downtown-focused radials are intersected by circumferential “crosstown” lines. The modified grid is focused on the CBD, but is designed for a rider to get from any point in the City to any other point with no more than one transfer.

Figure 1-3 Schematic Diagram of Current Muni Service Network





Key Issues for the TEP

1. Key issues for TEP decision makers
2. Key concepts

Key Issues for the TEP

This chapter summarizes the key issues that emerged during the creation of this briefing binder, highlighting the issues that the TEP will need to address during the project's goal setting and visioning process. References point to chapters throughout this binder that provide more information about key issues.

INTRODUCTION

For the first time in nearly 30 years, Muni has the opportunity to address questions about its mission, its role in the City, and the services it provides. Questions to be addressed by the TEP include:

- What are the services that Muni should provide to maintain or increase ridership and mode share?
- How can Muni ensure that the services it provides are the highest quality possible?
- What organizational structure and level of staffing is necessary to support this service?
- What is the right relationship between Muni and other modes?

The answers to these questions go beyond looking at Muni or even the MTA in isolation, but rather require thinking about how Muni fits into an overall vision for San Francisco. When asked "What is your vision for transportation in San Francisco?" most stakeholders answered with visions of the city, including its economic vitality, the beauty of its streets, and overall quality of life.

A vision for Muni, and therefore transportation in San Francisco, is necessarily a vision for San Francisco as a city. Few cities are able to set aside the time and resources required to think coherently and strategically about the relationship between their public transit system, the city's mobility, and goals for the future. The TEP is an extraordinary once in a generation opportunity to articulate a vision for a transportation system that reflects the values of San Francisco.

We cannot talk about urban transport until we know what kind of city we want, and to talk about the kind of city we want, we have to know how we want to live.

– Enrique Penalosa, Former Mayor of Bogota

A city's internal transportation system—the layout of its streets and roads the layout of streetcar systems and subways—determines the character of the city, how its citizens live and work. Different transportation systems produce different types of cities, and the places within them, as effortlessly as different types of soils produce different sorts of shrubbery, flowers, and trees.

– Alex Marshall, *How Cities Work*

KEY ISSUES FOR THE TEP

What follows is a list of key issues for the TEP that emerged from stakeholder interviews and from the summary of peer data and Muni performance trends that follow.

Developing a Vision with Measures for Success

In interviews, stakeholders were nearly unanimous in supporting the TEP as an opportunity to develop a comprehensive vision for transportation in San Francisco. Existing City policy, especially the Transit First language of the City Charter (see the Appendix to this binder), imply a vision for San Francisco – one where transit plays a dominant role on City streets – that has not been fully realized or translated into a clear vision with related concrete goals. The TEP process promises to change transportation in San Francisco for the better, but must provide specifics about what “better” means.

Stakeholder interviews highlight the absence of clear vision and goals as a critical problem with Muni and the MTA. Although Proposition E requires Muni to report on a comprehensive set of performance measures, by themselves these measures do not specify a clear direction for MTA to use for managing transportation in San Francisco. The TEP is an opportunity to give both the MTA and Muni clear, and possibly bold, direction.

Stakeholders were asked what the “ultimate measure of success” should be for MTA and a majority indicated that transit mode share (the percent of all trips made on transit) would be an excellent indicator of success because it encompasses so many other important goals including rider satisfaction and overall transit performance. Productivity and cost efficiency standards were also mentioned as important to an overall vision where transit is so easy and pleasurable to use that any San Franciscan can contemplate life in the City without a car. One of the key issues for the TEP will be refining the MTA's measures of success to develop simple and easily understood metrics that evaluate how well Muni and MTA are doing in achieving its goals.

Increasing Muni's Ridership and Mode Share

Historical data show that Muni's ridership and mode share have either not increased or fallen over the last 20 years. Many of the reasons for this decline are out of Muni's control: car ownership rates in San Francisco have risen with incomes, employment centers have dispersed more widely in the Bay Area, and more people are working at home. About two percent of Muni's overall ridership decline of 12 percent over the last 20 years can be attributed to BART, which carries some of the local San Francisco trips that had previously been served by Muni (see Chapter 6 for a discussion of ridership and mode share trends).

Almost all stakeholders voiced a desire for Muni to become more relevant in the lives of San Franciscans by carrying more riders and significantly increasing its share of all trips. To attract more riders, Muni may need to offer new or different services to expand its appeal to different markets and to expand its market share among current riders. Stakeholders also emphasized that the quality of Muni service is one of the factors in shifting the mode share that the MTA can control directly, and that better service, measured by speed, reliability, and customer experience, will encourage everyone to ride transit more.

Some stakeholders stressed that increasing ridership and mode share is not entirely a Muni issue, but also an MTA and City issue. Improving Muni service enough to attract many new riders, often from their cars, will likely require changing how street space is allocated and managed to support improved transit service, and developing policies related to parking and congestion that further support the MTA's goals for Muni. This can be guided by the City's Transit First policy and Proposition E, which created the MTA to manage all transportation modes more coherently and effectively.

The factors that influence ridership are described below.

How can Muni attract more riders?

The factors that make transit an attractive choice for more trips have been well-established by academic research and real-world experience. They include:

- **Reliability** – ability to depend on transit for important trips and to arrive at one's destination about when one expects to. Reliability strongly influences rider confidence and perception of a transit system.
- **Travel time** – rich or poor, people typically place a high value on their time. When choosing how to make a trip, people's choices are most sensitive to

Why is increasing transit ridership in San Francisco important?

Better Muni service is a crucial factor in:

- Improving the quality of life for those that live, work, and visit in San Francisco.
- Increasing the City's economic competitiveness.
- Improving environmental health by reducing car trips.
- Maintaining or reducing current levels of auto congestion and parking demand which can not be accommodated on existing street infrastructure.
- Maximizing the ability of its limited street network to move people.

door-to-door travel times. Factors that influence travel time include:

- Speed of transit vehicles.
- Reliability – while reliability is important for customer experience, it is also a factor in travel time since a reliable system reduces the variability in waiting times which contribute significantly to travel time, especially in a local system with relatively short trips.
- Frequency – an important factor in total travel times, influencing perceived and real wait times for transit riders.
- Transfers – transfers add to the coverage of a transit system, but too many transfers or inconvenient transfers add to a passenger's total trip time.
- **Passenger loads** – transit is less attractive when passengers must stand for long periods of time, especially when vehicles are very crowded. According to Proposition E data, about 30% of Muni vehicles are overcrowded.
- **Coverage** – whether or not transit service is provided near one's origin and destination. Coverage is related to convenience, since passengers will not need to travel long distances to reach a transit route if coverage is good.

- **Span** – the hours of service, including late night service (whether it operates 18 to 24 hours a day) and whether or not fast, frequent, and reliable service is provided all day (rather than just at peak times).
- **Cost** – potential passengers weigh the cost and value of using transit versus the out-of-pocket costs and value of choosing another way to make a trip.
- **Information** – the ease with which current and potential riders can learn about the system, how to use it, and what’s changing.
- **Appearance** – of vehicles, stations, stops, and staff.
- **Comfort** – including cleanliness, seat comfort, and the severity or amount of acceleration/ deceleration, both lateral and longitudinal.
- **Safety and security** – can use transit with the expectation that you will arrive safely with no threat to your personal security.
- **Customer service** – Portland’s Tri-Met is considered a model transit agency in their attention to the “total transit experience,” which adopts a broad definition of customer service. They strive to make transit as attractive and user-friendly as possible from before you leave your home until you reach the door of your destination. Like successful businesses, they have profited from paying close attention to the needs, desires, and perspective of their customers.
- **Rider experience** – Collectively, the preceding factors contribute to the overall experience of using transit. This is the bottom line of customer satisfaction.

The extent to which San Franciscans value one or more of these factors over others will be the subject of the study’s market research. The TEP will explore each of these factors in detail, with guidance from the Policy Advisory Group, Technical/Regional Advisory Committee, and Citizen Advisory Committee.

How Can Muni Become More Cost Effective

Another key question for the TEP will be how Muni can maximize the service it provides by stabilizing or reducing its cost per passenger trip. There are two approaches to improving cost effectiveness:

Increase productivity

Productivity is defined as the number of people carried per hour each vehicle is operated. The cost to operate a bus is roughly the same regardless of how fast or slow it moves, the

size of the vehicle it operates, or whether a lot of people ride or only a few. As the number of passengers who board per hour increases, the cost per passenger trip goes down.

To illustrate, if it costs \$100 per hour to operate a bus, it costs \$5.00 per person to carry 20 people in an hour, but it costs only \$1.25 per person to carry 80 people in that same hour. Because people get on and off the bus all through the hour, the bus carrying 80 people in an hour may never be overcrowded, but will be much more productive than the bus that carries only 20 people in an hour.

As a system, Muni is already one of the most productive transit systems in the country, second only to New York City among the peer systems studied. However, in a very small and dense geographic service area such as the City of San Francisco, Muni can expect to be an industry leader in this area.

Muni can increase productivity by attracting more riders or by increasing average transit speeds so that each bus can provide more service in a vehicle hour. Strategies to attract more riders were described above. As a system, Muni’s speed has declined by about 1% per year for the last 20 years (See Chapter 6 for a discussion of transit speeds). Keys to increasing transit speed include:

- **Design vehicles and stops for speed** – Low floor buses, level with boarding platforms and sidewalks, more and larger doors, and other enhancements can help to speed boarding and alighting and make vehicles more accessible, especially for riders that generally take extra time.
- **Design fares and collection policies for speed** – Allowing all door boarding and helping passengers to know where to stand for boarding will reduce time spent at stops. Prepaid fares that eliminate cash transactions on vehicles speed boarding. This requires enhanced proof of payment and other techniques for moving large numbers of people quickly.
- **Transit Priority Streets that protect transit travel time** – There are a host of techniques for improving transit travel time, ranging from exclusive transit lanes, to queue jumps at intersections, to various signalization enhancements. Each of these has impacts on other modes and each offers different levels of effectiveness in maintaining transit speeds. Other cities, such as Seattle and Minneapolis, have developed standards for transit speeds on priority routes that are based on maintaining transit speeds (including all stops and other forms of delay) at a minimum percentage of the posted speed limits. As transit speeds

deteriorate measures are taken to enhance speed, including removing auto lanes if needed. The MTA cannot realize the San Francisco's Transit First policy because it does not have the full authority to make these kinds of improvements as needed to protect travel time.

- **Reduce the number of stops** – Wider spacing of transit stops has been shown to both reduce in-vehicle travel times and improve reliability. Travel times are reduced because buses must decelerate and accelerate less frequently, and there are fewer delays caused by pulling in and out of traffic. Fewer stops increase reliability by avoiding these same unpredictable delays at stops, and by increasing the chances that the bus will stop at each stop along its route for a predictable amount of time. Frequent stops increase the probability of bunching and gaps in service.

Contain or reduce the cost per hour of service

Muni currently provides approximately 3.3 million service hours per year. Because most of the costs of operating transit service are related to labor (typically about 75%), Muni can affect unit costs primarily through efficiencies. Stakeholders emphasized the need to maintain a highly skilled and consistent work force, and commented on the need to improve the work environment, especially for Muni's transit operators. However, stakeholders also recommended a number of areas for potential costs savings:

- **Reduce Worker's Compensation and Disability costs** – Keeping the workforce working is one of the best ways to reduce unit costs. This includes initiatives to reduce driver assaults, increase ergonomics, and keep employees healthy – investments that can ultimately pay dividends.
- **Focus on preventative maintenance** – Fleets are often asked to go beyond their useful lives waiting for replacement. Preventative maintenance is often deferred in times of financial constraint because its impact can not readily be seen. Yet, keeping vehicles running efficiently and longer between breakdowns helps to control costs.
- **Use technology to improve efficiency** – Next-Bus technology has the potential to become a line management tool that will “see” where buses are throughout the system. Automated passenger counters can provide almost real time information about loading patterns, allowing for service adjustments that

increase efficiency. A whole host of new technology tools are available to improve system efficiency.

The TEP should focus on both productivity and cost efficiency to allow Muni to provide the maximum amount of service to the maximum number of riders possible in San Francisco.

Reliability as a Key Performance Measure

Reliability means different things to different people, yet it is cited by stakeholders as the most important concern of Muni riders. In many transit systems, saying a route is not “reliable” means that the transit vehicle is not arriving according to its printed schedule; but most Muni riders do not use schedules. Muni is designed to operate frequently enough that a rider can simply go to the stop and have confidence that the transit vehicle will arrive in a relatively short time. Even the least frequent Muni routes are scheduled to operate every 20 minutes during most times of day.

No one likes waiting, but San Franciscans may have an even lower tolerance for waiting. Our standards are likely to have increased with our incomes and as we have come to place a higher value on our time.

Reliability is so crucial to rider satisfaction because it influences whether or not people can count on Muni to make important trips, and their confidence that Muni will transport them to their destinations when expected. More reliable service shortens door-to-door travel times by reducing the amount of time people budget to wait for transit and, once on the bus, by making travel times more predictable.

By its own measures, Muni's reliability has plateaued or declined after some improvement in the past five years. Schedule adherence is less than 70% for the system, despite many efforts to increase reliability. The TEP will focus on all contributing factors to reliability including:

- **Line management** - Many stakeholders focused on the need for enhanced line management and new techniques to accomplish line management including using technology and centralized control of lines.
- **Management of vehicles** – This includes buying the right vehicles, maintaining an appropriate spare ratio and maintaining vehicles so that they are available for service.
- **Management of staff** – Having the right number of operators and related staff available every day and getting the system started right from the first pull out contribute to all-day reliability. Missing runs, late

pull outs and other controllable factors compound to create bunching and gaps in service.

- **Create a culture of performance** – Many stakeholders cited the need for a “culture of performance” at Muni that is similar to the culture in some private businesses such as Federal Express. At Fed Ex, individual employees are given very wide latitude to make decisions that will get packages delivered on time. Each time a package is not delivered properly it is considered a “failure.” A system that is designed around rewarding success and providing the tools, responsibility, and authority for creating success will always do better than one where the value is placed on having a good excuse for failure.
- **Use the techniques for enhancing speed to enhance reliability.** Each of the techniques described in the previous section on enhancing speed can also be used to enhance reliability.
- **Change measures of reliability.** Simply changing the way reliability is measured will not improve reliability as experienced by riders. However, emphasizing headway adherence – the time between vehicles – rather than schedule adherence, especially on routes that run frequently, will more accurately match the measure to the way passengers experience reliability. Passengers talk about bunching and gaps rather than about the on-time performance of any one vehicle. A second possibility is to make a distinction between relatively minor and major issues. In a mixed traffic urban system, passengers have a high tolerance for some variability in their service but a very low tolerance for major delays. Distinguishing the degree of variability in reliability may allow resources to be more carefully allocated.

Amount and pace of change

The vision articulated in the TEP process is likely to require some changes to Muni’s operations, service design (e.g., the layout of the routes), as well as changes to the design and management of San Francisco streets. The vision outlined by the TEP will imply the amount of change that will be required to realize this vision and meet goals.

Change in San Francisco, as well as within the MTA, is typically a difficult process. Within organizations as large as Muni and the MTA, changes to how transit service is delivered or how streets are managed also usually require an enormous amount of staff effort. In the City, attempts to improve Muni’s service over the years have proven that it is typically more difficult to improve service than to maintain the status quo. Change usually is accompanied by protest, regardless of how positive that change might be, or the net social benefit. These factors will temper the desired pace of change.

In addition to the amount of the change, the TEP will need to decide how aggressively the MTA should pursue these improvements. How quickly should the MTA strive to realize this vision for the City? The Project Working Group’s determination of the appropriate pace of change is likely to be informed by an assessment of the ability of the public and the MTA to absorb change, the gravity of the problems the TEP is intended to address, and an estimation of the magnitude of the benefits that will accompany any improvements. Implementing the TEP will require maintaining a focus on the City as a whole and on policies that are broader than any one neighborhood, route or constituency. Proposition E gives the MTA Board the independence it needs to implement difficult choices, but it needs the support of all levels of City government to either provide support or at least remain neutral on any proposed changes.



Transportation in San Francisco

1. Amount of travel in San Francisco
2. Mode split
3. Profile of Muni riders
4. Profile of those who don't ride Muni

Transportation in San Francisco

INTRODUCTION

This chapter provides an overview of transportation in San Francisco and, when relevant, the Bay Area. This includes estimates of the total number of trips to, from, and within San Francisco and mode share. It also uses a recent on-board survey of Muni riders and Census data to provide a basic profile of Muni riders: who rides, who doesn't, and how Muni is used.

This information provides necessary context for understanding, in general, transportation in San Francisco and how Muni is currently used. Once a vision for San Francisco is established, these numbers will provide the basis for determining specific goals for transit ridership and mode share. Highlights from this chapter:

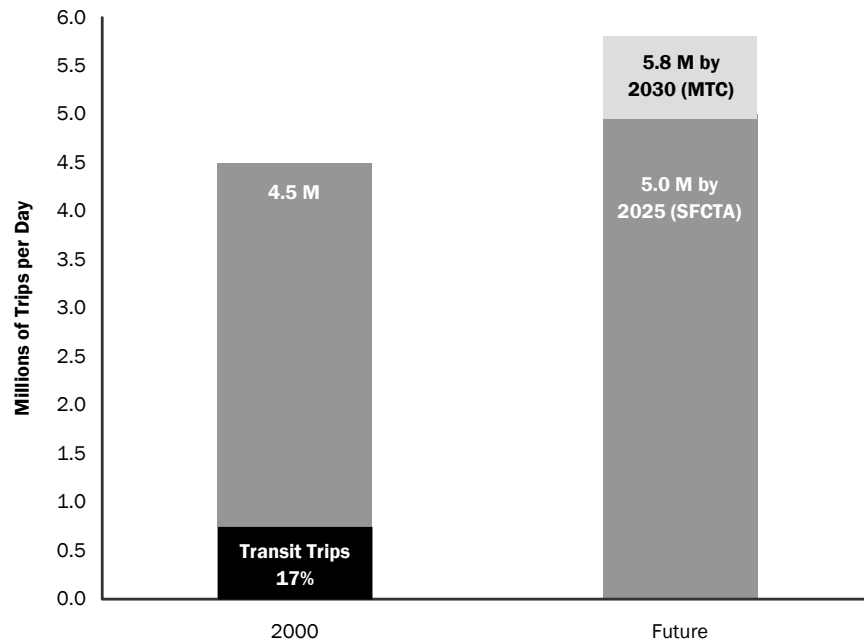
- The overall number of trips per day in San Francisco is expected to grow 12% to 29% over the next 20 to 25 years.
- About 70% of all San Francisco trips are completely within San Francisco (i.e., with both trip origin and destination within the city).
- Of all trips beginning, ending, or within San Francisco, 25% to 33% are work trips (range is a SFCTA estimate).
- About 77% of San Franciscans work in San Francisco, down from 86% in 1980.
- Transit mode share for trips to work by San Franciscans has declined 1.8 times faster than the percent of residents who work in the City, falling from 39% in 1980 to 32% in 2000.

SAN FRANCISCO TRANSIT EFFECTIVENESS PROJECT

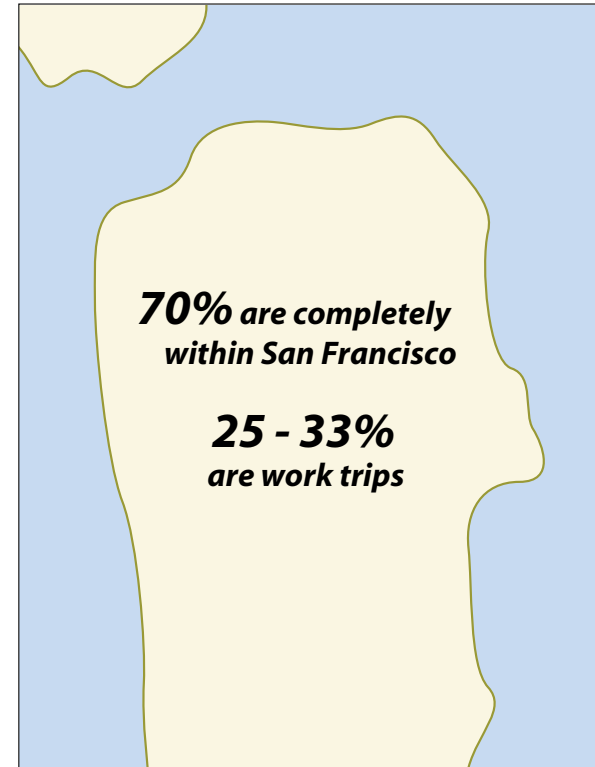
- Muni's annual ridership has declined 12% since 1986.
- Over 80% of Muni's riders live in San Francisco.
- When compared to San Francisco's population as a whole, San Francisco Muni riders have lower incomes (58% of Muni rider households have an annual income less than \$45,000, compared to 41% of San Francisco households). On the other hand, 42% of Muni riders have a relatively high household income. Muni is one of the few transit agencies in the USA that attracts a relatively high share of households with medium to high incomes.

Number of Trips per Day in San Francisco

Number of trips San Francisco's transportation system carries, including all trips into, out of, and through the city.



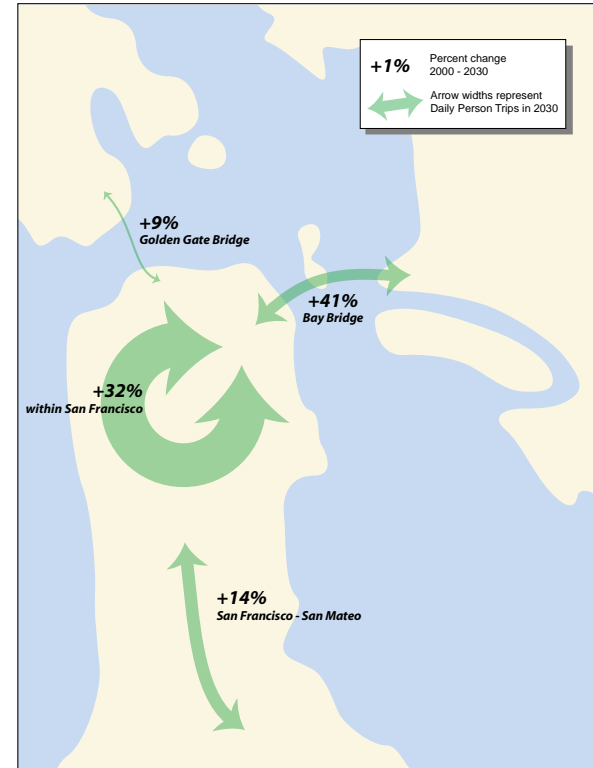
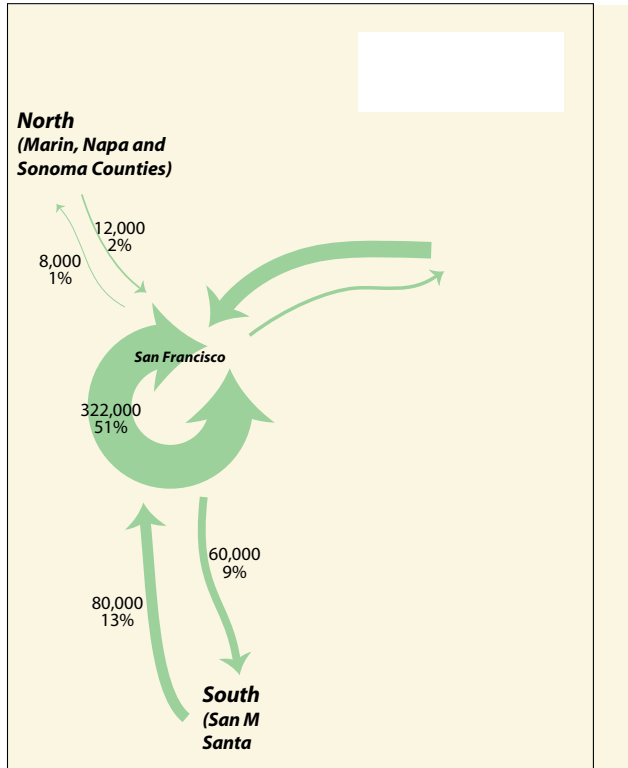
Source: SFCTA Countywide Transportation Plan. MTC 2030 Plan for the San Francisco Bay Area



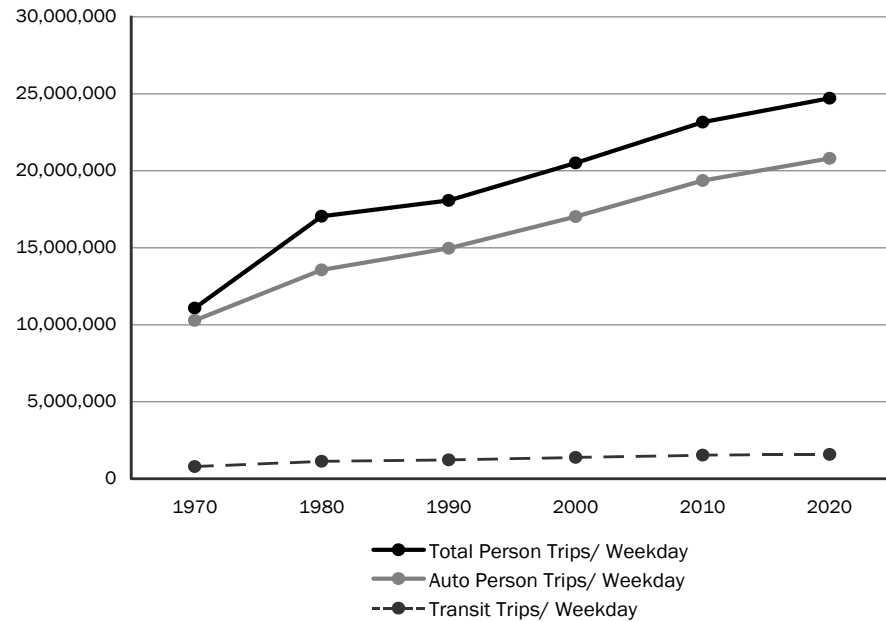
Source: Range estimated in SFCTA Countywide Transportation Plan

- In the next 20 to 25 years, the number of trips per day in San Francisco is expected to increase 12% to 29%, (according to, respectively, SFCTA and MTC projections).
- As a city San Francisco can choose how to manage expected growth in trips, which will influence the amount of congestion in San Francisco as well as the number of trips Muni must plan to carry.

Current Ba



Bay Area Mode Shares All Trips, 1970–2020



Source: MTC San Francisco Bay Area Demographic and Travel Characteristics
[Http://www.mtc.ca.gov/maps_and_data/datamart/stats/baydemo.htm](http://www.mtc.ca.gov/maps_and_data/datamart/stats/baydemo.htm)

- Auto trips in the Bay Area have increased much faster than transit trips in the past. The MTC expects this trend to continue.

San Francisco Current Mode Share

Trips are typically summarized by mode share or split — the proportion of all trips made on a particular mode of transportation.

Mode Split for All Trips – 2000		
	Trips	Percent of All Trips
Auto	2,809,000	62%
Transit	777,000	17%
Walk	892,000	20%
Bike	40,000	1%
Total	4,518,000	100%

Source: SFCTA Countywide Transportation Plan. Includes regional and internal trips.

Commute Mode of San Francisco Residents – 2000		
	Workers	Percent of Commute Trips
Drive Alone	170,000	41%
Carpool	45,000	11%
Transit	130,000	31%
Walk	39,000	9%
Other	15,000	4%
Worked at Home	19,000	5%
Total	418,000	100%

Source: US Census, SFCTA Countywide Transportation Plan

- A higher percentage of work trips are on transit compared to non-work trips.

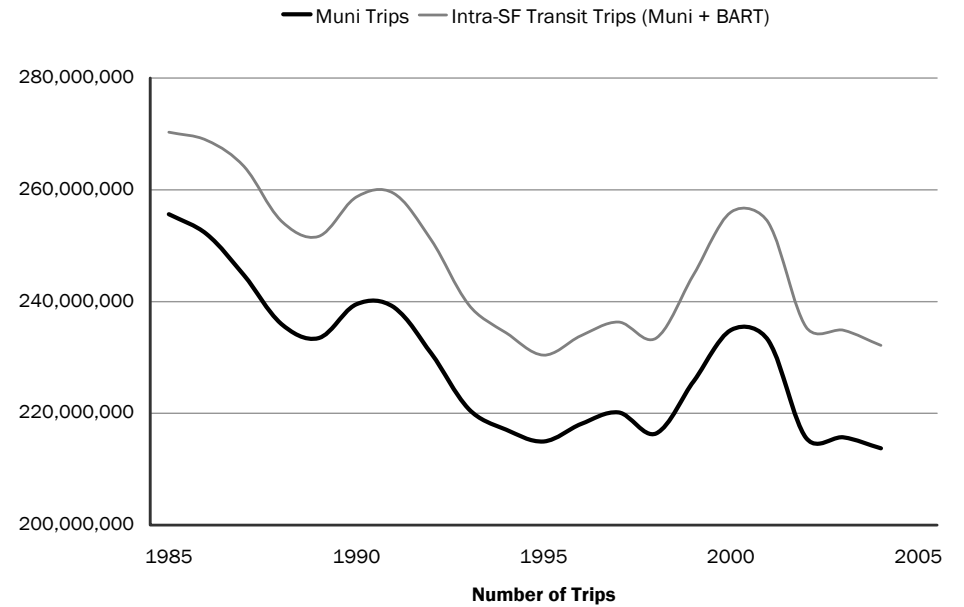
San Francisco Resident Mode Shares, 1980–2000



Source: US Census

- The percent of San Franciscans that work in San Francisco declined from 86% to 77% from 1980 to 2000 (a 10% decrease).
- From 1980 to 2000, the percent of San Franciscans that take transit to work has declined from 39% to 32% over the same period (an 18% decrease).
- Transit mode share for trips to work by San Francisco residents has declined 1.8 times faster than the percent of San Francisco residents that work in the city.

Muni Annual Ridership, 1986–2005

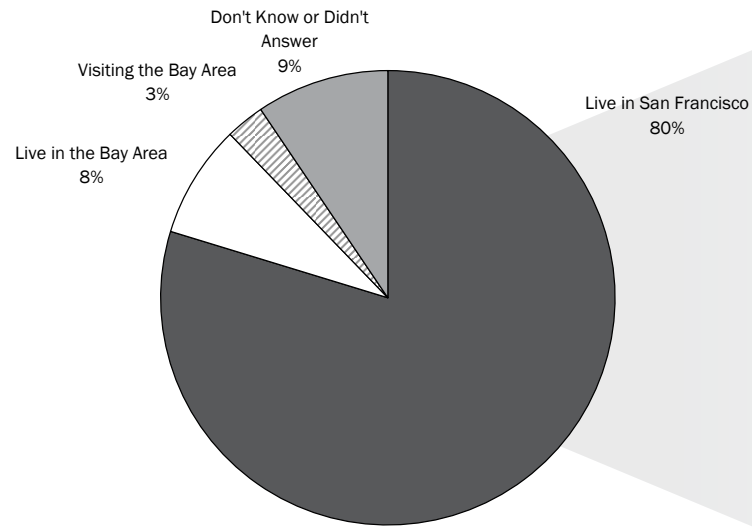


Source: Muni SRTPs

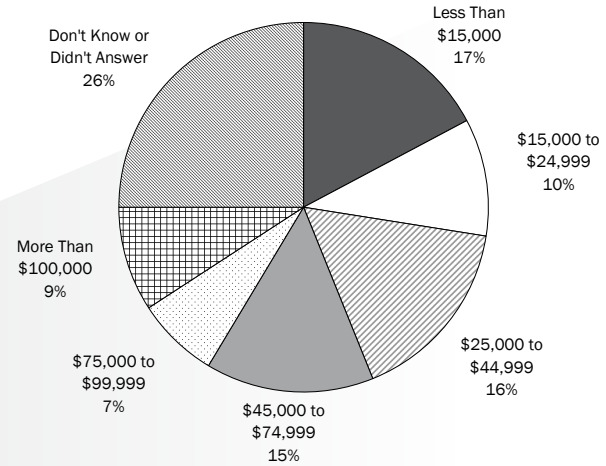
- Muni’s annual ridership has declined about 12% from 1986 to 2005.
- The percent of intra-San Francisco trips made on BART has risen gradually from 6% in 1986 to about 8% in 2005.

WHO RIDES MUNI?

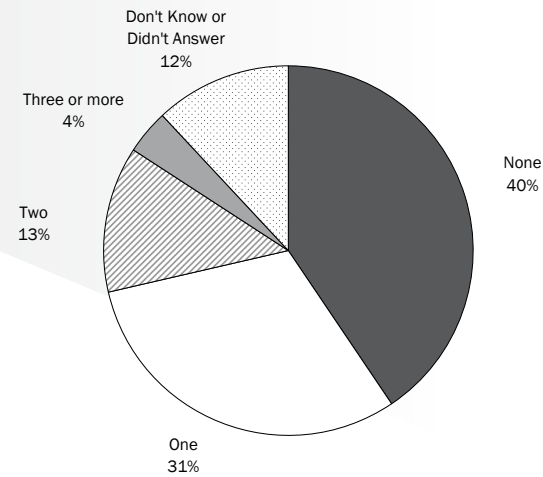
Residence of Muni Riders



Household Income of Muni Riders Who Live in San Francisco



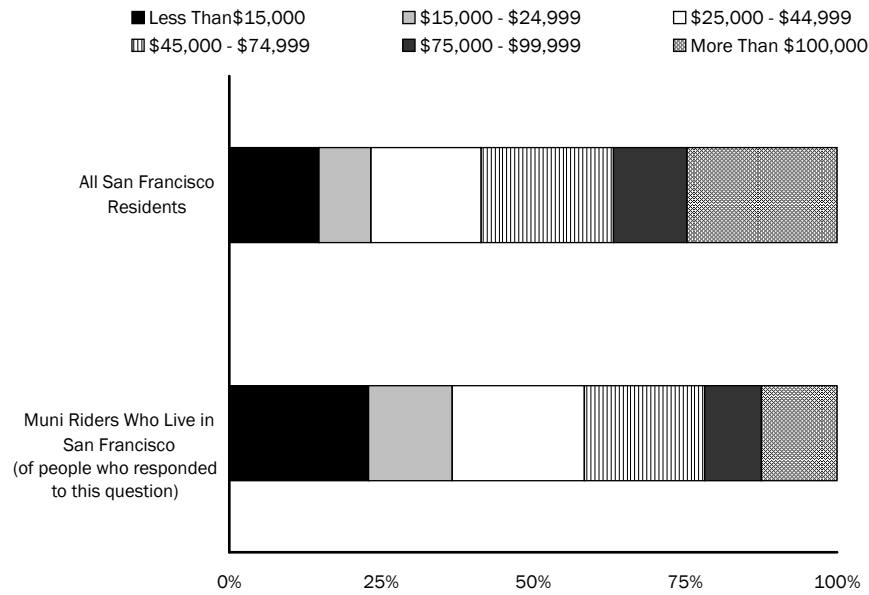
Number of Vehicles Owned by Muni Riders Who Live in San Francisco



Source: SFCTA 2005 Muni Onboard Survey

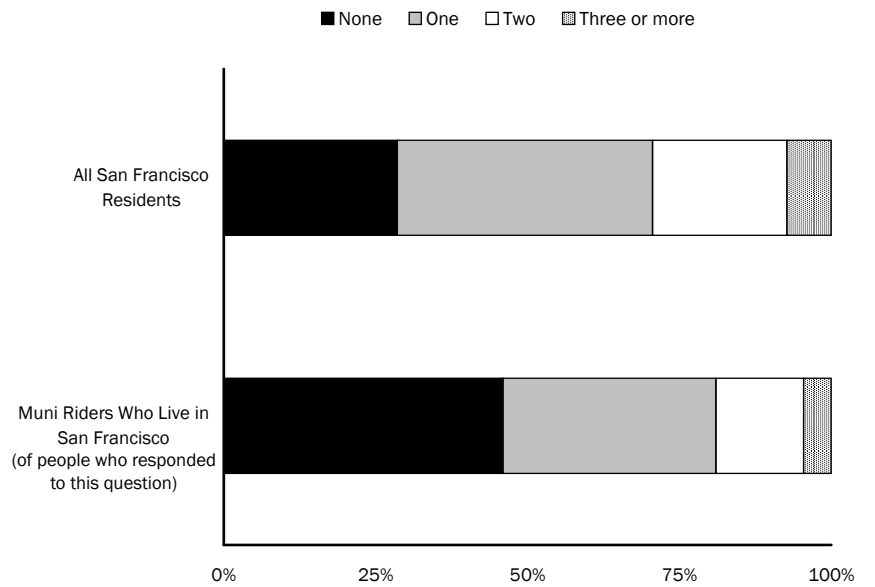
WHO RIDES MUNI AND WHO DOESN'T?

Household Income of Muni Riders Who Live in San Francisco Compared to San Francisco Residents as a Whole



Source: SFCTA Muni Onboard Survey and US Census

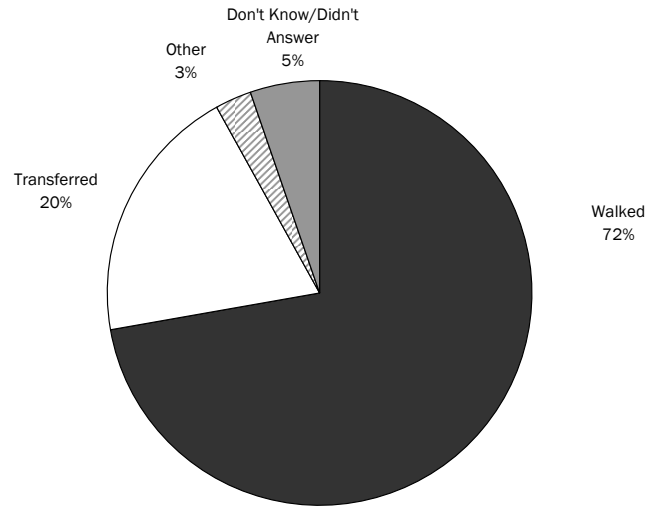
Number of Vehicles Owned by Muni Riders Who Live in San Francisco Compared to San Francisco Residents as a Whole



Source: SFCTA Muni Onboard Survey and US Census

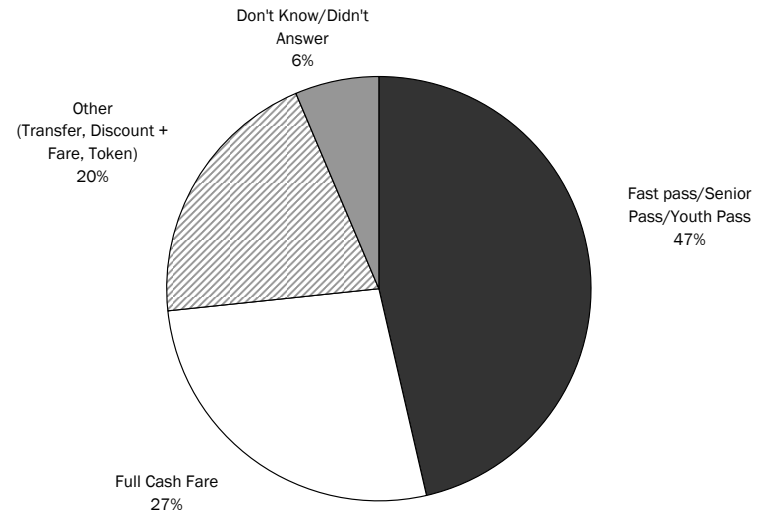
HOW DO PEOPLE ACCESS MUNI?

How Riders Get to the Bus Stop



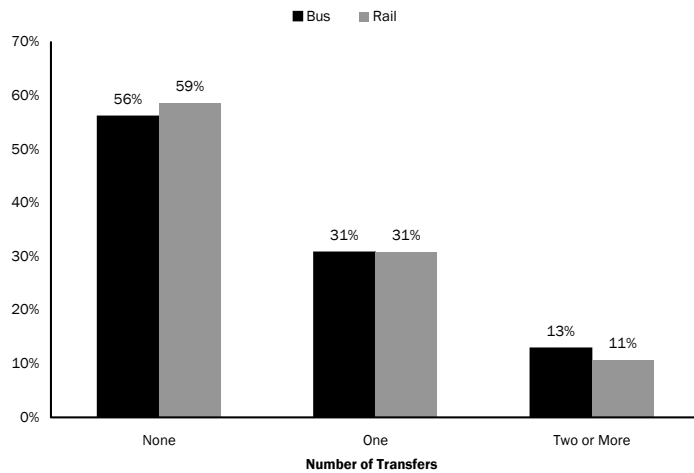
Source: SFCTA Muni Onboard Survey

How Riders Pay



Source: SFCTA Muni Onboard Survey

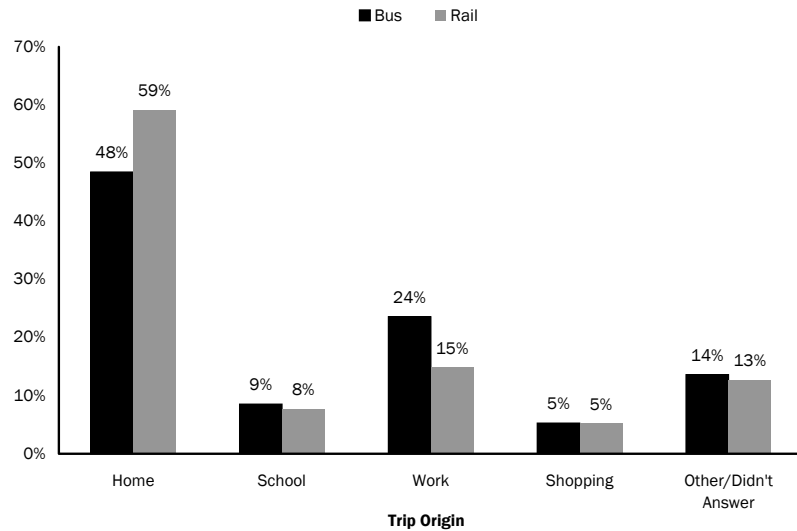
How Many Times Riders Transfer (for the entire trip)



Source: SFCTA Muni Onboard Survey

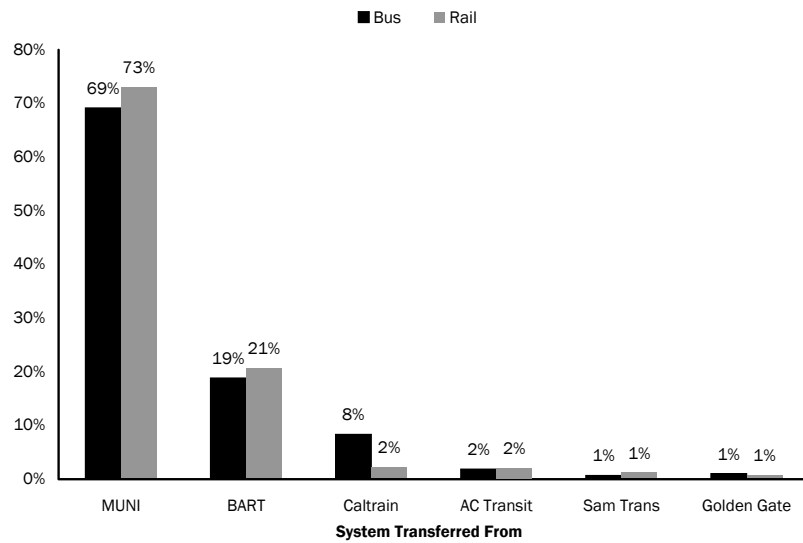
WHERE RIDERS COME FROM

Origin Type



Source: SFCTA Muni Onboard Survey

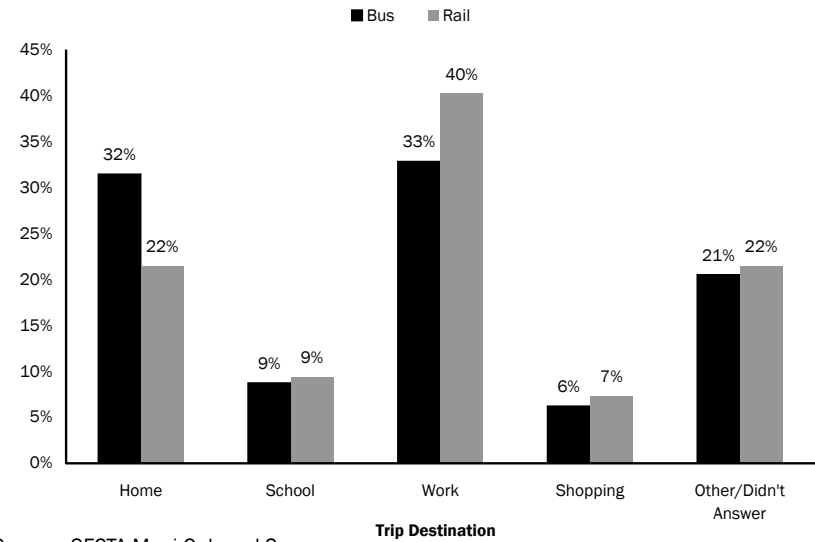
System Transferred From



Source: SFCTA Muni Onboard Survey

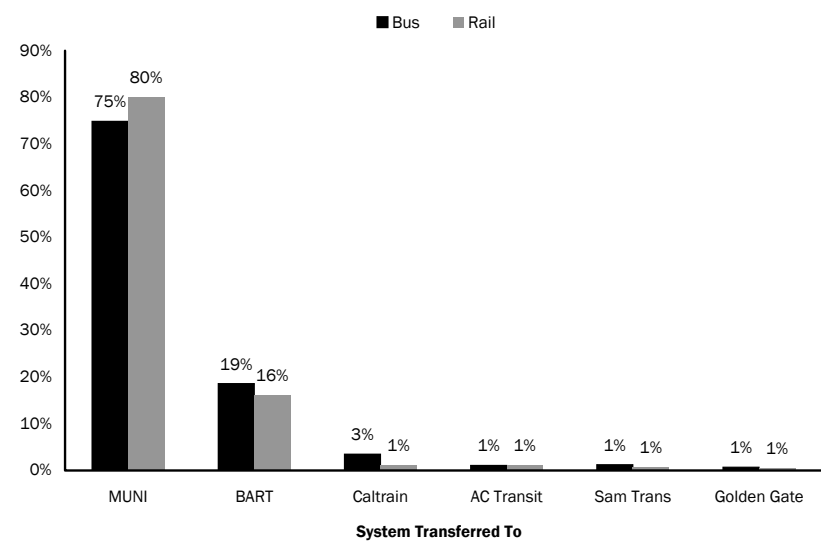
WHERE RIDERS ARE GOING

Destination Type



Source: SFCTA Muni Onboard Survey

System Transferred To



Source: SFCTA Muni Onboard Survey



Summary of Stakeholder Interviews

1. Summary of stakeholder interviews

Summary of Stakeholder Interviews

To inform the visioning and goal setting process, 20 opinion leaders were interviewed. These stakeholders included transit advocates, members of the Board of Supervisors, members of the MTA Board, executives from neighboring transit agencies and MTC, advocates for specific population groups, as well as business, tourism, and labor representatives.

This chapter anonymously summarizes the results of these conversations. The chapter is organized around a list of scripted questions asked of each stakeholder. Comments mentioned by more than one person are bolded with the number of people that made similar comments in parentheses.

Note: The content of this chapter has been taken directly from stakeholder interviews. The factual accuracy of this content has not been analyzed. These comments are not necessarily the opinion of anyone other than the stakeholder making the comment.

What is your vision for transportation in San Francisco?

- **MTA should adopt a comprehensive multimodal vision that balances all modes, realizes the existing Transit First policy, and can be measured. (9)** As a multi-modal transportation agency, MTA is in a unique position to shape the City to make Muni work. Decisions for public right of way need to follow the Transit First policy, which dictates that more right of way should be dedicated to transit, walking, and biking. MTA may have more of a sense of a vision for Muni, but there is no overall vision for transportation in the City. There is a need for “complete streets.” DPT needs to be a full partner in MTA and with a shared vision. MTA’s success at moving people must be evaluated with performance measures. There is a need to increase the amount of dedicated right of way for Muni vehicles in congested areas. All transportation policies should seamlessly support Muni as the primary operator in a Transit First city.
- **A city where it is very viable for most people to live without cars. (8)** There needs to be a drastic improvement in the attractiveness of Muni. Muni should be much easier, faster, and cheaper to use than cars, as well as provide seamless connections to all major destinations in San Francisco and region. MTA needs to create the perception within and outside San Francisco that within our city it is very easy to get around by transit (like New York City).
- **Provide a reliable, fast, and competitive transit service while retaining comprehensive service network. (8)** Muni should be a system that balances the needs of people with several transportation choices with the safety net function required of an urban transit system. Muni should efficiently deliver commuters and all other types of riders to wherever they are going in the City. There should be a focus on equity that improves service to all riders. Muni should carry more people, be reliable, safe, efficient, and clean.
- **A viable public transportation system that supports the City’s economic vitality and growth. (6)** We can’t move people effectively on the limited roadway system – the City can only be viable if Muni is viable. Muni is part of our economic competitiveness within the City, as well as helping to attract businesses to the City.

- **A system that supports beautiful, livable street design. (4)** Manhattan achieves low rates of car use, but is not a model for San Francisco. European cities are more successful at combining successful transportation design with beautiful, livable, pedestrian-oriented streets. In this sense, we need “complete streets” that work well (for transportation) that are also well-designed and beautiful places for people. More of the public right of way needs to be reclaimed to create wonderful public spaces and enable walking, biking, and public transit.
- **Mobility and access is provided equally and affordably to all citizens. (2)** Transportation is a right. All people, regardless of income, need to have equal access to superior transportation services that include good mobility for all, equal access to opportunities, and affordable cost. People should not need to own a car to have mobility and access.
- A sustainable transportation network: clean energy, zero CO₂ emissions, financially sustainable.
- That the visitor experience of San Francisco include public transportation (outside of cable cars and historic streetcars) because it is so clean, easy, and useful (fast, frequent, and convenient).
- Land uses for San Francisco and the region that support sustainable transportation design. Concentrate jobs and housing in downtown San Francisco (locally) and regionally in downtown San Francisco and Oakland.
- A system with adequate equipment that is safe, functional, reliable, and ergonomically correct; operated by schedules that can be maintained humanely.

What is the ultimate measure of the MTA’s success?

- **Percent of all trips made on transit; number riders on transit. (12)** Changing the mode split to more sustainable modes must be accompanied by improvements in the public realm (e.g., better street design).
- **Rider satisfaction on Muni. (8)** Focus on the customer (use quantitative and qualitative measures of customer satisfaction). The ultimate measure of success is a system with happy workers and riders who love and “own” their system. Muni should be recognized as part of the fabric of the City.

- **Door-to-door travel time.** (5) Muni needs to be competitive with auto travel times.
- **On-time performance.** (3)
- **Ensuring the benefits of Muni accrue to all San Franciscans, especially vulnerable populations.** (3) Muni should be accessible to all.
- **A system that encourages ownership by everyone – one that is valued as being as important as fire and police service** (2)
- The absolute number and rate of pedestrian injuries and fatalities.
- The percent of household budget being spent on transportation.
- The number of people moved by corridor without massive congestion.
- Exceeding goals outlined in Proposition E.
- Unit costs that are no higher than the average of the largest systems in the Country.

What should be, if any, the MTA's targets for mode share and/or car trips in San Francisco?

- **35-40% of all trips on transit.** (4)
- **60-70% of all trips on transit.** (4)
- **Most trips by sustainable modes: >10% bike, >60% by transit.** (3)
- **Muni may be close to “there” in terms of the percent of all trips on transit.** (3) The goal should be improving the satisfaction of those that ride, since being a “captive” rider is not about being transit dependant in San Francisco. Simply holding percent of trips on transit constant should be considered a victory given the increasing affluence in the City.
- **Muni should be the mode of choice for all trips inside San Francisco.** (3) Muni should be able to reach the heights of its ridership in the 1970s.
- At least 50% of all trips on transit.
- Decrease absolute number of car trips below 2005 levels – this will be necessary if more public right of way is used for pedestrians, bicycles, and transit.

In what areas is MTA currently most successful?

- **Coverage, both geographically and span of service, is very good.** (10)
- **Providing basic mobility without major disruptions and “melt downs”.** (6) Muni moves a large number of people at relatively low cost to the rider with reasonable efficiency. Despite its shortcomings, many people depend on Muni.
- **MTA is currently not successful at meeting any of its goals.** (3) TEP may be, if done well, a positive step in right direction.
- **Muni's service that operates in physically separated right of way (e.g., Muni Metro).** (3) Muni Metro service often provides a high quality customer experience and has the potential to provide reasonably high quality service. The Metro system can be used without feeling angry or frustrated by Muni.
- **Reasonable fares.** (3)
- **Limited stop and express Muni service work reasonably well.** (2)
- **System is open to public input.** (2)
- **Comprehensive paratransit support system and accessibility.** (2)
- **Most drivers are very good at their jobs and work under difficult circumstances.** (2)
- F line service runs well and is well used.
- NextBus information is a step in the right direction.
- Proof of Payment is the first step in the right direction on fare collection.
- No more than one transfer required to get just about anywhere.
- Muni has many middle class and “choice” riders.
- Muni's equipment (vehicles) is relatively new and in good shape.
- Popular support for transit and transit improvements.
- Special events services – for example, Giants games.
- Muni runs more frequently than in many cities.
- Safety on board the bus.
- Service to downtown especially in peak times.

- Long-term planning – delivering major projects (e.g., F-Line).
- Vehicle maintenance is generally good – we keep the rolling stock rolling.

What are the most important areas for improvement?

- **Reliability. (16)** This is the single biggest factor keeping riders away. People want to know when the bus is scheduled to be there and, when they get to the stop, when the next bus will actually arrive. Reliability problems are complicated and have many causes including missing runs (caused by the lack of operator and vehicle availability), especially on rail lines. Adding service on Third Street may further stretch an already vulnerable fleet. Management of the streets themselves, as well as management of Muni’s routes, needs to be improved to reduce service gaps, bunching, and to make travel and wait times less unpredictable. This problem ends up in a self-perpetuating cycle – missing runs put strains on the drivers who are out there, which increases stress and absenteeism, which makes service worse. Don’t be afraid to take lanes away from cars or parking if the goal is to allow Muni to move people reliably.
- **Transit speeds need to be more competitive with driving. (7)** MTA is not implementing enough strategies to improve the speed and reliability of Muni.
- **Thinking strategically and sustainably at the same time as providing the basic service every day – MTA and Muni does not take the time to think ahead. (6)** MTA staff is strictly reactionary. The MTA Board of Directors is too insular – the Board does not set the agenda, but instead only respond to what Staff needs. Everything should not boil down to money – need to determine and plan for the system and service we need.
- **If the system is not financially sustainable, nothing else matters – not just one year of budget balancing, but long term stability. (4)** Muni needs to make long term financial plans to achieve its goals, and not fit its long-term plans within assumed financial realities.
- **Operator courtesy and sensitivity. (4)** There needs to be more operator training of all types. Driver courtesy is an essential part of customer service.
- **Muni in particular is not staffed to be a leader – it’s all about dealing with today’s fires. (4)** MTA and Muni are not a “force in the region” – they are not leaders, especially considering the numbers they carry. Muni isn’t really a leader in the City either, although it has policy muscle through Prop E, Transit First, TIDF etc.
- **Current routings are inefficient – TEP process will be beneficial. (4)**
- **Legibility and communication so that the rider knows what to expect and how to use the system. (4)** Better customer information (active real-time information and passive). Muni is mysterious, especially for first time riders (e.g., visitors). This also translates to working with the public on studies and planning efforts – need to keep people notified about what’s happening on their system.
- **Deferred maintenance and lack of coordinated capital planning results in periodic meltdowns and lack of vehicle availability. (4)**
- **Need to act aggressively to increase transit mode share. (3)** MTA not acting with enough desperation and ferocity to achieve its goals. Muni should not be the province of the transit dependant, or designed strictly around the needs of a particular group of riders. Muni needs to attract a broader clientele or not be satisfied with attracting largely those that have no options. Need to provide more service to meet ridership demand and grow ridership.
- **Increased frequency of service on core routes. (2)**
- **Improving work rules with its unions so that Muni has more flexibility to provide good service. (2)** Current work rules are extremely bad for Muni service as experienced by Muni’s riders – work rules need to be thoroughly reexamined and renegotiated. In past, Muni driver union leadership has been completely disinterested in improving service, instead focusing on forwarding the interests of its members (at the expense of Muni and its riders).
- **Need to stop robbing one line to improve service on another. Planning decisions are too often politically based. Take care of the neighborhoods first. (2)**
- Better safety – Muni pays too much in claims and many accidents are easily avoidable.

- Better personal security on the bus and at stops – people do not always feel safe when using Muni.
 - Cleanliness of vehicles and stations.
 - Improve the organization's focus on riders/customers.
 - Better access to transit stops – remove pedestrian barriers to transit stops.
 - Need plan to increase Muni's affordability – at present it is too expensive for many low-income residents.
 - Overall, using Muni often is not a positive experience.
 - Proof of payment implementation must allow all door boarding to allow for operational, speed, and reliability benefits.
 - Further decreases in bus emissions.
 - As a way to make positive shift in mode share, reduce overall demands on Muni, and reduce number car trips, MTA should gather the small amount of funding necessary to implement the citywide bicycle network.
 - Communication within the organization, top down and bottom up.
 - Muni tends to substitute coverage for frequency and reliability. It's a poor trade-off.
 - Marketing needs to be improved to get the whole City to embrace Muni and ask what they can do to help the system run better.
- **Coordination with other operators – looking for creative ways to make the most of all the transit resources in the City. (2)**
 - **People that live in San Francisco and drive to work. (2)**
 - Specific areas
 - Northern part of the city is underserved by rail which would increase ridership.
 - Some neighborhoods are underserved – Potrero Hill, Dogpatch, Outer Mission, Bayview, Visitation Valley, southeast part of the City.
 - Western neighborhoods.
 - All parts of the City that are currently more than a 30 minute transit trip from downtown.
 - Analysis of origin/destination data will reveal opportunities.
 - Places where the City is likely to change. The western part of the City is essentially going to stay the same. Focus on new markets and needs, especially since it takes so long to implement service improvements.
 - SOMA service and connections to all other parts of the city.
 - Limited service needed on Third Street and Visitation Valley, beyond the 9X.
 - Pacific Street is underserved by the 12-Folsom.
 - Less emphasis on downtown and more emphasis on the neighborhoods.
 - 19-Polk out to Hunters Point has been cut too much.
 - 2005 service cuts really hurt the system.
 - Specific groups
 - **Seniors (2)**
 - College students and major employers: lack of Class Pass programs.
 - Late night riders.
 - Markets that are not ideally served by a 40-foot or bigger bus.
 - Muni should focus on getting current riders to use the system more rather than searching for more markets.

Are there markets which the MTA does not serve well now that should be served?

- **Serving choice riders other than downtown oriented peak hour work trips. (8)** Cross-town (non-downtown) service quality needs to be bolstered. "Choice" riders will need service that is much more reliable.
- **Tourism: major entry barriers for those not familiar with system. (4)** Perception is that it is difficult to use Muni; very difficult to find basic information, buy a map, etc.
- **Faster service to all outer neighborhoods. (3)**
- **Need limited stop/express service seven days a week to reach these rider markets on weekends. (3)** Need limited services in parts of the city that don't have it now.

What are the growth markets in terms of geography, trip purpose, population market segment, and time of day?

- **Need to make Muni something that can easily be used at least 18 hours a day.** (7) Muni needs to offer almost equal amounts of transit service throughout the day, unlike most peak oriented systems. Need 24 hour service to help service grow throughout the day. (4)
- **Need to find a way to get more weekend and occasional trips on Muni.** (3) People who have many travel choices (cars) can be convinced to take Muni if it were more reliable.
- **Need to focus on the places in the City that are changing and have potential for change.** (3) Look for new origin destination pairs like Richmond – Mission Bay, connecting the UC campuses. SOMA in general may need a new look.
- **Less emphasis on downtown oriented trips and more emphasis on the grid network.** (2)
- **Low income communities.** (2)
- **Seniors.** (2)
- Muni should increase its share of trips coming to San Francisco from outside San Francisco.
- Cyclists.
- Visitors.

What are the things riders want most from MTA and how best to provide them?

- **Reliability.** (18) Reliability defined as “predictability” not adherence to schedule since most Muni riders don’t carry schedules.
- **Information/Legibility.** (13) NextBus information at all stops. Need maps at all stops so riders can see their alternatives if their bus doesn’t come (or if NextBus says the next one is arriving a long time away). Multi lingual information at all stops.
- **Safety.** (10) Including pulling to the curb, operating in a safe manner at all times, and security at stops and on buses.
- **Quality customer experience.** (8) Using Muni needs to be a positive experience most of the time. Friendly drivers would help a lot, as would vehicles that are more comfortable and clean. Keeping drivers on the

same route would help riders get to know their drivers over time.

- **Speed.** (7) It should never take more than a half hour to get downtown from the outer neighborhoods, and transit should always be time-competitive with driving. Boarding times need to be much faster; BART’s boarding times and those in Curitiba, even on buses, are good examples.
- **Less crowding.** (5) Need less crowding, especially during peak times. Need more humane loading standards.
- **High frequency service throughout the day on core routes.** (5)
- **Affordable fares.** (4) Including raising fares for more riders but providing for lifeline passes.
- MTA to be more responsive as an agency.
- Better routings that better match origins and destinations.

What are the barriers preventing MTA from achieving its vision, and how can these barriers be mitigated?

Organizational

- **They can’t achieve a vision if they don’t have one.** (11) There needs to be an integrated City vision for transportation that is articulated by MTA and other departments including SFCTA and DPW. City Hall should be part of directing vision. Clear vision and goals will be tools for addressing trade-offs among modes. Vision must be big and grand enough to inspire and actually shape the city; a small vision is not very useful or likely to be achieved. MTA needs to think big.
- **Staff culture** (11). Culture within Muni and MTA discourages active creation and execution of solutions to problems. Staff are reticent to come forward with solutions because they are worried about reprimands. There is little incentive to solve problems. There is no focus on the customer or on the quality of the product. Everyone is hunkered down in the “we can’t do that” mentality. There is no reward for figuring out HOW to make something happen. There need to be defined consequences for not getting the job done. Muni needs to empower people and get everyone moving in the same way.

- **Lack of staffing (7).** The MTA has deficient staffing levels in several critical areas – human resources, legislation, grant writing, analysts, and planners. Muni is left complaining about how the pie is divided, rather than affecting the pie. Deficient staffing means that employees are overwhelmed. Although Muni has attracted two recent great General Managers, the management ranks are still too thin, quality is spotty, and there isn't respect or focus on a professional middle level staff.
- **MTA administration and Board not aggressive enough about achieving its goals. (7)** The Administration and the Board seem unwilling to take on their own agenda and spend too much time on the day-to-day. They have the power to place ballot measures, work with politicians, and lobby to change state laws, but the organization does not appear to pursue these with any ferocity. MTA does not garner sufficient political support for the real changes that are necessary to significantly improve transit in San Francisco. Muni planning is too often on the defensive and instead should plot its course and take the steps necessary to achieve its goals. MTA is supposed to be independent, but too often the Board of Supervisors intervenes when someone complains (for example, stop consolidations get turned around by the Board). Too often details of community concerns (or just a few individuals) obscure larger goals and derail projects with a large net social benefit, with private interest prevailing over the public good. Not everyone is going to be happy with changes in San Francisco, and MTA needs to accept that. The MTA should work towards consensus, but be very willing to forge ahead to achieve a vision for the city as measured by concrete specific goals. Communities need to be involved from the beginning and should have a voice, but Muni has a responsibility to educate as well as listen. Everything can't come down to politics.
- **Transportation advocates are viewed as the enemy rather than a tool for political cover and community organizing. (4)** TEP process needs to hear voices of advocates (as well as riders). Riders themselves, rather than community groups, seem not to be represented in planning changes.
- **MTA does not do enough to discourage car use. (2)** Discouraging car use is an essential ingredient in shifting mode split. For example, to be time competitive with driving, transit can go faster, but car travel times can increase as well. If car use does not become less attractive while Muni becomes more, mode share will not shift very much.
- **An organization that keeps shuffling the boxes without asking whether this is really the best way to organize. (2)** It seems that the MTA spends too much time fixing blame rather than taking the time to figure out how to fix the problems. Upper management often has good ideas, but middle management does not know how to carry them out in a way that is positive and not just “discipline” based.
- **The system is too slow to adopt technological tools that could improve efficiency and effectiveness (2)** Proof of payment, Next Bus, automated vehicle location and other tools should all be in use already.
- Takes too long to hire and train operators.
- Staff have poor communication skills, defeating their own projects.
- Jobs that are too often filled by political appointments rather than the best skilled and trained person.
- MTA does not have enough independence, power, and authority to do what it needs to do to fulfill its responsibilities.
- MTA has all the independence and power it needs since the adoption of Proposition E, to manage its own budget and service and to take political cover from the Mayor and the Board. An independent MTA board needs to make the hard decisions and should be supported.
- Fear drives decision-making: fear of litigation, fear of angering minor vocal constituencies; fear of addressing labor issues.

Labor-Management Issues

- **Unions have direct links to elected officials and have no reason to work with management. (7)** Unions have little interest in improving service. For TEP to be successful, the operators need to be excited about it so its changes are not perceived as negative. It is often nearly impossible to do something as simple as reallocate service hours from one line to another because that would mean moving work from one division to another and the Union would object.

- **Union contracts that are out of touch with modern labor practices or even what the employees want.** (7) Union/management relations are not synergistic.
- **Everyone needs to pull together around achieving shared goals.** (4) This takes team building and communication throughout the organization. We have to get out of the blame game and shift the amount of energy spent on the worst 10% or 2% in any organization to instead focus on the top 10%.
- **Need to remove operator wages from the charter so that meaningful collective bargaining can take place.** (3) This is a core issue for Muni's costs – without real bargaining, the cost to provide service will always remain higher than it should be, Muni won't be able to create a good working environment, and it may be difficult to provide good service.
- **There isn't enough cooperation and trust between union and management.** Drivers have the feeling that "it all comes down on brown" – and that management does not support them when they try to do the right thing. There is no incentive to be the best.

Service Delivery

- **Muni is way behind on every aspect of technology from fare collection to passenger counting to IT systems and vehicle design.** (4)
- **There is not enough focus on line/route management or service delivery.** (3) Muni needs not to just put more inspectors out on the streets, but needs more real two-way real time remote communication with a focus on service delivery. Give supervisors and drivers more authority and responsibility. Use modern real-time tools (such as NextBus's management capabilities) so that more supervision can be done from Central Control, rather than requiring large numbers of expensive people on the ground with minimal impact.
- **There is no systematic plan to improve service delivery.** (3) There is no management plan for service delivery that is felt throughout the agency -- no maintenance plan, no operations plan. First line supervisors are not well trained and do not have any real tools for managing service other than coming down on drivers.

- **Need to aggressively pursue more dedicated right of way for Muni.** (2)
- Trust – people won't ride if they have a terrible experience even one time. People don't trust Muni to produce a useable product.
- Schedules are inhumane and not realistic. Management doesn't want to hear about schedule problems because they often take money to fix.
- No one is analyzing vehicle break downs to better understand how to get a consistent and high quality fleet that will have full availability.

Legal/ Governance

- **Governance issues.** (7) There is no political support or vision from the Mayor, Board of Supervisors or MTA Board. The SFCTA's role needs to be clarified and the TA and MTA need to be working together, not in competition. Need to figure out how to incorporate the SFCTA into MTA and make the SFCTA serve the goals of the MTA (2). Prop E should have done this. If the MTA is truly independent, it needs to have the power and authority to act that way. One crucial issue for the MTA is the city's current decision making process: The MTA does not have enough authority and cannot make changes quickly to improve transportation. Need to see how other cities have structured this process so that they can make good decisions quickly.
- **Need to reform level of service standards** (2) Current LOS/ CEQA measures prevent real improvements to transit, walking, and biking. Transit only lanes, bicycle lanes, and pedestrian improvements should be exempt from CEQA analysis. Internal inconsistencies in policies. Lack of performance measures for anything other than cars.

Financial

- **Need to aggressively pursue new revenue sources.** (4) There is not enough money to provide enough service, and to provide service that is affordable. Needs more funding to improve service quality.
- There is no long term financial planning

What can MTA and the City in general do to facilitate regional travel using transit?

- **Muni should focus on what it can really impact (9)** – local trips, and providing good service to key destinations or transfer points; Don't spend too much focus on low volume regional trips.
- **Fare and transfer coordination with other agencies for ALL riders, not just adult fast pass on BART. (6)** Unified fare media will help. This is an equity issue.
- **Physical redesign of intermodal centers. (3)** Need platform-platform connections, proper pulsed hubs at BART stations, appropriate locations for Caltrain stations, Golden Gate Transit center at Civic Center, timed transfers for lines that begin or end at a rail station, fare coordination.
- **Facilitate and encourage recreational trips being made on transit. (3)**
- **Encourage BART to operate longer hours. (2)**
- **Better integration with BART. (2)** Extend FastPass to Daly City BART station; Renegotiate off-peak rate for Muni riders on BART.
- **Take advantage of Sam Trans and Golden Gate services as if they were Muni. (2)** Don't let intergovernmental issues reduce the efficiency of resources. If other operators use our streets, they need to accept local riders.
- Muni is absent from the regional table – its needs to advocate for its needs in regional decision-making.
- Transbay Terminal must be extremely well-designed and must include Caltrain access.
- MTA needs to acquire more dedicated right of way, especially for regional carriers. For example, Golden Gate Transit should have dedicated right of way for its buses from Marin, over the bridge, on Lombard, down Van Ness, and into downtown. The Bay Bridge needs to have a bus lane (or very high occupancy lane) in each direction.
- Better integration with ferry services.
- Much better customer information about trips can be made, how to use Muni, and where it goes.
- Be more open to working with private businesses and others who might provide shuttle services that could help with regional trips.

Are there examples of other transit agencies that “get it right” that could serve as models for MTA in any key areas? Are there peer systems to which to compare MTA?

- **New York City (10)** – useful service 24 hours a day (4); bus operations (2); fare structure and media (4) -- same price throughout region, and fares are very easy to buy/understand/use; lifecycle costing and capital planning.
- **Boston (4)**
- **Chicago (4)** – bus operations
- **Portland (4)** – holistic approach to streets, land-use connection, reliability, cleanliness, and lack of crowding; fare free downtown
- **Bogota (4)** – Implementation oriented (2); made the tough choices required to get the dedicated right of way to run very fast and reliable transit on the surface (2).
- **Seattle (3)**: fare free zone downtown (2). Using tunnels for more than one mode so that multiple routes benefit from large investment (i.e., both rail and buses operate in a tunnel downtown). The Central Subway should be designed this way.
- **Curitiba (2)** – made the tough choices required to get the dedicated right of way to run very fast and reliable transit on the surface.
- **London (2)** – bus intermodal center design
- **Paris (2)** – ubiquity of rapid transit network
- **Toronto (2)**
- Amsterdam: very easy to use system, emphasis on streetcars
- Vancouver BC: integrated transit and land use planning
- WMATA for rail operations
- Switzerland, especially Zurich (pulsed hubs, on-street transit management)
- Scandinavia and London: Signage
- Shanghai: passenger information is great (real time and passive), very easy to learn how to use the system, and then easy to get where you want to go
- Sydney: cleanliness, customer service orientation (e.g., drivers are very friendly and helpful)

- Barcelona, Bilbao, Stockholm, London: Intermodal station design
- Boulder, CO – effective branding; legibility of bus network (has been achieved even without rails in the ground); physical separation of bike network – focus on bike paths rather than bike lanes.
- Copenhagen – policy of reducing number of parking spaces in the city by 1% a year as a way to manage congestion and improve transit and bike friendliness.
- Denver

What are the things transit operators and other employees want most from MTA and how best to provide them?

- **Less stressful working environment, especially for frontline employees who bear the brunt of rider frustration. (9)** This begins with equipment that is adequate, safe and ergonomically correct to reduce injury and stress on the job. It includes load factors that are less crowded to allow drivers to have a more humane environment to work in. Less crowding would improve operator safety as well. Need to offer more service that is more reliable. Some routes may require monitors or a second set of eyes on the bus for security. Operator assaults are a real problem that needs to be addressed. Stress also comes from inadequate running time and schedules that can't possibly be made. Making sure that all runs are filled would greatly reduce stress by managing crowding and helping passengers to be calmer and more courteous when on the bus.
- **Drivers and mechanics want to be heard and respected. (9)** Drivers want to be consulted. "Treat drivers with the same respect we give firemen!" Drivers want "communication, identification and assistance in implementation" which translates to open communication with management, respect, and a great working environment. Some union members aren't sure their unions speak for them because unions tend to represent the long time members and not the future needs. Need to recognize that Muni employees are Muni and City employees first and union members second. If their employers hear them instead of going through a grievance process, everyone is better off.

- **Support for a culture of working as a team to deliver quality service; support entrepreneurship to deliver quality, not "as long as you have a good excuse, you're OK." (6)** Restore pride in doing a good job. Muni employees do have pride and are hurt by constant negative stories and impressions. Muni employees need to know that they are supported and backed up by management, not that everyone is looking for an easy scapegoat when something happens. Need better support for the best drivers – make mentors of the best drivers. Better support all the way around.
- **Adequate compensation and benefits. (3)**
- New work rules that improve ability of employees to rely on other employees and improve accountability of management and line level employees. (2)
- **Better training and tools to do their job, including the changing focus on security. (2)**
- **Better street operations, street design, and customer interface to make it easy to provide good service. (2)** Higher usage of prepaid fares. Drivers want to drive buses and routes that are easy to keep on-time – buses that are easy to keep reliable, have few unexpected delays.
- **Certainty or at least stability– make change in the organization more predictable. (2)** Make it possible for a driver to feel ownership over his vehicle, his trip and his riders.
- Need to make the Joint Labor Management Board (JLMB) more effective and inclusive.
- Job security.
- Less emphasis on discipline and more emphasis on rewarding the best.

Do MTA's existing service design policies (line spacing, line headways, stop spacing, load factors, etc.) provide the necessary guidance to redevelop the system?

- **Stop spacing needs to consider topography and perhaps demographics, but within that context, stops should generally be more widely spaced. (14)** Current or eventual spacing standards (in feet) need to be viewed as an average, not as a ceiling for the distance between stops. Muni doesn't adhere to its own standard which would make a huge step

forward. Problem seems to be worst on trolley lines and LRT lines where passing isn't possible, so line management is more complicated. Be careful when thinking about stop consolidation not to neglect the seniors and disabled riders who make up such a high percentage of current ridership. Muni needs to apply stop spacing standards consistently throughout the city so that it is fair; little concession should be made for topography, no concessions made based on demographics. Current policies are ignored – even secret.

- **Need to look at places that are over served. (7)** and consider more short turns and other techniques that provide capacity to places that are always over crowded. Look at new ways to deliver service – alternatives to the fixed route bus for certain low volume times of day and parts of the City. Empty buses should not be tolerated. Muni needs to reengineer itself with realistic and complete data and if we're going to invest resources in unproductive service, it should be a policy choice that's clear about the number of people served and the cost of serving them – both in dollars and in alternative uses of those resources.
- **Speed and comparative travel time with car are most important missing policies. (3)** Muni should consider places where more limited and express services could be added, converting some of the local service. This would be relatively low cost and doesn't require any major new operating initiative.
- **Implementing any policies will require data collection and monitoring. (2)** Make real informed decisions and monitor what you do; not politically driven decisions that are often half measures.
- Muni needs to set policies that will work in both good and bad financial times, similar to AC Transit's policies that equate density and service frequency. Policies make it clear that when 10-minute service is called for, and when 15 minute service won't be tolerated.
- Frequency – On Muni's core routes, service should operate every 5 to 7 minutes for 18 hours a day. If current frequency policies are kept, their hours (span) need to be expanded.
- Needs for residents and visitors are about the same
- Specifics:
 - Transit lines should never be just one block apart (e.g., Clement Street, Valencia).

- Outer Balboa is over served, short turns could help.
- Too many buses go all the way down Market Street, consider short turns.
- Consider multiple inner terminals for some routes, similar to 38's multiple outer terminals.
- Pacific Heights, Presidio Heights may be over served.
- Express routes may operate on days or times when they are not needed (i.e., Martin Luther King's Birthday), but too short a span on regular work days.
- Community service routes should be treated specially, with frequent stops, even flag stops, smaller vehicles and a local neighborhood orientation. These routes should not be "robbed" when service is missing elsewhere.

Given the trade-offs inherent in service planning what should be MTA's top priorities? Further, should all areas of the city have access to some transit? If so, are lifeline frequencies enough?

- **Stop spacing should be examined – there may be too many stops contributing to reliability problems and slow travel times. (9)**
- **Top priority is to provide reliability on the most frequent lines. (6)**
- **Muni needs to provide different types of services for different types of customers. (6)** More limited and express services, and potentially BRT, perhaps premium priced, without leaving transit dependant behind. Small buses and community shuttles should be part of the mix too. Muni needs to be faster and be time-competitive with driving– changes should err in this direction, rather than less. Muni needs to aggressively make bold changes to become faster and more reliable.
- **There are places that are overserved, especially on long lines. (6)** Consider more short turns which could improve reliability, etc. Abandon routes that don't meet productivity standards/thresholds. Not every line is a 40 foot bus route and alternative delivery strategies should be considered. Small buses on community service lines would be an easy victory.

- **Focus service on high density areas and core routes that have higher populations of transit dependency.** (4) Less geographic coverage is acceptable. Muni should maintain complete coverage in the City, bus focus service on high density areas.
- **When meeting transit goals is in tension with automobile congestion goals, transit should always trump autos.** (3) Need real implementation of Transit First.
- **Lifeline service should be provided at least every 30 minutes to all corners of city, with higher frequencies based upon density and transit dependent populations.** (3) 30 minutes is minimum service frequency that is useful. Service at this frequency needs to be reliable. Every 60 minutes is too infrequent.
- Should emphasize the comfort and convenience of passengers and people who live in the neighborhoods Muni serves.
- There are no neighborhoods that have too much service; buses and Metro lines are always crowded.
- **Need to replace trolleys.** (2) Electric trolley buses should be replaced with hybrid diesels – these offer more flexibility (for passing buses) and speed. Also allow more flexibility to offer limited stop and express services. The current trolley fleet, including the new ETIs, is not reliable and should be replaced.
- **The fleet is in better condition than it has been in a long time.** (2)
- 30' buses have never been replaced and are being phased out. Need to consider the needs and utility of a small bus fleet.

Are there infrastructure and fleet issues (for example, vehicle types and passenger facility needs) that should be considered in the MTA TEP process?

Vehicles

- **Current vehicles create boarding and alighting delays – need wider doors, level boarding, all-door boarding.** (5) Low floor vehicles will lower claims because they are easier for the elderly to use.
- **Entire light rail fleet should be low-floor.** (3)
- **Current vehicles ignore critical quality of life issues, especially noise and passenger comfort.** (3) All vehicles should include handholds that go to the front of the bus. Some accessibility features have been lacking on newer vehicles. Handholds should be low enough for shorter people. Hooks that allow people to hang their grocery bags and hold on are ideal. Comfortable seats would be great – why should we assume that San Franciscans won't treat a nice bus with respect. Driver ergonomics should be a priority. All buses should be clean – people respect something that looks respectable.
- **Fleet that reduces emissions.** (2)

Surface Stops

- **NextBus needs to be fully implemented.** (10) Real time arrival information should be provided throughout system, especially at major transfer locations. Metro stations and major bus stops need much more real-time information; NextBus is good, but not everything it could be.
- **More and better bus shelters.** (6) Bus stops over-emphasize anti-homeless, anti-vandal indestructibility over passenger comfort. Need more comfortable seating, better route and schedule information. Tilt seats are hard for seniors. Improved lighting will increase security at shelters, as will more emergency phones. Bus stop shelters are in disrepair. Graffiti is up and needs to be addressed.
- **Develop stop standards and include this in the overall goals of the system. Include “station like” stops for key bus stops.** (3)
- **Need stop bulb outs on all stops, especially streets with high traffic volumes.** (3) Buses should never have to pull in and out of traffic. Center platforms work well too instead of bulbs.

Metro Stations

- **Metro stations should be converted to allow low-floor LRTs.** (3)
- Need more seating in Metro stations
- Need clear signage to elevators in Metro stations.

Streets

- **Need dedicated right of way and/or signal prioritization on all major lines.** (3) Need huge increase in amount of dedicated right of way. These need to be colorized to improve performance and legibility

of routes and to demonstrate importance of transit. Consider transit lanes in the middle of the street, especially Geary and Van Ness. This would improve reliability and safety. On Mission Street, consider a Market Street type arrangement with side platforms, even if you can't have dedicated lanes.

- **We need a thorough understanding of what transit preferential techniques work best in which situations and the flexibility to apply what's needed until reliability reaches standard on every line, starting with the most heavily used. (2)**
- Focus on pedestrian safety on all high volume transit streets
- Need countdown signals at every intersection in the City.
- Priority signals hold the green too long and create a wake of congestion behind, especially on very frequent routes.

Network/ Service Design

- **Need a comprehensive plan for BRT and LRT implementation throughout the City. (4)** Whole network needs to be implemented as quickly as possible. BRT is the key to improving transit travel times and transit image.

Other

- **Invest in the best preventative maintenance and state of the art facilities to support the operation. (5)** These are nearly always overlooked. Muni needs to develop a long range facilities plan and manage its assets.
- **Focus on facilities, which are often overlooked, but contribute to employee morale, and the ability of people to do their jobs. (2)**
- Will likely need another bus yard to accommodate BRT vehicles and the additional service necessary to achieve mode share goals.
- Capital investments should be made only with the goal of reducing operating costs.
- System needs more legibility. Major transit lines should run both directions on same streets; use contra-flow transit lanes where streets are one-way. Need much better signage and way finding.
- Region's operators need to share information to design

and procure the best equipment out there.

- More places to buy lifeline passes
- Muni needs to focus on service efficiency and effectiveness and not on "building things."

If a sustainable financial operation is a key goal, what are the most promising avenues for increasing revenue and/or reducing costs?

To increase revenue

- **Increase fare revenue by increasing average fare. (15)** Raise fares including passes and keep doing that consistently as inflation increases. Deal with the deep discounts on Muni and bring average fare revenues up. Muni should aim to have higher farebox recovery ratio targets. Provide discounted fares (e.g., senior discount) only during off-peak times. System wide proof of payment with a plan to eliminate or control fare evasion (4). Charge higher fares for special services (e.g., express and limited stop service). (4) Riders will pay more for premium services, including express services over longer time periods, BRT, potentially Fast Pass on BART.
- **Parking charges are the key to Muni ridership and congestion reduction. (11)** MTA still plays both sides of the parking policy game. More specifically, charge market rates for all parking in City, ensuring adequate availability at all times. Charge new parking impact fees to address Muni's congestion costs at their source. Reducing parking requirements saves the developers a lot of money. Find a way to recoup some of that for Muni with an in lieu fee or other parking space tax. Should increase neighborhood parking permit costs and charge for more curb parking. Increase all parking costs, and eliminate any monthly discounts in City garages. There should be no free parking for anyone downtown. Use modern parking technology to adjust pricing, extend meter hours and make changes as needed to maximize revenue.
- **Muni should not pursue additional new revenue sources until it can prove it can deliver better service and reduce its costs. (9)** Muni must focus on delivery and optimize what it has before it goes back for more money.

- **Find ways to make downtown businesses pay for the services their employees receive. (5)**
- **Consider a downtown congestion pricing program. (4)** The City may not be ready for this for 5 years, but it will happen eventually.
- **Reestablish the vehicle license fee local add-on. (4)**
- **Restructure routes to eliminate redundancy and provide better service on fewer lines. (4)** Less geographic coverage is OK.
- **Higher state, regional, and local gas taxes that fund transit operations and capital improvements. (3)** Gas tax increase at the next dip in prices.
- **Consider 1/4 cent sales tax. (3)** To get a 2/3 vote, create a tax that does more than one thing – for example funding healthcare AND MUNI or Muni AND homeless services. Do a better sales job.
- **Consider ways to get every City resident to pay a fee in exchange for a deeply discounted or free Muni pass. (2)**
- **Increase sales of monthly passes. (2)**
- **Vehicle impact fee. (2)**
- **Fight for allocation formulas based on daytime population and/or ridership, not overnight population. (2)** MTA needs to find partners for this and take a leadership role. Get a bigger slice of the money already available to the region.
- Maximize use of Proposition 42 funding, and make as much available to operating as possible rather than capital.
- Going to the voters is always difficult so make it count. Don't keep going back to the well for \$5 or \$7M. Make it count.
- Bridge toll increase – make the second dollar permanent and consider adding another one and dividing it by ridership to transit operators.
- Make new housing developers pay into TIDE.
- No fare increase until plan in place for service improvements
- Citywide parcel tax.
- See February 2006 SPUR policy paper for ideas for new revenues.

- Create combined transit passes that offer entry at museums
- Increase flexibility to get operating funds from sales tax, especially if capital projects aren't fully funded.
- Increase enforcement of parking and traffic issues.
- Maximize the opportunities for air rights development over facilities including parking garages.
- Make sure people understand Muni is an essential City service like police and fire and don't stop until it's funded adequately.

To reduce costs

- **Address disability and worker's comp. Get people to come to work! (6)** This isn't just about enforcing rules, it's about making a less stressful work environment, improving vehicle ergonomics and doing what has to be done to intervene early rather than reacting when someone is disabled. Consider incentives to encourage people to be their best rather than finding ways to punish those that are not doing what you want.
- **Renegotiate labor contracts to improve work rules/practices. (6)** to increase productivity and decrease unit costs.
- **Make the system more productive and efficient. (5)** Use technology to improve efficiency: NextBus data should be used for line supervision and service planning. Emphasize efficiency in vehicle design. Fare collection is also a technology issue. We may be losing a fair amount of revenue in fare evasion. Our tear off transfer is a useless fare mechanism. Look at fare practices elsewhere.
- **Focus on preventative maintenance. (5)** Especially true for the Breda light rail vehicles which are deteriorating rapidly. Diesel's are getting to be a problem too. Need to extend the working life of vehicles. Better maintenance will allow Muni to reduce spare ratios, which will lower organizational costs.
- **Change street design and management to help Muni be more efficient. (3)** Focus on Transit Preferential Streets improvements to reduce delay, including signal prioritization, stop sign removal, dedicated transit lanes, queue jumps. Realize the promise of Prop E by combining some street functions across modes, such as traffic control and street supervision to be more efficient and reinforce common goals.

- **Optimize stop spacing for ridership, eliminating many bus stops. (3)**
- **Have DPW prioritize road maintenance on transit routes. (2)** Poor road conditions increase cost of Muni maintenance and repairs. Coordinate projects on the street to minimize impacts on neighborhoods.
- **Bay Area wide purchasing to control costs. (2)** Consider a coordinated purchasing pool with other Bay Area operators for as many things as possible including fuel, parts and other consumables. Consider a Bay Area spec for standard buses with MTC entering into long-term procurement contracts.
- **Decrease use of diesel fuel (via more fuel efficient vehicles or more electric vehicles). (2)**
- Look at middle management – every \$100,000 a year job should be justified.
- Muni has already cut too much – we’re past the fat and into the bone.
- Do a comprehensive evaluation to find ways to convert paratransit riders to fixed route including free Muni for wheelchair users; travel training for those that need it.
- Streamline purchasing and hiring and all of the areas where the structure adds political burden.
- Let drivers “trade back” some of their sick leave for pay when they retire. It’s an incentive not to use the time, which some consider to be “theirs”.

What should MTA’s first priorities be?

- **Delivering a reliable service with predictable wait times is the most important priority. (10)**
- **Define vision first, AND THEN figure out how to achieve it. Don’t be constrained by perceived limitations. (7)** An organization as big as the MTA (and Muni) needs a strategic direction; everything else (goals, policies, behaviors) will flow from this. This requires the longest process (like the TEP) but is the only way to make sound fundamental changes for the better. Vision needs to be clear and aggressive to dramatically shift mode share towards transit. MTA needs to communicate clearly to citizens and policy makers the tradeoffs involved to achieve the goals. Goals need to be multi-modal and inter departmental. Goals need to be supported and driven through

by the Mayor’s office. Start with one division at a time and get everyone pulling the same way.

- **Focus on the customer and the customer’s experience. (6)** Develop a culture of service delivery and empowering people to deliver good service.
- **MTA needs to take a leadership role in its duty to find new sources of funding. (3)** MTA should not wait for the politics to be right – it needs additional funding ASAP.
- **Get the long term financial house in order. (3)**
- **Improve speed on existing routes so Muni is time-competitive with the car. (3)**
- **Add resources where Muni has always been lacking to take a leadership role in the region. (3)** Create an Executive Deputy for HR and have it work non-stop on labor issues, staff development, benefits and workers comp and industrial injury issues. Show you’re serious about enforcing the contract and getting people to work in a well compensated humane environment.
- **MTA needs to embrace “Complete Streets” movement and plan for all modes of transportation in an integrated way. (2)**
- Improve maintenance
- Accurate information so that Muni can tell the truth, and so that problems can be analyzed fairly.
- Provide different types of service for different markets – limited, express and BRT service for the choice market without hurting people who need a more tailored service. Eliminate “one size fits all” thinking
- Focus on transit justice – make it equal for all.
- Do something visible to help Muni’s image and show it can accomplish something important. First steps should include neighborhood shuttles, more limited stop service and expanding successful expresses.

Other Comments

TEP Focus

- MTA should do simple fixes for Muni performance (e.g., stop consolidation and stop sign removal) as quickly as possible
- MTA needs to think more like a business – with transit as its first priority.

- Need to have a rapid transit network – a network is the only way to achieve transit mode share goals
- MTA does not realize the desperation of the transportation situation in San Francisco and is not acting quickly enough, with enough desperation, to make needed improvements.
- Balance future thinking and planning with the need to delivery quality service daily.
- There needs to be a balance between modes that is about moving people and fairly dividing space. Make clear that we are not talking about prohibiting cars and possibly killing vitality. We need to move people without risking our vitality.
- Use the independence of the MTA Board to do the right thing.
- TEP is most exciting for its focus on system efficiency. “Stick to the knitting”
- MTA still divided into single-mode silos. Need to integrate planning across modes and integrate transportation and land use planning with Planning Department
- TEP will not get very far without the political will to make tough choices and significant changes in the city.
- TEP must be bold and make bold changes: these start with a big vision and clear goals.

TEP Process

- **This study needs to be asking the question – If we were starting over, would we do it this way? (3)**
- TEP process (specifically the policy advisory group) needs more rider representation to balance out managerial and union representation, as well as more pedestrian advocates, bicycle advocates, and planning advocates – this should be a multimodal study that establishes mode share goals not just for transit. Because it will chart a vision for the city, planning groups (and the planning department) should have more involvement.
- Concern that the Citizens Advisory Group will not be respected, will not have the importance or weight it deserves.
- TEP process must be driven by the answer to the question: “What kind of city do we want to be and live in?” This is a unique opportunity that won’t come around again.

- One essential ingredient to achieving the city’s goals is actively discouraging car use.

Specific Ideas for Muni/ MTA

- **Need much better enforcement of transit-only lanes. (3)**
- **Improve the current Muni system map. (2)** Current map is inadequate and needs to be dramatically improved. Muni maps should highlight higher frequency routes to make trade-offs transparent to riders.
- Need to get control of temporary disability permits at meters, which hamper street enforcement.
- Must reduce variation in boarding times – key issue for reliability
- Use light-duty personnel as “loaders” at busy stops to get people legally in the back door as a first step toward a full proof of payment system.
- Nat Ford needs to get out and meet with riders and every group he can. Don’t take the staff as gospel.
- MTA needs a unified message and image.
- Bicycles should not be allowed on Muni Metro. It is crowded 24/7 and will be a hazard with the amount of wheelchair use on the Metro lines.
- Try to make fixed route riders out of potential para-transit users with free Muni passes for wheelchair riders.
- Nat Ford needs to meet with the accessibility committee – he has not responded to invitations to do so.
- DPT puts too much emphasis on getting people to the bridge. Put traffic control officers in the neighborhoods where they will help San Franciscans.
- Need to examine pedestrian/cable car safety issues and pedestrian conflicts with LRTs.
- Supervision and first level of management should be clearly distinguished from the rank and file. There needs to be clear definition and training for these jobs.
- Clement service could be limited to a local shuttle, or the branch of the 38 that goes to the VA hospital.
- Honest information to passengers.
- Honesty – Let’s be honest about what a transit system

can and can't do. If your car trip has variability, then the bus transit trip will too. We need to set reasonable targets, meet them and be honest about them.

- Bus service changes for Third Street implementation need to be rethought.
- 66 Quintara is often empty.



Peer Review

1. Purpose and limitations of peer reviews
2. System level measures
3. Light rail operations
4. Bus operations
5. Compendium of peer data

Peer Review

INTRODUCTION

The purpose of this peer review is to provide a context to help interpret Muni's performance and identify Muni's strengths and weaknesses.

Ten roughly comparable peer systems were selected based on a number of factors including service area, population, density, and the modes of transit operated. For each peer, industry standard performance indicators were selected from the 2004 National Transit Database (NTD). In the case of Canadian operators, the 2004 Canadian Urban Transit Association (CUTA) database was used with all financial figures converted to US dollars.

In some sense, Muni has no peers. Every city and transit agency is unique, shaped by differing geography, history, and development patterns, so unqualified quantitative comparisons between transit agencies are difficult. Comparisons between transit agencies are, at best, indicators – few hard and fast comparisons can be made because of the myriad differences between agencies and operating environments. In this peer review, all effort has been made to tease out the most meaningful comparisons, and to explain or isolate the differences that allow certain aspects of each agency to be compared.

In spite of these limitations, peer reviews can provide valuable insight. In some ways all transit agencies can be fruitfully compared so long as these limitations are respected.

Certain factors make Muni truly unique. These factors are highlighted below and inform the rest of the peer analysis:

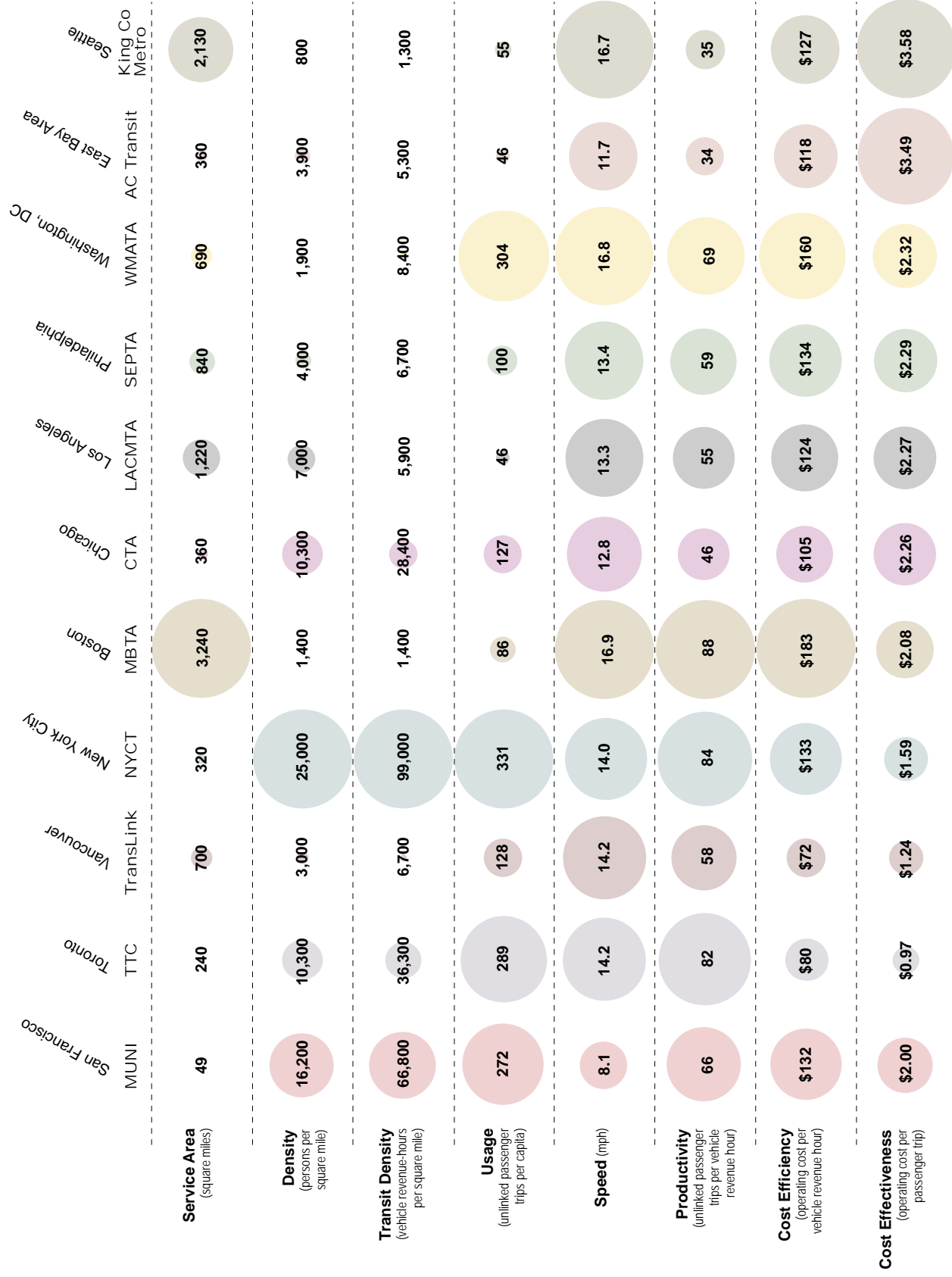
- **Muni exclusively serves a dense urban area.** Most of Muni's peers provide transit service throughout their metro regions, while Muni only serves the region's central city. This results in vastly different service area sizes and densities. Muni's peers serve less concentrated suburban development with lower potential for productive transit service, while Muni almost exclusively serves dense transit-supportive areas. This density has several implications:
 - Muni productivity should be high because density drives transit ridership and productivity.
 - High density environments are typically more attractive for pedestrians, and because all transit trips begin and end as a pedestrian, this encourages transit use.
 - Denser areas typically have more congestion, which reduces transit speeds and reliability. Because so much of Muni's service is provided on congested urban streets with competing demands, there is less opportunity for developing exclusive rights of way, freeway express services, or other techniques for improving speed and reliability.
 - Dense environments have more congestion, which slows cars and transit. Congestion can work in transit's favor, so long as transit is separated from it. Most dense urban areas have found it worthwhile to make the investments necessary (either by elevating or burying rail lines, or dedicating lanes on the surface) to separate transit from traffic so that transit moves quickly and efficiently, making it much more attractive as an alternative to driving.
- **Muni operates many transit modes.** Few systems operate the number and range of transit modes operated by Muni. Muni's bus, trolley, light rail, historic streetcars, and cable cars increase facility needs, create complex maintenance demands, and less vehicle and staff flexibility than at properties providing fewer transit modes.

Figures 5-1 and 5-2 summarize basic information about Muni and its peers, including the most relevant factors that influence the operational efficiency of each agency. After a comparison

of peer agencies as complete transit systems, the performance of light rail and bus operations (Muni's primary modes) are reviewed separately to improve comparability.

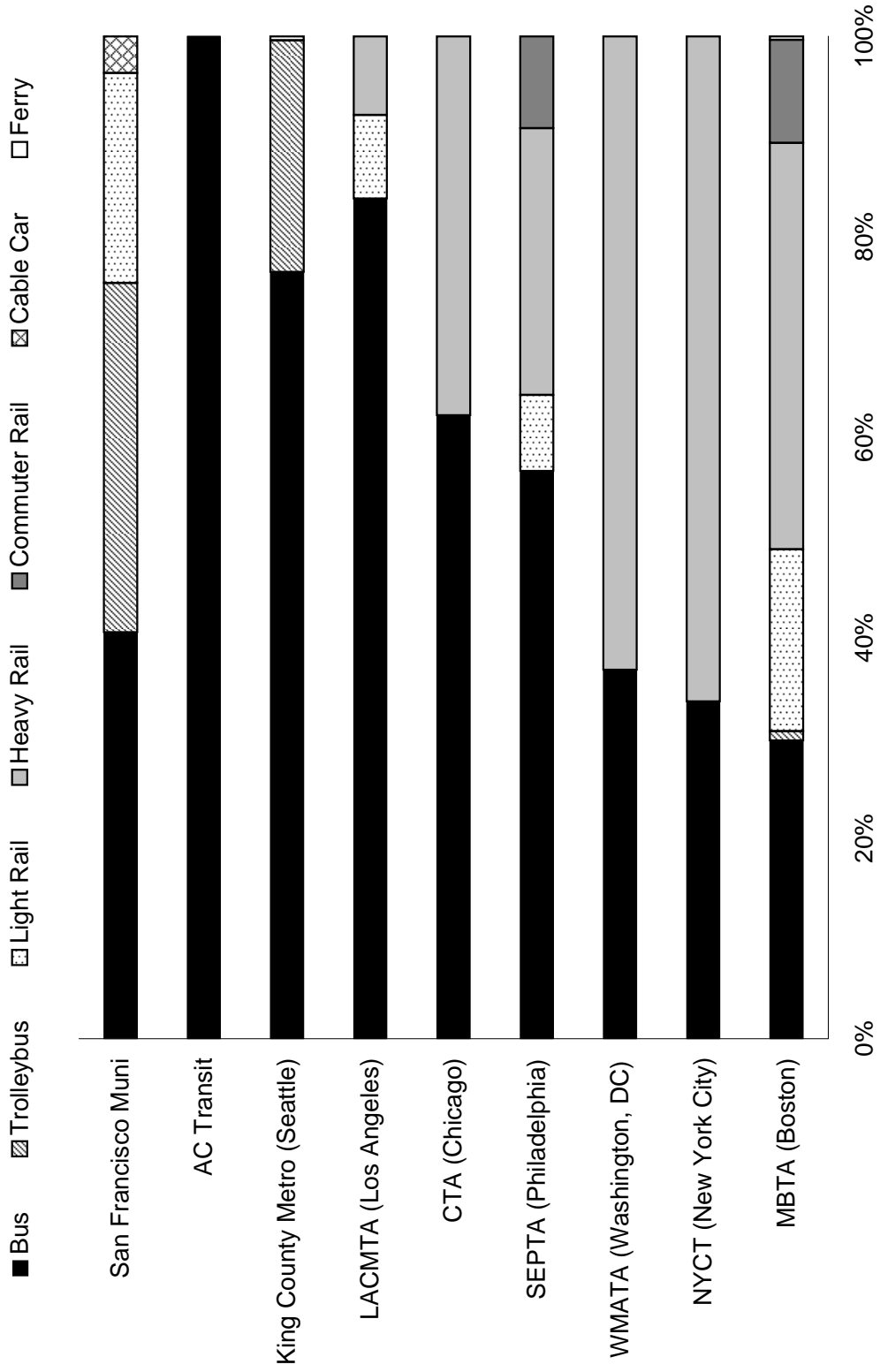
Because peer reviews are necessarily limited, when trying to determine a transit system's potential for improvement, it is often more useful to examine a system's historical performance. Chapter 6 of the briefing book examines Muni's historical performance, and shows that in the past Muni has enjoyed higher speeds and productivities.

Figure 5-1 Peer Comparison: Transit Agency (including bus and rail)



Source: National Transit Database, Canadian Urban Transit Association 2004 Note: All costs in 2004 US Dollars **Nelson\Nygaard** CONSULTING ASSOCIATES

Figure 5-2 Percent of Passenger Trips Carried by Each Mode



Source: NTD 2004

Note: Muni data does not include intra-San Francisco trips made on BART.

SYSTEM OPERATIONS

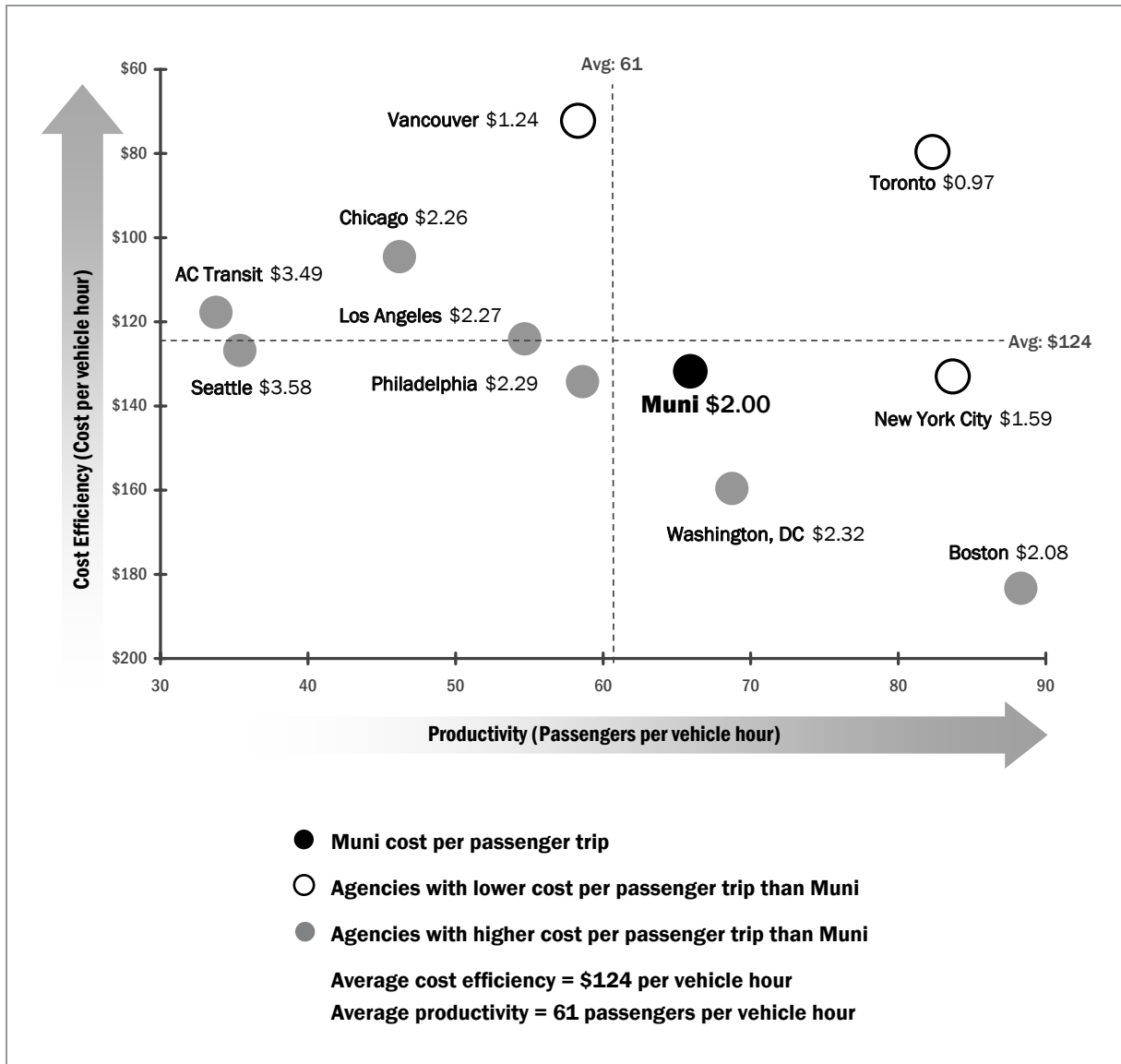
One of the main concerns of the TEP is Muni's cost effectiveness (measured as the cost per passenger trip), which describes how effectively a transit agency uses limited operating funds to maximize the amount of service it provides. This operating cost per passenger trip has not been reduced by each agency's respective (and different) average fares. For reference, peer agency fare data is summarized in Figure 5-12 at the end of the chapter.

Cost effectiveness can be improved by either lowering hourly operating costs, increasing productivity, or doing both. Figure 5-3 shows the relationship between hourly service costs, productivity, and the resulting cost per passenger trip.

Lowering Muni's cost per passenger trip is the key to its financial stability. Muni spends \$2.00 per passenger trip, lower than the \$2.19 average cost per among its peers.

Muni's cost effectiveness is above average. While laudable, this is not unexpected given its dense compact service area.

Figure 5-3 Cost Effectiveness (Cost per passenger trip)



The two Canadian peer systems have dramatically better cost effectiveness than any of their American counterparts. Consider Toronto as an example. Its cost per passenger trip is \$0.97, roughly \$1 less per trip than Muni. This means that Toronto spends 50% less than Muni to transport each passenger.

One clear difference in the cost structure of Canadian transit systems is the amount of resources they dedicate to health and retirement benefits. Their nationalized health and welfare benefits reduce costs, and keep these items out of bargaining agreements. Another clear difference is the Bay Area's higher cost of living which necessarily increases Muni's costs. From available data, we cannot determine how much of their cost effectiveness can be attributed to these factors, or to superior management, planning, or operations.

Lowering the cost per passenger trip

Lower the cost per hour of service

Vancouver's TransLink demonstrates how lower hourly operating costs can reduce costs per passenger trip. Though TransLink is less productive than Muni (58 passengers per hour compared to Muni's 66 per hour), its hourly operating costs are 45% lower. The net effect: TransLink spends 38% less for each passenger trip. The Canadian systems illustrate the power of containing or lowering costs.

Muni service costs \$132 per hour to operate, about average among its peers (\$124). Because Muni does not operate heavy rail, which is considerably more expensive to operate per hour than bus and light rail, Muni's costs per hour should be below, rather than above, average. However, this may be offset by San Francisco's above average cost of living.

Generally, there are many ways to lower cost per hour of service without lowering wages or benefits. Strategies include: improving the effectiveness of scheduling, changing work practices, improving maintenance, and buying improved vehicles that reduce maintenance and fuel costs.

Increase productivity

The cost per hour to operate a bus is roughly the same regardless of how fast or slow it moves, the size of the vehicle, or whether a lot of people ride or only a few. As the number of passengers who board per hour increases, the cost per passenger trip goes down.

To illustrate, if it costs \$100 per hour to operate a bus, and if in one hour it carries 20 people, the cost per passenger trip is \$5. If that same bus carries 80 people in an hour, then the cost per trip is \$1.25.

Muni currently carries about 66 passenger trips per hour, slightly above the peer average of 61 per hour. Though New York City has nearly the same hourly operating costs as Muni, it spends 20% less per passenger trip because its productivity is 27% higher.

There are several factors that indicate that Muni has the potential to significantly improve its productivity, including:

- Muni operates in a dense urban environment, which makes it possible to operate with very high levels of productivity.
- Historically, Muni's productivity has been much higher (e.g., it had approximately 80 passengers per hour from 1985 to 1993), indicating that even higher levels of productivity are possible.
- Muni is more of an all day service than a commute service (based on comparison of peak to base ratios) which means that its vehicles are relatively full, even in the middle of the day, which helps to boost overall productivity.

On the other hand, there are several factors that will tend to lower Muni's potential productivity, including:

- Smaller vehicle capacity (compared to some peers). Large heavy rail services (e.g., BART) allow one operator to carry many more people, which increases its potential productivity. Three of the four peers that are more productive than Muni operate significant amounts of heavy rail (Washington DC, New York City, and Boston – Toronto is the exception).
- Much of Muni operates in mixed traffic, which lowers its speed and reliability, two factors that reduce cost effectiveness and the ability of Muni to attract passengers.
- Though coordination with BART is positive, intra-San Francisco trips made on BART reduce Muni's potential productivity along the BART corridor.

Productivity is determined primarily by four factors: density, the number of people that a transit system can attract to its service, the size of transit vehicles, and speed of the vehicles.

Muni’s transit vehicles are the slowest

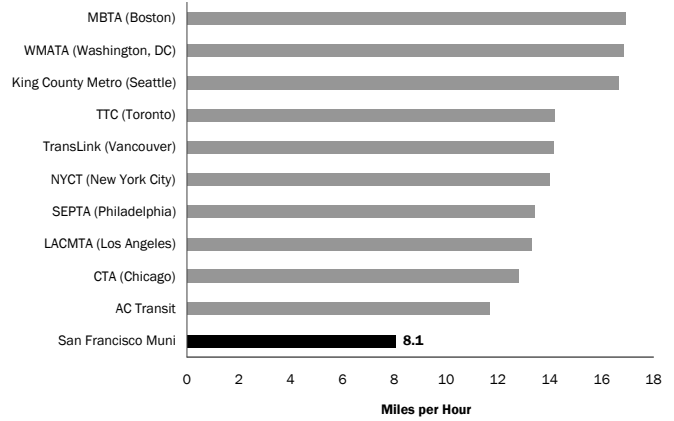
Speed is one large determinant of a transit system’s cost effectiveness, productivity, and attractiveness. Muni’s average system speed of 8.1 MPH is by far the slowest among its peers. There are several reasons for these speed differences:

- Muni carries the majority of its passenger trips on buses in mixed traffic on urban streets which are typically slower than rail vehicles.
- Muni’s service area density is the 2nd highest of the peer systems, which increases congestion. Because San Francisco has minimal exclusive right-of-way for transit, congestion has a larger impact on speed and reliability.
- Muni operates relatively little freeway oriented express service compared to peer systems.
- San Francisco’s topography and Muni stop spacing standards combine to create an environment of frequent stops.
- Muni has not implemented as many strategies to speed buses as other systems (for example, grade-separation (subways), exclusive right-of-way on the surface, prepaid fares, level boarding, and signal priority).

Low vehicle speeds hurt transit system productivity in two ways: slow service increases the vehicle-hours of service required to maintain desired frequencies and fails to attract choice transit riders.

Hypothetically, if Muni increased its average system speed by 2 MPH from 8 to 10 MPH, its productivity would increase from 66 to 82 passenger-trips per hour. This would reduce the cost per passenger trip 20% from \$2.00 to \$1.60 per hour, putting Muni on par with New York City’s cost per trip. This illustrative example is not meant to suggest that increasing Muni’s average speed by 2 MPH is a small or simple matter, but rather to show the power increasing average speed can have to increase productivity and cost effectiveness.

Figure 5-4 Average System Operating Speed



BUS TRANSIT OPERATIONS

Buses are the dominant mode of transport in the Muni system: Muni's buses transport 75% of all passenger trips using 66% of Muni's total operating funds. What follows are key findings from a comparison of Muni's bus performance (combined diesel and electric trolley bus) to that of its peers (Figures 5-5 through 5-8).

Muni bus operations cost the least per passenger trip and transport the second most passengers per hour

Compared to its peers Muni's buses are both highly productive and cost effective. This is not because Muni's buses are fast: Muni's buses are the second slowest among its peers.

Muni's high productivity is driven by a number of factors:

- Muni's service area is the second densest and by far the smallest of the peer systems. This creates a highly concentrated demand for bus transit. Muni's peers also provide bus service in lower density, less productive areas that drive down their average productivity.
- Many of Muni's bus lines do the work that would be done by rail in other cities. For example, Muni bus lines 38, 14, 9, 30, 49, and 1 individually carry more passenger trips per day than three of Muni's LRT lines (the M, K, and J).
- Muni's bus fleet has the highest percentage of articulated buses among its peers. On the corridors that carry 30% of Muni's total bus passenger trips, Muni uses articulated buses which have 50% more capacity than standard buses and only 20% less capacity than each LRT car (but 60% less capacity than two car trains). Larger buses increase productivity and decrease the cost per passenger trip.

Figure 5-5 Productivity: Bus

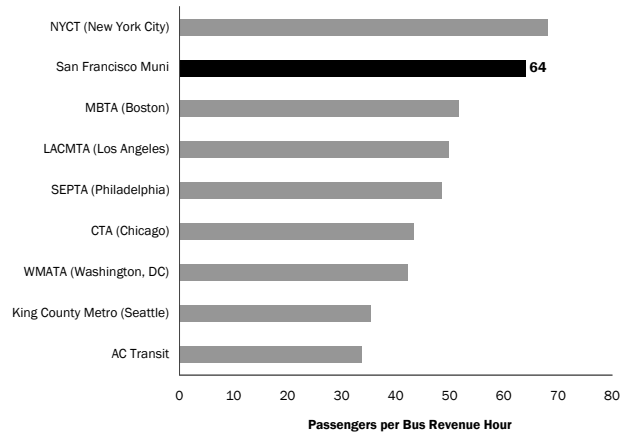


Figure 5-6 Cost Effectiveness: Bus

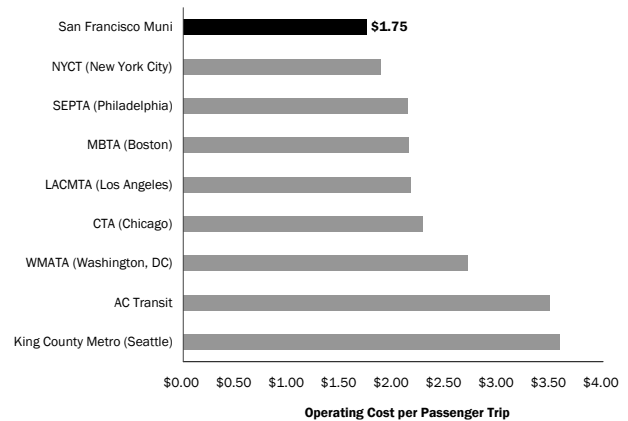


Figure 5-7 Average Operating Speed: Bus

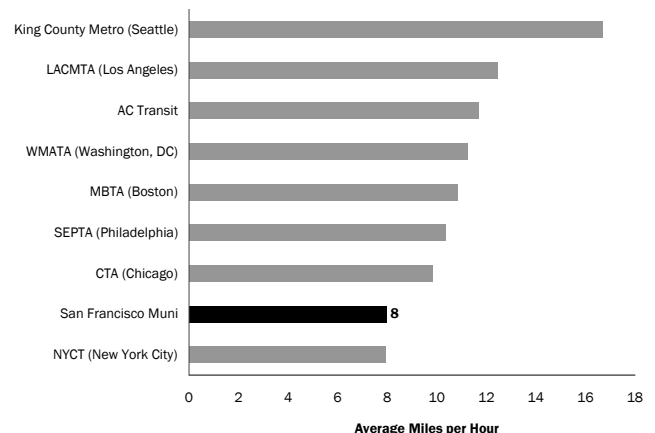
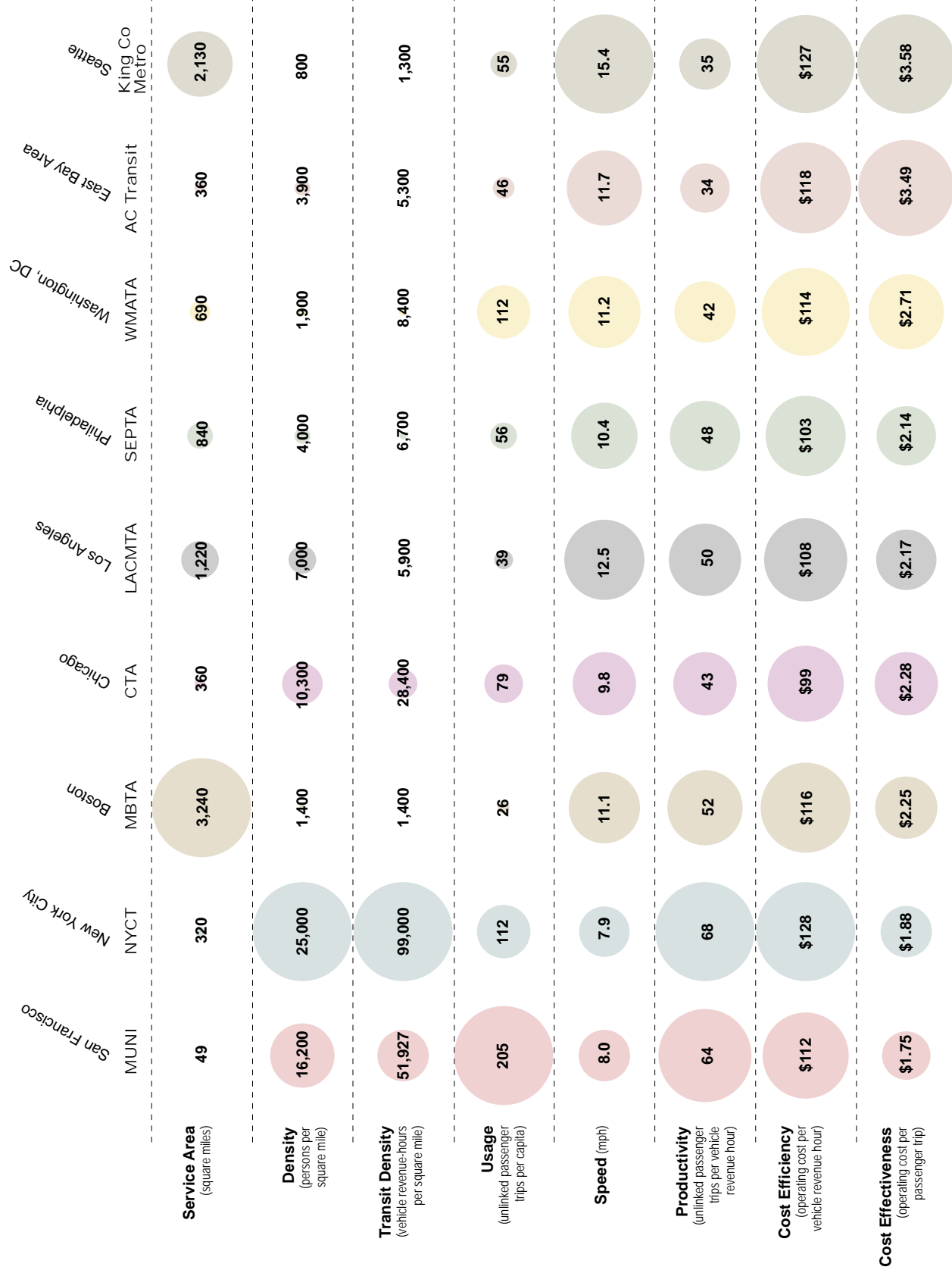


Figure 5-8 Peer Comparison: Bus Operations



Source: National Transit Database 2004 Note: All costs in 2004 US Dollars

LIGHT RAIL TRANSIT (LRT) OPERATIONS

By carrying more riders than buses at higher speeds, LRT can carry more riders using less vehicle hours of service than comparable bus operations. This higher potential productivity typically offsets the higher hourly cost of LRT operations (LRT costs more because of higher maintenance costs and, in some cases, station agents and fare inspectors). The net result is a reduced cost per passenger trip. However, these cost savings are only achieved if the productivity is high enough relative to the higher hourly costs of LRT service.

What follows are key findings from a comparison of Muni's LRT performance to that of peer LRT service (see Figure 5-11 for comparison of data from LRT peers).

Muni LRT is less cost effective than Muni buses

Muni's peers with comparable LRT service, Boston and Philadelphia, demonstrate how LRT typically results in cost savings. Each passenger trip on Boston's light rail (Green Line) costs 30% less than a comparable bus trip, while Philadelphia achieves a 15% cost savings.

In Muni's case, LRT costs 34% *more* per passenger trip than Muni bus. In other words, it is less cost effective for Muni to move passengers by LRT than bus, exactly the opposite of what is expected.

Two factors contribute to Muni's low LRT productivity. First, Muni's LRT lines are historical legacies that owe their survival in part due to their own right of way, such as the Twin Peaks Tunnel. These routes happen to operate in relatively low density parts of San Francisco, reducing their potential productivity. Muni did operate streetcars on denser corridors (Geary, Stockton, Mission), but these were replaced by buses in the 1950s.

The second factor is the low speed of Muni's LRT service, explained below.

Faster LRT service increases productivity and reduces the cost per passenger trip

Boston's light rail service carries 56% more passengers per year than Muni LRT for only 2% more in operating costs in part because Boston's Green Line LRT vehicles travel 57% faster than Muni's (15.0 MPH for Boston vs. 9.6 MPH for Muni). Faster vehicles can carry more trips per hour, which reduces the number of vehicle service hours required to serve those

trips. Boston's LRT vehicles are faster partly because 97% of Boston's LRT guideway mileage is separated from mixed traffic lanes versus 35% for Muni's LRT.

Roughly speaking, for Muni LRT to achieve the same cost effectiveness as its bus service, its average speed would need to increase from 9.6 to 13.0 mph. To be 20% more cost effective than bus service, its average speed would need to be 16.1 mph.

Figure 5-9 Light Rail vs. Bus Cost per Person Trip

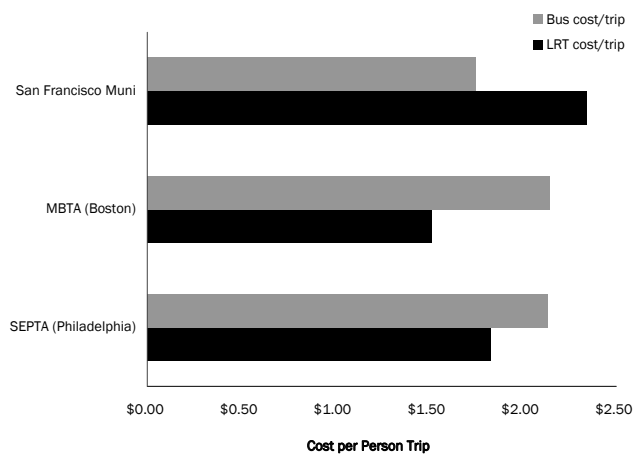


Figure 5-10 Light Rail Average Speed

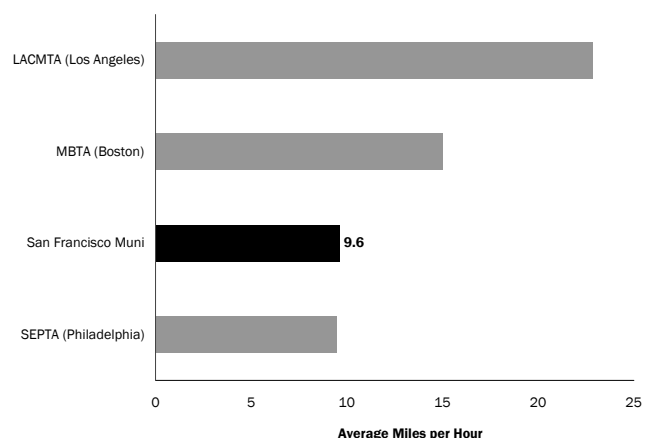
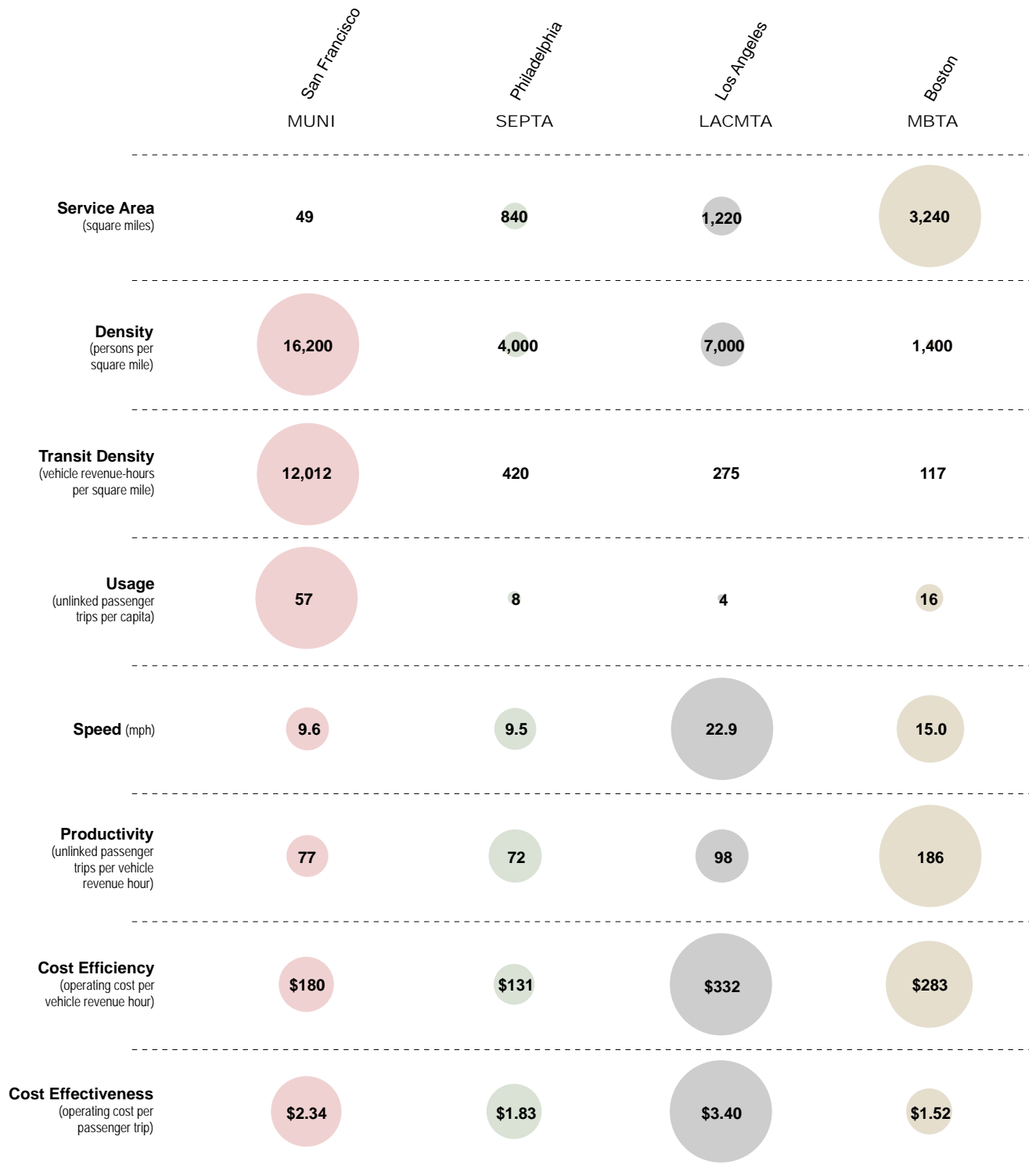


Figure 5-11 Peer Comparison: Light Rail (LRT) Operations



Source: National Transit Database 2004

Note: All costs in 2004 US Dollars

Nelson|Nygaard
consulting associates

Figure 5-12 Peer Fare Information

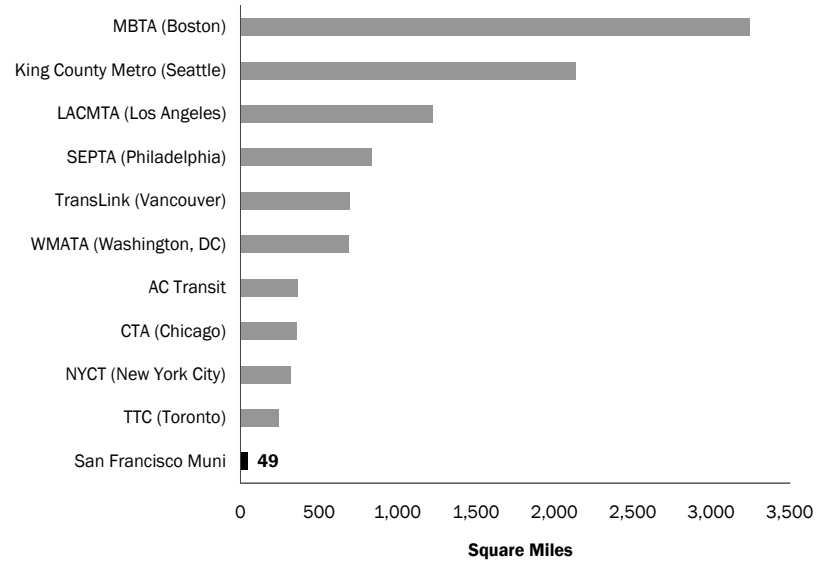
	System Adult Fare (2006)	Monthly Pass	Average Fare (2004)		
			System	Light Rail	Bus
MUNI (San Francisco)	\$1.50	\$45	\$0.65	\$0.48	\$0.48
AC Transit (East Bay)	\$1.75	\$70	\$0.69	-	\$0.69
CTA (Chicago)	\$2.00	\$75	\$0.85	-	\$0.81
King County Metro (Seattle)	\$1.25-\$2.00	\$45-\$72	\$0.75	-	\$0.75
WMATA (Washington, DC)	Bus: \$1.25, Heavy Rail: \$1.35-\$3.90	-	\$1.06	-	\$0.66
MBTA (Boston)	Bus: \$0.90-\$1.55, Heavy and Light Rail: \$1.25	\$71	\$0.78	\$0.75	\$0.48
SEPTA (Philadelphia)	\$2.00	\$70	\$0.97	\$0.59	\$0.79
NYCT (New York City)	\$2.00	\$76	\$0.96	-	\$0.79
LACMTA (Los Angeles)	\$1.25	\$52	\$0.56	\$0.58	\$0.56
Translink (Vancouver)	\$1.73-\$3.47	\$53-\$100	\$0.74	NA	NA
TTC (Toronto)	\$2.12	\$77	\$0.76	NA	NA

Figure 5-13 Muni's Current Fare Structure

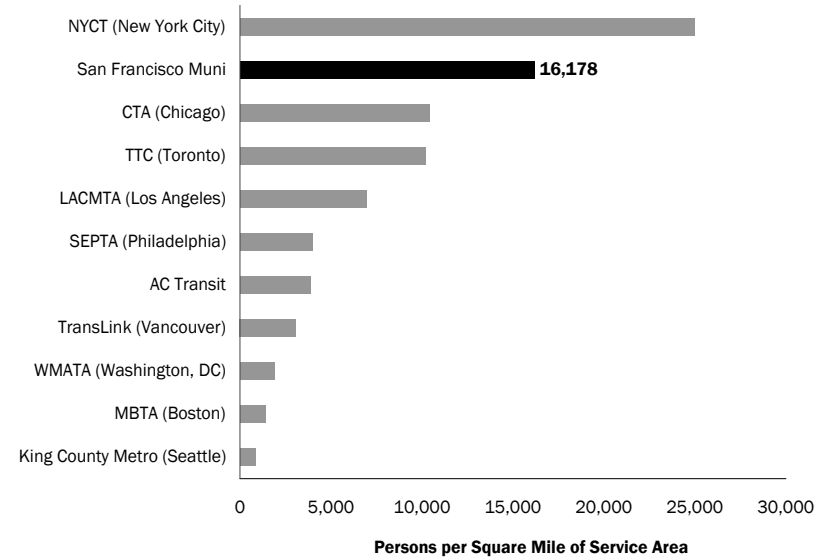
	Fare
Basic fares	
Adult (18-64 yrs)	\$1.50
Senior, disabled, youth	\$0.50
Child (under 5 yrs.)	free
Cable car fares	
All ages	\$5.00
Discount (senior, disabled, before 7 am and after 9 pm)	\$1.00
Passes	
Monthly	\$45.00
Discount (senior, disabled, youth)	\$10.00
Weekly	\$15.00

COMPENDIUM OF PEER DATA: SYSTEM

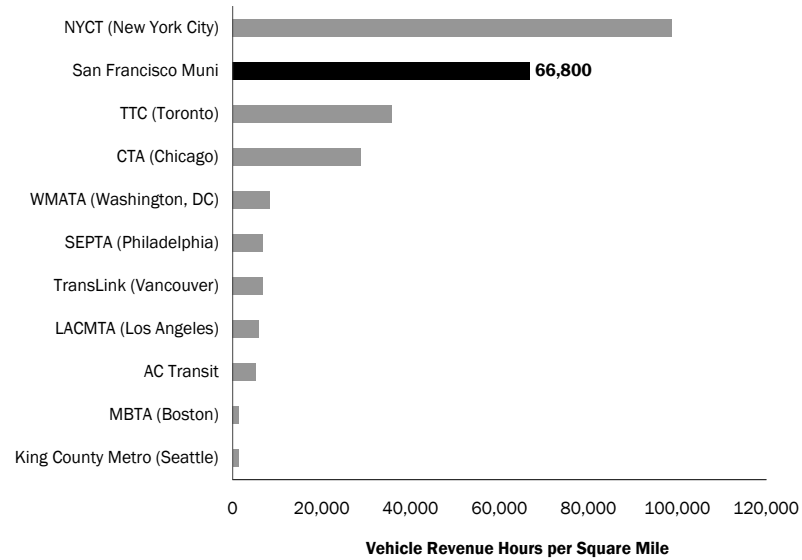
Service Area



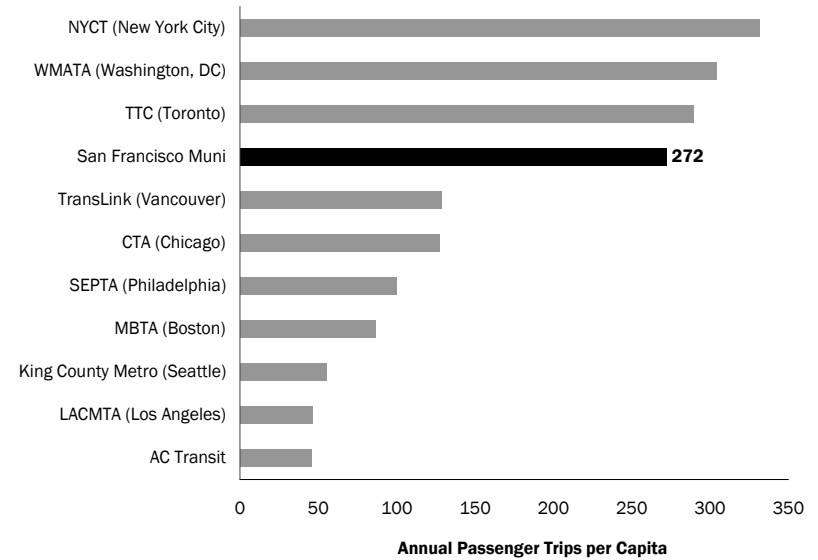
Density



Transit Density

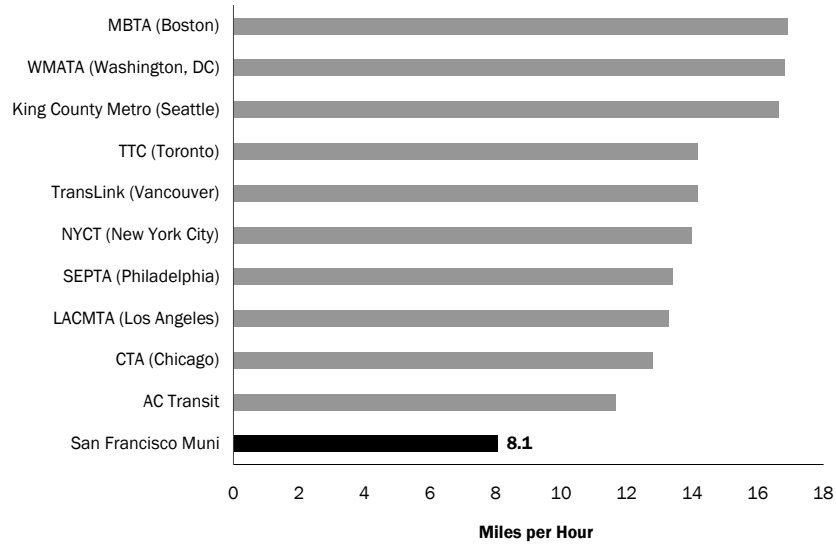


Usage

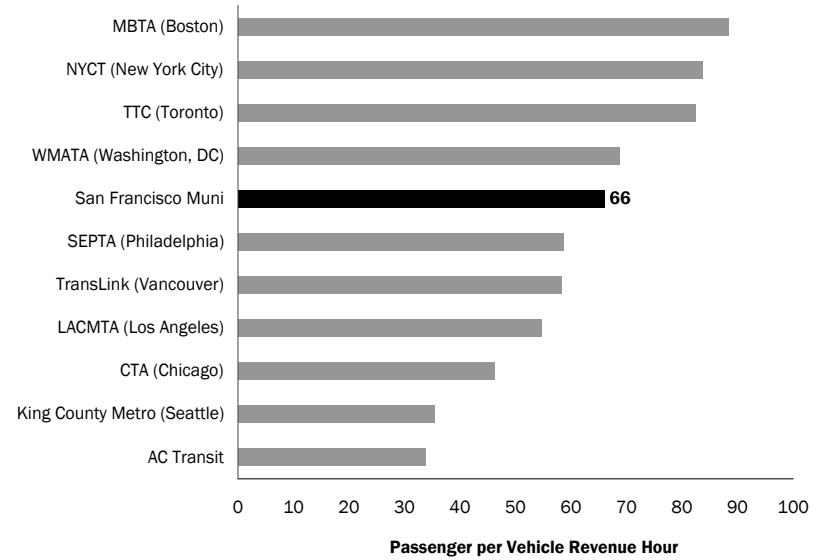


COMPENDIUM OF PEER DATA: SYSTEM

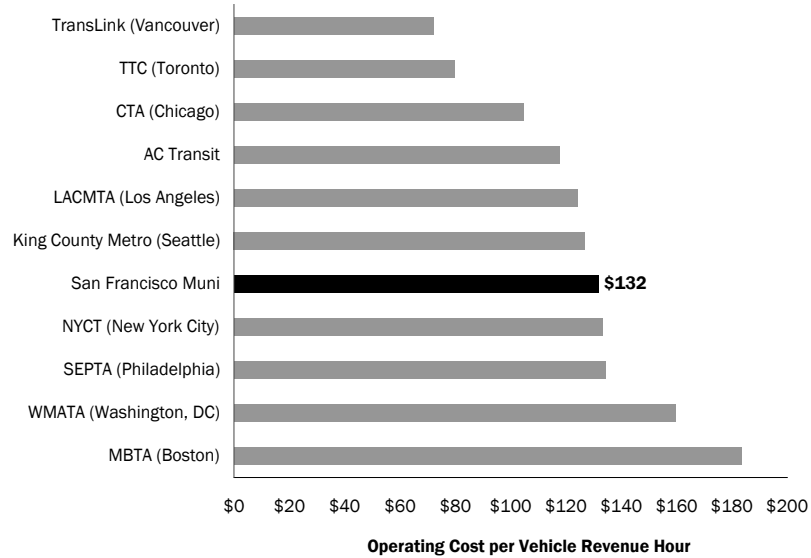
Speed



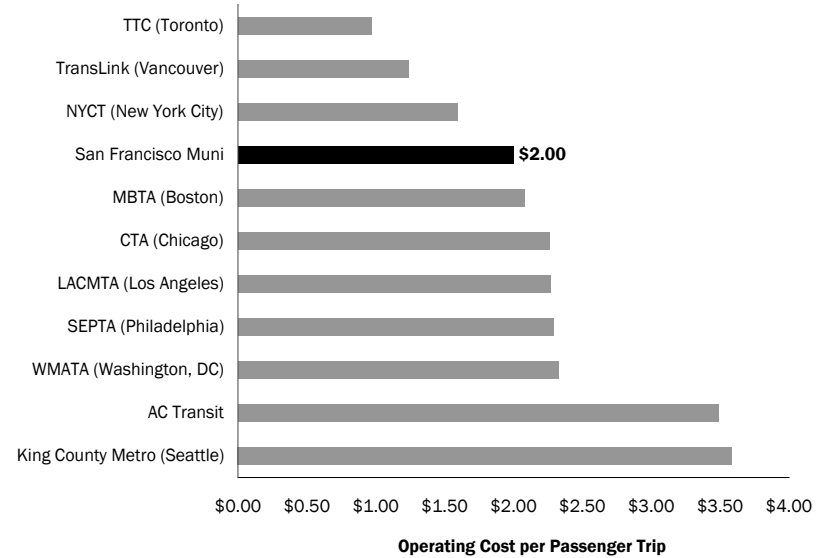
Productivity



Cost Efficiency

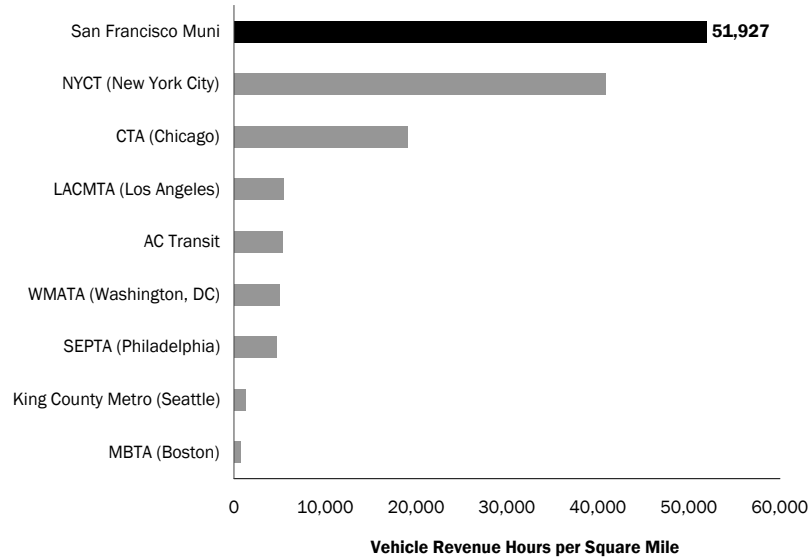


Cost Effectiveness

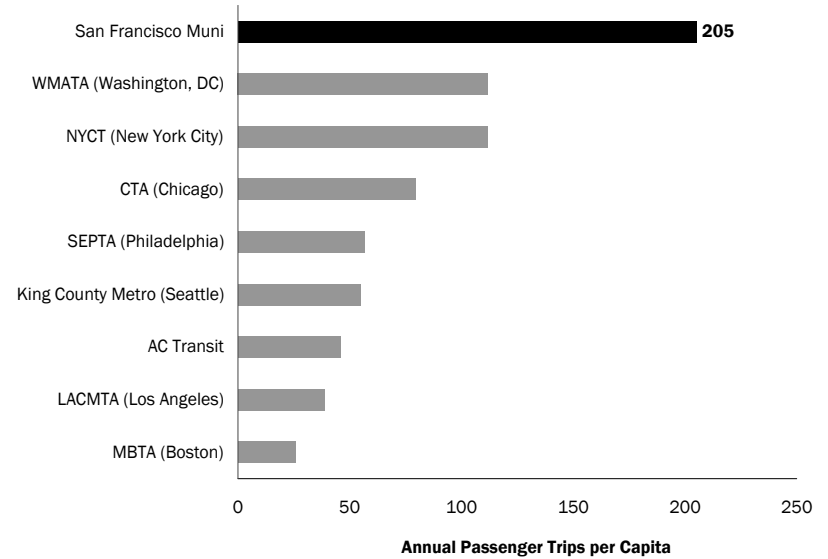


COMPENDIUM OF PEER DATA: BUS

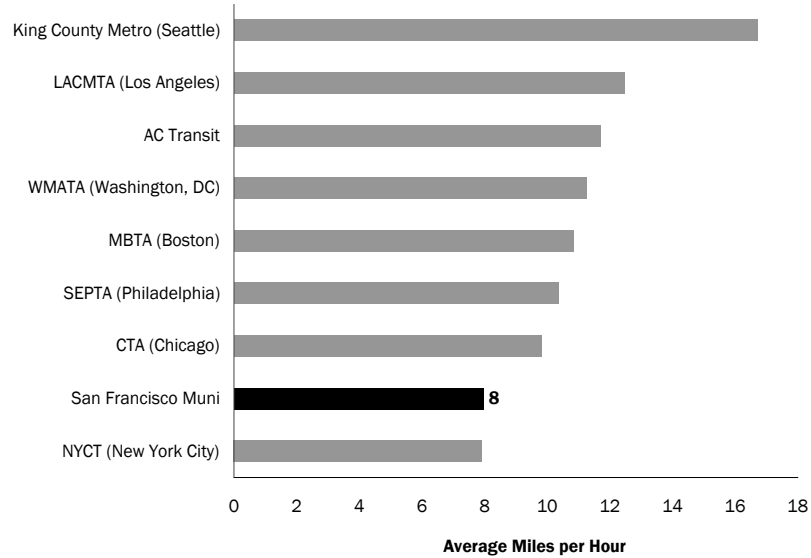
Transit Density



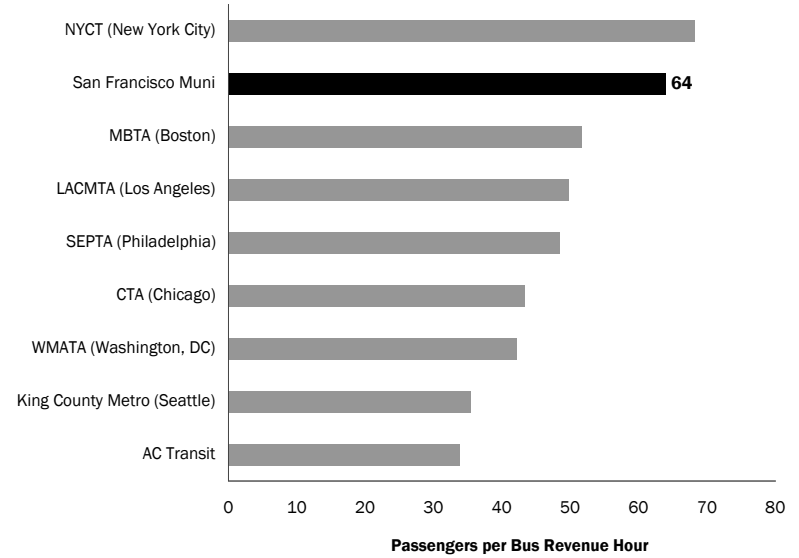
Usage



Speed

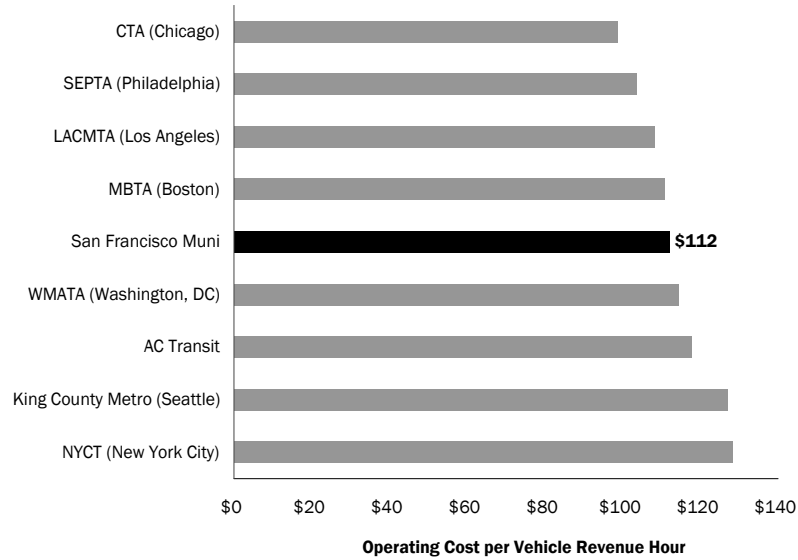


Productivity

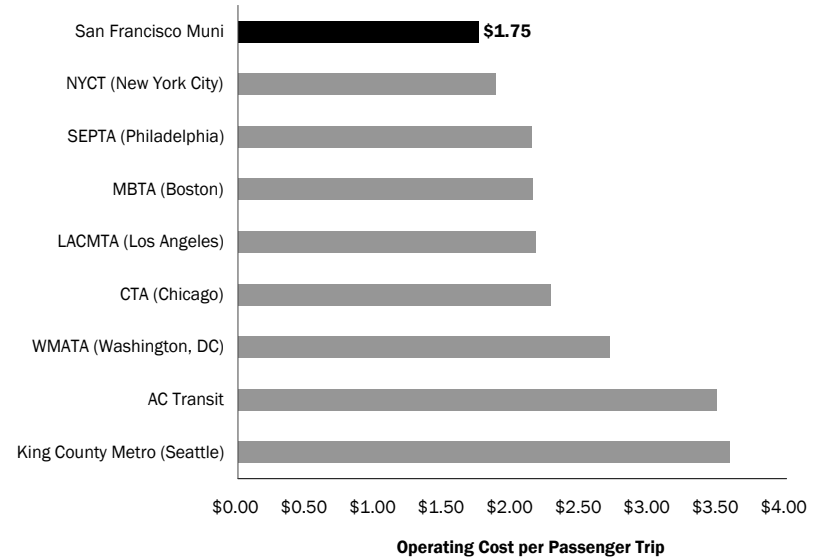


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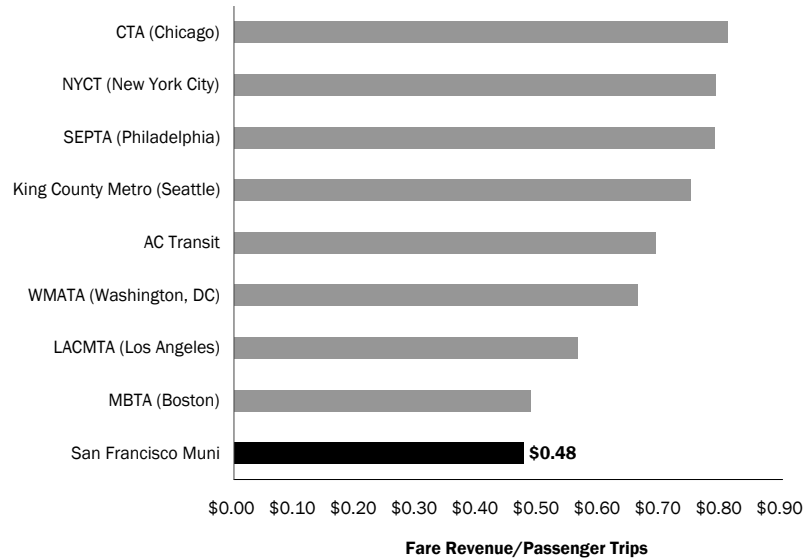
Cost Efficiency



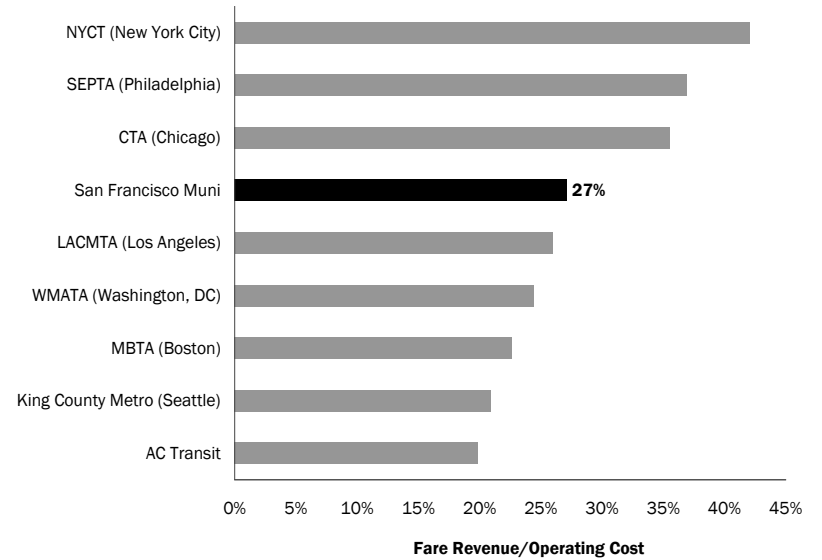
Cost Effectiveness



Average Fare

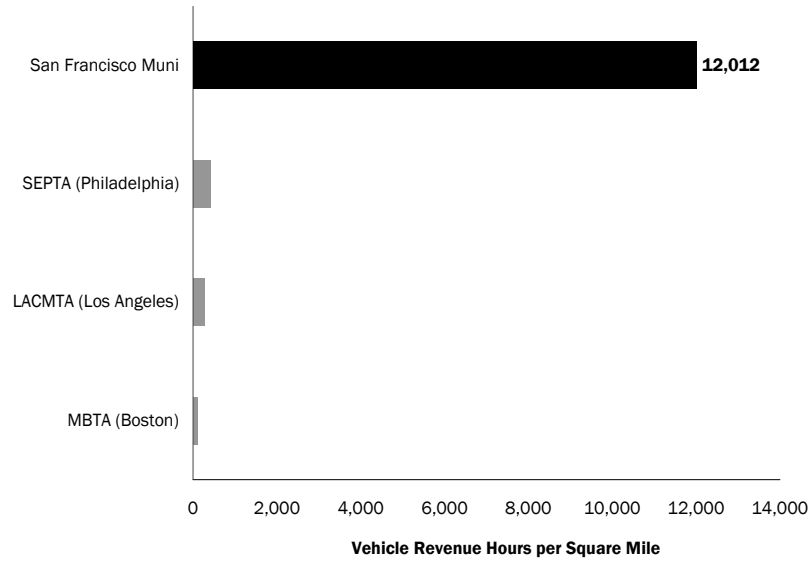


Farebox Recovery

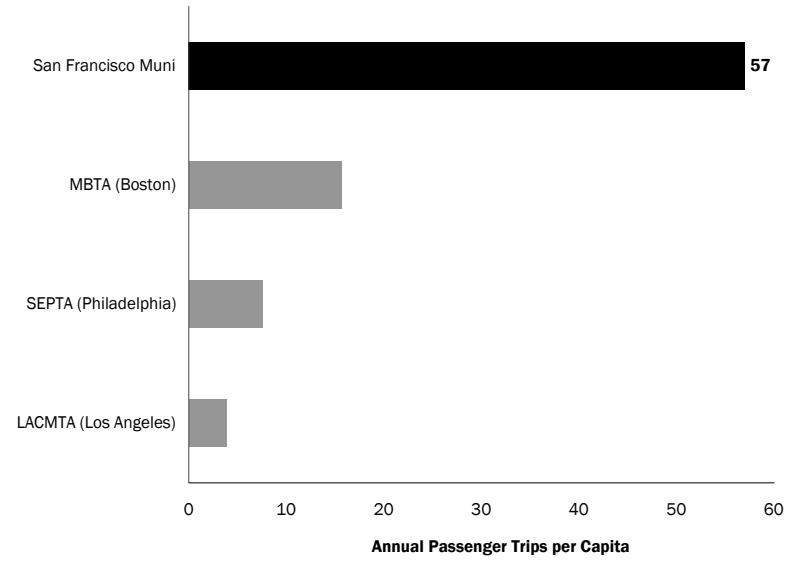


COMPENDIUM OF PEER DATA: LRT

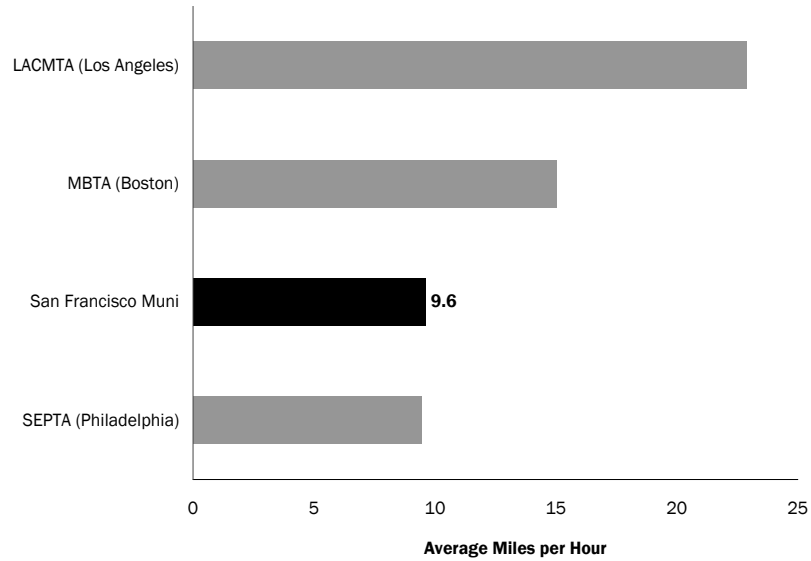
Transit Density



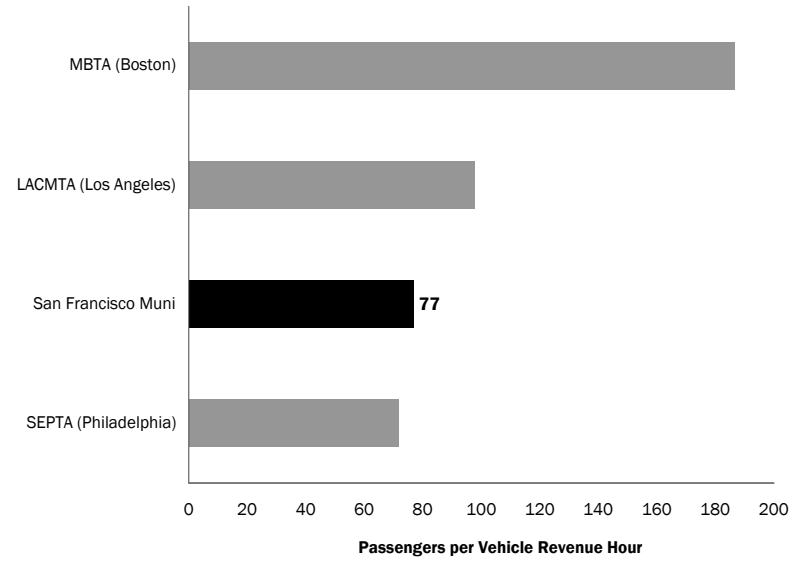
Usage



Speed

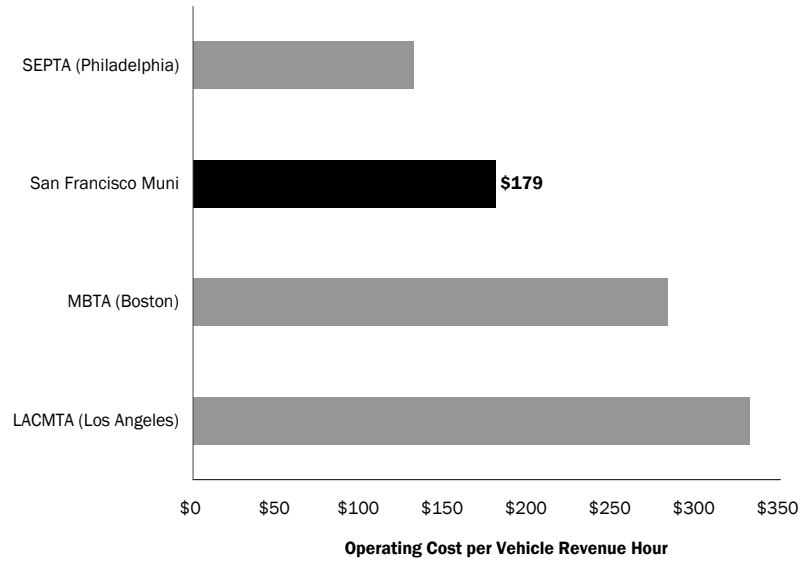


Productivity

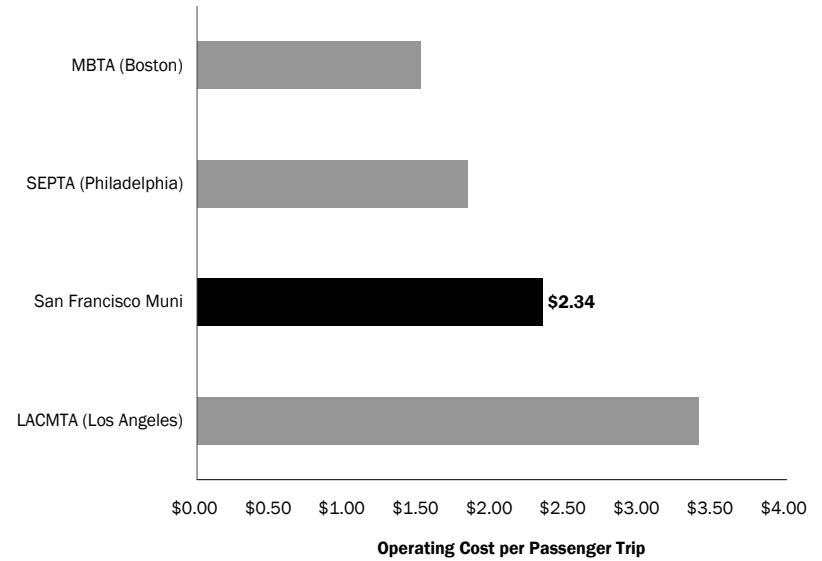


COMPENDIUM OF PEER DATA: LRT

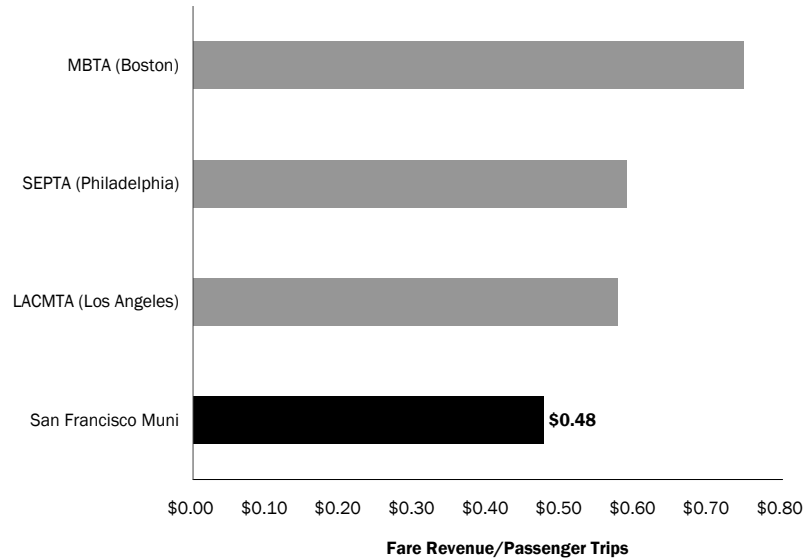
Cost Efficiency



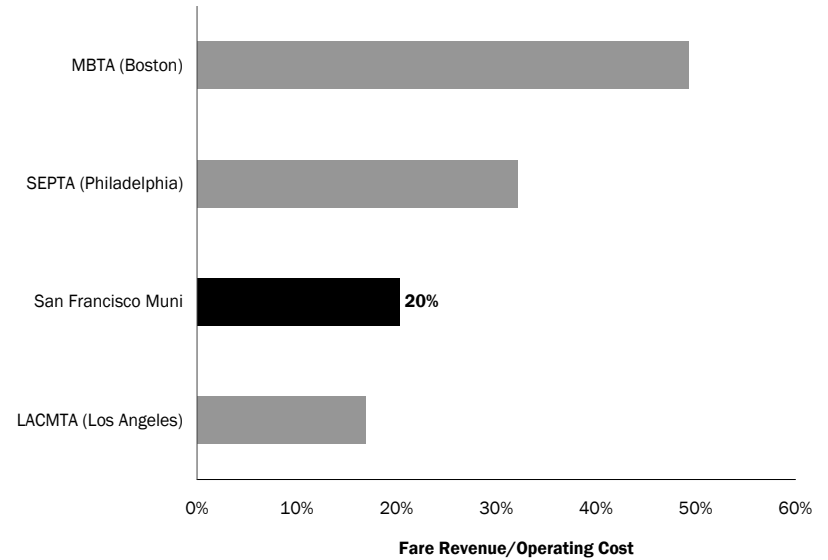
Cost Effectiveness



Average Fare

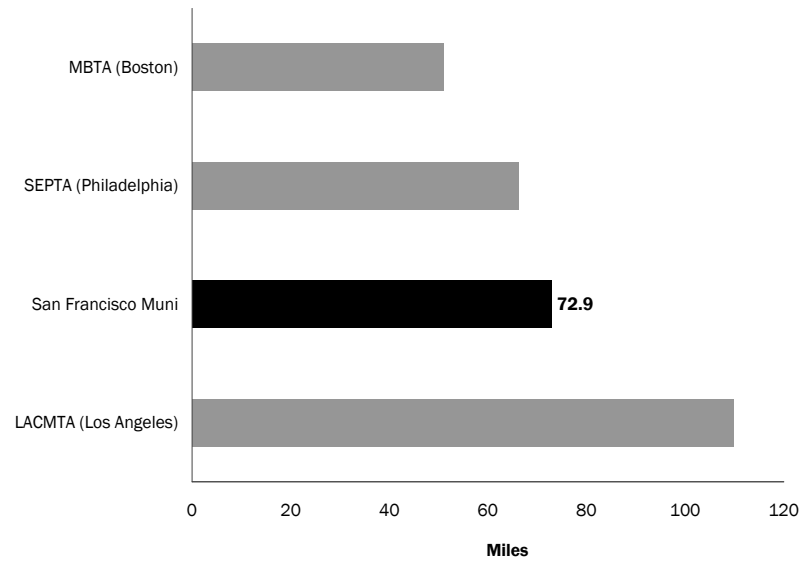


Farebox Recovery



COMPENDIUM OF PEER DATA: LRT

Fixed Guideway Miles: LRT





Muni Performance Review

1. Basic measures of Muni's success
2. Underlying factors, emphasizing speed and reliability
3. Compendium of Muni performance data

Muni Performance Review

INTRODUCTION

This chapter does four things:

1. Summarizes Muni's performance using three basic measures of success: overall ridership, transit mode share, and cost effectiveness. Though these three simple measures do not provide a comprehensive diagnosis of Muni, they do capture bottom line concerns:
 - Is Muni attracting more and more people?
 - Is ridership growing, not only in absolute terms but also in terms of mode share, the percent of all trips made on transit?
 - Is service being provided as cost effectively as possible?
2. Reviews Muni's performance for two key factors that influence its performance on its basic measures: speed, reliability, and the factors that contribute to each. This review of underlying causes begins on page 6-8.
3. Suggests actions that transit systems may take to improve performance (on page 6-9 and 6-14).
4. Summarizes relevant Proposition E performance data.

The three basic measures are not strictly organizational or financial; they are highly relevant for Muni's current and prospective riders. Riders want Muni to provide highly attractive services, and also have an interest in how cost effectively Muni provides these services. High cost effectiveness means that Muni is providing as much service as possible with its limited resources.

Speed and reliability are the two primary determinants of Muni's attractiveness. Together, they determine most of a transit rider's overall travel time (i.e., the time riders spend waiting plus the time spent in a Muni vehicle). Reliability determines not just the amount of time riders budget for waiting, but also their confidence in Muni: whether or not they can count on it to make important trips on-time. Muni rider surveys show that reliability is their primary concern with Muni service. Speed and reliability are discussed later in this chapter as primary factors in Muni's bottom line performance.

This chapter relies primarily, but not exclusively, on the data Muni has reported since 2000 to satisfy the requirements of Proposition E (see Appendix to see text of Proposition E). The performance standards required by Proposition E represent perhaps the most comprehensive requirements of any transit agency. Some of these measures of Muni's performance are most relevant to riders, while others are more useful for managerial or organizational purposes. Muni's historical performance (since 2000) for relevant Proposition E measures is presented at the end of this chapter.

BASIC MEASURES OF MUNI SUCCESS

This section reviews in turn Muni's historical performance for three basic measures of transit agency success – overall ridership, transit mode share, and cost effectiveness. Though in some cases the historical data available is limited, the overall trend is clear: for these three basic measures, Muni's success has been steadily declining.

Ridership and Transit Mode Share

Ridership and transit mode share (or the percentage of all trips in San Francisco that are made on transit) measure the MTA's success at meeting basic goals of the City for transportation. Increasing ridership enough to significantly increase public transit's mode share determines to what degree Muni helps the City to meet the goals outlined in the City's Charter (Transit First) and General Plan.

Ridership and mode share are closely related, but mode share is the most important measure. Ridership can grow in an absolute sense while transit's mode share for all trips declines; growing ridership in itself does not indicate the MTA and Muni are moving in the right direction unless transit's mode share is increasing as well. (Neither the City nor MTA currently have explicit goals for transit mode share.)

Though the number of trips made in San Francisco has increased since 1985, Muni ridership declined steadily from 1985 to 1995, and has remained flat since (with a brief increase that accompanied the economic boom of the late 1990s). Though historical mode share data is incomplete, Census mode share data for trips to work (see Figure 6-1) suggest that transit's share of all trips in San Francisco has been declining faster than Muni's ridership. (During the 1970's transit mode share increased, a trend exhibited throughout the transit industry at this time that was driven by gasoline shortages and dramatically increased investment in public transit.)

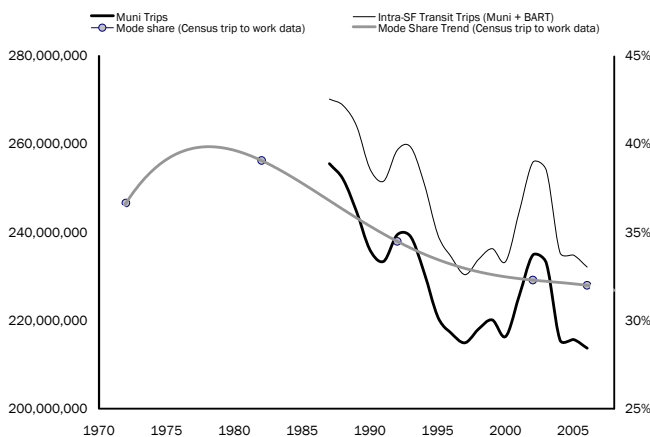
Why has Muni's ridership fallen or stayed flat during a time when the overall number of trips has increased? There are several factors involved (shown in Figures 6-1, 6-2, 6-3, and 6-10):

- **Dispersing work travel patterns (more San Francisco residents work outside of San Francisco than in the past).** From 1970 to 2004, the percentage of San Francisco residents that work outside of San Francisco increased from 9% to 23%.
- **More people work at home.** From 1970 to 2004, the percentage of employed San Franciscans that work at home rose from 3% to 8%.

- Increasing median incomes and car ownership rates.** Since 1970 the median annual household income of San Francisco residents has increased in real terms by \$26,500 (after being adjusted to 2004 dollars). Over the same time period, the percent of households without a vehicle has decreased from 38% to 28%. In general, transit mode share tends to decrease as car ownership rates increase.
- Shift in intra-San Francisco trips from Muni to BART.** Starting in 1983, BART started to accept Muni monthly passes as fare for trips within San Francisco, with Muni reimbursing BART for each trip made. From 1986 to 2005, the percent of all intra-San Francisco trips made on BART has stayed fairly constant (it rose from about 6% to 8%, tracking directly to general ups and downs in Muni ridership – see Figure 6-3). BART accounts for about 2% of Muni’s 12% decrease in ridership since 1986.
- Declining attractiveness of Muni service.** Available data (Figure 6-10) show a gradual slowing of Muni service (no data before 2000 is available for Muni reliability). Anecdotally, many San Franciscans report that Muni’s service quality has declined over the last 20 years, hitting a low point in the late 1990s.

Though these factors may explain most of the decline in Muni ridership and transit mode share, the net result is a reduced role for Muni in the daily lives of San Franciscans.

Figure 6-1 Muni’s Ridership and Mode Share, 1986–2005



Note: Muni’s methodology to estimate ridership changed in 1985, so ridership estimates from before that time are not comparable. Historical mode share data for all trips (work and non-work) is not readily available. As a proxy, mode share data for work trips (from Census) is used to indicate the trend in Muni’s mode share for all trips.

Figure 6-2 Demographics Affecting Muni Mode Share

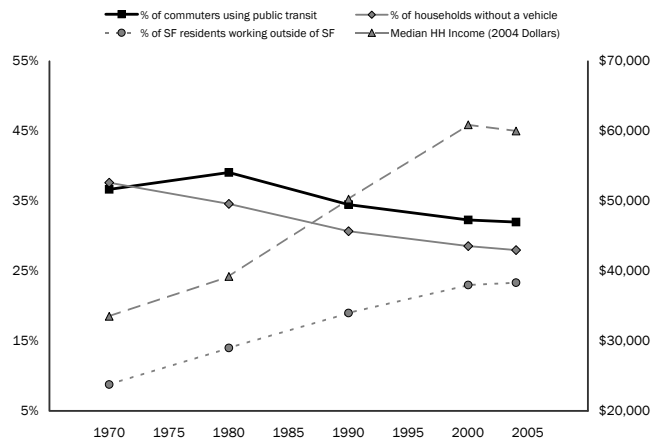
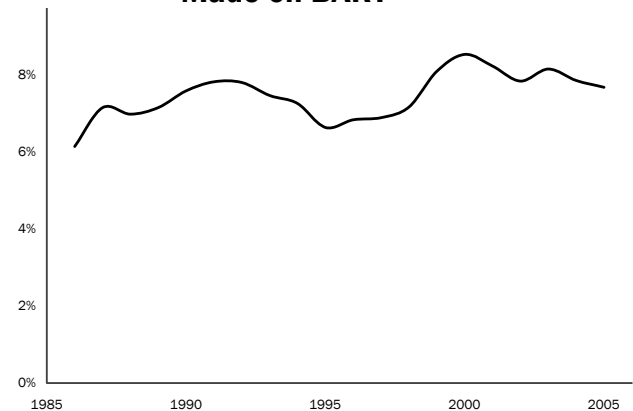


Figure 6-3 Percent of Intra-SF Trips Made on BART



Cost Effectiveness

Cost effectiveness, measured by the cost to provide each passenger trip on Muni, is a function of its productivity and cost per hour of service. The cost effectiveness is the actual cost to Muni for every passenger trip independent of the fare collected; looking strictly at costs insulates this data from changing fare policies and collection rates so the data is more comparable over time. Figures 6-4 through 6-9 show Muni's productivity, cost per revenue service hour, and overall cost effectiveness since 1991 for Muni as a system, its bus operations (combined data for electric trolley and diesel buses), and light rail operations. Note that all cost figures have been inflation adjusted to equal 2005 dollars.

Since 1991, Muni's bottom line performance – its cost per passenger trip – has diminished. After adjusting for inflation, its cost per passenger trip has increased 30% from \$1.61 to \$2.10 (in 2005). Falling productivity and increasing cost per service hour are the causes. Over the same time period, productivity has fallen nearly 20%, while the system's cost per service hour has increased about 10%. System performance trends largely mirror the performance of Muni bus operations because buses deliver the majority of Muni's service.

The productivity of Muni's light rail service has fallen even more (about 23%), but its cost per passenger trip has risen only slightly because its cost per revenue service hour has risen more slowly than bus operations. While this relatively modest increase in the cost per hour of service for both bus and rail service appears to be positive news, it most likely reflects the hollowing out of managerial, operations, maintenance, administrative, and planning staff as reported in stakeholder interviews. It suggests that Muni does not have the proper amount of staff for a transit operation of its size. Eliminating these positions or leaving them unfilled has, in the short to mid term (as seen in the mid 1990s), helped to contain the growth of Muni's cost per service hour, but these gains are illusory. Further analysis of Muni's cost growth is likely to show that the direct costs of providing service have been rising quickly as a result of rapidly rising expenditures on retirement, health care, and worker's compensation benefits.

Figure 6-4 Muni System Cost Efficiency (Cost per Revenue Vehicle Hour), 1991–2005

All values converted to 2005 dollars

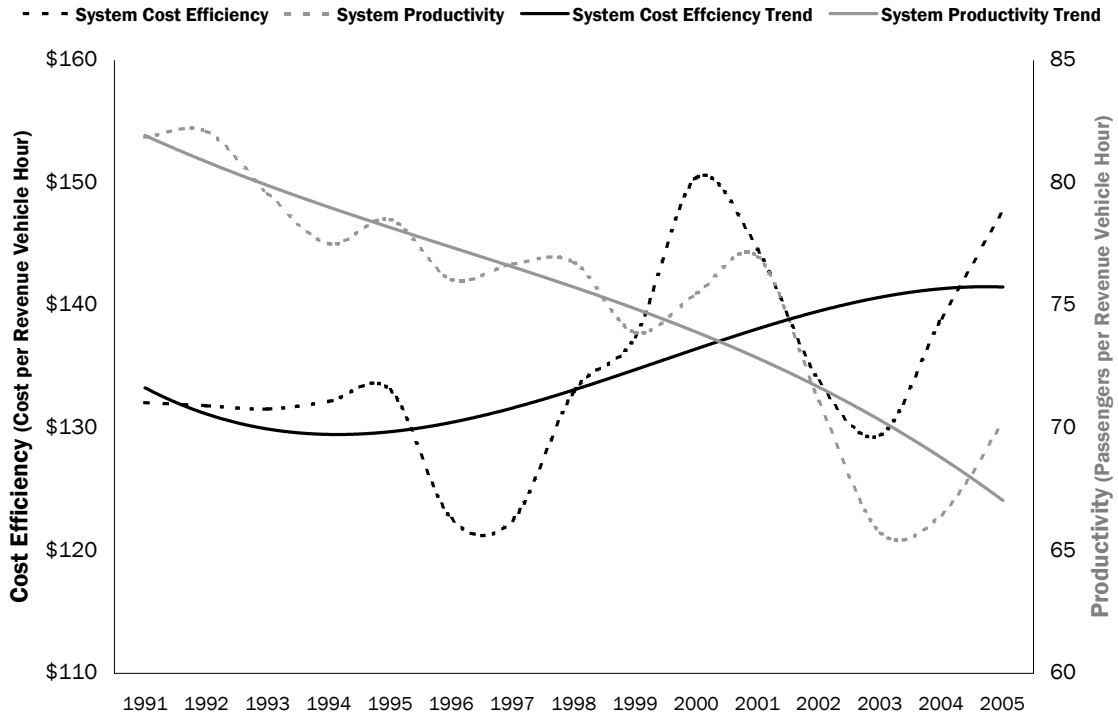


Figure 6-5 Muni System Cost Effectiveness (Cost Per Passenger Trip), 1991–2005

All values converted to 2005 dollars

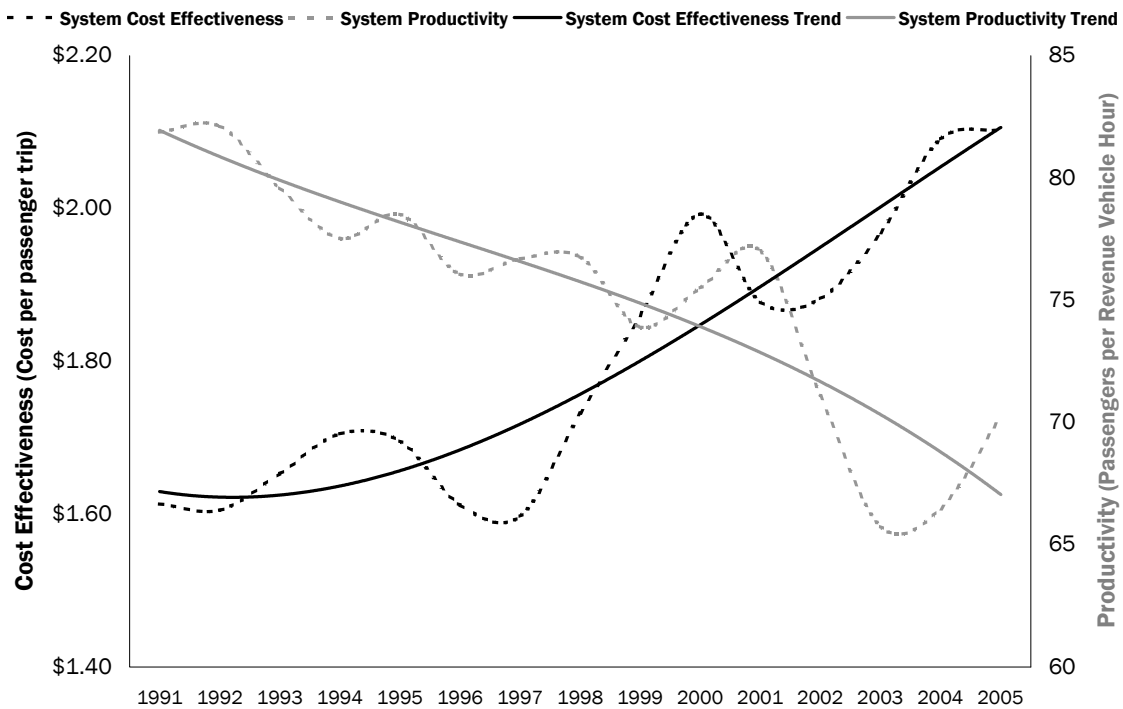


Figure 6-6 Muni Light Rail Cost Efficiency, 1991–2005

All values converted to 2005 dollars

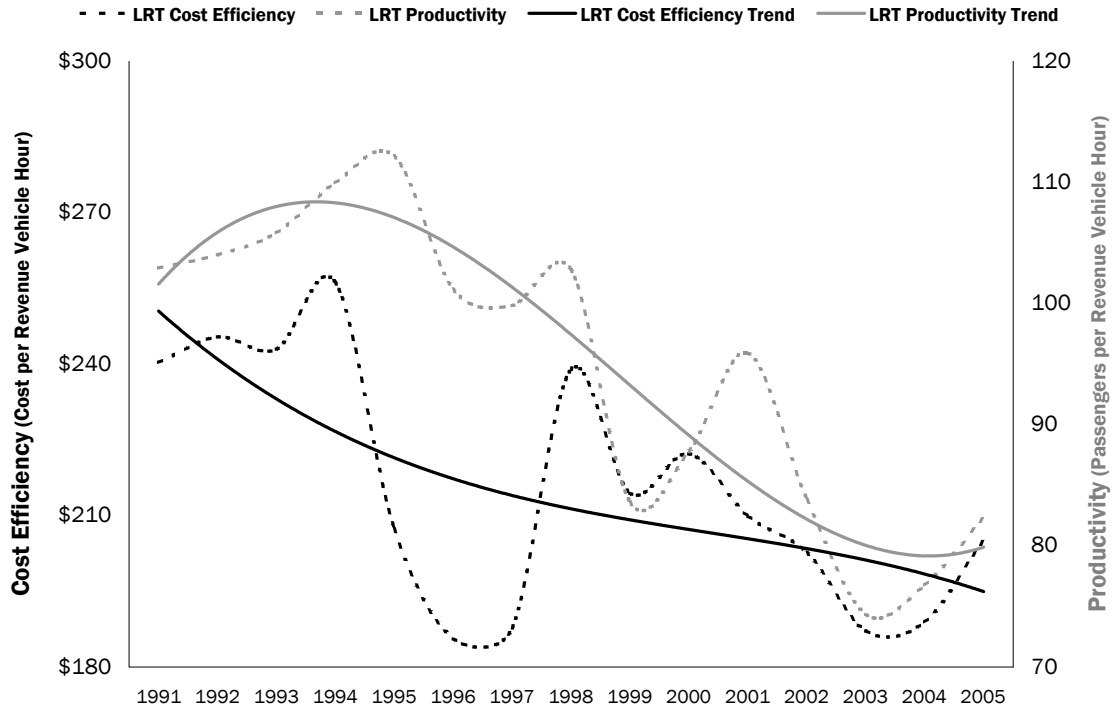


Figure 6-7 Muni Light Rail Cost Effectiveness, 1991–2005

All values converted to 2005 dollars

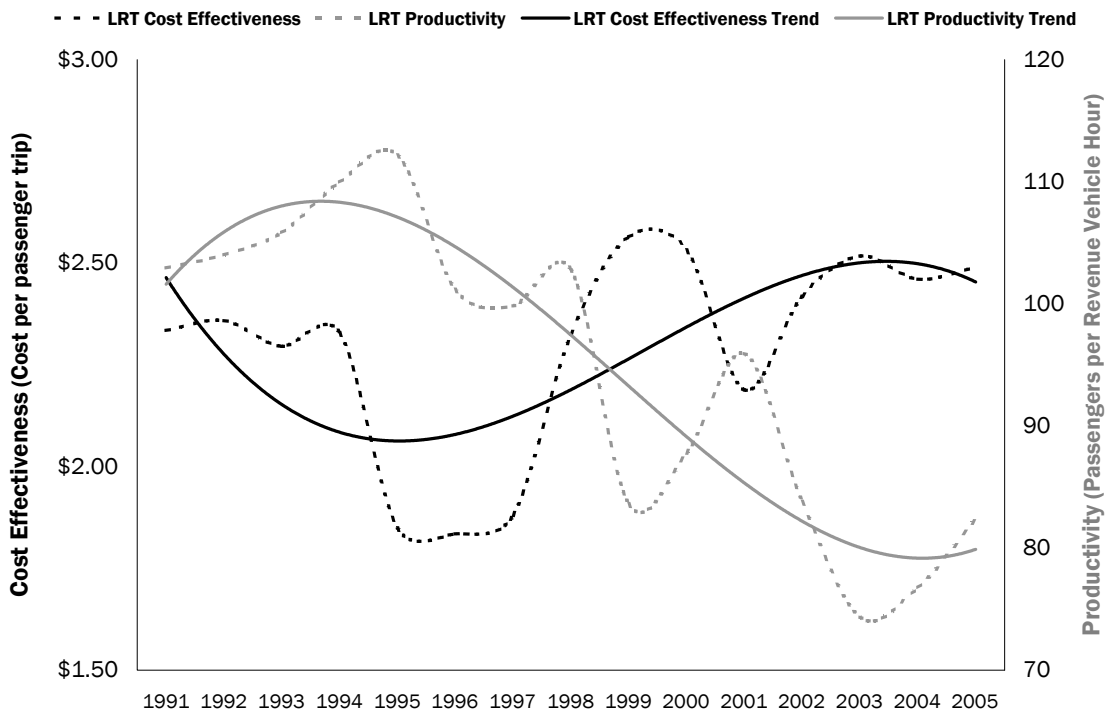


Figure 6-8 Muni Bus (Electric and Diesel) Cost Efficiency, 1991–2005

All values converted to 2005 dollars

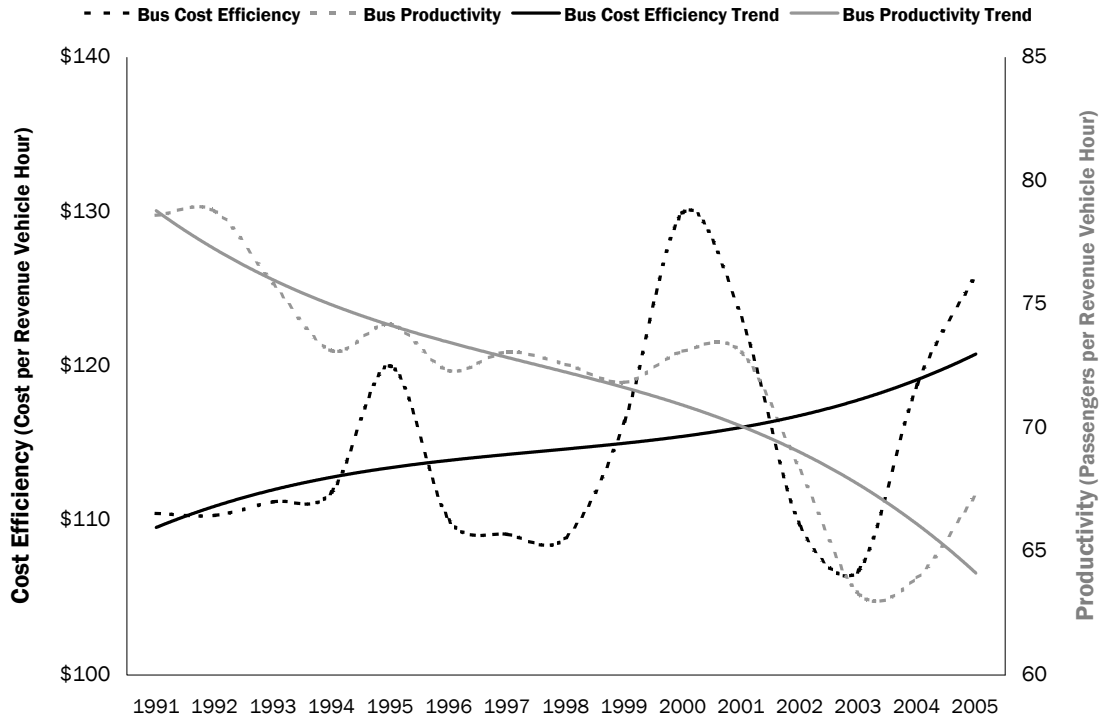
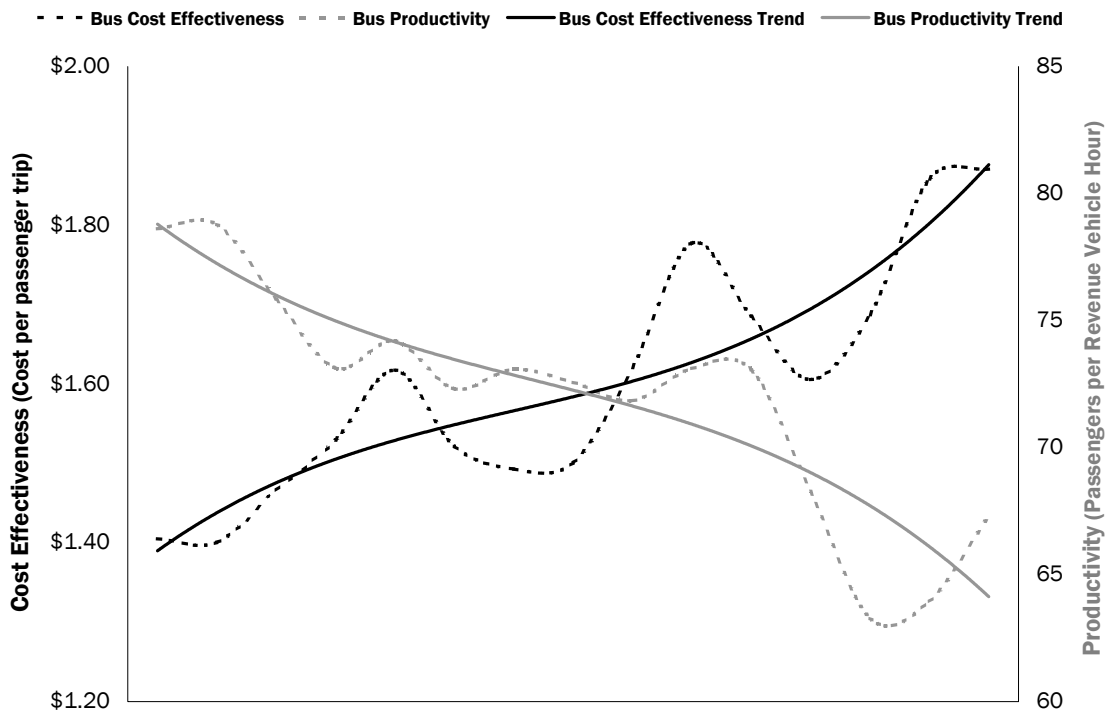


Figure 6-9 Muni Bus (Electric and Diesel) Cost Effectiveness, 1991–2005

All values converted to 2005 dollars



UNDERLYING CAUSES

This section uses historical Muni data to examine the root causes for its current performance for these overall measures. Performance data for most of these factors is only available since 2000 (with the advent of Proposition E reporting).

Speed and reliability are two of the most important factors in Muni's success in attracting riders, increasing its mode share, and improving cost effectiveness. There are, of course, other factors in attracting riders such as frequency, span (schedule of service, e.g. 5 am to 11 pm), service design (how well routes meet travel demand patterns), and customer service. Speed and reliability are emphasized because they are two of the most important factors in attracting riders.

Speed

Transit speed is unique because it has the potential to provide exponential payoff for two independent benefits. Faster transit not only attracts more riders directly by being more competitive to other modes, but also makes it cheaper to operate each mile of service, producing savings that can be reinvested in higher service frequency. The same number of vehicles can carry more people. Faster and more frequent service (provided for the same resources) attracts more riders, which thereby increases productivity.

It should be noted that some riders value speed more than others, but in general people prefer a travel mode that is fast and reliable over one that is slower and less certain. Most people place a high value on their time, and overall travel time is a large factor when deciding what travel mode to use to make trips.

Speed can be considered in two ways: the average speed of transit vehicles and the overall door-to-door speed of a trip. Time spent on the transit vehicle is one part of the overall trip time, along with time spent waiting, walking to a transit stop, and walking from a transit stop to one's destination. When deciding how to make trips (say, deciding whether to drive across the Bay Bridge or to take BART), people typically consider the perceived door-to-door travel times.

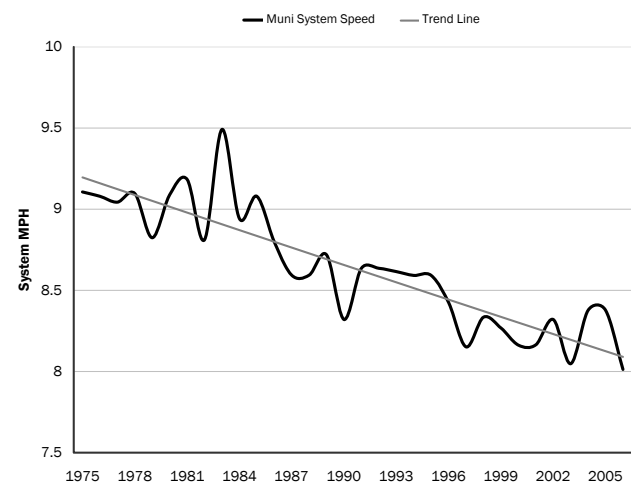
In this sense, increasing the speed of taking transit is not simply a question of improving the transit vehicle's average speed. Other strategies include reducing wait times (via more frequent and/or more reliable service) and optimizing the time spent walking to/from transit (which is influenced by the distance between routes and stops). When attempting to reduce overall trip times, there is a tradeoff between walk time and time spent on the vehicle (fewer stops mean faster transit, but more

time walking), as well as the distance between routes and the frequency of service provided on those routes (with the same resources, fewer routes can have higher frequency service).

The average speed of transit itself (and therefore the time one spends on transit vehicles) does, however, offer significant opportunity to reduce the actual and perceived door-to-door trip speeds.

Like all transit agencies that do not actively manage the speed of their system, Muni's system speed has declined by about 1% a year for the last 20 years (see Figure 6-10). This decrease in system speed is just slow enough to have proceeded unnoticed (or at least without protest), but cumulatively it has had significant effects. Slower average speeds increase travel times on transit, change travel choices, and increase the operating cost because as service slows more service hours must be added to maintain the same service frequency.

Figure 6-10 Muni's System Speed, 1975–2005



In San Francisco, decreasing ridership (at least since 1986, the earliest date of comparable ridership data) should have had the effect of *increasing* Muni's average speed because less time is spent boarding fewer passengers, but just the opposite has occurred. Several factors have contributed to the gradual decline in speeds, including:

- Increasing congestion
- Increasing double parking
- More stop signs and signalized intersections on transit routes
- More transit stops on some routes
- Increasing wheelchair use on transit

As part of the TEP, the MTA will consider multiple strategies to improve Muni's speed, especially on core routes where it carries the bulk of its passengers. To improve overall door-to-door trip speeds, the MTA may consider:

- Improving reliability (as explained in the next section)
- Increasing service frequency on core routes
- Changing policies for distances between transit stops and routes
- More wide spread implementation of NextBus and other real-time information about Muni that have the potential to reduce time spent waiting.
- Increasing average speed of its vehicles. What follows is a list of potential strategies, each with a different level of cost, complexity, and potential to speed service:
 - Removing some stops signs on transit routes
 - Converting stop signs to transit preferential traffic signals
 - Reducing delay at traffic signals
 - Consolidating transit stops to create a more consistent spacing. Applying stop spacing standards (measured in feet) consistently throughout the City can increase service speeds, as well as provide a level of access to transit that is fair citywide.
 - Changing design of routes (for example, reducing the number of turns a vehicle must make)
 - Decreasing boarding times. Muni can decrease boarding times by improving fare payment systems, using more pre-paid fares and/or buying new vehicles that have level boarding and more and/or wider doors. Muni could also add more service to crowded routes because boarding takes longer on crowded vehicles. At present, about 30% of Muni routes have overcrowded conditions (according to Proposition E data).
 - Creating more transit-only lanes
 - Creating more physically separated right of way for transit (as on Judah west of 9th Avenue)
 - Building more subways to grade-separate more Muni service

Reliability

Reliability is the most commonly cited concern by riders in Muni's annual survey, but what this means, and how it should be measured, is a complex matter. This section outlines what transit reliability can mean, what factors are involved in providing reliable service, and some possible steps the TEP may take to improve Muni reliability. Minimizing issues with reliability is crucial for Muni to retain its current customers, attract new customers, and enable both groups to utilize the service for more of their trips.

Reliability means different things to different people; it's often used as a catchall phrase to describe real, but inarticulate, frustrations with Muni service. What it usually *does not* mean for Muni riders is a failure to adhere to schedules. The vast majority of Muni riders does not use schedules; most probably do not even know that Muni has schedules or where they might go to find them. For most Muni riders on most Muni routes, schedules are never consulted – people simply go to a stop and wait for the bus.

For most Muni riders, concerns with reliability are related to three separate but related effects reliability issues have on their experience of using Muni: the amount of time they must wait for transit, its effect on their total trip time, and its dependability. In short, people don't like waiting for the bus, people don't like arriving late to their destination, and people really don't like not being able to count on Muni. These frustrations are reviewed in turn below.

- **Waiting time** – some wait time for transit vehicles is inevitable. But the amount of time that people must budget for waiting for Muni is dependent not just on its scheduled frequency of service, but also its reliability. A bus that is supposed to come every 10 minutes does not always arrive at evenly spaced 10 minute intervals. Unreliable service increases overall travel times because riders must budget time for possible variation in wait times.

For example, the 5-Fulton may be expected to operate every 10 minutes, but if riders do not have a high degree of confidence that it will pass by every 10 minutes because there are occasional gaps in service, they may budget 15 to 20 minutes for waiting time to ensure that they arrive on-time (to work, to an appointment, etc).

No one likes budgeting more time for the activity of

waiting for Muni because waiting itself is particularly unpleasant. Though people have different sensitivities to waiting, as a rule of thumb, each minute someone spends waiting is perceived as two minutes. Wait time, especially unpredictable amounts of wait time, has a high price for transit riders.

- **Total trip time** – once on board, reliability means that travel times are consistent. Transit service can be “unreliable” if it usually takes 18 to 22 minutes to make a particular trip from point A to point B, but sometimes (5 to 10 percent of the time) requires 30 to 35 minutes. Just as for wait time, variable or “unreliable” travel times once on a Muni vehicle mean that riders must budget more time to complete their journey, increasing expected door-to-door travel times. Though unreliable service may not dramatically increase Muni’s average speed, it does increase the amount of time that riders must budget to arrive at their destination on-time.
- **Dependability** – whether or not riders can count on Muni to make important trips. Reliable service allows people to have a very high degree of confidence that a transit vehicle will arrive about when they expect it to, and that there will not be an unexpectedly long gap between service, and that, once on the vehicle, that they will get there generally within the amount of time they expect. Dependability issues can be caused by long wait times, travel times, or a combination of both.

From the customer’s point of view, reliability issues have a price in the amount of time required to use transit. Poor reliability means that customers must allow more time for their trips, and if they’re aiming for a fixed arrival time, the time they’ve had to allow is the real measure of the time Muni has taken out of their lives.

One crucial implication of reliability’s effect on door-to-door trip times is that, just like operating service more frequently, operating reliable service can speed overall door-to-door trip times by reducing the amount of time riders must spend to wait for Muni and the time they expect to spend on vehicles. Reliability improvements that reduce variations in the time people spend waiting and in transit have large potential to increase the net door-to-door speed of using Muni, increasing its competitiveness with other travel modes such as driving.

Minor and major issues

Reliability issues can be grouped by their severity: minor and major issues. Minor issues are relatively small deviations from

the expected bus arrival time (“I expected the bus to come within 8 minutes, but it didn’t come for 12 minutes”). These minor issues increase wait times and total trip times. Major reliability issues are large deviations from expectations (“I expected a bus to come within 12 minutes, but it didn’t come for 40 minutes, or it never came at all”).

Major reliability issues cause riders to doubt the dependability of Muni as a way to make important trips and should be minimized as much as possible. A major failure for an organization like Federal Express may mean delivering a package three days late, or losing it altogether. When riders have a choice and can make the same trip more predictably on another mode, they tend to abandon Muni, especially for important trips. With each major reliability event Muni risks losing or even alienating its customers.

Minor and major reliability issues are not independent phenomena. As explained in a subsequent section of this chapter, major issues cause many minor reliability problems on Muni routes, and minor reliability issues often escalate into major issues that persist throughout the day.

A second implication of reliability issues is their effect on the amount of crowding on vehicles. Unevenly spaced vehicles spread the passenger load unevenly, even though average measured loads may be acceptable. The result is that some transit vehicles have less than the average load, but others will have a higher than average load. During peak times, a higher than average load can mean crush load conditions – standing shoulder to shoulder with other passengers – an undignified condition that degrades the experience of using Muni.

A third implication of reliability issues is the very visible phenomena of bunching. Most reliability issues are, in essence, large variations in the amount of time between transit vehicles. When buses are not reliable, that usually means that some bunching is occurring, when two transit vehicles are right next to one another, causing large gaps in service. Besides making headways variable and increasing wait times, bunching has a negative psychological effect on riders. Anyone who has ridden Muni knows the frustration of waiting 20 minutes for a bus that is supposed to come every 10 minutes, only to see two buses pull to the stop together.

Minor reliability issues

For riders, minor issues are relatively small deviations from when a bus doesn’t come about as soon as someone expects it to. For example, a bus that is expected to come every 5 minutes may not arrive for 8 minutes. These small deviations from expectations can cause riders to start to perceive Muni service as

unreliable. Some minor issues are inevitable and are tolerated by riders, but they are undesirable, should be minimized, and may have a larger impact on choice riders

Providing frequent service and maintaining headways (and thereby avoiding large gaps in service) are critical for providing this type of reliability. For most of Muni’s routes (say, for those with service frequency of at least every 15 minutes), headway adherence is more relevant for riders than its schedule adherence (headway adherence reflects even spacing between buses, while schedule adherence reflects conformity to scheduled time points). Transit service that almost always passes stops evenly spaced (whether every 5, 8, 10, 12, or 15 minutes) is likely to be perceived as reliable, whereas service that is rarely evenly spaced is unlikely to be perceived as reliable by riders.

For those Muni routes that have headways of about 15 minutes or greater (as well as commute oriented express services), schedule adherence becomes more important than headway adherence. Routes with infrequent service can still provide a valuable and reliable service if they are operated on a consistent (and published) schedule. Commuter rail services, such as Caltrain, provide common examples of schedule-driven perceptions of reliability.

Major reliability issues

Issues with reliability are particularly frustrating when riders experience extraordinarily long wait times for a transit vehicles. Some of the biggest reliability issues, such as the “Muni Metro Meltdown” of 1999, become the stuff of urban legends. These are service failures. Although these extraordinary failures happen infrequently, their impact reverberates over time, and word spreads to more people than ever experienced the delay directly.

However, a “meltdown” need not occur for reliability issues to be considered extremely serious. From the rider’s point of view, major issues happen every day on many routes, whenever a rider waits an unexpected and extraordinary amount of time for a transit vehicle (say, for example, waiting twice as long as they expect to wait for a vehicle – perhaps 18 minutes for a bus that is supposed to come by every 10 minutes). Muni does not have a definition for this type of major issue, so Muni’s performance for this type of reliability issue is unknown.

These large deviations from expectations failures are grave because they teach riders that Muni cannot be counted on to make important trips (work or non-work trips – most people consider all of their trips to be quite important!). Riders remember their experiences with major reliability issues, and

they have the power to quickly erode a person’s perception of Muni service quality.

Delivering reliable service

Muni’s reliability is primarily determined by three factors:

- Were the operators and equipment available when service was scheduled?
- Once on the road, did the vehicles break down?
- Once on the road, did the service stay on time?

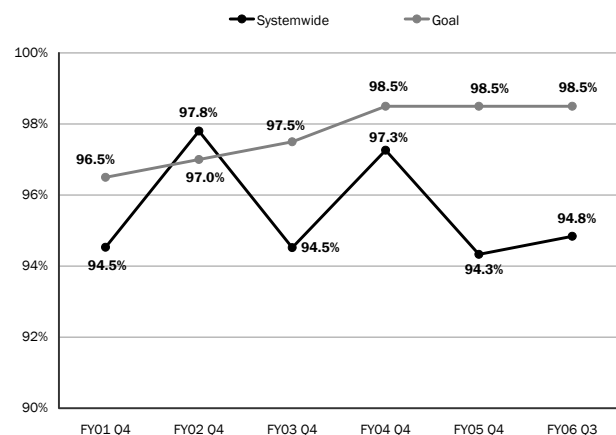
A breakdown in any one of these three areas can result in reliability issues. Each of these factors has a corresponding Proposition E performance measure; Muni’s performance for each is reviewed below.

Were the operators and equipment ready for scheduled service? (Measured by percent of scheduled service that is delivered)

When scheduled service is not ready for service, gaps in service result. On a route that operates every 10 minutes, missing a run means a 20 minute gap is introduced (or two 15 minute gaps), introducing reliability issues. The remaining Muni vehicles on the road become more crowded.

The percent of scheduled service hours that Muni delivers has been about 96% since FY01. In other words, everyday about 4% of Muni’s scheduled service is not delivered.

Figure 6-11 Percent of Scheduled Service Hours that Muni Delivered, 2001–2006



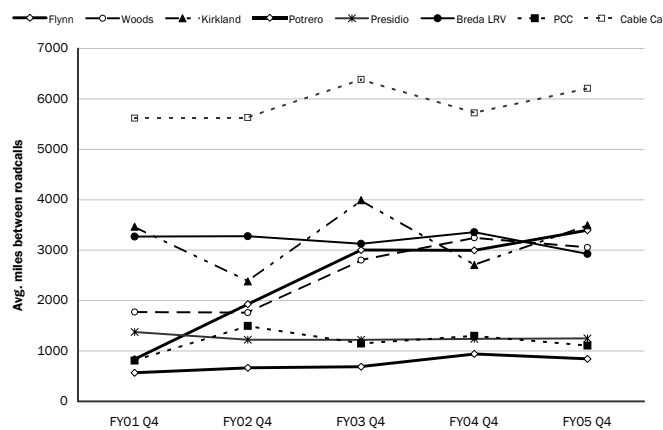
Once on the road, did the vehicles break down?

(Measured by mean distance between vehicle failure)

Whenever there is a road call, a Muni vehicle has stopped and passengers must wait for another transit vehicle, take a cab, or walk to complete the rest of their journey. These inevitably cause major reliability issues.

Some breakdowns are, of course, inevitable, but superior maintenance can reduce their frequency. As shown in Figure 6-12, two Muni maintenance facilities have achieved a net increase since 2001 in mean distance between failures.

Figure 6-12 Miles Between Road Calls (by Mode), 2001–2005



Once on the road, did the service stay on-time?

(Measured by headway and schedule adherence)

As previously discussed, there are two primary ways to measure on-time performance, headway and schedule adherence. Muni measures both for Proposition E, and this data is shown in Figures 6-13 and 6-14.

Muni’s reporting for these performance measures does not group on-time performance for each route by its frequency. Instead, on-time performance for both types of measures is reported in aggregate by mode and as a system.

Muni’s schedule adherence has increased from 65% to 69% since FY01. Over the same time period, its headway adherence has increased from 57% to 66%. This compares to a Proposition E goal of 85% schedule and headway adherence.

Maintaining headways (i.e., staying evenly spaced) between transit vehicles is a challenge for any transit agency. Natural

variations in boarding times, at stop lights, and running times are amplified during each run. Transit operations staff is engaged in a never ending struggle to fight the natural tendency of transit vehicles to get bunched up.

The dynamics of bunching are complicated but simple to explain. The initial cause is a small delay, which can be caused by a double parked vehicle, unexpected congestion, or the natural variation in the number of people trying to board a Muni vehicle at any given stop (because on Muni vehicles it takes longer to board more people). Drivers can sometimes “recover” and maintain headways, but the effects of this initial delay often cascade for the rest of the run.

As an example, consider a 38-Geary bus on a westbound journey from downtown to 48th Avenue. Downtown, the bus gets caught at a stop behind a double parked vehicle. It’s a short delay, but it means that it stops at a traffic signal it normally passes through. Even a small delay means that on average more people will be waiting at all subsequent stops. Though the additional number of people may be small, boarding times increase somewhat. Little by little, the bus gets farther behind the bus in front of it, and the small initial delay can quickly escalate into a large gap. In this case, by the time the bus arrives at Divisadero, instead of having the proper 5 minute spacing between it and the bus in front, there may be a 10 minute gap. Meanwhile, as our sample bus falls behind, its follower is slowly speeding up because it is picking up fewer and fewer passengers; by Divisadero, it may have caught up with our sample bus. As this accelerated bus gets pulled ahead, its follower then must pick up more and more passengers, risking the introduction of more delays and another long gap in service.

For Muni, the task of maintaining headways is made even more difficult because so much of its service operates in mixed traffic. Operating in mixed traffic introduces still more variation in travel times, which makes it even more difficult to maintain headways. Even BART, which operates 100% of its service out of mixed traffic (i.e., in grade separated in tunnels, tubes, or aerial structures), does not operate service perfectly on-time – its schedule adherence is about 93%. Muni has many routes with relatively small headways which increases the probability of bunching.

Figure 6-13 Muni Headway Adherence

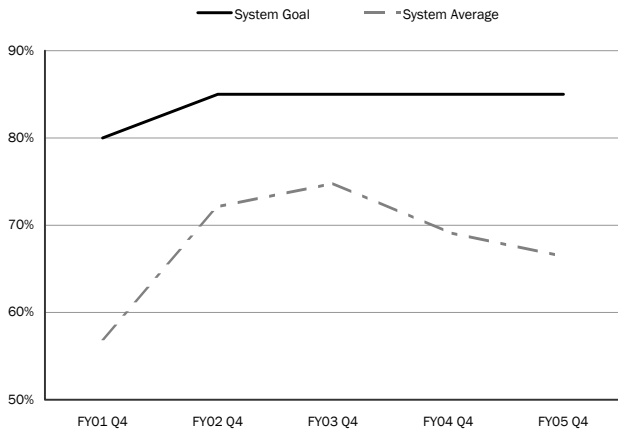
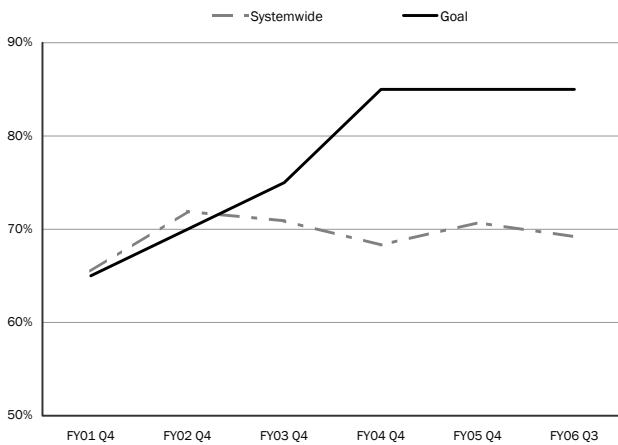


Figure 6-14 Muni Schedule Adherence



Determinants of reliability

The three preceding measures reflect reliability as experienced by riders. However, the determinants of service reliability are found in the nuts and bolts of providing transit service. Some Proposition E measures indicate Muni’s performance for certain determinants of the three primary factors in service reliability. Three primary determinants of service reliability are vehicle management, staff management, and operations. These are reviewed below.

1. **Management of vehicles** – Vehicle management requires buying the right vehicles, maintaining an appropriate spare ratio (that allows for service to be provided while vehicles are maintained and repaired), and maintaining the vehicles. Two Proposition E measures related to vehicle management are miles between road calls (Figure 6-12) and vehicle availability – the percent of vehicles that are ready for scheduled service (Figure 6-15). Vehicle availability indicates the success of fleet managers in having sufficient vehicles ready for scheduled service. Miles between roadcalls is a rough indicator of the effectiveness of Muni maintenance efforts.
2. **Management of staff** – Providing Muni service, especially its operations and maintenance, is an intensely human enterprise that requires the efforts of the vast majority of Muni’s 4,000+ employees. Managing this staff effectively is essential for providing reliable service.

Two relevant Proposition E measures for staff management are operator availability – the percent of operators that were available for scheduled service – and unscheduled operator absences. These two measures do not, of course, provide a complete picture of staff management, but are two crucial factors in service delivery. As shown in Figure 6-15, Muni operator availability, and not vehicle availability, appears to be the primary (but not sole) determinant of providing scheduled service. Figure 6-16 shows Muni’s progress in reducing unscheduled operator absences, absences that disrupt service delivery and increase the amount of overtime paid.

Figure 6-15 Muni Vehicle and Operator Availability

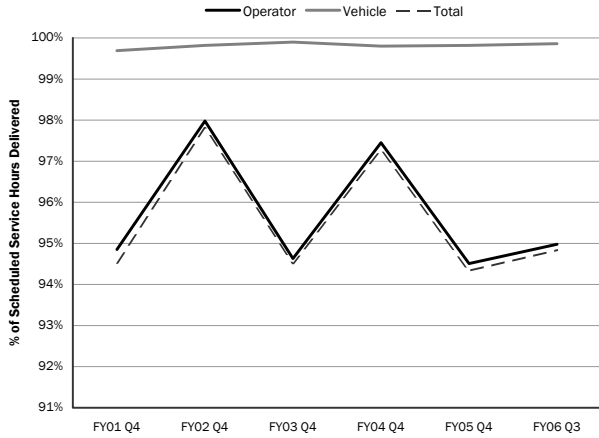
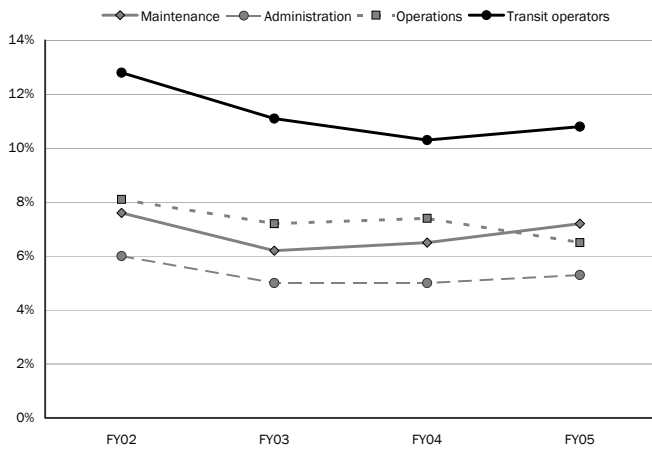


Figure 6-16 Muni Operator Unscheduled Absences

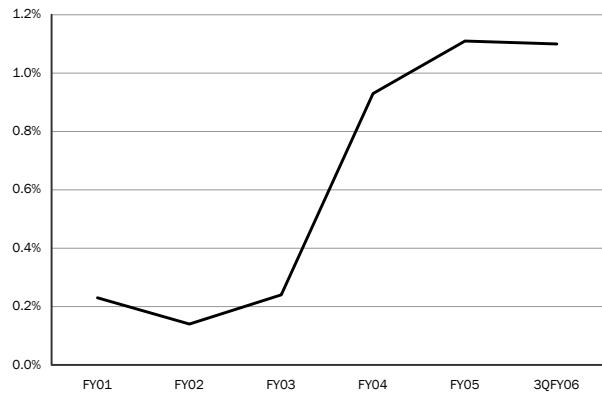


3. **Operations and on-time performance** – Muni, of course, attempts to manage its on-time performance. As discussed, providing on-time reliable performance is a complicated matter, and Muni operations, operators, and line supervisors attempt to keep vehicles on schedule. The result of these efforts is measured by Muni’s schedule and headway adherence.

On-time performance (whether measured by schedule or headway adherence), a key indicator of small scale reliability, is strongly influenced by whether or not an operator leaves the terminal on-time. Under normal operating conditions, variations in operating conditions or simply variation in the number of passengers at each stop causes transit vehicles to gradually get off schedule and bunch. Layover time is provided at the end of each line to help operators “recover” and get back on schedule. If a vehicle leaves the terminal late or early, then the vehicle is much more likely to cause small scale reliability issues for riders. As shown in Figure 6-17, the percent of late pull-outs, the time an operator leaves a terminal to begin a run, has increased since FY01.

It should be stressed that on-time pull outs is just one of the human elements that determine the on-time performance of Muni vehicles. There are many factors, such as street design and operations management, that contribute to helping service stay evenly spaced but are not measured by Proposition E (and perhaps cannot be measured).

Figure 6-17 Muni Late Pull Outs



Improving reliability

Significantly improving reliability will require Muni to take significant steps in its management of staff and vehicles. In addition, Muni may consider more sophisticated ways of managing the reliability of its operations on the street or, at a minimum, devise strategies to improve its operations using its current methods. For example, because so much of Muni's service operates so frequently, evolving to headway-based operations would require more active and sophisticated line management, but could improve reliability as experienced by customers. A comprehensive evaluation of service delivery is one component of the TEP.

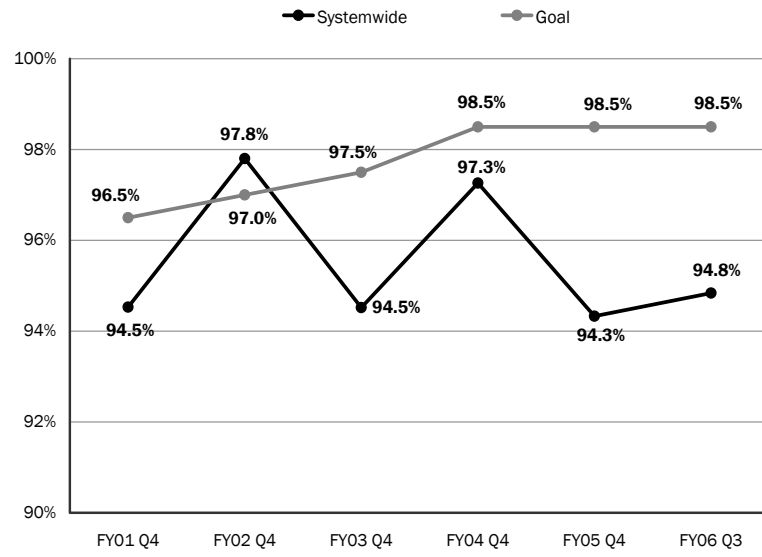
Many of the current core causes of reliability are found before Muni vehicles even hit the street. Crucial factors include driven availability, equipment availability, and late pull outs from bus yards and terminuses.

Apart from organizational improvements for staff, vehicle, and operational management, Muni can also take steps to reduce the variation in Muni's travel times on the road, thus addressing the core cause of Muni's reliability issues once on the road: variability in travel times. Possible strategies to reduce travel time variation on the road are largely the same as those to improve Muni's speed on the road. By removing causes of delay that slow vehicles down, especially causes of unpredictable delays, Muni becomes not just faster, but Muni travel times become more predictable and, thereby, more reliable. The following list explains how some of the possible techniques from the preceding section to improve speed can also improve reliability:

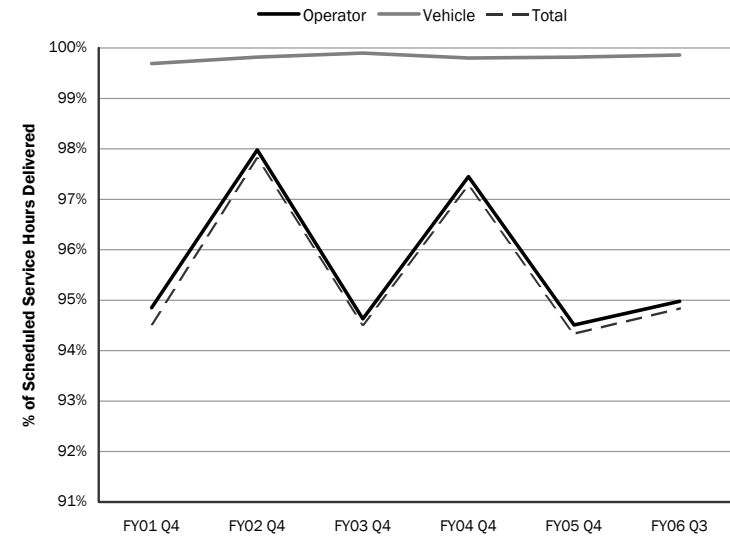
- **Reducing the overall number of stops.** Reducing stops means that vehicles will not only move more quickly, but will move more predictably. Fewer stops increases the likelihood that a vehicle will stop at every stop. Passenger loading times become less variable. With predictability comes reliability.
 - **Decreasing boarding times.** Improved fare payment systems, more prepaid fares, and vehicles that allow for level boarding through more and/or wider doors can decrease boarding times. These techniques also make boarding times less variable. BART is a good example – boarding times are very constant regardless of how many people get on or off. For Muni, this is not true. Muni's boarding times could be less variable if Muni added service to reduce crowding; crowded conditions can cause large variations in boarding times. According to the most recent Proposition E data, about 30% of Muni's routes are overcrowded.
- **Using traffic signal delay to *improve* reliability.** Traffic signal delay is not as variable as other types of delay. Some transit agencies, notably AC Transit (for its San Pablo Rapid Bus route and Los Angeles Rapid Bus service) use intelligent traffic signals to passively (with varying degrees of sophistication) help buses to stay evenly spaced.
- **Creating more physically separated right of way for transit.** Operating in mixed traffic causes some unpredictable delays for Muni. If Muni operated strictly in its own right of way, reliable service would be much easier to provide. This may not be necessary or desirable, but a physically separated right of way can dramatically boost reliability.
- **Changing measures of reliability.** Simply changing a measure of reliability will not improve reliability as experienced by riders. However, the MTA may find that better measures of reliability will help Muni operations to manage reliability more effectively. One possibility is emphasizing headway adherence rather than schedule adherence, especially on routes with high frequencies where schedules are irrelevant. On these routes, headway adherence is what is meaningful to riders. A second possibility is to make a distinction when measuring reliability between minor issues, major issues, and service failures. Muni riders have a higher tolerance for minor issues, but a low tolerance for major issues. Service failures such as the “Muni meltdown” are unacceptable. Muni could manage its operations in a way that aggressively minimizes the incidence of major issues as much as possible and makes service failures extremely rare.

COMPENDIUM OF MUNI PROPOSITION E DATA

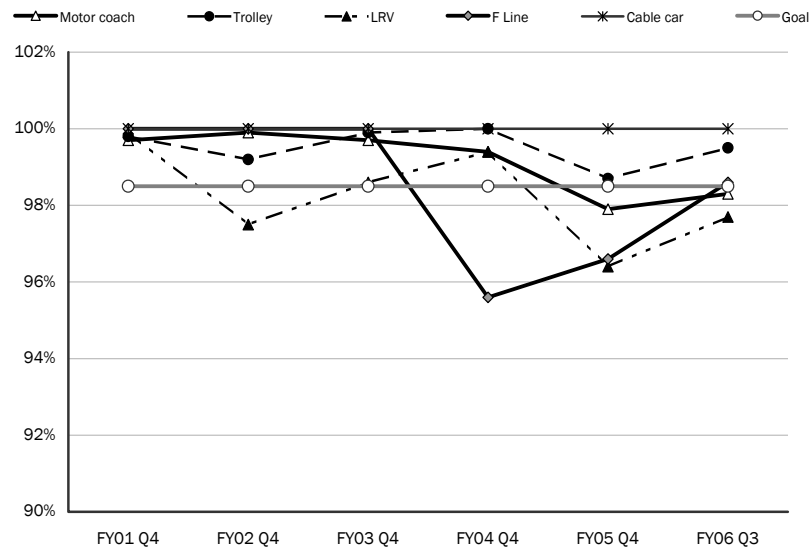
Percent of Scheduled Service Hours that Muni Delivered 2001-2006



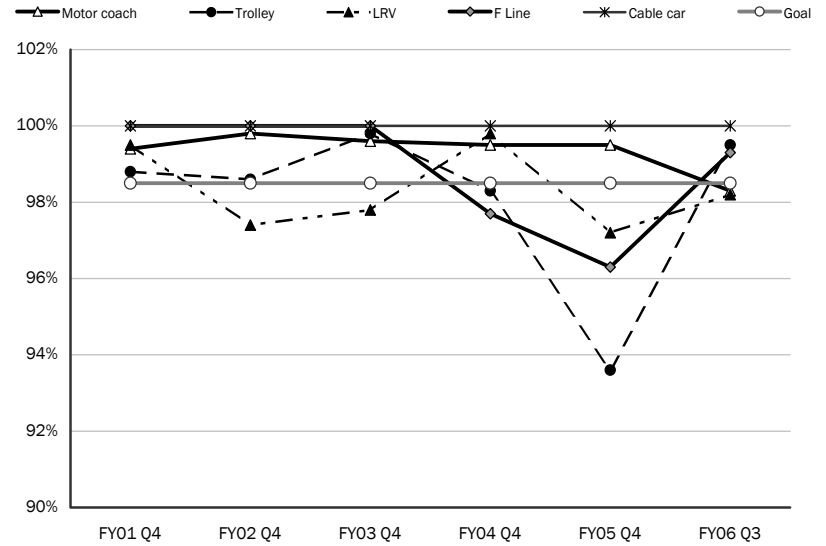
Muni Operator and Vehicle Availability



Percent of Availability, AM

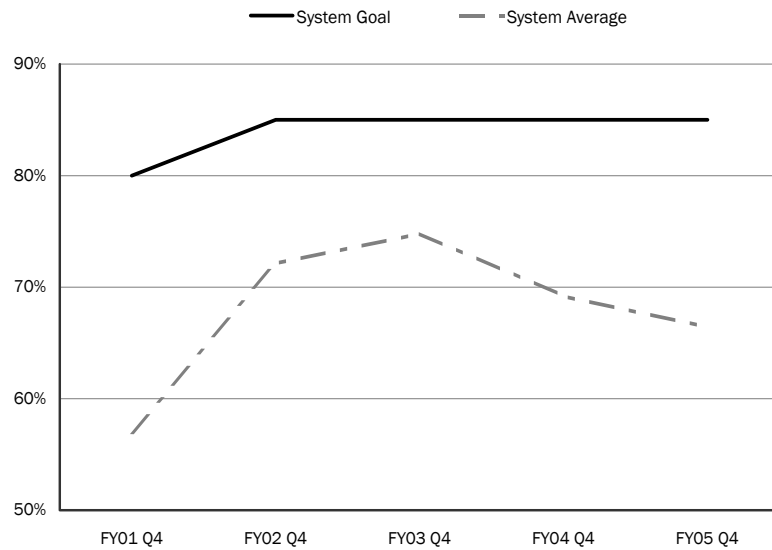


Percent of Availability, PM

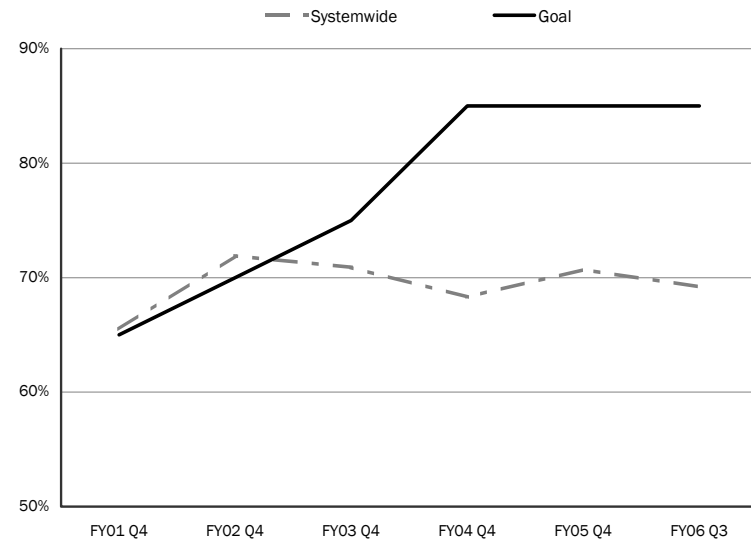


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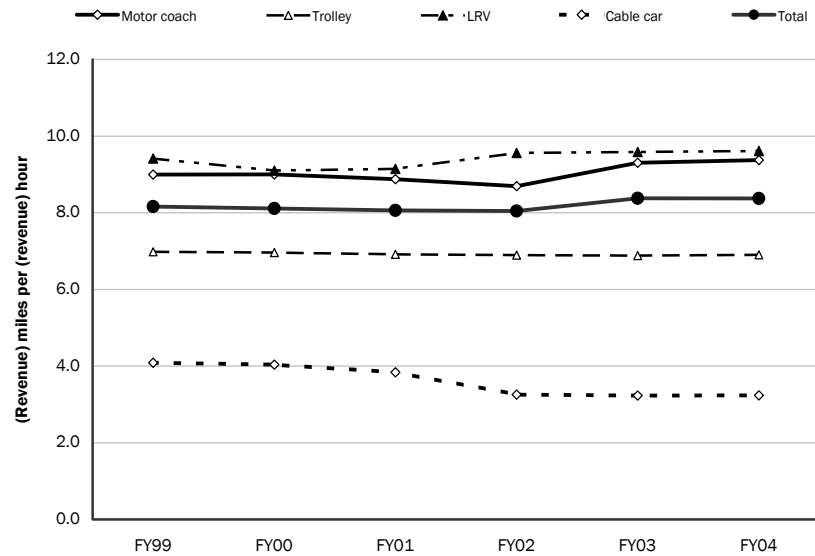
Muni Headway Adherence



Muni Schedule Adherence

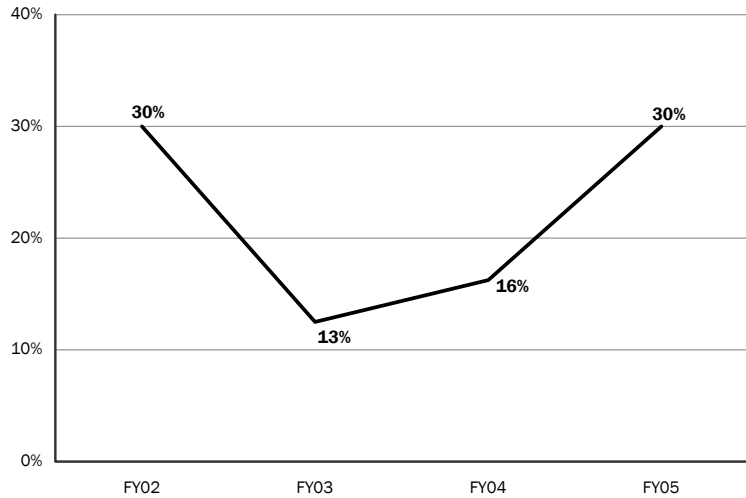


Muni Transit Speeds FY1999-2004

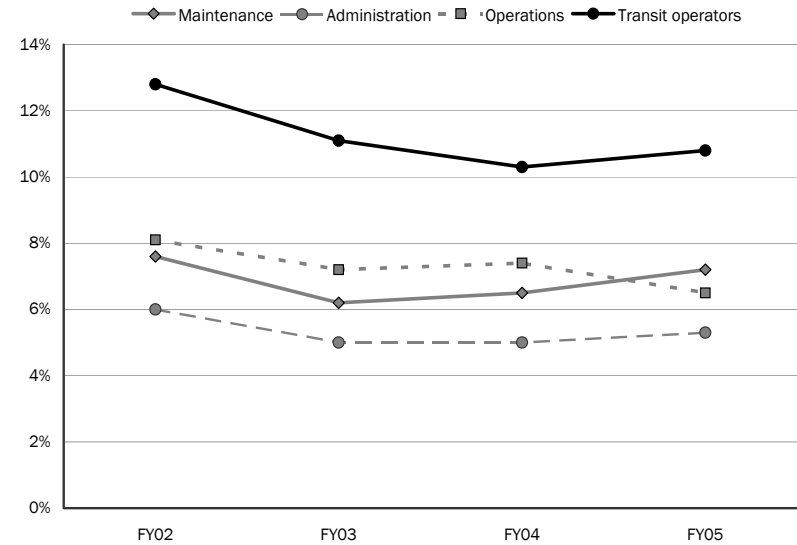


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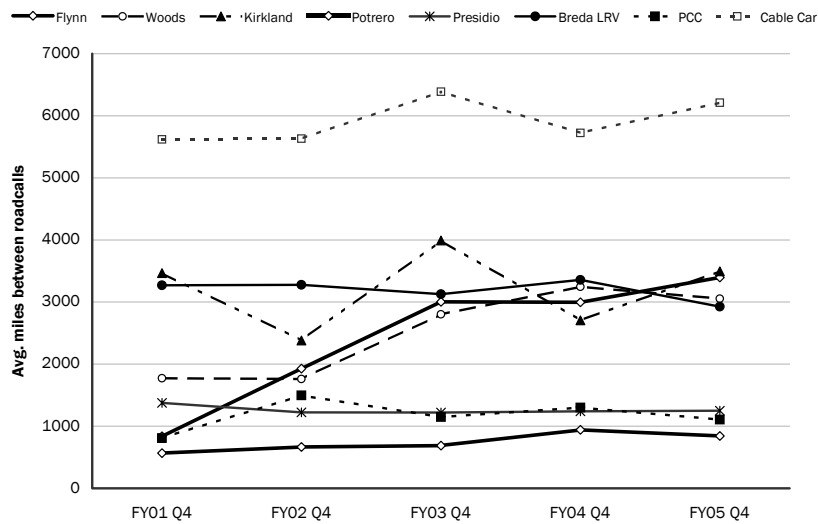
Percent of Lines Exceeding 85% Capacity FY2002–FY2005



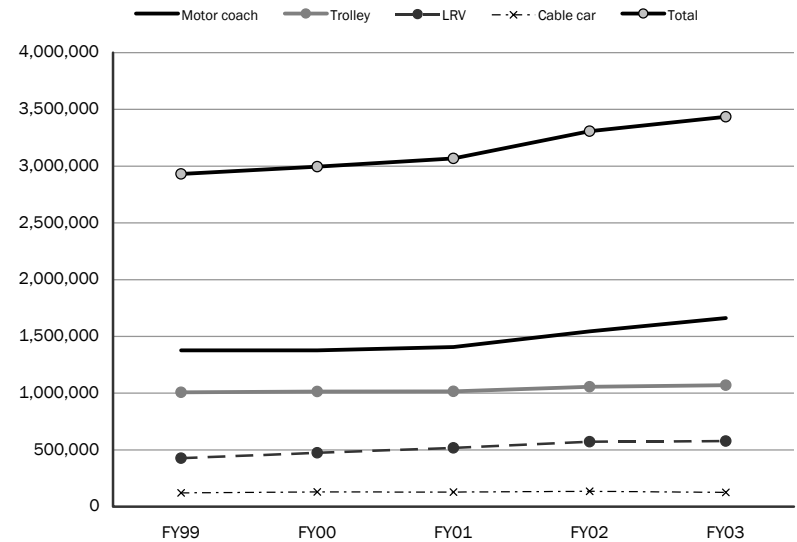
Muni Operator Unscheduled Absences



Miles Between Road Calls (by Mode) 2001–2005

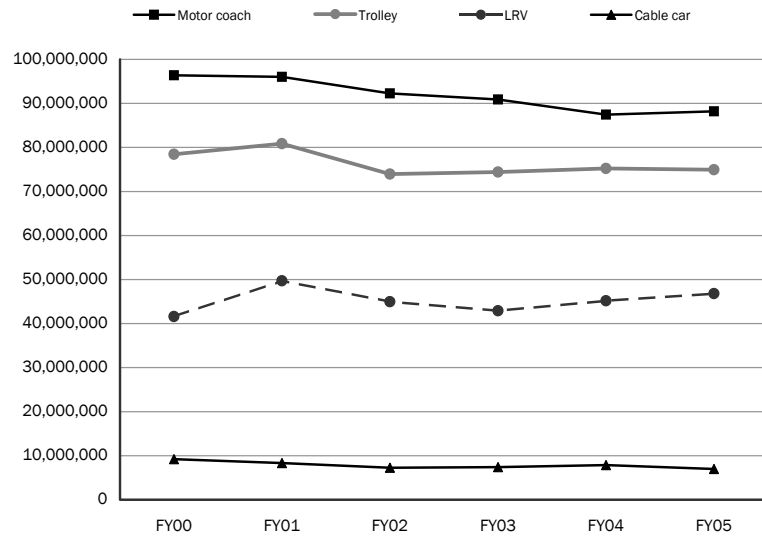


Muni Revenue Hours FY1999–2003

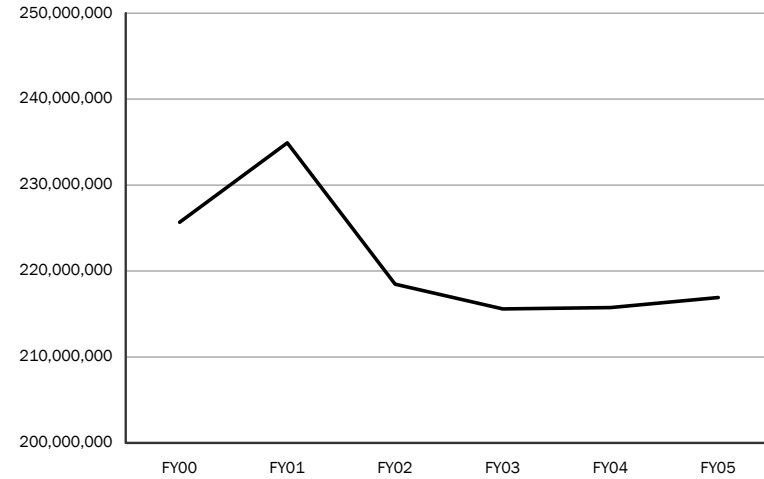


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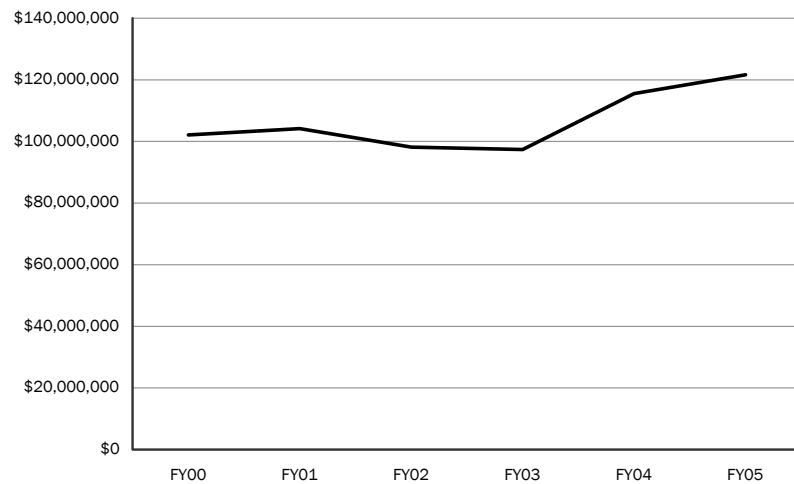
Muni Annual Ridership by Mode FY2000-2005



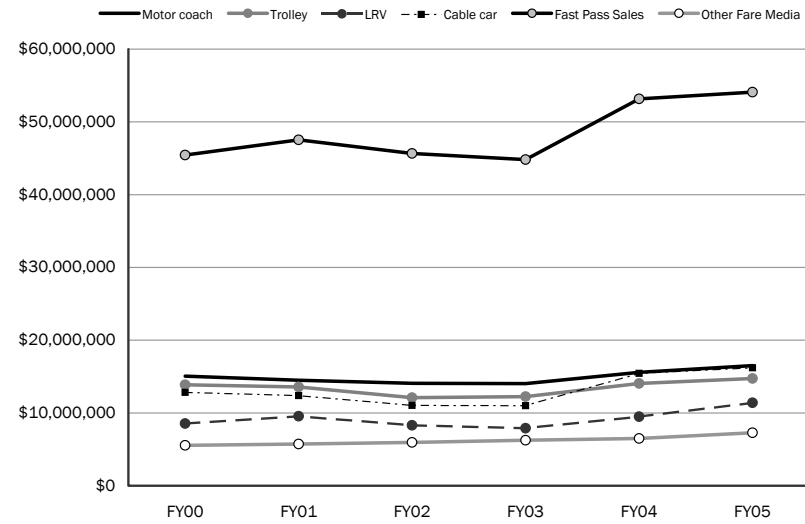
Muni Annual Ridership FY2000-2005



Muni Total Fare Revenues FY2000-2005

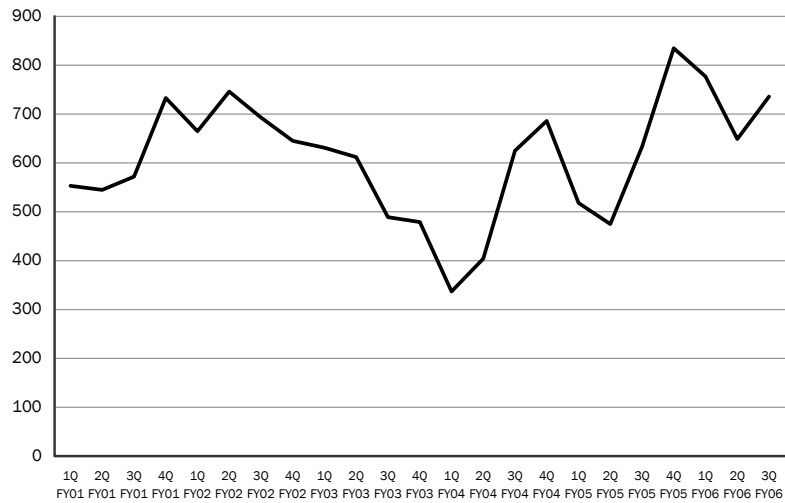


Muni Fare Revenue FY2000-2005

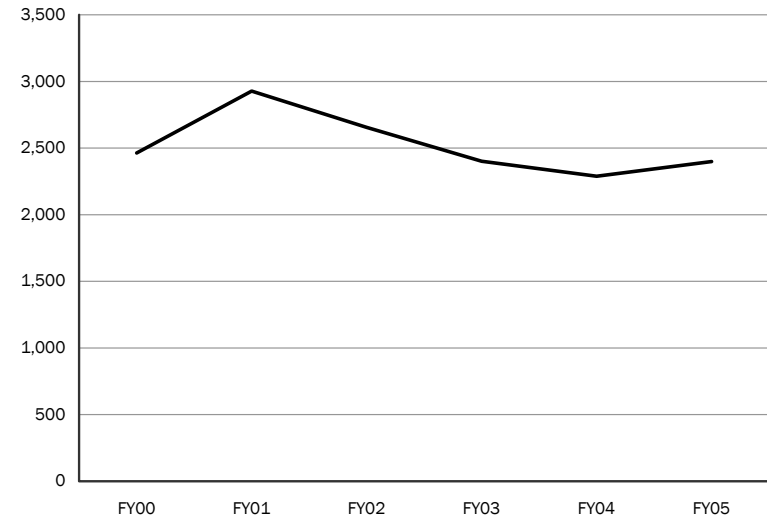


COMPENDIUM OF MUNI PROPOSITION E DATA

Muni Operator Complaints Requiring Follow-Up Q1 FY2001–Q3FY2006



Crime Incidents in Muni Vehicles and Facilities





Appendix A: San Francisco Transit Policies

1. Transit First
2. Proposition E
3. Muni standards: stop spacing, service coverage, service frequency
4. Muni's 2001 Vision Plan
5. City Planning Policies
6. SFCTA Countywide Plan Summary

Appendix A: San Francisco Transit Policies

TRANSIT FIRST POLICY

Source: San Francisco Charter

Article XVI: Miscellaneous Provisions, Sec. 16.102. Transit-First Policy.

The following principles shall constitute the City and County's transit-first policy and shall be incorporated into the General Plan of the City and County. All officers, boards, commissions, and departments shall implement these principles in conducting the City and County's affairs:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.
4. Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.
5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.

6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.
7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.
8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.
9. The ability of the City and County to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.
10. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway.

(Added November 1999)

PROPOSITION E

San Francisco City Charter

Article VIII A: The Municipal Transportation Agency

ARTICLE VIII A:

THE MUNICIPAL TRANSPORTATION AGENCY

Sec. 8A.100. Preamble.

Sec. 8A.101. Municipal Transportation Agency.

Sec. 8A.102. Governance and Duties.

Sec. 8A.103. Service Standards and Accountability.

Sec. 8A.104. Personnel and Merit System.

Sec. 8A.105. Municipal Transportation Fund.

Sec. 8A.106. Budget.

Sec. 8A.107. Municipal Transportation Quality Review.

Sec. 8A.108. Fare Changes and Route Abandonments.

Sec. 8A.109. Additional Sources of Revenue.

Sec. 8A.110. Planning and Zoning.

Sec. 8A.111. Citizens' Advisory Council.

**Sec. 8A.112. Parking and Traffic;
Incorporation Into Agency.**

Sec. 8A.113. Parking and Traffic; Governance.

SEC. 8A.100. PREAMBLE.

(a) The Municipal Railway and the Department of Parking and Traffic are vital to the economic and social fabric of San Francisco. San Francisco's transit system should be comparable to the best urban transit systems in the world's major cities. Specifically, San Francisco residents require:

1. Reliable, safe, timely, frequent, and convenient service to all neighborhoods;
2. A reduction in breakdowns, delays, over-crowding, preventable accidents;
3. Clean and comfortable vehicles and stations, operated by competent, courteous, and well trained employees;
4. Support and accommodation of the special transportation needs of the elderly and the disabled;
5. Protection from crime and inappropriate passenger behavior on the Municipal Railway; and
6. Responsive, efficient, and accountable management.

Through this measure, the voters seek to provide the transportation system with the resources, independence and focus necessary to achieve these goals.

The voters find that one of the impediments to achieving these goals in the past has been that responsibility for transportation has been diffused throughout City government. Accordingly, this Article places within the Municipal Transportation Agency the powers and duties relating to transit now vested in other departments, boards, and commissions of the City and County. This Article further requires that, to the extent other City and County agencies provide services to the Municipal Transportation Agency, those departments must give the highest priority to the delivery of such services.

At the same time, this Article is intended to ensure sufficient oversight of the Municipal Transportation Agency by, among other things, preserving the role of the City's Controller as to financial matters, the City Attorney as to legal matters, and the Civil Service Commission, as to merit system issues. In addition, this Article requires that outside audits be performed to ensure that required service levels are obtained with a minimum of waste.

This Article also requires that the Municipal Transportation Agency develop clear, measured performance goals, and publicize both its goals and its performance under those goals. As the workers of the Municipal Transportation Agency are vital to the improvements the voters seek, this Article authorizes incentives for excellence, and requires accountability-for both managers and employees-when performance falls short.

Finally, this Article is intended to strengthen the Municipal Transportation Agency's authority to: 1) manage its employees; 2) establish efficient and economical work rules and work practices that maximize the Agency's responsiveness to public, needs; and 3) protect the Railway's right to select, train, promote, demote, discipline, layoff and terminate employees, managers, and supervisors based upon the highest standards of customer service, efficiency and competency.

- (b) The Department of Parking and Traffic performs

functions vital to the operation of the Municipal Railway. Congestion on City streets causes delays in transit operations. Therefore, the Municipal Transportation Agency must ensure that transit vehicles move through City streets safely and efficiently.

In addition, the residents of San Francisco require that the Department of Parking and Traffic: 1) value and protect pedestrians and bicyclists; 2) reduce congestion and air pollution through efficient use of the streets; and 3) protect the City's economic health by giving priority to commercial deliveries and access to local businesses.

- (c) This Article shall be interpreted and applied in conformance with the above goals.

(Added November 1999)

SEC. 8A.101. MUNICIPAL TRANSPORTATION AGENCY.

- (a) There shall be a Municipal Transportation Agency. The Agency shall include a Board of Directors and a Director of Transportation. The Agency shall include the Municipal Railway and the Department of Parking and Traffic, as well as any other departments, bureaus or operating divisions hereafter created or placed under the Agency. There shall also be a Citizens Advisory Committee to assist the Agency.
- (b) Effective March 1, 2000, the Agency shall succeed to and assume all powers and responsibilities of the Public Transportation Commission.
- (c) Effective July 1, 2000, the Municipal Railway shall become a department of the Agency and the full provisions of this Article shall be applicable.
- (d) The Department of Parking and Traffic, upon its incorporation into the Agency pursuant to Section 8A.112, shall become a separate department of the Agency.
- (e) The Board of Supervisors shall have the power, by ordinance, to abolish the Taxi Commission created in Section 4.133, and to transfer the powers and duties of that commission to the Agency's Board of Directors.
- (f) Any transfer of functions occurring as a result of the above provisions shall not adversely affect the status, position, compensation, or pension or retirement rights and privileges of any civil service employees who engaged in the performance of a function or duty

transferred to another office, agency, or department pursuant to this measure.

- (g) Except as expressly provided in this Article, the Agency shall comply with all of the restrictions and requirements imposed by the ordinances of the City and County, including ordinances prohibiting discrimination of any kind in employment and contracting, such as Administrative Code Chapters 12B et seq., as amended from time to time. The Agency shall be solely responsible for the administration and enforcement of such requirements.
- (h) The Agency may contract with existing City and County departments to carry out any of its powers and duties. Any such contract shall establish performance standards for the department providing the services to the Agency, including measurable standards for the quality, timeliness, and cost of the services provided. All City and County departments must give the highest priority to the delivery of such services to the Agency.
- (i) The Agency may not exercise any powers and duties of the Controller or the City Attorney and shall contract with the Controller and the City Attorney for the exercise of such powers and duties.

(Added November 1999)

SEC. 8A.102. GOVERNANCE AND DUTIES.

- (a) The Agency shall be governed by a board of seven directors appointed by the Mayor and confirmed after public hearing by the Board of Supervisors. All initial appointments must be made by the Mayor and submitted to the Board of Supervisors for confirmation no later than February 1, 2000. The Board of Supervisors shall act on those initial appointments no later than March, 1, 2000 or those appointments shall be deemed confirmed.

At least four of the directors must be regular riders of the Municipal Railway, and must continue to be regular riders during their terms. The directors must possess significant knowledge of, or professional experience in, one or more of the fields of government, finance, or labor relations. At least two of the directors must possess significant knowledge of, or professional experience in, the field of public transportation. During their terms, all directors shall be required to ride the Municipal Railway on the average once a week.

Directors shall serve four-year terms, provided, however, that two of the initial appointees shall serve for terms ending March 1, 2004, two for terms ending March 1, 2003, two for terms ending March 1, 2002, and one for a term ending March 1, 2001. Initial terms shall be designated by the Mayor. No person may serve more than three terms as a director. A director may be removed only for cause pursuant to Article XV. The directors shall annually elect a chair. The chair shall serve as chair at the pleasure of the directors. Directors shall receive reasonable compensation for attending meetings of the Agency which shall not exceed the average of the two highest compensations paid to the members of any board or commission with authority over a transit system in the nine Bay Area counties.

- (b) The Agency shall:
 1. Have exclusive charge of the construction, management, supervision, maintenance, extension, operation, use, and control of all property, as well as the real, personal, and financial assets of the Municipal Railway; and have exclusive authority over contracting, leasing, and purchasing by the Municipal Railway, provided that any Agency contract for outside services shall be subject to Charter Sections 10.104(12) and 10.104(15). Ownership of any of the real property of the City and County shall not be transferred to any private entity pursuant to any such contract;
 2. Have the sole power and authority to enter into such arrangements and agreements for the joint, coordinated, or common use with any other public entity owning or having jurisdiction over rights-of-way, tracks, structures, subways, tunnels, stations, terminals, depots, maintenance facilities, and transit electrical power facilities;
 3. Have the sole power and authority to make such arrangements as it deems proper to provide for the exchange of transfer privileges, and through-ticketing arrangements, and such arrangements shall not constitute a fare change subject to the requirements of Sections 8A.106 and 8A.108;
 4. Have the authority to arrange with other transit agencies for bulk fare purchases, provided that if passenger fares increase as a result of such purchases, the increase shall be subject to review by the Board of Supervisors pursuant to Sections 8A.106 and 8A.108;

5. Notwithstanding Section 2.109, and except, as provided in Sections 8A.106 and 8A.108, have exclusive authority to fix the fares charged by the Municipal Railway and all other rates, fees, and charges for services provided by the Agency;
 6. Have the authority to conduct investigations into any matter within its jurisdiction through the power of inquiry, including the power to hold public hearings and take testimony, and to take such action as may be necessary to act upon its findings; and
 7. Exercise such other powers and duties as shall be prescribed by ordinance of the Board of Supervisors.
- (c) The Agency's board of directors shall:
1. Appoint a director of transportation, who shall serve at the pleasure of the board. The director shall be employed pursuant to an individual contract. His or her compensation shall be comparable to the compensation of the chief executive officers of the public transportation systems in the United States which the directors, after an independent survey, determine most closely resemble the Agency in size, mission, and complexity. In addition, the Agency shall provide an incentive compensation bonus plan for the director of transportation based upon the Agency's achievement of the milestones adopted pursuant to Section 8A.103.
 2. Appoint an executive secretary who shall be responsible for administering the affairs of the directors and who shall serve at the pleasure of the board.
- (d) The director of transportation shall appoint all subordinate personnel of the Agency, including a deputy director for the Municipal Railway, and, upon its incorporation into the Agency, a deputy director for Parking and Traffic. The deputy directors shall serve at the pleasure of the director of transportation. The director of transportation may serve as the deputy director for the Municipal Railway, but shall not be entitled to any greater compensation or benefits on that basis.
- (e) Upon recommendation of the City attorney and the approval of the board of directors, the City attorney may compromise, settle, or dismiss any litigation,

legal proceedings, claims, demands or grievances which may be pending for or on behalf of, or against the Agency relative to any matter or property solely under the Agency's jurisdiction. Unlitigated claims or demands against the Agency shall be handled as set forth in Charter Section 6.102. Any payment pursuant to the compromise, settlement, or dismissal of such litigation, legal proceedings, claims, demands, or grievances, unless otherwise specified by the Board of Supervisors, shall be made from the Municipal Transportation Fund.

- (f) The Agency's board of directors, and its individual members, shall deal with administrative matters solely through the director of transportation or his or her designees. Any dictation, suggestion, or interference by a director in the administrative affairs of the Agency, other than through the director of transportation or his or her designees, shall constitute official misconduct; provided, however, that nothing herein contained shall restrict the directors' powers of hearing and inquiry as provided in this Section.
- (g) Except to the extent otherwise provided in this Article, the Agency shall be subject to the provisions of this Charter applicable to boards, commissions, and departments of the City and County, including Sections 2.114, 3.105, 4.101, 4.103, 4.104, 4.113, 9.118, 16.100, and A8.346. Sections 4.102, 4.126, and 4.132 shall not be applicable to the Agency.

(Added November 1999)

SEC. 8A.103. SERVICE STANDARDS AND ACCOUNTABILITY.

- (a) The Municipal Railway shall be restored as soon as practicable to a level of service measured in service hours which is not less than that provided under the schedule of service published in the April 1996 timetable, although not necessarily in that configuration.
- (b) No later than July 1, 2000, and by July 1 of each year thereafter, the Agency shall adopt mile-stones for the achievement of the goals specified in subsections (c) and (d). Milestones shall be adopted for each mode of transportation of the Municipal Railway, and for the Municipal Railway as a whole, with the goal of full achievement of the standards set in subsection (c) no later than July 1, 2004.

(c) The standards for the Agency with respect to the services provided by the Municipal Railway shall include the following minimum standards for on-time performance and service delivery:

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.

(d) The standards for both managers and employees of the Agency with respect to the services, provided by the Municipal Railway shall also include other measurable standards for system reliability, system performance, staffing performance, and customer service, including:

1. Passenger, public, and employee safety and security;
2. Coverage of neighborhoods and equitable distribution of service;
3. Level of crowding;
4. Frequency and mitigation of accidents and breakdowns;
5. Improvements in travel time, taking into account adequate recovery and lay-over times for operators;
6. Vehicle cleanliness, including absence of graffiti;
7. Quality and responsiveness of customer service;
8. Employee satisfaction;
9. Effectiveness of the preventive maintenance program; and
10. Frequency and accuracy of communications to the public.

(e) The performance measures adopted in Section 4 of this measure shall be published as rules of the Agency and utilized to determine the achievement of the performance standards and milestones adopted by the Agency for the Municipal Railway. The performance measures shall be subject to amendment after public hearing by a vote of the Agency board. The Agency

shall regularly publish reports on its attainment of those standards and milestones. Nothing herein shall prohibit the Agency from using additional performance measures.

(Added November 1999)

SEC. 8A.104. PERSONNEL AND MERIT SYSTEM.

- (a) The Agency shall establish its own personnel/labor relations office. The director of transportation shall appoint a personnel/labor relations manager, who shall serve at the pleasure of the director of transportation.
- (b) Except as otherwise provided in this Section, the Agency shall be governed by the rules of the civil service system administered by the City and appeals provided in civil service rules shall be heard by the City's Civil Service Commission. Unless otherwise agreed by the Agency and affected employee organizations, appeals to the Civil Service Commission shall include only those matters within the jurisdiction of the Civil Service Commission which establish, implement, and regulate the civil service merit system as listed in Section A8.409-3.
- (c) Effective July 1, 2000, except for the administration of health services, the Agency shall assume all powers and duties vested in the Department of Human Resources and the Director of Human Resources under Articles X and XI of this Charter in connection with job classifications within the Municipal Railway performing "service-critical" functions. Except for the matters set forth in subsection (f), the Department of Human Resources and the Director of Human Resources shall maintain all powers and duties under Articles X and XI as to all other Agency employees.
- (d) On or before April 15, 2000, the Agency shall designate "service-critical" classifications and functions for all existing classifications used by the Municipal Railway; provided, however, that employees in classifications designated as "service-critical" shall continue to be covered by any Citywide collective bargaining agreement covering their classifications until the expiration of that agreement.
- (e) For purposes of this Article, "service-critical" functions are:
 1. Operating a transit vehicle, whether or not in revenue service;

2. Controlling dispatch of, or movement of, or access to, a transit vehicle;
3. Maintaining a transit vehicle or equipment used in transit service, including both preventive maintenance and overhaul of equipment and systems, including system-related infrastructure;
4. Regularly providing information services to the public or handling complaints; and
5. Supervising or managing employees performing functions enumerated above.

The Agency shall consult with affected employee organizations before designating particular job classifications as performing “service-critical” functions. If an employee organization disagrees with the Agency’s designation of a particular job classification as “service-critical” pursuant to the above standards, the organization may, within seven days of the Agency’s decision, request immediate arbitration. The arbitrator shall be chosen pursuant to the procedures for the selection of arbitrators contained in the memorandum of understanding of the affected employee organization. The arbitrator shall determine only whether the Agency’s designation is reasonable based on the above standards. The arbitrator’s decision shall be final and binding.

The Agency may designate functions other than those listed above, and the job classifications performing those additional functions, as “service-critical,” subject to the consultation and arbitration provisions of this Section. In deciding a dispute over such a designation, the arbitrator shall decide whether the job functions of the designated classes relate directly to achievement of the goals and milestones adopted pursuant to Section 8A.103 and are comparable to the above categories in the extent to which they are critical to service.

- (f) In addition, the Agency shall, with respect to all Agency employees, succeed to the powers and duties of the Director of Human Resources under Article X to review and resolve allegations of discrimination, as defined in Article XVII, against employees or job applicants, or allegations of nepotism or other prohibited forms of favoritism; provided, however, that the Agency’s resolution of allegations of discrimination

must be approved by the City’s Director of Human Resources. To the extent resolution of a discrimination complaint or request for accommodation involves matters or employees beyond the Agency’s jurisdiction, the Agency shall coordinate with and be subject to applicable determinations of the Director of Human Resources.

- (g) The Agency shall be responsible for creating and, as appropriate, modifying Municipal Railway bargaining units for classifications designated by the Agency as “service-critical” and shall establish policies and procedures pursuant to Government Code section 3507 and .3507.1 for creation and modification of such bargaining units. When the Agency creates or modifies a bargaining unit, employees in existing classifications placed in such bargaining unit shall continue to be represented by their current employee organizations.
- (h) The Agency may create new classifications of employees doing specialized work for the Agency. Such classifications shall be subject to the civil service provisions of the Charter unless exempt pursuant to Section 10.104 or subsection (i).
- (i) The Agency may create new classifications and positions in those classifications exempt from the civil service system for managerial employees in addition to those exempt positions provided in Section 10.104; provided, however, that the total number of such exempt new positions shall not exceed 1.5 percent of the Agency’s total workforce, exclusive of the exempt positions provided in Section 10.104. This provision shall not be utilized to eliminate personnel holding existing permanent civil service managerial positions on November 2, 1999.

Persons serving in exempt managerial positions shall serve at the pleasure of the director of transportation. Such exempt management employees, to the extent they request placement in a bargaining unit, shall not be placed in the same bargaining units as non-exempt employees of the Agency.
- (j) The Civil Service Commission shall annually review both exempt and non-exempt classifications of the Agency to ensure compliance with the provisions of subsections (h) and (i).
- (k) Upon the expiration of current labor contracts, and except for retirement benefits, the wages, hours,

working conditions, and benefits of the employees in classifications within the Municipal Railway designated by the Agency as “service-critical” shall be fixed by the Agency after meeting and conferring as required by the laws of the State of California and this Charter, including Sections A8.346, A8.404 and A8.409. These agreements shall utilize, and shall not alter or interfere with, the health plans established by the City’s Health Service Board; provided, however, that the Agency may contribute toward defraying the cost of employees’ health premiums. For any job classification that exists both as a “service-critical” classification in the Municipal Railway and elsewhere in City service, the base wage rate negotiated by the Agency for that classification shall not be less than the wage rate set in the Citywide memorandum of understanding for that classification.

- (l) Notwithstanding subsection (k), the Agency may, in its sole discretion, utilize the City’s collective bargaining agreements with any employee organization representing less than 10 percent of the Municipal Railway’s workforce.
- (m) Notwithstanding any limitations on compensation contained in Section A8.404, and in addition to the base pay established in collective bargaining agreements, all agreements negotiated by the Agency relating to compensation for Municipal Railway managers and employees in classifications designated by the Agency as “service-critical” shall provide incentive bonuses based upon the achievement of the service standards in Section 8A.103(c) and other standards and milestones adopted pursuant to Section 8A.103. Such agreements may provide for additional incentives based on other standards established by the Agency, including incentives to improve attendance. The Agency shall also establish a program that provides incentive bonuses for all managers, including all managers exempt from the civil service system, based on the achievement of these standards and milestones.
- (n) For employees whose wages, hours and terms and conditions of employment are set by the Agency pursuant to Sections A8.404 or A8.409 et seq., the Agency shall exercise all powers of the City and County, the Board of Supervisors, the Mayor, and the Director of Human Resources under those sections. For employees covered by

Section A8.409 et seq., the mediation/arbitration board set forth in Section A8.409-4 shall consider the following additional factors when making a determination in any impasse proceeding involving the Agency: the interests and welfare of transit riders, residents, and other members of the public; and the Agency’s ability to meet the costs of the decision of the arbitration board without materially reducing service. The Agency shall perform the functions of the Civil Service Commission with respect to certification of the average of the two highest wage schedules for transit operators in comparable jurisdictions pursuant to Section A8.404(a), and conduct any actuarial study necessary to implement Section A8.404(f).

- (o) The voters find that unscheduled employee absences adversely affect customer service. Accordingly, not later than January 1, 2001, the agency shall create a comprehensive plan for the reduction of unscheduled absences. In addition, the Agency shall take all legally permitted steps to eliminate unexcused absences. The Agency shall have no authority to approve any memorandum of understanding or other binding agreement which restricts the authority of the Agency to administer appropriate discipline for unexcused absences.
- (p) Before adopting any tentative agreement reached as a result of negotiations, mediation or arbitration, the Agency shall, at a duly noticed public meeting, disclose in writing the contents of such tentative agreement, a detailed analysis of the proposed agreement, a comparison of the differences between the agreement reached and the prior agreement, and an analysis of all costs for each year of the term of such agreement. Such tentative agreement between the Agency and employee organization shall not be approved by the Agency until 30 days after the above disclosures have been made.

(Added November 1999)

SEC. 8A.105. MUNICIPAL TRANSPORTATION FUND.

- (a) There is hereby established a fund to provide a predictable, stable, and adequate level of funding for the Agency, which shall be called the Municipal Transportation Fund. The fund shall be maintained separate and apart from all other City and County funds.

Monies therein shall be appropriated, expended, or used by the Agency solely and exclusively for the operation including, without limitation, capital improvements, management, supervision, maintenance, extension, and day-to-day operation of 1) the Agency; 2) the Municipal Railway; 3) upon its incorporation into the Agency, the Department of Parking and Traffic; and 4) any other division of the Agency subsequently created and performing transportation-related functions. Monies in the Fund may not be used for any other purposes than those identified in this Section.

(b) Beginning with the fiscal year 2000-2001 and in each fiscal year thereafter, there is hereby set, aside to the Municipal Transportation Fund the following:

1. An amount (the "Base Amount") which shall be no less than the amount of all appropriations from the General Fund, including all supplemental appropriations, for the fiscal year 1998-1999 or the fiscal year 1999-2000, whichever is higher (the "Base Year"), adjusted as provided in subsection (c), below, for (1) the Municipal Railway; and (2) all other City and County commissions, departments and agencies providing services to the Municipal Railway, including the Department of Human Resources and the Purchasing Department, for the provision of those services. The Base Amount for the Department of Parking and Traffic and the Parking Authority shall be established in the same fashion but using fiscal years 2000-2001 and 2001-2002 for the services being incorporated into the Agency.
2. Subject to the limitations and exclusions in Sections 4.113 and 16.110, the revenues of the Municipal Railway, and, upon their incorporation into the Agency, the revenues of the Department of Parking and Traffic, and the Parking Authority; and
3. All other funds received by the City and County from any source, including state and federal sources, for the support of the Municipal Railway.

(c) The Base Amount shall initially be determined by the Controller. Adjustments to the Base Amount shall be made as follows:

1. The Base Amount shall be adjusted for each year

after fiscal year 2000-2001 by the Controller based on calculations consistent from year to year, by the percentage increase or decrease in aggregate City and County discretionary revenues. In determining aggregate City and County discretionary revenues, the Controller shall only include revenues received by the City which are unrestricted and may be used at the option of the Mayor and the Board of Supervisors for any lawful City purpose. Errors in the Controller's estimate of discretionary revenues for a fiscal year shall be corrected by adjustment in the next year's estimate.

2. An adjustment shall also be made for any increases in General Fund appropriations to the Agency in subsequent years to provide continuing services not provided in the Base Year, but excluding additional appropriations for one-time expenditures such as capital expenditures or litigation judgments and settlements.
3. Further, when new parking revenues increase due to policy changes in fines, taxes or newly-created positions, the Base Amount shall be reduced by 50 percent of such increase to reduce the Agency's reliance on the General Fund.

(d) The Treasurer shall set aside and maintain the amounts required to be set aside by this Section, together with any interest earned thereon, in the Municipal Transportation Fund, and any amounts unspent or uncommitted at the end of any fiscal year shall be carried forward, together with interest thereon, to the next fiscal year for the purposes specified in this Article.

(Added November 1999)

SEC. 8A.106. BUDGET.

The Agency shall be subject to the provisions of Article IX of this Charter except:

- (a) No later than March 1 of each year, after professional review, public hearing and after receiving the recommendations of the Citizens' Advisory Council, the Agency shall submit its proposed budget for the next fiscal year to the Mayor and the Board of Supervisors for their review and consideration. The Agency shall propose a base budget that is balanced without the need for additional funds over the Base Amount, but may include fare increases and decreases, and

reductions or abandonment of service. The Mayor shall submit the base budget to the Board of Supervisors, without change. Should the Agency request additional support over the Base Amount, it shall submit an augmentation request for those funds in the standard budget process and subject to normal budgetary review and amendment.

- (b) At the time the budget is adopted, the Agency shall certify that the budget is adequate in all respects to make substantial progress towards meeting the goals, objectives, and performance standards established pursuant to Section 8A.103 for the fiscal year covered by the budget.
- (c) No later than August 1, the Board of Supervisors may allow the Agency's base budget to take effect without any action on its part or it may reject but not modify the Agency's base budget by a two-thirds' vote. Any fare or service change proposed in the base budget shall be considered accepted unless rejected by a two-thirds' vote on the entire base budget. Should the Board reject the base budget, it shall make additional interim appropriations to the Agency from the Municipal Transportation Fund sufficient to permit the Agency to maintain all operations through the extended interim period until a base budget is adopted. Any request for augmentation funding shall be approved, modified, or rejected under the general provisions of Article IX.

(Added November 1999)

SEC. 8A.107. MUNICIPAL TRANSPORTATION QUALITY REVIEW.

- (a) The Agency shall biennially contract with a nationally recognized management or transportation consulting firm with offices in the City and County for an independent review of the quality of its operations. The contract shall be competitively bid and approved by the Controller and Board of Supervisors. The review shall contain:
 - 1. A detailed analysis of the extent to which the Agency has met the goals, objectives, and performance standards it is required to adopt under Section 8A.103, and the extent to which the Agency is expected to meet those goals, objectives, and performance standards in the two fiscal years for which the review is submitted, and independent

verification of the Agency's reported performance under the performance measures adopted pursuant to Section 4 of this measure; and

- 2. Such recommendations for improvement in the operation of the Agency as the firm conducting the review deems appropriate.
- (b) The results of the review shall be presented promptly to the Citizens' Advisory Council, the Agency, the Board of Supervisors, and the Mayor by the reviewing firm; and the Citizens' Advisory Council, the Agency, and the Board of Supervisors shall each promptly hold at least one public hearing thereon.

(Added November 1999)

SEC. 8A.108. FARE CHANGES AND ROUTE ABANDONMENTS.

- (a) Any proposed change in fares shall be submitted to the Board of Supervisors as part of the Agency's budget under Section 8A.106, and may be rejected at that time by a two-thirds' vote of the Board.

The Agency shall base any proposed change in Municipal Railway fares on the following criteria:

- 1. The Municipal Railway's need for additional funds for operations and capital improvements.
- 2. The extent to which the increase is necessary to meet the goals, objectives, and performance standards previously established by the Agency pursuant to Section 8A.103.
- 3. The extent to which the Agency has diligently sought other sources of funding for the operations and capital improvements of the Municipal Railway.
- 4. The need to keep Municipal Railway fares low to encourage maximum patronage.
- 5. The need to increase fares gradually over time to keep pace with inflation and avoid large fare increases after extended periods without a fare increase.

- (b) For purposes of this Article, a "route abandonment" shall mean the permanent termination of service along a particular line or service corridor. If the Agency proposes to abandon a route at any time other than as part of the budget process as provided in Section 8A.106(a), it shall first submit the proposal

to the Board of Supervisors. The Board of Supervisors may, after a noticed public hearing, reject the proposed route abandonment by a two-thirds' vote of its members taken within 30 days after the proposal is submitted by the Agency.

(Added November 1999)

SEC. 8A.109. ADDITIONAL SOURCES OF REVENUE.

The Mayor, the Board of Supervisors, and the Agency diligently shall seek to develop new sources of funding for the Agency's operations, including sources of funding dedicated to the support of such operations, which can be used to supplement or replace that portion of the Municipal Transportation Fund consisting of appropriations from the General Fund of the City and County. To the extent permitted by State law, the Agency may submit any proposal for increased or reallocated funding to support all or a portion of the operations of the Agency, including, without limitation, a tax or special assessment, directly to the electorate for approval without the further approval of the Mayor or the Board of Supervisors. The Agency shall be authorized to conduct any necessary studies in connection with considering, developing, or proposing such revenue sources.

(Added November 1999)

SEC. 8A.110. PLANNING AND ZONING.

The planning and zoning provisions of this Charter and the Planning Code as they may be amended from time to time shall apply to all real property owned or leased by the Agency.

(Added November 1999)

SEC. 8A.111. CITIZENS' ADVISORY COUNCIL.

The Agency shall establish a Citizens' Advisory Council of fifteen members which shall consist of one person appointed by each member of the Board of Supervisors and four members appointed by the Mayor. Each member must be a resident of the City and County. No fewer than ten members of the Council must be regular riders of the Municipal Railway. At least two members must use the Municipal Railway's paratransit system, and at least three of the members must be senior citizens over the age of 60. The membership of the Council shall be reflective of the diversity and neighborhoods of the City and County. The Council may provide recommendations to the Agency with respect to any matter within the jurisdiction of the Agency and shall be allowed to present reports to the

Agency's board of directors. The members of the Council shall be appointed to four-year terms and shall serve at the pleasure of their appointing power. Staggered terms for the initial appointees to the Council shall be determined by lot.

(Added November 1999)

SEC. 8A.112. PARKING AND TRAFFIC; INCORPORATION INTO AGENCY.

- (a) By July 1, 2001, the Agency and the Department of Parking and Traffic shall prepare and submit to the Mayor and the Board of Supervisors a joint plan for incorporating the Department into the Agency.
- (b) Effective July 1, 2002, the Department of Parking and Traffic shall become a separate department of the Municipal Transportation Agency and Charter Section 4.116, establishing the Parking and Traffic Commission, shall be repealed. Effective that date, the Agency shall have all the same powers and duties with respect to the Department of Parking and Traffic that it has with respect to the Municipal Railway, and shall succeed to all powers and duties of the Parking and Traffic Commission.

Effective July 1, 2002, the Agency's board of directors shall also exercise all remaining powers of the Parking and Traffic Commission for all purposes, including the power of members of the Parking and Traffic Commission to serve ex officio as members of the Parking Authority under Section 32657 of the Streets and Highways Code. The chair of the Agency's board of directors shall designate annually the directors to serve as members of the Parking Authority. Any person may serve concurrently as a member of the Agency's board of directors and as a member of the Parking Authority. It is the policy of the City and County that the Agency exercise all powers vested by State law in the Parking Authority.

- (c) Except as provided in subsection (a), no provision of this Article shall apply to the Department of Parking and Traffic prior to July 1, 2002.

(Added November 1999)

SEC. 8A.113. PARKING AND TRAFFIC; GOVERNANCE.

- (a) The Agency shall manage the functions of the Department of Parking and Traffic so that the department:
 1. Provides priority to transit services in the utili-

zation of streets, particularly during commute hours;

2. Facilitates 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. Proposes and implements street and traffic changes that gives the highest priority to impacts on public transit, pedestrians, commercial delivery vehicles, and bicycles;
 4. Integrates modern information and traffic-calming techniques to promote safer streets and promote usage of public transit; and
 5. Develops a safe, interconnected bicycle circulation network.
- (b) The Agency shall manage the Parking Authority so that it does not construct new or expanded parking facilities unless the Agency finds that the costs resulting from such construction and the operation of such facilities will not reduce the level of funding to the Municipal Railway from parking and garage revenues under Section 16.110 to an amount less than that provided for fiscal year 1999-2000.

(Added November 1999)

MUNI SERVICE STANDARDS

Source: San Francisco Municipal Railway Short Range Transit Plan 2006-2025, Chapter 4, pg 26-27

Stop Spacing Standards

- Passenger stop spacing should be approximately 800-1,000 feet on motor coach and trolley coach lines except where there are steep grades, and 1,000-1,200 feet between stops on LRV surface lines.
- On streets with grades of over 10%, stops should be spaced 500-600 feet apart. On streets with grades of over 15%, such as on Castro between 22nd Street and 24th Street, stops may be spaced as close as 300-400 feet.
- Stops should be on the nearside of an intersection at stop signs; where right turns are heavy from the cross street on to the transit street; or where the green time for the transit street is less than half of the cycle.
- Stops should be on the far side of an intersection at uncontrolled intersections; where the bus makes a turn; where right turns are heavy from the transit street on to the cross street; or where the green time for the transit street is more than half of the cycle.
- Stops should be mid-block if there is a major traffic generator mid-block, or if pedestrian flows naturally converge at a mid-block location.

Coverage Standards

- Lines should be spaced approximately one-half mile apart throughout the City, except where constrained by geography or the street grid.
- All residential locations in San Francisco should be within approximately one-quarter mile of a Muni route that operates at least 19 hours per day.

Frequency Policies

- Muni's policy headways, or the maximum amount of time allowed between vehicle arrivals, should be 10 minutes at the peak for radial and express lines, 15 minutes for crosstown lines, and 20 minutes for feeder lines. Figure A-1 presents Muni's policy headways. These headway frequencies are minimums, and more frequent service may be operated than provided by these standards. Many of Muni's lines exceed the standards.

- Consider reducing service without exceeding policy headways on lines that continuously have diminished ridership.

Figure A-1 Muni’s Policy Headways

Weekday	Peak	Base	Evening	Owl
Radial	10	15	20	30
Express	10	--	--	--
Crosstown	15	15	20	30
Feeder	20	30	30	--
Weekend	Peak	Base	Evening	Owl
Radial	--	15	20	30
Crosstown	--	20	20	30
Feeder	--	30	30	--

Figure A-2 Muni’s Planning Load Factors

Vehicle	Maximum load for planning purposes
30’ coach	45
40’ coach	63
60’ coach	94
LRV	119
PCC (historic streetcar)	70

Other Service Policies

- Construct appropriate transit rights-of-way in major corridors to reduce transit travel time and increase capacity.
- Expand transit priority measures, such as bus bulbs, bus-only lanes and signal priority, on the Transit Preferential Streets network, or elsewhere as needed.
- Provide convenient transfer opportunities with regional transit operators.
- Develop inter-operator fare instruments to facilitate regional travel.
- Increased capacity should be provided at equal or lower cost by substituting articulated vehicles where loads and frequencies warrant.
- Service should be designed such that peak period loads do not exceed the maximum load for planning purposes as shown in Figure A-2, when averaged over the two-hour peak. Note that cable cars are equivalent to a 40’ vehicle.



1.02

Muni's Vision for Rapid Transit in San Francisco

Muni's proposed 12 major corridors (see page five.)



Muni is getting better; there is no question—every indicator is “up” after years of decline. And while we are gratified to see the enormous progress, we realize that the system is due for a major upgrade. If Muni is really going to excel, we must get the buses and streetcars out of traffic.

For the first time in many years, Muni has developed a long-range transit expansion proposal. SPUR is honored to present the outline of this proposal here. This article was written by the Capital Planning & Grants Group at Muni, and edited by SPUR. It is an excerpt from the forthcoming document, “A Vision for Rapid Transit in San Francisco,” which will be available in January 2002. To receive a copy of the document, call Muni Capital Planning & Grants at (415) 934-3954, or email suany_chough@ci.sf.ca.us.

SPUR is committed to working to build the public support necessary to follow through on the promise of a transit-first city. We hope this document can serve as a kind of contract with the public: we provide Muni with the funding it needs, and in exchange, we get one of the best transit systems in the world. Only in this way can San Francisco remain an economically vital and environmentally sustainable community.

continued on page 3

More Visionary Transit Ideas!

New Transbay Terminal.....	12
Ode to Sidewalks	14
E-Line to Fort Mason	15
Youth-Friendly Transit	16

THE VISION

The San Francisco Municipal Railway (Muni) has been serving the city for 90 years and today provides over 750,000 trips each weekday. While Muni strives to be efficient and comprehensive, there is a lot of room for improvement. Riders still experience overcrowding, erratic reliability, and long travel times, due in part to the fact that transit competes with automobile traffic for space on the streets. Problems with transit cause more people to choose to drive—a choice that increases congestion, takes up land for parking, pollutes the environment, and more importantly, directs more and more of the city’s resources, land and energies to private, single occupant-automobiles at the expense of public transit.

This has spurred Muni to envision what a truly first-class transit system for San Francisco might look like. It would be one that moves riders quickly and efficiently throughout the city with a minimum of waiting. It would be a high capacity, easily accessible, rapid transit-style service. It would enable riders to transfer easily between Muni lines as well as to BART, Caltrain, ferries, and other regional transit services. Muni’s aim is to make improvements across a network of corridors providing broad city-wide coverage. The vision includes 12 major corridors, with a minimum level of service, generally described as

- frequent (less than ten minutes wait during peak hours)
- fast (from any part of the city to downtown in no more than one half-hour)
- comfortable (clean, comfortable, and well-maintained vehicles).

Muni, with input from stakeholders, developed a set of guiding principles, generated a “toolbox” of solutions, and identified the major corridors for improvement. This article applies those principles and tools to the corridors, and suggests a list of projects that could become a rapid transit network for San Francisco.

Potential Muni Revenue Sources

How Would We Pay for a Transit Expansion? Investing in our transit infrastructure is one of the smartest things the city can spend money on, but any way you look at it, it’s expensive. There are many potential sources for funding, with wide variation in political realism, magnitude of revenue, and impacts on the economy. Here’s a partial list.

Source	Description	Estimated Revenue Generated (in 2001 dollars)
Sales Tax Extension	Half percent sales tax for transportation	\$65 million annually
Additional Sales Tax	Additional half percent sales tax for transportation	\$65 million annually for transportation
Increased Parking Tax	Increase current 25% parking tax to 35% and maintain existing shares (14% to General Fund, 14% to Muni, 7% to Sr. Citizens Fund)	\$25 million annually to Muni
Increased Parking Fines	Increase current parking fines by 20% and maintain share dedicated to Muni	\$13 million annually to Muni
Enhanced Transit Impact Development Fee	Expand the current TIDF to include all non-residential boundaries development and expand the TIDF	Additional \$75 - \$120 million over the next twenty years
Parcel Tax	Flat tax on each parcel of real property.	\$17.5 million annually
City General Obligation Bonds	Bonds supported by property tax revenues authorized by 2/3 vote of the electorate	varies
Joint Development	Long-term ground or air rights leases on or over public property or facilities	varies
Congestion Pricing/Tolls	Adjust bridge tolls to demand based on time of day; use to subsidize transit	varies
Increase Regional Bridge Tolls	Increase base bridge toll for automobiles by \$1 on state owned Bay Area bridges	\$22 million annually to West Bay transit operators
Regional Gas Tax	Impose a regional 10 cent per gallon gas tax	\$440 million to San Francisco over 20 years

These in turn will be further developed and prioritized as part of Muni’s Capital Improvement Program and the Short Range Transit Plan, as well as through the San Francisco County Transportation Authority’s (SFCTA) Countywide Transportation Plan.

PRINCIPLES

- **Integrate local and regional transit into a seamless transit network.** A seamless transit network minimizes transfer wait times and coordinates scheduling with regional transit providers. As jobs become

continued on page 4

more dispersed around the region, more San Franciscans will work outside the city and require connections to regional transit such as BART and Caltrain.

- **Physically separate transit service from automobile traffic on major corridors by creating exclusive rights-of-way (ROW).** Traffic congestion is a major source of delay for Muni, resulting in increased travel time and decreased reliability. Transit-only diamond lanes are often blocked by automobiles, and are not effective without constant enforcement. A physically separated right-of-way is more effective at allowing transit to stay on schedule. This means street space must be dedicated to transit use, and not shared with automobiles.
- **Provide high-capacity, rapid transit-style service in major corridors.** There are a number of major corridors in San Francisco that have high volumes of riders and that suffer from chronic capacity and reliability problems. This justifies a greater investment in these corridors to establish high capacity rapid transit. This could be rail or rubber-tired transit in an exclusive right-of-way, surface or subway, with faster boarding and wider station spacing.
- **Upgrade transit service in increments as ridership builds and as funding becomes available.** Because funding is limited and proposed projects cannot all be built at once, it is important to take incremental steps so that multiple corridors can be improved simultaneously. For example, building exclusive right-of-way for Bus Rapid Transit (BRT, described below) can be done as a first step, with light rail replacing BRT as more funds become available.

TOOLBOX

This toolbox describes potential incremental steps for transit improvements.

A Few Reason We Need Transit Expansion

- Approximately 799,000 people live in San Francisco today, making it one of the densest cities in the United States. San Francisco’s daytime population, including workers and visitors, is estimated at 1.1 million people. The city has the lowest rate of car ownership in the Bay Area (0.54 per capita, compared with 0.75 in the region) and the lowest rate of vehicle miles traveled (9.8 miles traveled per person, compared with 18.8 region wide) (MTC). Thirty-one percent of San Francisco residents commute by transit, as opposed to 10% in the nine Bay Area counties (RIDES for Bay Area Commuters Commute Survey, 2001).
- Many large projects are planned or under construction in the city: Mission Bay, a new Federal Office Building, developments on Piers 27-31, Piers 30-32 and Pier 70, a new Transbay Terminal, and Hunters Point Naval Shipyard.
- San Francisco is projected to gain 102,800 jobs, for a total of about 731,000, by 2020. Jobs will be evenly distributed around the region—the Santa Clara cities together will have 1.3 million jobs and cities like Dublin, Fremont and Antioch are expected to see 50% growth rates in employment. This will have a big impact on regional corridors, many of which are already at or near capacity.
- Congestion on freeways and arterials will increase significantly over the next 25 years: while 5% of roadway facilities were beyond capacity in 1998, 15% are expected to be so in 2025.
- Muni serves many intercounty trips today. 10% of BART’s morning riders are San Franciscans who take Muni to get to BART (*BART Station Profile Study*, 1998). Approximately 70% of Caltrain riders use Muni to reach their final destination from the Fourth and Townsend Caltrain terminal. These numbers will increase over time.

All corridors discussed here need basic improvements, such as Transit Preferential Street treatments described below, but some conditions justify a more robust, higher capacity mode. Costs are expressed as general, per-mile estimates and do not include companion projects such as new storage and maintenance facilities, new vehicles, and ongoing operating and maintenance costs.

Transit Preferential Street (TPS) Treatments

The TPS tool consists of a variety of low-to-medium cost treatments that speed transit vehicle flow. These can also be implemented individually but are more effective taken together.

- Signal Timing for Transit Vehicle Flow
- Signal Priority Systems
- Bus Bulbs (sidewalk extensions at bus stops)
- Boarding Islands
- Transit Lanes
- Exclusive Transit Right-of-Way

- **Transit Stop Respacing and Relocation**

Cost per mile: \$200,000

Conversion to Trolley Coach/ Trolley Coach Extension

Electric trolley coaches are rubber-tired coaches that are powered electrically from fixed overhead wires. Trolley coaches now generally operate in regular traffic, but can operate in an exclusive ROW with signal priority, or in a subway. Trolley coaches produce zero emissions and are particularly effective on steep grades. Currently, 34% of Muni’s revenue hours are operated by trolley coach. Conversion of more lines to trolley coach operation is desirable because they are quiet, clean vehicles that enhance the quality of life in an urban setting.

Cost per mile: \$6.6 Million

Bus Rapid Transit (BRT)

BRT is rubber-tired vehicle operation configured to offer speeds and capacity

similar to rail transit, with exclusive travel lanes, limited stops, and signal pre-emption. Other characteristics include the use of low-floor transit vehicles, a prepaid fare system that expedites boarding, and stations that provide shelter and passenger information. Because BRT vehicles are separated from other vehicles and stop less frequently, travel time decreases. BRT is appropriate in corridors with high ridership where there is sufficient ROW to provide dedicated lanes. BRT does not require as much capital infrastructure as surface light rail transit (LRT), and may serve as the first phase of implementing light rail transit.

Cost per mile: \$28 Million

Surface Light Rail Transit (LRT)

LRT on surface streets operates most efficiently in exclusive rights-of-way, where traffic is prohibited (possibly by a physical barrier) from traveling in the same lane as the transit vehicle but is allowed to cross at intersections. LRT ideally operates with signal preempts, allowing vehicles to travel relatively unimpeded from station to station. Exclusive rights-of-way may be located along the curb or down the center of the street. The majority of Muni's LRT system runs on the surface, some of it in exclusive ROW, such as the N-Judah on the Embarcadero and parts of Judah Street.

Cost per mile: \$59 Million

Subway Light Rail Transit (LRT)

In addition to running on the surface, light rail can operate in subways in congested areas. LRT operation is most efficient in an exclusive right-of-way with no conflicts with other vehicles and pedestrians, where speed is maximized and train control can be automated. This is only possible in a grade-separated right-of-way, such as a subway. Muni currently operates five light rail lines with one- or two-car trains, but capacity can be increased to some extent at marginal cost by adding more cars to each train. LRT subways may also accommodate electric trolley as well as light rail. The cost of build-

ing a subway is justified where there is a high density of population, destinations, and traffic, such as downtown.

Cost per mile: \$366 Million

Other Tools

This document focuses on physical infrastructure investments, but there are other tools that would help reduce travel time and provide a higher level of service to riders.

- Proof of Payment
- Express, limited, or skip-stop service
- Low-floor vehicles
- Real-time passenger information systems.

THE CORRIDORS (as shown on the map on page one)

Third Street-Chinatown

This is the first of the Four Corridors (identified in the SFCTA's 1995 plan) to be built. Construction began in 2001, and the first trains will be in revenue service in late 2004. The project will replace much of the current 15-Third motor coach route with surface LRT, operating in exclusive right-of-way except in the Bayview commercial core. Initially, Third Street trains will operate on the Muni Metro Extension on the Embarcadero north of the Caltrain Terminal, and into the Market Street subway. The Third Street LRT project will vastly improve the street with landscaping, lighting, and other urban design treatments.

Phase 2 (Central Subway) is the next major investment for Muni. This phase of the project is partially funded and is scheduled to open in 2009. The Central Subway will take Third Street trains from Fourth and King into a subway through SOMA, under Market Street, to Union Square and Chinatown, serving many destinations and connecting to BART. The cost of the Third Street Light Rail and Central Subway, with a projected daily ridership of over 92,000, is \$1.3 billion.

Geary

The four Geary bus routes together carry 50,000 riders on an average

weekday and taken together, Richmond District ridership accounts for 112,000 rides, nearly 16% of Muni's weekday ridership. Even with buses running every two minutes on Geary, in peak times, capacity is still insufficient.

Geary has priority after the Central Subway. Geary would be surface light rail line in its own ROW from the ocean to Laguna, where there is enough width on the street for an exclusive transit ROW. The LRT would then go into a subway and terminate in the Financial District or at the Transbay Terminal. This new line would also require a new LRT maintenance and storage facility or a major expansion of Metro East (a new facility to be built on part of the Third Street project).

This line would increase reliability by ensuring that auto traffic would not impede transit vehicles, particularly in the most congested downtown portion of the corridor. Capacity would increase and travel time would decrease. Perhaps most importantly, the quality of service for riders would improve.

Subway/Surface LRT from Pacific Ocean to Transbay Terminal: \$1.7 Billion

An intermediate phase for Geary would be BRT in a physically separated ROW, with major TPS improvements east of Van Ness. This would include timed signals and proof-of-payment.

BRT from Pacific Ocean to Van Ness and TPS to Transbay Terminal: \$346 Million

Van Ness-Mission

Van Ness is one of the Four Corridors in the adopted SFCTA plan, and Muni's vision is to have surface LRT in exclusive ROW on Van Ness. There are questions of how this line would fit into the existing route network and how it would connect with other lines and maintenance facilities. If the LRT line were extended into the Mission, the project would have to resolve right-of-way issues along Mission

continued on page 6

“Muni’s Vision” from page 5

Street, which is not as wide as Van Ness.

Surface LRT from North Point to Daly City BART: \$906 million

A rapid bus transitway is in the planning stages for Van Ness Avenue between approximately 12th Street and Lombard Street, and could serve as a BRT precursor to LRT. The transitway could occupy the center of Van Ness Avenue and would separate buses from other traffic using raised medians, landscaping, and boarding platforms. This option would require major TPS improvements along Mission Street.

BRT on Van Ness and TPS on Mission: \$435 Million

As a first step, the 47-Van Ness bus should be electrified by extending the overhead wires at both ends of the route, allowing all-electric operation on Van Ness. In addition, the 14-Mission bus should be extended to serve Daly City BART.

Electrification of 47-Van Ness: \$25 Million

Market Street

Market Street is extremely transit-rich—Muni Metro and BART run below grade, and the F-Market streetcar line and numerous bus lines operate on the surface. Congestion on Market results in reliability issues, particularly east of 5th Street. Many pedestrians, bicyclists, delivery vehicles, taxis, and private transit vehicles also compete for space on the street. These delays reverberate throughout the system.

Reducing delays to transit caused by autos can be done by diverting auto trips to other streets, and restoring

transit-based signal timing. Capacity increases can be achieved by enhancing rail service in the subway or by adjusting bus routes.

BRT from Castro to the Embarcadero: \$95 Million

TPS treatments from Castro to the Embarcadero: \$670,000

Chinatown-North Beach-Marina

North Beach and Chinatown are among the city’s densest neighborhoods, with an average of 90 dwelling units per acre. Muni envisions extending the Central Subway further north from the planned terminal at Stockton/Clay in Chinatown, through North Beach and Fisherman’s Wharf. It could come to the surface and extend into the Marina on a surface alignment via Lombard or Chestnut, with a terminal at the Presidio. The subway could be built to accommodate trolley coaches as well as light rail.

Subway/surface LRT from Stockton/Clay to the Presidio: \$554 Million

As a first step, this alignment needs the highest level of TPS treatments, including physically separated ROW for the route numbers 30 and 45 along their entire lengths, signal priority systems, and bus bulbs or boarding islands to speed boarding.

TPS treatments from Stockton/Market to the Presidio: \$113 Million

Fillmore-16th Street

Fillmore-16th Street, currently served by the 22-Fillmore, is a major crosstown route, carrying almost 25,000 riders each weekday. Ultimately, this could be a surface light rail corridor with connections to the N, J, Market Street, and Third Street lines. There would be an issue with street width, since Fillmore has only one lane in each

direction.

Surface LRT from Marina Green to Third Street: \$643 Million

In the near term, a BRT-type service could be developed on 16th Street, where there is sufficient street width to accommodate an exclusive lane for buses, along with significant TPS improvements on Fillmore, including signal priority, bus bulbs, and prohibition of left turns at key intersections.

TPS on Fillmore and BRT on 16th Street, including electrification on 16th Street: \$88 Million

Geneva-Ocean

In the long run, this corridor would be best served by surface light rail in exclusive ROW. The K-line would continue to operate on Ocean and an extension of the Third Street LRT would operate on Geneva with a terminal at Balboa Park BART or Phelan Loop.

Surface LRT from Baysshore/ Sunnydale to Balboa Park BART: \$149 Million

An interim step on Geneva would be to implement significant TPS measures such as stop respacing and signaling intersections. The interim step will also include establishing exclusive ROW for the K-line on Ocean Avenue.

TPS treatments from Junipero Serra to Baysshore/Sunnydale, including exclusive ROW for K-line: \$51 Million

19th Avenue-Park Presidio

19th Avenue is the primary north-south artery in the western half of the city, and is appropriate for surface LRT. The alignment would follow the existing Muni 28 route, with a potential extension south to the airport. Exclusive rail ROW already exists between Eucalyptus and Junipero Serra.

Surface LRT from Golden Gate Bridge to Daly City BART: \$433 Million

A more immediate improvement for this corridor is BRT with exclusive ROW, possibly extending to SFO. This line could be operated with suburban-style coaches.

BRT from Golden Gate Bridge to Daly City BART: \$239 Million

Rescue Muni’s Transit Expansion Proposal

Working alongside staff at Muni, the city’s local transit advocacy group has been studying the need for a capital expansion. Rescue Muni has published a thoughtful paper about the future of Muni’s system, emphasizing less expensive, rapid bus lines in the short term, with a few new rail lines for the longer term. See www.rescuemuni.org for the organization’s official policy on service expansion.

Potrero-San Bruno

Potrero and San Bruno form a north-south corridor between Mission and Third Street and include a number of residential neighborhoods as well as many commercial and industrial employment clusters. The 9-San Bruno Muni lines combined carry 38,000 riders per weekday. BRT is appropriate for Potrero Avenue but because San Bruno has only one lane in each direction, that part of the corridor requires significant TPS treatments.

BRT on Potrero and TPS on San Bruno: \$42 Million

A first phase would be electrification of the 9-San Bruno, since almost half of the route has already been wired.

Electrification of 9-San Bruno: \$56 Million

The Embarcadero

Muni’s vision for the Embarcadero is to extend light rail service along the northern edge, from Fisherman’s Wharf to Fort Mason and the Presidio, through the Fort Mason tunnel. This could be an extension of the North Beach-Marina light rail line or the F-Market historic streetcar.

LRT from Fisherman’s Wharf to Presidio: \$111 Million

A short-term project is implementation of the E-line service, which would enable continuous rail service from Caltrain to Fisherman’s Wharf along the Embarcadero. In order to operate the E-line, a number of issues must be resolved, such as sufficient maintenance capacity, procurement of an adequate number of historic vehicles, and operating and capital funding. The primary capital cost is for design and construction of terminal improvements on the southern end.

E-line (terminal loop): \$11 Million

SOMA (Folsom/Harrison)

Muni recently implemented major changes to improve SOMA service in this rapidly developing area. At least nine Muni routes pass through SOMA in all directions, and east-west streets are useful as Market by-pass routes. A clear trunk line for SOMA would



Extending vintage trolley service to Fort Mason through the existing tunnel is one option for expanding transit along the Embarcadero. See also “E Line to Fort Mason,” page 15. Photo montage courtesy of The Market Street Railway.



This image shows what a dedicated rapid busway on Van Ness Avenue might look like. Because a busway can move so many more people per hour than buses and autos mixed in the same lanes, this idea is perhaps the only realistic short term way to increase capacity in the corridor. Photo montage courtesy of David Vasquez, Rescue Muni



A light rail line down Geary Boulevard would utilize the extra-wide street width to give Muni its own, super-fast right of way, while making streetscape improvements to improve the walking environment for pedestrians. Photo montage courtesy of David Vasquez, Rescue Muni

"Muni's Vision" from page 7

improve service for passengers in this corridor. Folsom Street is the logical route, since it is midway between Market and King Streets, and it should allow two-way BRT operation. This would protect transit vehicles from added congestion. The Department of City Planning is also considering the possibility of converting Folsom to a two-way street. Folsom can thus be transformed into a transit and pedestrian street, rather than an auto-dominated street.

BRT from the Embarcadero to 16th Street: \$71 Million

Hunters Point (Evans-Innes)

Bayview/Hunters Point is now seeing a large transit investment with the Third Street Light Rail Project. In the coming years, additional need for transit investment is anticipated due to planned development in the Hunters Point Naval Shipyard, which could generate up to 10,000 trips per day.

When the shipyard and neighboring areas are developed, this corridor would be best served by BRT in the Evans/Innes corridor, possibly connecting to Cesar Chavez and the 24th Street BART station or to Civic Center. This would allow connections to the Third Street LRT, the Potrero-San Bruno BRT line, and Mission Street.

BRT from Innes/Donobue to Cesar Chavez/Mission: \$130 Million

Depending on the timing of new development, the 19-Polk could become a major trunk line with TPS treatments, rerouted to be more frequent and more direct to the Civic Center area.

TPS on 19-Polk route: \$3.6 Million

The 19-Polk could also be converted to electric trolley operation in the short term.

Electrification of 19-Polk: \$119 Million

**EXISTING RAIL CORRIDORS:
JUDAH, TARAVAL, CHURCH,
OCEANVIEW AND INGLESIDE**

These routes have the highest ridership in the system and require special

treatment to improve service for passengers and to take advantage of the substantial investment in rail. The majority of existing rail service is on surface streets in mixed flow. Although traffic is not as heavy as it is downtown, many of these routes have all-way stop signs that add running time, as well as turning movements and parking regulations that interfere with transit movement. Rail vehicles are particularly prone to delays due to automobile interference, since they cannot maneuver around obstacles.

All rail corridors should be protected with exclusive ROW and other TPS treatments: boarding islands at all stops, conversion of all-way stops to signalized intersections with priority for transit, and signal priority or grade crossing protection for M-line to cross 19th Avenue at Eucalyptus. Ultimately, the M-line could be grade-separated from St. Francis Circle to 19th and Junipero Serra.

TPS Treatments for:

J (Duboce Portal to 30th Street) \$0.5M

K (St. Francis Circle to Green Terminal) \$0.5M
 L (West Portal to Wawona/46th Avenue) \$1.2M
 M (St. Francis Circle to Green Terminal) \$1.6M
 N (Duboce Portal to La Playa) \$0.7M

*SPUR is very pleased to present this summary of Muni's visionary transit expansion plan. The improvements made at Muni in the last two years give us confidence that Muni can implement this plan professionally and efficiently. The details of each of the corridors still need to be worked out as well as in the rest of the system between the 12 priority corridors. We call on the residents of San Francisco to work with Muni in the spirit of positive cooperation, and to begin to plan on how to pay for it. The price is high, but the cost of not making these needed capital expenditures is much higher. **

new members as of 12/4/01

Business Members		
SF DPW Bureau of Architecture (Mark Dorian)	James Ensign	Deb McCay
Howard S. Wright Construction Co. (Leanne Pashkovl)	Brooke Facente	Louis Merlin
Steeffel, Levitt & Weiss (Timothy Tosta)	Roger Gordon	Steven Merrill
	Matthew Gray	Matthew Morrin
	Marshall Haines	Ronald Morrison
	Robert Harrison	Lisa Mullikin
	Jim Heid	Heather Neff
	Richard Hilton & Sandra O'Malley	Dennis Paoletti
	Ahmed Hussein	Brian Phipps
Individual Members	Irma Jarvenpaa	Susie Poliwka
Peter Arnstein	Herbert Jeong	Michelle Ponce
Andrew Barnes	Wanda J. Jones	James D. Porter
Martie Bolinger	Pepper Karansky	Jen Posner
Mary Breuer	Valerie Kazanjian	Conant Radcliffe
Dianne & Jeff Cerf	Michael Burns Keating, Jr.	Jeannette Redensek
Robert Champlain	Michael Kelly	Seema Sairam
Ilse Cordoni	Debra Lehtone	Robert Brook Sutton
Robert Couly	Mark Loughnan	Victor Vallejo
Kathleen Diohep	Timothy Lucey	Ali Vieira & Kathy Philips
Scott Edmonson	Steven Ma	Maggie Visser
Richard Endres	James Mathias	R. Wallace Wertsch
		Andy Yan

CITY PLANNING POLICIES

Excerpts from General Plan Transportation Element

Specific Policies**OBJECTIVE 11**

ESTABLISH PUBLIC TRANSIT AS THE PRIMARY MODE OF TRANSPORTATION IN SAN FRANCISCO AND AS A MEANS THROUGH WHICH TO GUIDE FUTURE DEVELOPMENT AND IMPROVE REGIONAL MOBILITY AND AIR QUALITY.

POLICY 11.1

Maintain and improve the Transit Preferential Streets program to make transit more attractive and viable as a primary means of travel.

The Transit Preferential Streets program includes measures to improve transit vehicle speeds and to minimize the restraints of traffic on transit operations.

POLICY 11.2

Continue to favor investment in transit infrastructure and services over investment in highway development and other facilities that accommodate the automobile.

Every decision to direct expenditures toward improving congestion and parking conditions should first consider the improvement of transit operations.

POLICY 11.3

Encourage development that efficiently coordinates land use with transit service, requiring that developers address transit concerns as well as mitigate traffic problems.

POLICY 11.4

Encourage the development of one or more multi-service transportation outlets at transit-accessible locations for the sale of transit fare instruments and the provision of other kinds of trip information.

Convenience should be the primary factor in locating and operating the multi-service center. Transit patrons should be able to use the center without having to exit or enter fare gates, and transit fare instruments should be made available for all modes of transit.”

OBJECTIVE 20

GIVE FIRST PRIORITY TO IMPROVING TRANSIT SERVICE THROUGHOUT THE CITY, PROVIDING A CONVENIENT AND EFFICIENT SYSTEM AS A PREFERABLE ALTERNATIVE TO AUTOMOBILE USE.

In order to encourage residents, commuters, and visitors to switch their travel modes away from the automobile, we must improve transit service to make it a preferred alternative. Improvements to the existing system can be implemented at a relatively low cost, however, such improvements are often resisted due to real or perceived negative impact on parking or traffic circulation. For this reason, transit improvements should be based on a rational street classification system in which all transportation functions of the street network are analyzed, and only certain streets or locations are designated “transit preferential.” Transit preferential streets (TPS) should be established along major transit routes, and general traffic should be routed away from these streets wherever possible.

In certain locations pedestrian’ needs must also be addressed in transit system improvements. This is important near major activity centers and interline transfer points. For this reason “transit centers” should be established as part of the transit preferential streets (TPS) system where pedestrian safety, accessibility, and circulation needs are addressed, and transit information and minimum passenger amenities are provided.

POLICY 20.1

Give priority to transit vehicles based on a rational classification system of transit preferential streets.

The TPS classification system should consider the multi-modal functions of the street, the existing and potential levels of transit service and ridership, and the existing transit infrastructure. Through street classification, transit preferential treatments should be concentrated on the most important transit streets, and the treatments applied should respond to all transportation needs of the street. For example, on streets that are major arterials for transit and not for automobile traffic, treatments should emphasize transit priority. On streets that are major arterials for both transit and automobiles, treatments should emphasize a balance between the modes, emphasizing the movement of people and goods rather than vehicles. This method ensures that transit preferential treatments are applied in the most efficient and cost effective manner.”

Building on a Tradition of Alternatives to the Automobile

A balanced, multi-modal transportation system, including public transit, ridesharing, automobiles, bicycles and pedestrians, is necessary not only for a high quality of life, but also to maintain the economic well-being of the community. Without this balance, the congestion, pollution and scale of development oriented to the automobile instead of human beings would take their toll on the viability and renowned character of San Francisco's commercial and residential districts. They could also result in the penalties that may be assessed by regional governmental agencies such as the Air Quality District when these conditions are not brought into compliance with established standards.

In this respect, San Francisco's traditional reliance on walking, public transportation and other modes for both work and non-work trips has paid off. San Francisco has a considerable and comprehensive variety of transportation alternatives, and commercial and residential districts well-known for their attractiveness and agreeable, walkable character. The amount of land and resources that are devoted to accommodating the automobile is much lower than in other communities in California, allowing for a downtown whose accessibility, compactness and efficiency of land uses and services contribute greatly to its market strength.

In 1992, surveys of automobile and transit use in San Francisco showed the city, unique among all other cities in the Bay Area, was in compliance with the standards set by the Air Quality District for 1999. Therefore, the District determined that San Francisco did not need to develop either a trip reduction ordinance or additional employer programs to reduce automobile commuting, saving the city and its large employers from costs and penalties that would have otherwise applied. The air quality in San Francisco and the nine-county Bay Area has been maintained above all applicable federal standards of pollutants, such that in 1995 the Bay Area became the only large metropolitan area in California to be designated as an Attainment Region by the Environmental Protection Agency. This designation removes the threat of relevant federal sanctions in San Francisco and the Bay Area, removes administrative burdens on its industries, and relieves them from imposition of more extreme emission controls.

The long-standing transportation policies of San Francisco must be reviewed and updated as the city continues to be shaped by technology, economics, demography and natural forces. Nevertheless, these policies have served the city well, and helped position the city and region as a model for other

metropolitan areas to emulate. Clearly, the future of the high quality of life and strong market appeal of doing business in San Francisco depends on the success of maintaining and enhancing its balanced, multi-modal transportation system..."


Transit First

The Transit First policy is aimed at restoring balance to a transportation system long dominated by the automobile, and improving overall mobility for all residents and visitors when reliance chiefly on the automobile would result in severe transportation deficiencies. It encourages multi-modalism, the use of transit and other alternatives to the single-occupant vehicle as modes of transportation, and gives priority to the maintenance and expansion of the local transit system and the improvement of regional transit coordination.

SFCTA COUNTYWIDE PLAN SUMMARY

Source: <http://www.sfcta.org/cwtp.htm>

**San Francisco County Transportation Authority
Countywide Plan**




DRAFT 2004 COUNTYWIDE TRANSPORTATION PLAN

(Public Review Draft)R

Public Workshop

May 13, 2004



History of Plan Development^{1R}



The Countywide Plan was developed based on a R three-pronged strategy including:

- *policy steering committeesR*
- *Technical working groupsR*
- *Community workshopsR*

Public outreach and input has come from a wide R array of San Francisco organizations:

AAA

Bernal Heights Neighborhood Center (BHNC);

Chinatown TRIP

Chinese Chamber of Commerce

Coalition for SF Neighborhoods

Cow Hollow Neighbors in Action and the Lyon Corridor;

District 7 Advisory Council

District 11 Council

Greater West Portal Neighborhood Association

Harvey Milk Democratic Club

Hayes Valley Neighborhood Association

Japantown Task Force

League of Conservation Voters

Northeast Mission Business Association (NEMIB);

North of the Panhandle Neighborhood Association

Outer Mission Residents Association

Planning Association of the Richmond (PAR)

Rescue MUNI

SF Chamber of Commerce

SPUR

SF Tomorrow

Sunset Heights Association

Sunset-Parkside Education and Action Committee (SPEAK)



Transportation and Land Use Coalition

Transportation for a Livable City

Visitation Valley Planning Alliance

Yerba Buena Alliance



SFCTA COUNTYWIDE PLAN SUMMARY

Source: <http://www.sfcta.org/cwtp.htm>

Chapter 1: Plan Vision and Goals



“The Plan’s vision is to develop safe, efficient, and attractive transportation choices for all users in a way that cultivates the City’s diverse economy while protecting its celebrated quality of life.”

The major goals of the Countywide Transportation Plan are to:

- Support **economic vitality** by facilitating local and regional accessibility and efficient movement of people and goods.
- Promote **safety and security** for all people sharing the streets by reducing conflicts, accidents, and seismic vulnerability
- Support **community vitality** by supporting good land use planning, improving neighborhood access and enhancing neighborhood livability
- Ensure **equity** in transportation investments through a broad distribution of benefits among all city residents and developing affordable modes of transportation, such as transit, walking and cycling.
- Sustain **environmental quality** by promoting transit and non-motorized modes, conversion to clean technologies and urban beautification.
- Make **wise investments** in our transportation system through the cost-effective use of funds; leveraging outside funds; and promoting efficient program delivery.

2

Chapter 2: Existing Conditions



Our street network, the area from property line to property R line, is one of San Francisco’s most important public R assets. R

Our street system is: R



A Grid Layout, allowing for the most efficient access and route choices

A Large Area - about 30% of the total SF land area of San Francisco!

Multi-modal in transportation function



Pedestrian scale



A major public open space resource

3

Trends, Needs, and Opportunities

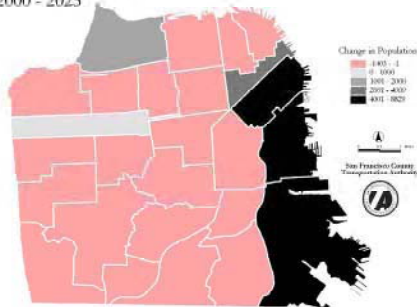


Several Land Use and Demographic Trends will affect the transportation system over the next 30 years:

San Francisco is expected to see strong household and job growth over the next 25 yrs.

	2000	2025	Growth
Cars per Household	1.08	1.11	2.7%
Cars per '000 Population	439	478	8.7%

Change in Population 2000 - 2025



As wealth increases, motor vehicle ownership will rise, particularly for households with 3+ vehicles.

The city's population is getting older; more attractive and safer transit and pedestrian options are needed.

Chapter 3: Needs and Opportunities



...and finally, trip-making is growing more regional in nature, particularly the commute trip.

Growth in Daily Transit Trips 2000-2025 to & from East Bay



Growth in Daily Transit Trips 2000-2025 to & from South Bay



Growth in Daily Transit Trips 2000-2025 to & from North Bay



SFCTA COUNTYWIDE PLAN SUMMARY

Source: <http://www.sfcta.org/cwtp.htm>

Chapter 3: System Needs and Opportunities 1R



“A tale of two cities”: While regional trip-making reflects “Transit First” policies...

Strong transit mode
Share growth by
2025

MODE SHARE CHANGES: Now and the Future Without the Plan			
All Trips			
Mode	2000 Base	2025 Base	% Growth
Auto	62.2%	60.9%	-2.1%
Transit	17.2%	19.5%	13.4%
Walk	19.7%	18.8%	-5.0%
Bike	0.9%	0.9%	-2.1%
Total	100.0%	100.0%	

MODE SHARE CHANGES: Now and the Future Without the Plan			
Internal Trips			
Mode	2000 Base	2025 Base	% Growth
Auto	54.2%	54.4%	0.3%
Transit	16.4%	16.2%	-1.6%
Walk	28.3%	28.4%	0.4%
Bike	1.0%	1.0%	-1.2%
Total	100.0%	100.0%	

...Internal SF trips are losing transit mode share ground.

6

Chapter 3: Needs and Opportunities

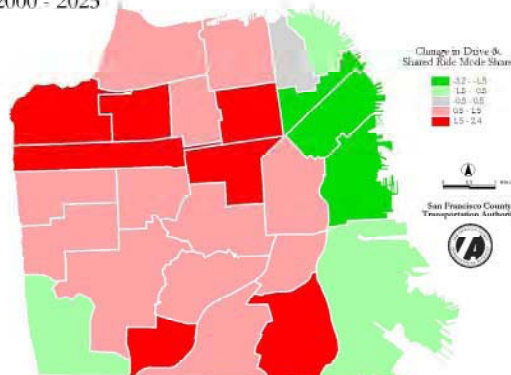


Why is Transit Losing Ground within San Francisco?

A look at Auto Demand and Transit Performance Reveals:

- Transit travel times are 3x Auto travel times; 1/3 speed
- Increasing household wealth is fueling demand for autos
- Transit options are competitive in terms of: connectivity, reliability and comfort.

Change in Drive & Shared Ride Mode Share 2000 - 2025



7

Chapter 4: Investment Plan



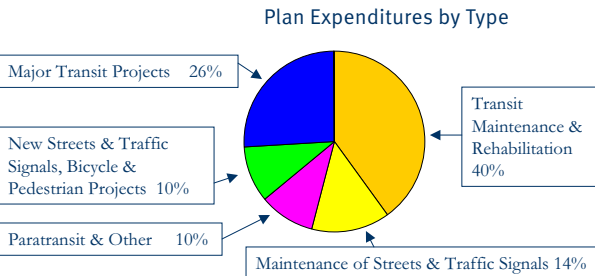
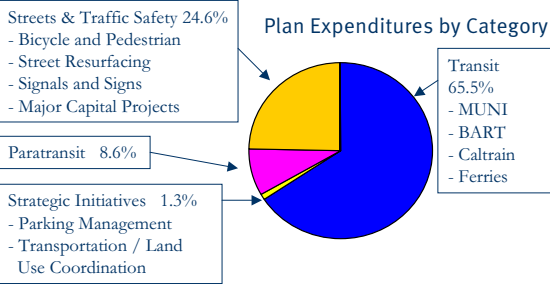
Managing Demand in Key Corridors is R Critical to System PerformanceR

- Closing Gaps in Travel Times between Transit and Auto
- Giving Lane Priority to Buses and Light Rail
- Further Developing Transit, Bike and Pedestrian Networks
- Smoothing out traffic flow with signal coordination
- Improving Regional Connections

Major Transportation Corridors



Chapter 4: Investments and Performance

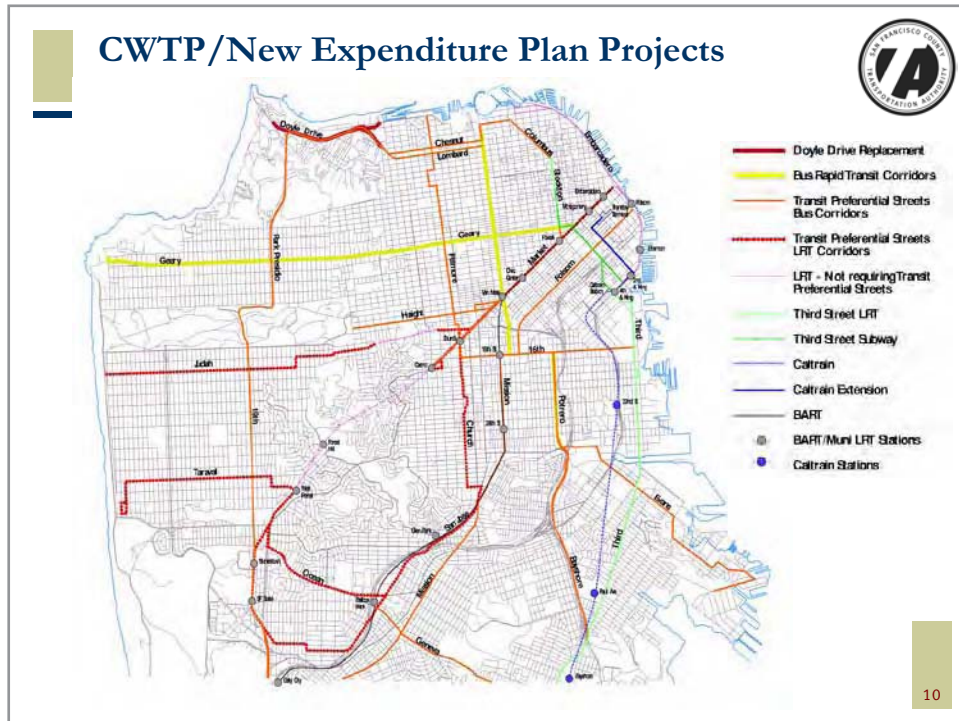


Prop K New R Expenditure PlanR

- \$12.4 B over 30 R yearsR
- Invests in 4 major R capital projects and R programmatic areasR
- Approved with 75% R of vote in November, R 2003R

SFCTA COUNTYWIDE PLAN SUMMARY

Source: <http://www.sfcta.org/cwtp.htm>



Draft 2004 Countywide Transportation Plan: Highlights Chapter 4: Investments and Performance

Mode Split

- ◆ The Plan reverses the mode share decline

Mobility

- ◆ The Plan improves the travel time, reliability and appeal of transit

✓ Accessibility

✓ Environment

✓ Equity

MODE SHARE CHANGES:
With and Without the Plan

Internal Trips

Mode	2025 Base	2025 Plan	% Growth
Auto	54.4%	53.7%	-1.2%
Transit	16.2%	17.0%	4.9%

MODE SHARE CHANGES:
Before and After

All Trips

Mode	2000 Base	2025 Plan	% Growth
Auto	62.1%	60.4%	-2.8%
Transit	17.2%	20.1%	16.8%

Chapter 5: Strategic Policy Initiatives



Strategic initiatives can help to increase the effectiveness of R planned investments:



➤ ***Coordinate transportation investments with land use*** by prioritizing transit investments in high population/job density corridors.



➤ Develop the city's multi-modal network by ***building out the transit, bike and pedestrian network***.

➤ Promote the role of ***streets as public places*** and open spaces.



➤ ***Broaden and strengthen Transportation Demand Management*** efforts, including smarter parking management citywide

➤ ***Support neighborhood-scale planning*** and projects throughout the city.

12

Draft 2004 Countywide Transportation Plan: Highlights Chapter 6: Implementation



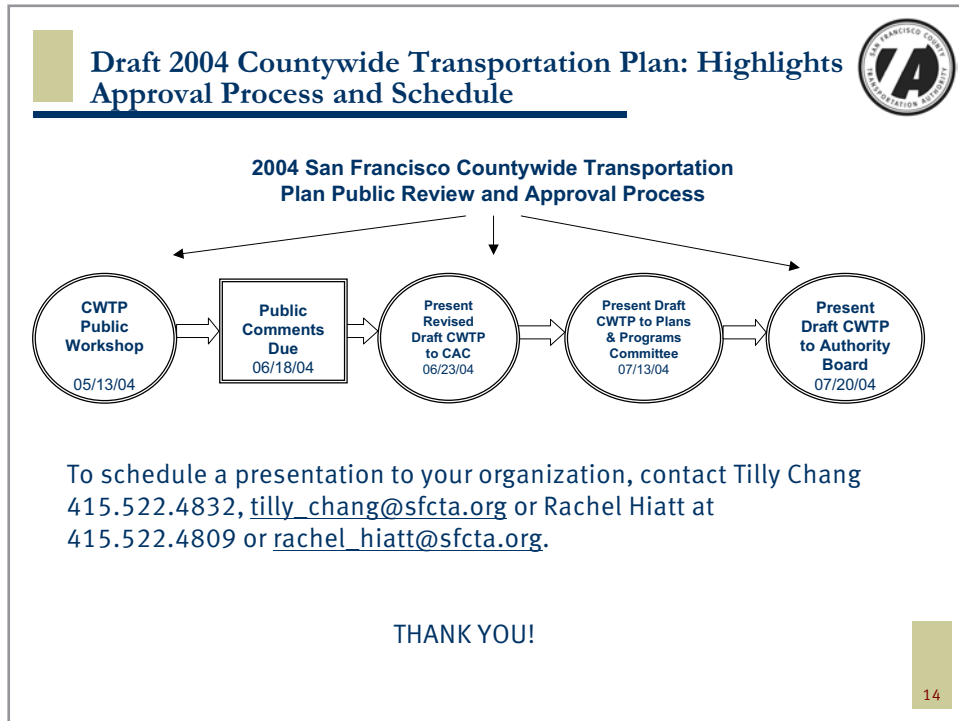
The CWTP is a living document that will be updated every 3 years – until then, we will implement the Plan through the following activities:

- Identify new sources of funding/Legislative Advocacy
- Develop 5- and 10- year Funding Plans
- Improve planning tools and mechanisms for agency coordination
- Conduct system performance monitoring and evaluation
- Advocate CWTP policies in the upcoming 2005 Regional Transportation Plan
- Carry out corridor studies, neighborhood plans, and pilot projects

13

SFCTA COUNTYWIDE PLAN SUMMARY

Source: <http://www.sfcta.org/cwtp.htm>





B

Appendix B: Glossary

Appendix B: Glossary

Term	Definition
Breda light rail vehicle	Light rail vehicles used by MUNI Metro (e.g., the N-Judah)
BRT Bus Rapid Transit	Bus rapid transit. BRT is not a precisely defined technical term. It commonly means dramatically upgraded bus service that operates in its own right-of-way (i.e., separated from other traffic), has stations instead of stops, has level boarding (like subways), and prepaid boarding.
Bulb-out	An extension of the sidewalk into the street, creating a larger area for transit shelters and wider sidewalks. These improve pedestrian access around transit stops, shorten the distance pedestrians have to walk between corners, tend to reduce traffic speeds near intersections, and allow buses to load passengers without pulling off the road.
Cost effectiveness	Cost effectiveness is the cost per passenger trip. More precisely, it is the amount of money a transit agency spends to provide its service (either as a system or a particular mode of travel, such as bus or rail) divided by the total number of passenger trips. This only takes into account what it costs to provide the service, and does not deduct fare revenues from the cost of providing the service.

Term	Definition
Cost efficiency	Cost efficiency is the cost to provide one hour of transit service.
CEQA	California Environmental Quality Act. CEQA is a California law that sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision makers in determining whether any environmental impacts are associated with a proposed project. It requires environmental impacts associated with a proposed project to be eliminated or reduced, and that air quality mitigation measures have been implemented. (www.energy.ca.gov/lng/glossary.html)
CMA	Congestion Management Agency. A countywide agency responsible for preparing and implementing a county’s Congestion Management Program. In San Francisco, the CMA is the San Francisco County Transportation Authority.
DPT	Department of Parking and Traffic, a part of the MTA.
DPW	Department of Public Works – the DPW provides services ranging from cleaning, repairing, and maintaining city streets and sewers, to greening the City’s urban landscape, to designing and managing construction of public facilities.
Fare box recovery ratio	The proportion of operating expenses covered by passenger fares. This is calculated by dividing fare box revenue by total operating expenses. It can be calculated for an entire transit system, or for each mode (e.g., bus, rail, cable car) that it operates.
Fast Pass	The monthly pass for riders of Muni
Headway	The scheduled time interval between any two revenue vehicles (buses, LRVs, trolleys, etc.) operating in the same direction on a route.
Lifeline service	The Lifeline Transportation Program, funded by the MTC and administered by County CMAs, supports community-based transportation projects to improve mobility for low-income residents of the nine San Francisco Bay Area counties.

Term	Definition
Lifeline Fast Pass	A \$35 discounted monthly pass available to low income individuals who are also eligible for a variety of programs including SSI, Food Stamps, etc.
Low floor	A term describing vehicles such as buses, trolleys, and trams where the passenger compartment floor is considerably lower than that of traditional models. Vehicles of this type have a stepless entry and usually have an area without seating next to at least one of the doors where wheelchairs can be parked. In addition to improving accessibility, low floors also allow fully-mobile passengers to board more quickly, and can improve overall travel speeds.
LRT/LRV Light Rail Transit Light Rail Vehicle	Lightweight passenger rail cars operating singly (or in short, usually two-car, trains) on fixed rails in right-of-way not separated from other traffic for much of the way. Typical LRT includes streetcars; in San Francisco, the streetcars and the Muni Metro are light rail. Light rail vehicles are driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. The vehicles used to operate this service are called Light Rail Vehicles (LRV)
Mode split	The proportion of all trips that are made on the various modes of transportation, whether walking, biking, public transit, car, and so on.
MTA	Municipal Transportation Agency. The MTA Board of Directors governs the Municipal Transportation Agency, which oversees the San Francisco Municipal Railway (Muni) and the Department of Parking and Traffic (DPT).
MTC	Metropolitan Transportation Commission. The MTC is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area.
NextBus	A commercial computer system that tracks the location of transit vehicles, and transmits information about the predicted arrival time of the next few vehicles at a particular stop. This information can be accessed via the internet, cell phone, or displayed at transit stops/stations.
Productivity	For transit systems, productivity is the number of passengers carried for every bus-hour of service provided (i.e., every hour a transit vehicle operates to pick up passengers).

Term	Definition
Proposition E	Approved by voters in 1999, Proposition E added Article VIII A to the San Francisco Charter. Proposition E established the MTA, prescribed its powers and duties, and mandated performance goals and measurements for MUNI. See the Appendix for the full text.
Pulsed hubs	A transit hub serving two or more services, where service is timed to allow efficient timed transfers. These are typically used for transit systems that have relatively low service frequency (e.g., Golden Gate Transit).
Queue jump	Elevated ramps or at-grade lanes that can be used by transit vehicles to bypass congestion at traffic signal and, in some cases, receive more effective signal priority at signals.
SFCTA	San Francisco County Transportation Authority. The SFCTA administers and oversees the delivery of the Proposition K (Prop K) half-cent local transportation sales tax program and New Expenditure Plan, which identifies transportation improvements to be funded from the extension of the existing half-cent transportation sales tax.
TIDF	Transit Impact Development Fee. Enacted in 1981, the TIDF attempts to recover the cost of carrying additional employees into downtown via public transit by capturing fees on office development on a square foot basis at the time the development is occupied. TIDF does not apply to the many other land uses that operate downtown, including hotels, entertainment venues, and retail space.
Transit First Policy	Article XVI of the San Francisco Charter, the Transit First Policy articulates the City’s commitment to promoting and prioritizing transit, walking, and bicycling as an attractive alternative to travel by private automobile. See the Appendix for the full text.
Transit mode share	The percent of all trips within a designated area made on transit. In other words, public transit’s share of the <i>mode split</i> .