**THIS PRINT COVERS CALENDAR ITEM NO. :**

**SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY**
**City and County of San Francisco**

**DIVISION:** SFMTA Finance & Administration

**BRIEF DESCRIPTION:**
Overview of SFpark, the SFMTA parking management program, and planned parking pilot projects that are funded in part by the Federal DOT Urban Partnership Program.

**SUMMARY:**

- SFpark plans to use pilot projects to help position the SFMTA to evaluate the policies, technology, and enforcement strategies that will enable the SFMTA to manage parking much more effectively citywide.
- One of the primary purposes of the pilot projects is to evaluate how effective parking management, in particular demand-responsive pricing to achieve parking availability targets, is for reducing congestion and therefore improving the reliability of public transit and reducing transportation-related greenhouse gas emissions.
- Pilot projects will employ multispace parking meters (that accept credit/debit cards), in-street parking sensors, and new types of parking information via different channels, such as variable message parking signs.
- Consistent with the Urban Partnership Program grant language, the pilot project areas are expected to include Downtown, Civic Center/Hayes, Fillmore, Fisherman's Wharf, Southern Embarcadero, Chestnut/Lombard, and as control areas (to enable better before/after analysis) Mission/Valencia, Union Street, Clement/Geary, and West Portal.

**ENCLOSURES:**

1. SFpark Vision, Goals, and Principles
2. SFpark Parking Pilot Project Scope of Work

**APPROVALS:** **DATE**

DIRECTOR OF DIVISION PREPARING ITEM _____ _____

FINANCE _____ _____

EXECUTIVE DIRECTOR/CEO _____ _____

SECRETARY _____ _____

**ASSIGNED MTAB CALENDAR DATE:** _____

**EXPLANATION:**

To address San Francisco's parking issues, the SFMTA created SFpark, its parking management program. The goal of SFpark is to use new parking management approaches and technology to manage San Francisco's parking supply and demand in ways that support the SFMTA's overall transportation goals, such as reducing congestion in order to improve Muni reliability and reduce transportation-related greenhouse gas emissions.

The SFMTA will complete the parking pilot projects described in this document using Value Pricing Pilot Program (VPP) and Transportation, Community, and System Preservation (TCSP) funding authorization from the Federal Highway Administration (FHWA), as well as 20 percent match from local sources. These Federal funding sources are part of the Urban Partnership Agreement (UPA) signed August 6, 2007 between the U.S. Department of Transportation and the San Francisco Bay Area Urban Partner, which includes the San Francisco County Transportation Authority and the SFMTA.

The purpose of the UPP funding is to demonstrate innovative ways to manage congestion. In the case of the SFpark parking pilot projects, the SFMTA has committed to evaluating via pilot projects how San Francisco's on-street and off-street parking supply, a limited and valuable public asset, can be managed using demand-responsive pricing to reduce congestion. This is particularly important in San Francisco's major employment, commercial, and tourist centers as sound parking management can improve congestion levels, economic vitality, and quality of life.

Enclosed are two documents: SFpark **Mission, Vision, and Goals** which outlines the framework SFpark will use as it develops and implements projects and programs, and the SFpark **Parking Pilot Projects Scope of Work**, which describes the planned parking pilot projects.

**Purpose of parking pilot projects**

The SFpark pilot projects have one immediate purpose: to test innovative parking-based solutions to congestion. More broadly, the purpose of the pilot projects is to position the SFMTA to manage parking more intelligently citywide by 2010. To achieve this goal, SFpark plans to do a thorough before/after analysis of the pilot projects to help the SFMTA:

1. Refine new approaches to parking management in pilot areas before proposing a new parking management framework for the City.
2. Evaluate how effective parking management, in particular demand-responsive pricing to achieve availability targets, is for reducing congestion and therefore improving the reliability of public transit and reducing transportation-related greenhouse gas emissions.
3. Evaluate the effectiveness of sound parking management along with variable tolling in the Doyle Drive corridor for achieving the larger goals for congestion reduction and consequent improvements in mode share, public transit, and greenhouse gas emissions.
4. Increase the cost-effectiveness of parking enforcement. Without proper enforcement, the tools of parking management are much less effective.

5. Develop effective approaches to providing information about parking location, availability, and price to drivers.
6. Evaluate (and eventually choose) the right new technology that enables more intelligent parking management.

### Scope of parking pilot projects

The parking pilot projects will include approximately 6,425 on-street metered parking spaces (approximately 25% of all metered parking spaces), and 11,667 parking spaces in SFMTA-managed parking garages and lots. The following provides a high level overview of what the pilots will test:

| |
|---|
| **Parking management Refining our approach to parking management to help achieve availability goals** |
| Evaluate demand responsive pricing and relaxing time limits to manage congestion |
| Establish the right relationship between the price of metered on-street parking and parking garages/lots |
| Change when parking is regulated (e.g., evenings and/or weekends) |
| Test new solutions for spillover/ residential parking issues |
| **Enforcement Testing new approaches to make enforcement safer and more efficient** |
| Test new approaches to enforcement (independent of new technology) |
| Test new enforcement techniques that take advantage of new technology |
| **Driver information Providing information to drivers to help them make informed decisions** before **and** during **their trip** |
| Make parking location, availability, and price information available via internet, PDA, and phone |
| Expand the use of guidance signage – dynamic and static – to deliver parking information to drivers |
| **Technology How new technologies can enable more effective management of our limited parking supply** |
| Test pay-by-space multispace meters |
| Test pay-and-display multispace meters (where appropriate) |
| Test in-street sensors to get occupancy data to inform pricing, enforcement, and policy evaluation |
| Test in-street sensors to get traffic volume and speed data to inform evaluation |
| Test new handheld devices that allow more efficient enforcement strategies |

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**Planned** SFpark **parking pilot project areas**

The SFMTA has selected six areas in which to conduct parking pilots that are either major employment and commercial centers or neighborhood commercial centers that generate many trips. Each area has a unique land use and, therefore unique parking conditions. The Agency will implement parking pilots appropriate for these varied land uses and parking conditions. The pilot project areas and implementation details will be refined during the detailed planning phase while working with pilot area stakeholders and communities.

As noted, the implementation and evaluation details for some of the pilot projects may change in response to unforeseen technical or financial constraints. In addition, changes to the implementation and evaluation details may result from lessons learned in the early phases of implementation.

- **Downtown.** With a high concentration of employment, SFMTA parking garages, and on-street commercial loading, the central business district is an optimal location to evaluate strategies to achieve congestion and parking availability goals using the pricing of off-street parking.
- **Civic Center/Hayes Valley.** Like Downtown, the Civic Center/Hayes Valley area is a major employment center, but differs in that it has more on-street metered parking, fewer off-street parking facilities, and less on-street parking for commercial loading. Parking demand in the area comes from both people with short-term business in the Civic Center and Hayes Valley area, as well as commuters looking for all-day parking.
- **Fillmore.** The Fillmore is a thriving neighborhood commercial district with significant off-street parking facilities and variable parking demand, which is often high in the evenings because of special events at several music venues.
- **Fisherman's Wharf.** This tourist center is a large trip generator, especially on weekends and holidays, which can cause congestion on the Doyle Drive corridor.
- **Southern Embarcadero.** As an extension of Downtown and centered around the baseball stadium, the unique conditions in Southern Embarcadero will allow SFMTA to vary pricing for special events to determine how to best manage limited parking supply when there is very high demand.
- **Chestnut/Lombard.** With high and varied demand, this neighborhood commercial area is closely linked to the Doyle Drive corridor. As a neighborhood commercial center, Chestnut/Lombard has a high volume of restaurants, bars, and retail shops. As a result, it is an ideal location to test the effectiveness of relaxing time limits and pricing parking by time of day and length of stay.
- **Control area: Mission/Valencia (with sensors, meters, and parking management changes).** A thriving commercial district, Mission/Valencia has significant off-street parking facilities and variable parking demand, with especially high parking demand during the evenings that is often driven by special events. In this area, the Agency will use sensors and meters to measure the effect of varying the price of parking by time of day.
- **Control area: Union Street (with sensors and meters).** Union Street is a neighborhood commercial area known for its restaurants, bars, and shops. On Union Street, the Agency will use sensors to evaluate the impact of new parking meters on parking availability. Union Street

is only two blocks from Chestnut Street, where the agency will relax time limits and vary pricing by time of day. The proximity of these two streets will allow the agency to compare the effects of new meters with the effect of relaxed time limits and variable pricing.

- **Control areas: Clement/ Geary and West Portal (with sensors).** Clement and Geary as well as West Portal are busy neighborhood commercial streets. In these areas, only sensors will be installed so that the areas can serve as pure controls for a strict "no change" environment.
- **Residential Parking Management.** In residential areas adjacent to the pilot projects, the SFMTA will seek to identify at least two communities that are willing to test one of two new approaches to managing residential parking in areas that are near major trip generators, in particular neighborhood commercial districts.

  The SFMTA will test approaches to managing on-street metered parking in commercial areas, off-street parking (i.e., public parking lots and garages), and surrounding residential parking as a coherent whole. This coherent approach to parking management in a large area or neighborhood may offer even larger congestion management benefits, while at the same time helping to address parking management issues on a community and/or neighborhood level. More broadly, these pilot tests will allow the SFMTA to evaluate strategies for better parking management in residential areas, and may allow the SFMTA to develop a new "tool" or strategy it can employ in the future to address parking issues in communities where on-street parking is problematic.

  The SFMTA intends to pilot test two approaches to coherent parking management centered on neighborhood commercial districts. One approach works within the current residential parking permit (RPP) program, while the other starts fresh to pilot test a new "best practices" approach.
- **Improved Enforcement.** Active management of parking resources requires consistent levels of adequate enforcement. Without enforcement, changes to parking regulations are not as meaningful. As part of the SFpark pilot projects, SFMTA Enforcement will provide a dedicated group of PCOs for parking enforcement in pilot and control areas, and will test new approaches to enforcement that will allow the same number of PCOs to provide a higher level of more responsive enforcement.
- **Parking Guidance and Traveler Information Systems.** As part of the pilot projects, SFpark will make available to motorists new data about parking availability and price, both off-street in parking garages and lots, as well as on-street metered parking. Data will be available to motorists on the internet **before** trips, helping people to make more informed decisions about how to travel. Data will also be available on mobile devices such as cell phones to provide motorists with information **during** their trip to help them quickly find parking near their destination.

### Schedule for parking pilot projects

The schedule for all UPA-funded projects is very aggressive: all projects must be planned, implemented, and evaluated by September 30, 2009. The SFMTA plans to meet this schedule, with the

majority of pilot project areas having been in operation for at least 12 months before the formal end of the UPA projects, sufficient time to thoroughly test pilot project concepts and go through one full seasonal cycle.

Below is a summary of the planned schedule for the parking pilot projects. **Note: This approximate schedule will be made more specific and detailed as planning for the pilot project is completed.**

- Spring 2008: Finish planning of SFpark parking pilot projects
- Summer 2008: Collect "before" data; begin implementation of pilot projects;
- Fall 2008: Institute new approaches to parking enforcement in pilot areas
- Early 2009: Evaluate new parking meter technology to inform RFP for new meters
- Spring 2009: Release RFP for new parking meters and related equipment
- Fall 2009: Write final evaluation of parking pilot projects
- Spring 2010: SFMTA Board approves new city wide parking management approach
- Summer 2010: Install additional new (SFMTA-purchased) parking meters

Meeting this aggressive implementation schedule depends on several factors, some of which could significantly delay the start dates of the pilot projects. The two most significant factors are:

- **Procurement of services and equipment.** In order to implement the pilot projects, SFMTA will need to purchases goods and services, such as new parking meters and in-street sensors, as well as professional services for assistance with planning, data collection, data integration, and so on. The length of the procurement process depends upon requirements as well as what procurement mechanisms are available to the SFMTA. The SFMTA is investigating different alternatives for procuring these goods and services that will allow it to fulfill the UPA project timeline.
- **When variable tolling is instituted.** One of the purposes of the UPA grant funding is to evaluate the combination of parking management and variable tolling, so the parking pilot projects cannot end until some time (at least three months) after the start of variable tolling at the Golden Gate Bridge toll plaza.

  According to the Golden Gate Bridge, Highway and Transportation District, this variable tolling could begin as soon as September 2008, and will start no later than September 2009. To accommodate this uncertainty and ensure the parking pilot projects overlap for at least three months with variable tolling, the SFMTA plans to conduct its parking pilot projects through at least December 2009.

  The SFMTA will perform a full pilot project evaluation by September 2009 (to provide to Federal agencies that provided the UPA grants and to prepare a proposal for new parking management policies for San Francisco). If variable tolling is implemented too late in 2009 to be included in the evaluation, the SFMTA will complete a supplemental evaluation in early 2010.

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**Partners in** SFpark **pilot projects**

The SFpark parking pilot projects are funded by a combination of funds from the Federal Urban Partnership Program (UPP) and local sources. The UPP program selected five cities to demonstrate innovative methods to reduce congestion, and San Francisco's grant application was chosen, in part, to test parking-based congestion management.

During the planning and implementation of the parking pilot projects, SFMTA will coordinate with its local UPP partners, including the Metropolitan Transportation Commission (MTC) and the San Francisco County Transportation Authority (SFCTA).

The SFMTA has also partnered with a team of four transportation academics, including Dr. Donald Shoup, an internationally-recognized expert in the area of parking management, to advise SFpark on study design, serve as a technical advisory committee, and undertake a significant portion of the data analysis. This partnership will help to ensure that the pilot projects provide the kind of rigorous before/after analysis the SFMTA needs to make subsequent decisions about parking management policies and technologies.

**Funding Sources and Schedule**

| | **FFY 2008** | **FFY 2009** | **Total** |
|---|---|---|---|
| **Federal** | | | |
| FHWA VPP | $4.4 | $4.0 | $8.4 |
| FHWA TCSP | $10.0 | $0.0 | $10.0 |
| **Total Federal Funds** | **$14.4** | **$4.0** | **$18.4** |
| **Local Match = 20%** | | | |
| SFMTA Operating | $2.1 | $1.0 | $3.1 |
| Developer Fees | $1.5 | $0.0 | $1.5 |
| **Total Local Match** | **$3.6** | **$1.0** | **$4.6** |
| **Total Pilot Project Funding** | **$18.0** | **$5.0** | **$23.0** |

**Expected outcomes of better parking management**

Better parking management is expected to deliver many benefits, including:

- Reduce congestion by reducing drivers circling for parking. Congestion from this source will be reduced by using demand-responsive pricing to manage our parking supply towards availability targets, so that drivers will be able to find a parking space much more quickly.

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- Reduce parking demand at peak times. In the longer term, demand-responsive pricing of parking may reduce peak parking demand, which will also help to manage congestion during peak times.
- Improve the reliability of public transit, both Muni and regional bus services, by reducing congestion. Congestion is usually worst in busy areas during peak times, precisely when and where reliable transit service is most critical.
- Reduce transportation-related greenhouse gas emissions by reducing vehicle miles travelled caused by unnecessary circling for parking, reducing overall parking demand in the longer term, and making public transit more attractive.

The SFpark parking pilot projects will have unique value as a demonstration project for other cities. They leverage the SFMTA's unique mandate to effectively manage movement on City streets and status as the operator of San Francisco's public transit system (Muni), on-street parking, and a significant portion of the off-street (garages and lots) parking supply. The SFMTA expects the parking-based congestion management strategies tested during these pilot projects to offer an effective strategy that could be easily replicated in other cities because of its relative low cost and ease of implementation.

March 2008


# The SFMTA Parking Management Program
# Vision, Goals, and Principles

SFMTA | Municipal Transportation Agency

## Executive Summary

Parking is critical for the success of San Francisco's transportation system. As such, using new technologies and best practices to manage parking is one of the SFMTA's core mandates.

Parking is not just an important part of the transportation system – it's a big part of the City itself. Just the SFMTA-managed parking supply, approximately 335,000 spaces on- and off-street, covers approximately 4 percent of the City, an area larger than Golden Gate Park[1]. This does not include privately owned parking garages, lots and spaces. Operating and maintaining this parking infrastructure is costly, and increasing the supply even more so; parking garages cost approximately $40,000 to $50,000 per parking space. Effective parking management will become even more important in the years to come. By 2025, it is expected that San Francisco will have an additional 538,000 trips per day, a 12 percent increase, all on today's right of way[2].

As San Francisco's parking supply is a valuable and limited public asset, the SFMTA must manage it more effectively to support City goals for the transportation system and, therefore, larger goals for the City. These include:

- Increase San Francisco's economic vitality and competitiveness.
- Improve the quality of life in San Francisco's diverse and vibrant neighborhoods.
- Help public transit operate more reliably.
- Reduce congestion and the environmental impacts of the transportation system.
- Improve the relationship between transportation, parking, land use, and urban design.

Given the SFMTA's efforts to achieve financial sustainability, parking must also be managed in a way that respects the Agency's fiduciary responsibilities. Revenue from parking management (from garages, lots, meters, fines, and taxes) is a significant source of funding for Muni operations and other SFMTA activities. In FY 2007, parking revenue made up 27% of the SFMTA's annual operating budget.

To address San Francisco's parking issues and manage parking more effectively, the SFMTA created SFpark, a new parking management program. SFpark will use new parking management approaches and technology to manage parking supply and demand more intelligently.

This document presents the parking management framework that will guide SFpark as it develops and implements projects and programs, including a series of parking pilot projects that will test new parking technologies, management approaches, and enforcement techniques.

This document presents the SFpark program and includes:

1. SFpark **vision, goals, and principles.** This section presents a parking management framework that is consistent with City policies and direction from the SFMTA Board, and that will guide SFMTA staff as they move forward with SFpark projects and programs
2. **Summary of policy framework.** This section summarizes City policy directives that guided the development of the SFpark parking management framework.



1 SFMTA estimate and analysis

2 San Francisco County Transportation Authority 2004 Countywide Transportation Plan

# SFpark **Parking Management Framework**

## SFpark **Mission**

To be a model for how cities can manage and value parking to achieve goals for safety, convenience, congestion, transportation-related emissions, economic vitality, and quality of life.

## SFpark **Vision**

The SFMTA envisions a future San Francisco in which the City's on- and off-street parking system will be:

- **Safe.** People feel safe using SFMTA parking garages and lots. Parking management supports ongoing SFMTA efforts to increase pedestrian, bicyclists, transit, and motorist safety by reducing congestion and vehicle miles traveled.
- **Convenient.** Parking is easy to find and convenient to use, especially for high-priority vehicle trips.
- **Optional.** The SFMTA uses parking management to reduce parking demand, manage congestion and thereby make alternatives to driving more attractive for everyone.
- **Responsive.** Parking management—for both private and commercial vehicles—responds to the unique needs of San Francisco's diverse neighborhoods and streets.
- **Accountable.** The SFMTA is accountable for making tangible improvements to parking management by developing and reporting clear goals and performance measures to SFMTA Board members, City officials, San Franciscans and other stakeholders so they know what is working well and where improvements are needed.
- **Cost Effective.** The SFMTA strives to optimize the efficiency and cost effectiveness of its parking management operations while improving the work environment for parking enforcement, maintenance and operations staff.

This vision is consistent with existing policy directives, summarized later in this document, for how the SFMTA is to manage the City's transportation system.

## SFpark **Goals**

To achieve this vision for parking management, SFMTA staff proposes for adoption the following goals for SFpark. To make these goals more useful and specific, SFMTA staff will use pilot projects to refine these goals and develop targets and performance measures for adoption by the SFMTA Board.

| |
|---|
| **Safety and Security** |
| Create a safe environment in SFMTA parking garages and lots |
| Reduce traffic collisions, injuries and fatalities by reducing congestion and vehicle miles traveled |
| **Efficiency and Economy** |
| Provide adequate parking availability for priority users at all times of day in all public lots, garages, and on-street |
| Improve public transit speed and reliability by reducing congestion and double parking |
| **Convenience** |
| Make parking convenient to use and easier to find by managing towards availability targets |
| **Environment** |
| Reduce emissions from vehicles by reducing congestion, vehicle miles traveled and parking demand, and shifting travel toward less polluting forms of transportation |
| **Health** |
| Increase rates of walking and biking by reducing demand for parking |

## SFpark **Parking Management Principles**

The following key parking management principles will guide SFMTA staff as the Agency implements SFpark:

1. **Manage parking to achieve SFMTA goals for transportation.** SFpark will manage the City's parking supply to help achieve SFMTA goals for the transportation system. Parking management can help to improve the reliability and on-time performance of the public transit system, minimize the environmental impacts of all modes of transportation, promote public health and traffic safety, and optimize use of the City's limited right of way to support economic vitality and high quality of life.

2. **Manage parking to make it more convenient.** SFpark will manage parking supply and demand to help ensure, to the extent possible, that on- or off-street parking is available when and where needed. SFpark will manage towards availability targets for on-street and off-street parking facilities to help make it easier for motorists to find a place to park near their destination.

   This is especially important to help increase the vitality and competitiveness of San Francisco's downtown and neighborhood commercial districts. The more people that can

easily access pleasant commercial areas, whether by foot, bicycle, transit, or car, the more likely it is that these commercial centers will become even more vibrant and economically successful.

3. **Implement demand-responsive parking prices as the primary tool to achieve turnover and availability goals.** SFpark will use demand-responsive parking prices to achieve availability goals. This approach will help to balance parking demand with our limited parking supply, helping to ensure that motorists can readily find a parking space and increasing the value of parking.

   Parking pricing should respond to demand: the most desirable on-street spaces may need higher prices, while less convenient parking spaces, whether on-street, in lots, or in garages, may need lower prices. Because parking demand varies over time, parking prices should also vary by time of day and day of week; for example, prices can rise when demand is highest, and go down when demand is lower.

   The pilot projects will also test relaxing time limits in order to evaluate how effectively price can encourage turnover. To enable the active management of parking during the parking pilots, the SFMTA Board has authorized adjusting the rates and hours of paid operation as necessary to achieve availability targets for on- and off-street parking pilot projects. Changes to price will be made gradually and periodically so that people can absorb new information and have the opportunity to change travel behavior.

4. **Align parking enforcement practices with best practices.** Active management of parking resources requires consistent levels of adequate enforcement. SFpark will facilitate the development of more cost-effective parking enforcement that utilizes available technology and is aligned with SFMTA goals and parking demand patterns. In pilot areas, price changes will be accompanied by improved enforcement so that prices, and price changes, are as meaningful and effective as possible for achieving turnover and availability goals.

## Policy Framework

SFMTA's parking management is guided by a broad variety of adopted public policy documents that address topics related to parking, including:

- Climate Action Plan – San Francisco Department of the Environment and Public Utilities Commission
- General Plan – Planning Department
- Planning Code – Planning Department
- Various neighborhood plans (Glen Park, Visitacion Valley, Balboa Park, Market/Octavia, Eastern Neighborhoods, Transbay Area Plan, etc.) – Planning Department, SFCTA, SFMTA, etc.
- Proposition K Transportation Sales Tax Expenditure Plan – SFCTA
- Countywide Transportation Plan – SFCTA
- Short Range Transit Plan – SFMTA

In addition to these adopted policy documents, several major ongoing planning processes—including the SFMTA Transit Effectiveness Project, the SFMTA Better Streets Plan and the SFCTA On-Street Parking Policy Study—are developing recommendations that may also contribute to SFpark. Two voter-mandated, Charter-inscribed policies are also relevant to SFpark: the **Transit First** policy (San Francisco City Charter, Section 16.102) and the 2007 Proposition A **Emissions Reduction and Transit Reform Act**.

Taken together, these policies provide an overarching framework that guides the SFMTA's management of the transportation system, including SFpark**'s** management of parking. This can be summarized as follows:

- **Safety and Security.** Minimize traffic-related severe injuries and fatalities in San Francisco. Aim for San Franciscans of all ages, genders and abilities to feel safe walking, bicycling and taking transit anywhere in San Francisco at all times of day and night.
- **Efficiency and Economy.** Manage the transportation system which includes parking to ensure the efficient movement of people and goods and increase the total person capacity of the transportation network. Prioritize the fast, frequent and efficient movement of public transit on City streets.
- **Quality.** Measure customer satisfaction and evaluate quality of service for all modes of transportation from the customer's perspective.
- **Environment.** Reduce the net environmental impacts of the transportation system, such as reducing per capita vehicle miles traveled, by the amount necessary to meet the City's climate action and air quality goals.
- **Health.** Reduce public health costs by promoting active living, including walking and bicycling as everyday transportation.

- **Public Space.** Incorporate the pending "Better Streets" policies and plans in all street design and management projects, recognizing that the City's streets are its largest and most-used open spaces and should function as part of the City's public realm.

The following sections summarize relevant portions of the **Transit First** and **Emissions Reduction and Transit Reform Act.**

## Transit-First Policy

- "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**." This policy recognizes that streets in San Francisco are fixed in width, and that our limited existing right-of-way must be allocated to prioritize safety and efficiency so that people and goods can travel freely as the City grows. Under this policy directive, the SFMTA is mandated to manage the parking system so that traffic congestion does not limit economic growth or economic opportunities for San Franciscans.
- "Parking policies for areas well served by public transit shall be designed to **encourage travel by public transit and alternative transportation**." As detailed in the General Plan and various neighborhood plans, city staff have interpreted this policy to mean parking management should prioritize shopper and resident parking over commuter parking, particularly in employment centers well-served by transit.
- "**New transportation investment should be allocated to meet the demand for public transit** generated by new public and private commercial and residential developments." This policy recognizes that increases in person trips due to new development and economic growth should primarily be accommodated by improvements to public transit service. Investing in additional transit capacity and greater reliability is a more prudent use of scarce transportation resources than widening roadways and adding parking to accommodate more vehicle trips, as right-of-way and financial constraints prevent accommodating all new person trips in San Francisco by private automobile.

## Emissions Reduction and Transit Reform Act

- "San Francisco residents require:
- Reliable, safe, timely, frequent and convenient transit service to all neighborhoods;
- Roads that are not gridlocked with congestion;
- Efficient movement of goods and deliveries;
- A well-managed and well-coordinated transportation system that contributes to a livable urban environment."
- "The effective management of traffic flow and parking are vital to the operation of the Municipal Railway. Congestion on city streets causes delays in transit operations. Therefore,

the **Municipal Transportation Agency must manage parking and traffic flow to ensure that transit vehicles move through City streets safely and efficiently**."

- "Because the Agency has significant influence on San Francisco's transportation sector, which is responsible for fully half of the carbon emissions produced within the City, **the voters direct the Agency to develop and implement strategies for substantially reducing those emissions**."
- "The Agency shall be responsible for management of parking and traffic functions within the City, so as to:
- Provide priority to transit services in the utilization of streets […];
- Facilitate the design and operation of City streets to enhance alternative forms of transit […];
- Propose and implement street and traffic changes that give the highest priority to public safety and to impacts on public transit, pedestrians, commercial delivery vehicles and bicycles; [and]
- Ensure that parking policies and facilities contribute to the long-term financial health of the Agency."

March 2008


# The SFMTA Parking Management Program
# Scope of Work – Parking Pilot Projects

SFMTA | Municipal Transportation Agency

## Document Overview

This statement of work describes the SFpark parking management pilot projects to be completed as part of the August 6, 2007 San Francisco Urban Partnership Agreement (UPA) between the U.S. Department of Transportation and the San Francisco Bay Area Urban Partner.

The SFMTA will complete the demonstration projects described in this document using Value Pricing Pilot Program (VPP) and Transportation, Community, and System Preservation (TCSP) funding authorization from the Federal Highway Administration (FHWA), as well as 20 percent match from local sources.

This document contains a scope of work with an overview of the pilot project deliverables, schedule, budget, and funding plan for those SFpark pilot parking projects funded by the UPA. As SFpark pilot projects are still in the planning phase, project information in this document will be refined by further project planning and the development of a concept of operations.

It should be noted that the implementation and evaluation details for some pilot projects may necessarily change in response to unforeseen constraints. In addition, changes to the implementation and evaluation details may result from lessons learned in the early phases of implementation.

The SFpark **Mission, Vision, and Goals** document outlines the framework SFpark will use as it develops and implements projects and programs, including the parking pilot projects described in this document. Any potential changes during the planning, implementation, or evaluation of the pilot projects will be guided by the SFpark **Vision, Goals, and Principles** document.

# **Introduction to** SFpark

To address San Francisco's parking issues, the SFMTA created SFpark, its parking management program. The goal of SFpark is to use new parking management approaches and technology to manage San Francisco's parking supply and demand in ways that support the SFMTA's overall transportation goals.

SFpark will supplement existing SFMTA resources with UPA funding to demonstrate ways that a city's on-street and off-street parking supply, a limited and valuable public asset, can be managed using demand-responsive pricing to reduce congestion. This is particularly important in San Francisco's major employment, commercial, and tourist centers as parking management affects congestion levels, economic vitality, and quality of life.

UPA funding will accelerate SFpark efforts to develop new strategies to manage parking more effectively in San Francisco, enabling larger pilot projects on an accelerated timeline (per the requirements of the Urban Partnership Agreement). The evaluation of the UPA-funded pilot projects will guide how the SFMTA proceeds with plans to manage parking more effectively citywide.

The SFpark parking pilot projects will have unique value as a demonstration project for other cities. They leverage the SFMTA's unique mandate to effectively manage movement on City streets and status as the operator of San Francisco's public transit system (Muni), on-street parking, and a significant portion of the off-street (garages and lots) parking supply. The SFMTA expects the parking-based congestion management strategies tested during these pilot projects to offer an effective strategy that could be easily replicated in other cities because of its relative low cost and ease of implementation.

The new parking technologies include networked multispace parking meters, parking occupancy sensors, and parking information systems. Together, these technologies will enable more sophisticated and effective meter maintenance, enforcement, and parking management via demand-responsive pricing. Parking information systems will provide motorists with better information about parking location, availability, and price both **before** and **during** their trips, helping people to make more informed travel choices.

## Expected outcomes of better parking management

Better parking management is expected to deliver many benefits, including:

- Reduce congestion by reducing drivers circling for parking. Congestion from this source will be reduced by using demand-responsive pricing to manage our parking supply towards availability targets, so that drivers will be able to find a parking space much more quickly.
- Reduce parking demand at peak times. In the longer term, demand-responsive pricing of parking may reduce peak parking demand, which will also help to manage congestion during peak times.
- Improve the reliability of public transit, both Muni and regional bus services, by reducing congestion. Congestion is usually worst in busy areas during peak times, precisely when and where reliable transit service is most critical.

- Reduce transportation-related greenhouse gas emissions by reducing vehicle miles travelled caused by unnecessary circling for parking, reducing overall parking demand in the longer term, and making public transit more attractive.

## Purpose of parking pilot projects

While SFpark pilot projects will start to deliver benefits in pilot areas, SFpark aims to deliver these benefits by managing parking more intelligently citywide by 2010. To position the SFMTA so that it can achieve this goal, SFpark plans to complete several projects, including some parking pilot projects.

The pilot projects are a crucial step. Combined with thorough before/after analysis, they will help the SFMTA to:

1. Refine new approaches to parking management in pilot areas before proposing a new parking management framework for the City.
2. Evaluate how effective parking management, in particular demand-responsive pricing to achieve availability targets, is for reducing congestion and therefore improving the reliability of public transit and reducing transportation-related greenhouse gas emissions.
3. Evaluate the effectiveness of sound parking management along with variable tolling in achieving the larger goals for congestion reduction and consequent improvements in mode share, public transit, and transportation-related greenhouse gas emissions.
4. Increase the cost-effectiveness of parking enforcement. Without proper enforcement, the tools of parking management are much less effective.
5. Develop effective approaches to providing information about parking location, availability, and price to drivers.
6. Evaluate (and eventually choose) the right new technology that enables more intelligent parking management.

## Scope of parking pilot projects

The parking pilot projects will include approximately 6,425 on-street metered parking spaces (approximately 25% of total), and 11,667 parking spaces in SFMTA-managed parking garages and lots. The following provides a high level overview of what the pilots will test:

| |
|---|
| **Parking management Refining our approach to parking management to help achieve availability goals** |
| Evaluate demand responsive pricing and relaxation of time limits to manage congestion |
| Establish the right relationship between the price of metered on-street parking and parking garages/lots |
| Change when parking is regulated (e.g., evenings and/or weekends) |
| Test new solutions for spillover/ residential parking issues |
| **Enforcement Testing new approaches and technologies to make enforcement safer, easier, and more efficient** |
| Test new approaches to enforcement (independent of new technology) |
| Test new enforcement techniques that take advantage of new technology |
| **Driver information Providing information to drivers to help them make informed decisions** before **and** during **their trip** |
| Make parking location, availability, and price information available via internet, PDA, and phone |
| Expand the use of guidance signage – dynamic and static – to deliver parking information to drivers |
| **Technology How new technologies can enable more effective management of our limited parking supply** |
| Test pay-by-space multispace meters |
| Test pay-and-display multispace meters (where appropriate) |
| Test in-street sensors to get occupancy data to inform pricing, enforcement, and policy evaluation |
| Test in-street sensors to get traffic volume and speed data to inform policy evaluation |
| Test new handheld devices that allow more efficient enforcement strategies |

## SFpark **non-pilot projects**

Independent of the parking pilot projects, SFpark also plans to pursue several projects through FY2010 to help address some of San Francisco's most important parking management issues. The SFMTA is in the process of prioritizing which issues to address, but likely non-pilot projects include:

- Establish an accurate survey of the parking supply as a basis for sound parking management.
- Address disabled placard abuse.
- Promote parking cash out (a scheme that provides more incentives for people to use sustainable transportation).
- Clarify SFMTA policies to manage and promote car sharing.

# Overview of the Parking Pilots

## Context for parking pilot projects

Two related SFMTA projects are moving forward concurrently that affect or will be affected by the SFpark: implementation of the Transit Effectiveness Program (TEP) recommendations to improve Muni performance, and an upcoming procurement process for new parking meters.

The TEP and SFpark are complementary. The TEP is a multi-year, multi-million dollar study of Muni operations and routing, and two of its primary goals are to improve Muni speed and reliability. By reducing congestion, SFpark parking pilot projects (and subsequent improvements to parking management citywide) will support those goals for Muni. TEP-related improvements to Muni promise to make Muni even more attractive as a travel option for more people and more trips.

In addition to the TEP, the SFMTA also has an upcoming procurement for new parking meters. In 2009, the SFMTA plans to release a request for proposal (RFP) to buy new parking meters after the pilot project period. As part of the parking pilot project, SFMTA will be testing new and different types of parking meters. The experienced gained with these meters will assist in shaping the specifications needed for the City's new parking meters. Following the pilot project and parking meter procurement, it is expected that the SFMTA Board will adopt a parking management strategy to guide the implementation of new parking policies citywide.

## Schedule for parking pilot projects

The schedule for all UPA-funded projects is very aggressive: all projects must be planned, implemented, and evaluated by September 30, 2009. The SFMTA plans to meet this schedule, with the majority of pilot project areas having been in operation for at least 12 months before the formal end of the UPA projects, sufficient time to thoroughly test pilot project concepts and go through one full seasonal cycle.

Below is a summary of the planned schedule for the parking pilot projects. **Note: This approximate schedule will be made more specific and detailed as planning for the pilot project is completed.**

- Spring 2008: Finish planning of SFpark parking pilot projects
- Summer 2008: Collect "before" data; begin implementation of pilot projects;
- Fall 2008: Institute new approaches to parking enforcement in pilot areas
- Early 2009: Evaluate new parking meter technology to inform RFP for new meters
- Spring 2009: Release RFP for new parking meters and related equipment
- Fall 2009: Write final evaluation of parking pilot projects
- Spring 2010: SFMTA Board approves new city wide parking management approach
- Summer 2010: Install additional new (SFMTA-purchased) parking meters

Meeting this aggressive implementation schedule depends on several factors, some of which could significantly delay the start dates of the pilot projects. The two most significant factors are:

- **Procurement of services and equipment.** In order to implement the pilot projects, SFMTA will need to purchases goods and services, such as new parking meters and in-street sensors, as well as professional services for assistance with planning, data collection, data integration, and so on. The length of the procurement process depends upon requirements as well as what procurement mechanisms are available to the SFMTA. The SFMTA is investigating different alternatives for procuring these goods and services that will allow it to fulfill the UPA project timeline.

- **When variable tolling is instituted.** One of the purposes of the UPA grant funding is to evaluate the combination of parking management and variable tolling, so the parking pilot projects cannot end until some time (at least three months) after the start of variable tolling at the Golden Gate Bridge toll plaza.

  According to the Golden Gate Bridge, Highway and Transportation District, this variable tolling could begin as soon as September 2008, and will start no later than September 2009. To accommodate this uncertainty and ensure the parking pilot project overlap for at least three months with variable tolling, the SFMTA plans to conduct its parking pilot projects through at least December 2009.

  The SFMTA will perform a full pilot project evaluation by September 2009 (to provide to Federal agencies that provided the UPA grants and to prepare a proposal for new parking management policies for San Francisco). If variable tolling is implemented too late in 2009 to be included in the evaluation, the SFMTA will complete a supplemental evaluation in early 2010.

## **Partners in** SFpark **pilot projects**

The SFpark parking pilot projects are funded by a combination of funds from the Federal Urban Partnership Program (UPP) and local sources. The UPP program selected five cities to demonstrate innovative methods to reduce congestion, and San Francisco's grant application was chosen, in part, to test parking-based congestion management.

During the planning and implementation of the parking pilot projects, SFMTA will coordinate with its local UPP partners, including the Metropolitan Transportation Commission (MTC) and the San Francisco County Transportation Authority (SFCTA).

The SFMTA has also partnered with a team of four transportation academics, including Dr. Donald Shoup, an internationally-recognized expert in the area of parking management, to advise SFpark on study design, serve as a technical advisory committee, and undertake a significant portion of the data analysis. This partnership will help to ensure that the pilot projects provide the kind of rigorous before/after analysis the SFMTA needs to make subsequent decisions about parking management policies and technologies.

## Summary: What SFpark pilot projects will test

The following table provides an overview of how the pilot projects will help to evaluate different aspects of on- and off-street parking management.

| **Parking Management Approaches – Metered On-Street Parking and SFMTA Metered Parking Lots** |
|---|
| Test the effectiveness of different pricing structures:<br>• Vary price by time of day, length of stay, and length of stay AND time of day<br>• Vary price for special events |
| Test relaxing time limits to test the effectiveness of using both pricing and time limits to achieve availability goals. |
| Test when parking is priced – test metering parking in at least some pilot areas during expanded hours on weekday evenings, Friday and Saturday evenings, and Sundays. |
| Test strategies for managing spillover parking in residential areas. |
| **Parking Management Approaches – SFMTA Parking Garages** |
| Test the effectiveness of different pricing structures to achieve goals. |
| Establish the right relationship between the price of metered on-street parking and parking garages/lots. |
| Test the effectiveness of different pricing structures for achieving availability and demand management goals. Different strategies:<br>• Reduce or eliminate early-bird discounts and/or time window<br>• Replace unlimited monthly parking pass with bulk discount for individual uses<br>• Minimize discounts for long-term parking passes |
| **Parking Information and Guidance System** |
| Test providing information about parking location, availability, and price to drivers before and during their trip. |
| Test more widespread use of parking guidance signage (dynamic and static) to more effectively direct drivers to parking garages with available spaces. |
| **Parking Management Technology** |
| Test multi-space parking meters that can be networked, allowing remote price changes, real time meter status and usage data (for example, meter status, battery, coin box, etc.) for analysis to main server, and send service alerts when meter is out of service. |
| Test increasing convenience of parking by offering drivers many more payment methods (such as coins and credit/debit cards, as well as pay by cell phone, prepaid cards, TransLink, and other smart cards, if technically feasible) |

| |
|---|
| Test in-street parking sensors to test their usefulness, accuracy, and ability to integrate with parking meters to support tests for length of stay pricing and new enforcement approaches. |
| Test the ability of in-street sensors to accurately detect vehicle speed and volume to help measure reductions in congestion. |
| Test how data from these devices can enable better parking management and improve efficiency of parking enforcement. |
| Test FasTrak as a new form of payment in parking garages. |
| **Enforcement** |
| Test effectiveness of higher levels of enforcement. |
| Test different approaches to enforcement to see how enforcement can become more efficient and cost-effective. |

## Examples of pricing options

As the use of demand-responsive pricing for both on- and off-street parking is the primary tool for reducing congestion, the pricing models the SFMTA intends to test and evaluate merit special illustration. The following tables use hypothetical times of day and prices per hour to illustrate the pricing structures that will be evaluated for their effectiveness in achieving availability and therefore congestion management goals.

**Vary price by time of day**

| Time when parked | Price per hour |
|---|---|
| 8am-10am | $3.50 |
| 10am-4pm | $2.00 |
| 4pm-7pm | $3.00 |
| 7pm-9pm | $1.00 |

**Vary price by length of stay**

| Hour of parking | Price for that hour |
|---|---|
| 1st | $1.00 |
| 2nd | $1.50 |
| 3rd | $2.00 |
| 4th (and successive hours) | $2.50 |

**Vary price by length of stay AND time of day**

**Price of 1st hour varies by time of day**

| Time | Rate |
|---|---|
| 8am-10am | $3.50 |
| 10am-4pm | $2.00 |
| 4pm-7pm | $3.00 |
| 7pm-9pm | $1.00 |

**Price for each successive hour of parking**

| Time | Rate |
|---|---|
| 2nd hour | $1.50 |
| 3rd hour | $2.00 |
| 4th hour (and successive hours) | $2.50 |

For on-street metered parking, the price of parking will also vary by location. Prices could vary block to block depending on demand. For example, parking may become less expensive the farther it is located from a popular commercial area or other trip generator. For time of day pricing, the time periods when different prices are charged will vary with demand.

SFpark will use demand-responsive parking prices to achieve availability goals. This approach will help to balance parking demand with our limited parking supply, helping to ensure that motorists can readily find a parking space and increasing the value of parking.

Parking pricing should respond to demand: the most desirable on-street spaces may need higher prices, while less convenient parking spaces, whether on-street, in lots, or in garages, may need lower prices.

Because parking demand varies over time, parking prices should also vary by time of day and day of week; for example, prices can rise when demand is highest, and go down when demand is lower.

In addition to using demand-responsive pricing for on- and off-street parking, the pilot projects will also test relaxing time limits for metered on-street parking in order to evaluate how effectively price, rather than time limits, encourages turnover. To enable the active management of parking during the parking pilots, the SFMTA Board has authorized adjusting the rates and hours of paid operation as necessary to achieve availability targets for on- and off-street parking pilot projects. Changes to price will be made gradually and periodically so that people can absorb new information and have the opportunity to change travel behavior. For example, prices may be evaluated and adjusted every six weeks, and be raised or lowered, according to demand, no more than $0.25/hour.

## **Planned** SFpark **parking pilot project areas**

The SFMTA has selected six areas in which to conduct parking pilots that are either major employment and commercial centers or neighborhood commercial centers that generate many trips. Each area has a unique land use and, therefore, unique parking conditions that will allow the Agency to test several representative areas of the City. The Agency will implement parking pilots appropriate for these varied land uses and parking conditions. The pilot project areas and implementation details will be refined during the detailed planning phase while working with pilot area stakeholders and communities.

As noted, the implementation and evaluation details for some of the pilot projects may change in response to unforeseen technical or financial constraints. In addition, changes to the implementation and evaluation details may result from lessons learned in the early phases of implementation.

- **Downtown.** With a high concentration of employment, SFMTA parking garages, and on-street commercial loading, the central business district is an optimal location to evaluate strategies to achieve congestion and parking availability goals using the pricing of off-street parking.
- **Civic Center/Hayes Valley.** Like Downtown, the Civic Center/Hayes Valley area is a major employment center, but differs in that it has more on-street metered parking, fewer off-street parking facilities, and less on-street parking for commercial loading. Parking demand in the area comes from both people with short-term business in the Civic Center and Hayes Valley area, as well as commuters looking for all-day parking.
- **Fillmore.** The Fillmore is a thriving neighborhood commercial district with significant off-street parking facilities and variable parking demand, which is often high in the evenings because of special events at several music venues.
- **Fisherman's Wharf.** This tourist center is a large trip generator, especially on weekends and holidays, which can cause congestion on the Doyle Drive corridor.
- **Southern Embarcadero.** As an extension of Downtown and centered around the baseball stadium, the unique conditions in Southern Embarcadero will allow SFMTA to evaluate pricing for special events to determine how to best manage limited parking supply when there is very high demand.

- **Chestnut/Lombard.** With high and varied demand, this neighborhood commercial area is closely linked to the Doyle Drive corridor. As a neighborhood commercial center, Chestnut/Lombard has a high volume of restaurants, bars, and retail shops.
- **Control area: Mission/Valencia (with sensors, meters, and parking management changes).** A thriving commercial district, Mission/Valencia has significant off-street parking facilities and variable parking demand, with especially high parking demand during the evenings that is often driven by special events.
- **Control area: Union Street (with sensors and meters).** Union Street is a neighborhood commercial area known for its restaurants, bars, and shops. The Agency intends to use Union Street as a control area that receives both new meters (that allow convenient payments) and in-street sensors to help evaluate changes in parking demand.
- **Control areas: Clement/ Geary and West Portal (with sensors).** Clement and Geary as well as West Portal are busy neighborhood commercial streets. In these areas, only sensors will be installed to evaluate parking demand in a strict "no change" control environment.
- **Residential Parking Management.** In residential areas adjacent to the pilot projects, to address the possibility of additional spillover for parking demand into residential areas, the SFMTA will likely need to work with communities to adjust the time period when RPP is enforced, helping to protect residents from any potential changes in parking demand. The SFMTA will also seek to identify at least two communities that are willing to test one of two new approaches to managing residential parking in areas that are near major trip generators, in particular neighborhood commercial districts.

  The SFMTA will test approaches to managing on-street metered parking in commercial areas, off-street parking (i.e., public parking lots and garages), and surrounding residential parking as a coherent whole. This coherent approach to parking management in a large area or neighborhood may offer even larger congestion management benefits, while at the same time helping to address parking management issues on a community and/or neighborhood level. More broadly, these pilot tests will allow the SFMTA to evaluate strategies for better parking management in residential areas, and may allow the SFMTA to develop a new "tool" or strategy it can employ in the future to address parking issues in communities where on-street parking is problematic.

  The SFMTA intends to pilot test two approaches to coherent parking management centered on neighborhood commercial districts. One approach works within the current residential parking permit (RPP) program, while the other starts fresh to pilot test a new "best practices" approach.
- **Improved Enforcement.** Active management of parking resources requires consistent levels of adequate enforcement. Without enforcement, changes to parking regulations are not as meaningful. As part of the SFpark pilot projects, SFMTA Enforcement will provide a dedicated group of PCOs for parking enforcement in pilot and control areas, and will test new approaches to enforcement that will allow the same number of PCOs to provide a higher level of more responsive enforcement.
- **Parking Guidance and Traveler Information Systems.** As part of the pilot projects, SFpark will make available to motorists new data about parking availability and price, both off-street in parking garages and lots, as well as on-street metered parking. Data will be available to

motorists on the internet **before** trips, helping people to make more informed decisions about how to travel. Data will also be available on mobile devices such as cell phones to provide motorists with information **during** their trip to help them quickly find parking near their destination.

An appendix at the end of this document contains maps that describe the extent of the pilot project areas.

**What payment methods will be accepted**

| | **Pilot meters** | **All meters** | **Pilot garages** | **All garages** |
|---|---|---|---|---|
| **Cash/coins** | ** | ** | ** | ** |
| **Credit card/ debit card** | ** | | ** | ** |
| **SFMTA parking smart card** | ** | ** | | |
| **Pay by cell if feasible** | ** | ** | | |
| **FasTrak** | | | ** | |
| **TransLink if feasible** | ** | | | |

## Summary of SFpark pilot project areas (with possible implementation details)

| **Downtown (and northern SOMA)** | **Sutter/ Stockton Garage** | **5th & Mission Garage** | **Moscone Garage** | **Golden Gate Garage** | **Union Square Garage** | **St. Mary's Garage** | **Ports-mouth** | **Ellis/ O'Farrell** | **On-street metered parking** |
|---|---|---|---|---|---|---|---|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 1865 | 2585 | 732 | 1095 | 985 | 639 | 504 | 925 | 2100 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | | | | | | | | | |
| Credit /debit card | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Cell phone | | | | | | | | | ● |
| SFMTA parking smart card | | | | | | | | | ● |
| FasTrak | ● | ● | | | | | | | |
| **Garage parking pricing / management** | | | | | | | | | |
| Price by length of stay **AND** time of day | ● | ● | ● | ● | ● | ● | ● | ● | |
| Special event pricing | | | | | | | | | |
| Minimize long-term parking pass discount | ● | ● | ● | ● | ● | ● | | | |
| Reduce early-bird discounts and/or time window | NA | NA | ● | ● | NA | ● | | | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | ● | ● | ● | ● | ● | ● | | | |
| Test web-based reservations (if feasible) | | | | | | | | | |
| **On-street metered parking pricing / management** | | | | | | | | | |
| Price by length of stay (costs more per hour for longer stays) | | | | | | | | | |
| Price by time of day (vary first hour, then flat rate thereafter) | | | | | | | | | |
| Price by length of stay **AND** time of day | | | | | | | | | ● |
| Special event pricing | | | | | | | | | |
| Change times and/or days when parking is metered | | | | | | | | | ● |
| Relax time limits | | | | | | | | | ● |

| **Civic Center/ Hayes Valley** | **Civic Center Garage** | **Perform-ing Arts Garage** | **On-street metered parking** |
|---|---|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 843 | 618 | 900 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | | | |
| Credit /debit card | ● | ● | ● |
| Cell phone | | | ● |
| SFMTA parking smart card | | | ● |
| FasTrak | | | |
| **Garage parking pricing / management** | | | |
| Price by length of stay **AND** time of day | ● | ● | |
| Special event pricing | ● | ● | |
| Minimize long-term parking pass discount | | ● | |
| Reduce early-bird discounts and/or time window | NA | ● | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | | ● | |
| Test web-based reservations (if feasible) | ● | ● | |
| **On-street metered parking pricing / management** | | | |
| Price by length of stay (costs more per hour for longer stays) | | | |
| Price by time of day (vary first hour, then flat rate thereafter) | | | |
| Price by length of stay **AND** time of day | | | ● |
| Special event pricing | | | |
| Change times and/or days when parking is metered | | | ● |
| Relax time limits | | | ● |

| **Fillmore** | **Japantown Annex Garage** | **California/ Steiner Lot** | **On-street metered parking** |
|---|---|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 175 | 48 | 525 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | | | |
| Credit /debit card | ● | ● | ● |
| Cell phone | | ● | ● |
| SFMTA parking smart card | | | ● |
| FasTrak | | | |
| **Garage parking pricing / management** | | | |
| Price by length of stay **AND** time of day | ● | ● | |
| Special event pricing | ● | | |
| Minimize long-term parking pass discount | ● | | |
| Reduce early-bird discounts and/or time window | ● | | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | ● | | |
| Test web-based reservations (if feasible) | ● | | |
| **On-street metered parking pricing / management** | | | |
| Price by length of stay (costs more per hour for longer stays) | | ● | ● |
| Price by time of day (vary first hour, then flat rate thereafter) | | | |
| Price by length of stay **AND** time of day | | | |
| Special event pricing | | | ● |
| Change times and/or days when parking is metered | | | ● |
| Relax time limits | | | ● |

| **Chestnut/ Lombard** | **Lombard Garage** | **On-street metered parking** |
|---|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 205 | 280 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | | |
| Credit /debit card | ● | ● |
| Cell phone | | ● |
| SFMTA parking smart card | | ● |
| FasTrak | | |
| **Garage parking pricing / management** | | |
| Price by length of stay **AND** time of day | ● | |
| Special event pricing | | |
| Minimize long-term parking pass discount | | |
| Reduce early-bird discounts and/or time window | | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | | |
| Test web-based reservations (if feasible) | | |
| **On-street metered parking pricing / management** | | |
| Price by length of stay (costs more per hour for longer stays) | | ● |
| Price by time of day (vary first hour, then flat rate thereafter) | | |
| Price by length of stay **AND** time of day | | ● |
| Special event pricing | | |
| Change times and/or days when parking is metered | | ● |
| Relax time limits | | ● |

| **Fisherman's Wharf** | **On-street metered parking** |
|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 525 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | |
| Credit /debit card | ● |
| Cell phone | ● |
| SFMTA parking smart card | ● |
| FasTrak | |
| **Garage parking pricing / management** | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Minimize long-term parking pass discount | |
| Reduce early-bird discounts and/or time window | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | |
| Test web-based reservations (if feasible) | |
| **On-street metered parking pricing / management** | |
| Price by length of stay (costs more per hour for longer stays) | ● |
| Price by time of day (vary first hour, then flat rate thereafter) | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Change times and/or days when parking is metered | ● |
| Relax time limits | ● |

| **Southern Embarcadero** | **On-street metered parking** |
|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 500 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | |
| Credit /debit card | ● |
| Cell phone | ● |
| SFMTA parking smart card | ● |
| FasTrak | |
| **Garage parking pricing / management** | |
| Price by length of stay **AND** time of day | |
| Special event pricing | ● |
| Minimize long-term parking pass discount | |
| Reduce early-bird discounts and/or time window | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | |
| Test web-based reservations (if feasible) | ● |
| **On-street metered parking pricing / management** | |
| Price by length of stay (costs more per hour for longer stays) | |
| Price by time of day (vary first hour, then flat rate thereafter) | ● |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Change times and/or days when parking is metered | ● |
| Relax time limits | ● |

| **Control: Mission/ Valencia** | **Mission/ Bartlett Garage** | **16th/ Hoff** | **On-street metered parking** |
|---|---|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 350 | 98 | 750 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | | | |
| Credit /debit card | ● | ● | ● |
| Cell phone | | | ● |
| SFMTA parking smart card | | | ● |
| FasTrak | | | |
| **Garage parking pricing / management** | | | |
| Price by length of stay **AND** time of day | ● | ● | |
| Special event pricing | | | |
| Minimize long-term parking pass discount | | | |
| Reduce early-bird discounts and/or time window | NA | NA | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | | | |
| Test web-based reservations (if feasible) | | | |
| **On-street metered parking pricing / management** | | | |
| Price by length of stay (costs more per hour for longer stays) | | | |
| Price by time of day (vary first hour, then flat rate thereafter) | | | ● |
| Price by length of stay **AND** time of day | | | |
| Special event pricing | | | |
| Change times and/or days when parking is metered | | | ● |
| Relax time limits | | | ● |

| **Control: Clement/ Geary** | **On-street metered parking** |
|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 525 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | |
| Credit /debit card | ● |
| Cell phone | ● |
| SFMTA parking smart card | ● |
| FasTrak | |
| **Garage parking pricing / management** | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Minimize long-term parking pass discount | |
| Reduce early-bird discounts and/or time window | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | |
| Test web-based reservations (if feasible) | |
| **On-street metered parking pricing / management** | |
| Price by length of stay (costs more per hour for longer stays) | |
| Price by time of day (vary first hour, then flat rate thereafter) | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Change times and/or days when parking is metered | |
| Relax time limits | |

| **Control: Union St.** | **On-street metered parking** |
|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 180 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | |
| Credit /debit card | ● |
| Cell phone | ● |
| SFMTA parking smart card | ● |
| FasTrak | |
| **Garage parking pricing / management** | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Minimize long-term parking pass discount | |
| Reduce early-bird discounts and/or time window | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | |
| Test web-based reservations (if feasible) | |
| **On-street metered parking pricing / management** | |
| Price by length of stay (costs more per hour for longer stays) | |
| Price by time of day (vary first hour, then flat rate thereafter) | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Change times and/or days when parking is metered | |
| Relax time limits | |

| **Control: West Portal** | **On-street metered parking** |
|---|---|
| Number of pilot garage/ parking lot/ metered spaces | 100 |
| **Payment options** **For pilot on-street metered parking, all new meters will accept coins and credit/debit cards, as well as (if technically feasible) pay by cell and the SFMTA smart parking card** | |
| Credit /debit card | ● |
| Cell phone | ● |
| SFMTA parking smart card | ● |
| FasTrak | |
| **Garage parking pricing / management** | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Minimize long-term parking pass discount | |
| Reduce early-bird discounts and/or time window | |
| Complement unlimited monthly parking pass with pre-purchased bulk discount for one-time use tickets | |
| Test web-based reservations (if feasible) | |
| **On-street metered parking pricing / management** | |
| Price by length of stay (costs more per hour for longer stays) | |
| Price by time of day (vary first hour, then flat rate thereafter) | |
| Price by length of stay **AND** time of day | |
| Special event pricing | |
| Change times and/or days when parking is metered | |
| Relax time limits | |

# Evaluation of the Pilot Projects

The SFpark pilot projects are an opportunity for the SFMTA and its Federal partners to better understand the effect of new approaches to parking management. It is crucial that the pilots are carefully planned, monitored, and evaluated. This evaluation will prepare the SFMTA for citywide adoption of new parking management approaches, and will provide empirical data to other cities interested in the same kind of parking management.

## Key aspects of the parking pilot project study design

- **Control areas –** Several strategies will be employed to provide necessary "controls" that can be used to determine what changes to parking behavior are due to changes in parking management rather than factors such as the weather, vicissitudes of the local economy, or wider changes in the transportation system.

  In addition to the pilot areas, other commercial areas will be used as controls. The control areas will receive dedicated enforcement to provide the same consistent level of enforcement as the other pilot areas. In some control areas, only sensors will be installed to provide a "no change" control area. In other control areas, sensors and new parking meters will be installed, but no other changes will be made. In another control area, sensors and new meter technology will be installed, and changes will be made to price and time limits.

  The SFMTA also plans to use parking tax revenue data from private parking garages as well as revenue from SFMTA parking garages that do not participate in the pilot project as control data.

- **Pilot areas of sufficient size** – Pilot project areas must be defined broadly enough so that the effect of parking management changes in metered areas can be measured and to determine whether parkers are just parking in different locations or actually changing trip patterns. This will, for example, require gathering occupancy data in surrounding non-metered areas.

- **Sufficient duration –** The pilot projects must be of adequate duration in order to evaluate behavioral changes and to gather "before" data.

- **Sufficient "before" data** – To ensure the evaluation has sufficient "before" data, approximately eight weeks of data about parking demand will be collected from in-street sensors before significant changes are made in pilot areas.

- **Appropriate phasing of changes** – In each pilot area, changes will be phased and timed so that the effect of each change can be distinguished from other changes.

- **Appropriate frequency of changes** – When changes are made, including price, they must be made periodically and gradually so that motorists can absorb new information and have the opportunity to change travel behavior.
- **Consistent level of enforcement** – The SFMTA will use a dedicated squad of Parking Control Officers (PCOs) to enforce parking regulations in the pilot areas to provide a consistent and higher level of enforcement for the life of the pilot projects. This will help to normalize before and after data.
- **Excellent data collection** – The evaluation will only be as good as the data collected.
- **Parking occupancy monitoring sensors** – These sensors provide the rich data necessary to monitor demand and manage parking.
- **Professional customer intercept surveys** – In order to understand the impact of changes to parking management on travel behavior, retail activity, and motorists' perception, intercept surveys will need to be administered.
- **Cooperation from other City departments** – Evaluating several key aspects of parking policy management will require data from other City departments.
- **Data analysis** – The final step is data analysis. The SFMTA will supplement the DOT's evaluation team with its own analysis, which will be assisted by a team of four academics, including Dr. Donald Shoup.

The level of data collection and analysis planned for the parking pilot projects is unprecedented, and will enable SFMTA and San Francisco policy makers to understand the costs and benefits of a new approach to parking management.

To facilitate this level of data collection, analysis, and evaluation, SFpark is preparing a data management system. This system will allow SFpark to continue to sustain a high level of data collection and evaluation in the future by automating, to the extent possible, data collection, reporting, and basic analysis. This data system will underpin more active and effective parking management in the future beyond the pilot project period.

## Desired Data for Pilot and Control Areas

The following table outlines the "must have" and "would like to have" data that the SFMTA plans to collect and use, to the degree that it is financially feasible, in its evaluation of all pilot project areas and control areas.

| Parking Data | Source | When collected |
|---|---|---|

| | | |
|---|---|---|
| Parking customer satisfaction level/rates (overall) | Intercept surveys | Start and end of pilot period |
| Parking customer satisfaction level/rates (related to different technologies) | Intercept surveys | Start and end of pilot period |
| Inventory of parking supply (for on-street and SFMTA and commercial garages/lots), GIS layers | SFMTA and Treasurer | Summer 2008 |
| Occupancy rates (on-street and off-street) | In-street sensors, garage operators | 24/7 |
| Turnover/length of stay (on-street and off-street) | In-street sensors | 24/7 |
| Compliance (meter payment, time limits, fraud, etc.) | In-street sensors | 24/7 |
| Parking meter revenue (gross and net) | SFMTA | 24/7 |
| Parking fine revenue (gross and net) | SFMTA | 24/7 |
| Payment methods (by customer, on and off-street) | Meters and garage revenue systems | Daily |
| Citation records by block face | SFMTA | Daily |
| Level of enforcement (number of passes in area per day) | SFMTA Enforcement | Daily |
| SFMTA parking garage/lot revenue (gross and net) | Garage operators/ SFMTA | Daily |
| Cost of maintenance (for new meters and sensors) | SFMTA Meter Shop | Monthly |
| Cost of enforcement (for piloted enforcement techniques) | SFMTA Enforcement | Monthly |
| Before and after parking search time | Surveys | Every 6 months |
| Parking tax (by month by facility) for commercial lots/garages | Treasurer | Monthly |
| **Transportation Data** | | |
| **Must have** | | |
| Vehicle speeds | In-street sensors | 24/7 |
| Vehicle counts | In-street sensors | 24/7 |
| Transit operating speeds | SFMTA APCs | 24/7 |
| Transit travel time variation | SFMTA APCs | 24/7 |
| Transit boardings/alightings in pilot areas | SFMTA APCs, BART, Digital Shops | 24/7 |
| **Would like to have** | | |
| Mode split for employees, customers, others | Intercept surveys | Start and end of pilot period |
| Auto, Muni, bicycle, and pedestrian accident rates | Police records | Start and end of pilot period |
| Percent of traffic caused by cruising | TBD | Start and end of pilot period |
| **Retail Data** | | |
| **Must have** | | |
| Sales tax revenue (by block face) | Treasurer | Monthly |
| Merchant perceptions of parking management changes | Intercept surveys | Start and end of pilot period |
| Shopper surveys about how they arrived, what they spent/will spend, what is important about the parking here (availability vs. price), opinion of changes to parking management | Intercept surveys | Start and end of pilot period |

# Budget and Funding

| Project Area and Cost Items | Estimated Cost |
|---|---|
| **Downtown** | |
| Meters and sensors | $3,118,680 |
| Parking garage costs | $496,000 |
| Additional costs | $363,300 |
| **Total (plus 3% contingency)** | **$4,097,319** |
| **Civic Center/ Hayes Valley** | |
| Meters and sensors | $1,760,102 |
| Parking garage costs | $25,600 |
| Additional costs | $155,700 |
| **Total (plus 3% contingency)** | **$1,999,644** |
| **Fillmore** | |
| Meters and sensors | $1,067,307 |
| Parking garage costs | $13,600 |
| Additional costs | $90,825 |
| **Total (plus 3% contingency)** | **$1,206,884** |
| **Fisherman's Wharf** | |
| Meters and sensors | $788,836 |
| Additional costs | $90,825 |
| **Total (plus 3% contingency)** | **$906,050** |
| **Southern Embarcadero** | |
| Meters and sensors | $718,278 |
| Additional costs | $86,500 |
| **Total (plus 3% contingency)** | **$828,921** |
| **Chestnut/ Lombard** | |
| Meters and sensors | $428,379 |
| Parking garage costs | $13,600 |
| Additional costs | $47,575 |
| **Total (plus 3% contingency)** | **$504,241** |
| **Residential meters around pilot areas** | |
| Meters and sensors | $1,456,599 |
| Signage | $101,029 |
| **Total (plus 3% contingency)** | **$1,604,357** |

# Budget and Funding (continued)

| | |
|---|---|
| **Parking Guidance Signage** | |
| Planning | $100,000 |
| Procurement, installation, and integration -- Downtown | $2,900,000 |
| Procurement, installation, and integration -- Civic Center | $2,014,000 |
| **Total (plus 10% contingency)** | **$5,515,400** |
| **Control: Mission/ Valencia** | |
| Meters and sensors | $993,431 |
| Parking garage costs | $13,600 |
| Additional costs | $112,250 |
| **Total (plus 3% contingency)** | **$1,152,859** |
| **Control: Union Street** | |
| Meters and sensors | $613,931 |
| Additional costs | $27,680 |
| **Total (plus 3% contingency)** | **$660,859** |
| **Control: Clement/ Geary** | |
| Sensors | $98,858 |
| **Total (plus 3% contingency)** | **$101,823** |
| **Control: West Portal** | |
| Sensors | $18,340 |
| **Total (plus 3% contingency)** | **$18,890** |
| **Other Pilot Project Costs** | |
| SFMTA staff time (including all overhead) | $812,625 |
| Pilot project planning | $45,000 |
| Data collection, management, and evaluation | $300,000 |
| Enforcement planning and evaluation | $150,000 |
| Communications, PR, marketing, and outreach | $300,000 |
| Data integration and presentation from on-street | $270,000 |
| Data integration and presentation from off-street | $270,000 |
| Other City department staff time (e.g., City Attorney) | $125,000 |
| Meter maintenance/ operations staffing | $110,160 |
| Enforcement staffing | $108,000 |
| Enforcement equipment (vehicles) | $990,000 |
| Enforcement equipment (handhelds + monthly fees) | $317,000 |
| Modify existing handhelds to enable pay by cell | $215,500 |
| **Total (plus 10% contingency)** | **$4,402,752** |
| **Total: all pilot project costs** | **$23,000,000** |

### Notes about budget

- "Additional costs" in the preceding budget summary include curb marking, signage, and painting, as well as some single space meter pole removal and replacement bike parking.
- To the extent the SFMTA is able to negotiate lower prices with vendors, it will use those funds to either expand the scope of the pilots, increase the amount of marketing/education, or pay for unforeseen costs.
- Budget will be refined during more detailed planning in Spring 2008.
- Budget assumes that pilots will operate through December 31, 2009.

## Funding Sources and Schedule

| **Federal** | **FFY 2008** 7/1/08 -- 9/31/08 | **FFY 2009** 10/1/08 -- 9/30/09 | **Total** |
|---|---|---|---|
| FHWA VPP | $4.4 | $4.0 | $8.4 |
| FHWA TCSP | $10.0 | $0.0 | $10.0 |
| **Total Federal Funds** | **$14.4** | **$4.0** | **$18.4** |
| **Local Match = 20%** | | | |
| SFMTA Operating | $2.1 | $1.0 | $3.1 |
| Developer Fees | $1.5 | $0.0 | $1.5 |
| **Total Local Match** | **$3.6** | **$1.0** | **$4.6** |
| **Total Pilot Project Funding** | **$18.0** | **$5.0** | **$23.0** |

# Pilot Project Planning, Management, and Reporting

As part of the pre-implementation phase, the SFMTA will work with its partners to complete the project planning for the SFpark pilot parking projects. Because these parking pilot projects are considered a major intelligent transportation system (ITS) project that connects multiple operations functions across different systems, the SFMTA must prepare a System Engineering Report Form (SERF) and, subsequently, a System Engineering Management Plan (SEMP).

These documents will describe the project plans in more detail (the detailed planning of meter and sensor locations task for each pilot area is included in its respective sections later in this document). Once the project is underway, the SFMTA will manage the ongoing operations of the project. As part of the ongoing project management, the SFMTA will provide quarterly reports for the project and for the overall UPA quarterly report.

## Tasks and Deliverables

1. **Finalize implementation plan for parking pilot projects**. SFMTA will develop an implementation plan for parking pilot projects.

   Deliverable: SFpark **Parking Pilot Project Scope of Work**

2. **Complete System Engineering Report Form**. SFMTA will develop a SERF that provides a high level overview of the ITS aspects of the parking pilot projects.

   Deliverable: System Engineering Report Form

3. **Procure goods and services.** The SFMTA must procure the necessary goods and services for the pilot projects.

   Deliverable: Necessary approvals, selection, and contracting/purchase

4. **Develop Concept of Operations**. A Concept of Operations is a conceptualization of day-to-day conditions and operation of the SFpark pilot parking projects, including how the system will be used and operated, for both SFMTA personnel and drivers.

   Deliverable: Concept of Operations

5. **Develop implementation plan for each pilot project area.** For each pilot project area, the SFMTA will develop detailed implementation plans for each project.

   Deliverable: Technical Memorandum for each project area describing the implementation for that area.

6. **Complete System Engineering Management Plan**. The System Engineering Management Plan is a more detailed technical document that outlines more specifically the project's technical operation and integration.

   Deliverable: System Engineering Management Plan

7. **Modify existing SFMTA database to accept parking-related data.** The SFMTA will use existing data sources to evaluate pilot projects. In addition, parking meters and sensors installed under the auspices of SFpark will provide a tremendous amount of data. The SFMTA must modify an existing database to allow data from multiple sources to be automatically uploaded and efficiently integrated.

   Deliverable: Scope for database modification, including additional development needs

8. **Provide quarterly reports for the project.** As part of its project management duties and to fulfill an obligation of Federal partners, the SFMTA will provide quarterly reports for the project and for the overall UPA quarterly report

   Deliverables: Quarterly reports on project status

## Schedule

| Area and dates | Task |
|---|---|
| **Project planning** | |
| April 2008 | SERF; Finalize SFpark scope of work |
| May 2008 | Concept of Operations |
| May--July 2008 | Modify SFMTA database to accept more parking information |
| May--August 2008 | Detailed plan for each pilot project area |
| June 2008 | Complete SEMP |
| April 2008 – September 2008 | Procurement of goods and services |
| **Project management and reporting** | |
| Ongoing | Provide quarterly reports |

# Parking Information System

## Pilot overview

Data from off-street parking facilities, new parking meters, and on-street occupancy sensors will be used to complement demand-responsive parking pricing with better information about parking location, availability, and price so motorists can make more informed travel choices. These information systems will provide motorists with information **during** their trip to help them quickly find a parking space near their destination. The systems will also provide information **before** trips, helping people to make more informed decisions about how to travel.

The SFMTA will use various strategies to disseminate this parking price and/or availability information to help travelers, including residents, employees and visitors to the City, efficiently find a place to park in the UPA pilot areas. These strategies to disseminate this parking information include:

- **Variable message parking guidance signs** with real-time information about availability in parking garages. These signs will be strategically located on corridors that do not serve as transit preferential streets between the freeway off-ramps and garages, and will be complemented by supplemental static guidance signs.
- **Phone** for parking information via the region's 511 service.
- **Web** for access to parking information either via computer or PDA, at the 511 website, the SFMTA website, and other possible channels.

The SFMTA will also explore the feasibility of additional means to disseminate this information, such as via SMS (text messaging), in-vehicle navigation systems, and low-cost variable message signs near parking garages.

By providing information about parking location, availability, and price, the pilot parking information system will minimize unnecessary circulation of vehicles and therefore congestion. This parking information system is also expected to help optimize utilization of the existing parking resources and help improve garage operations.

The variable message signs will also be connected to the SF**go** Transportation Management Center (TMC), the City's intelligent transportation management center. During special events or in emergencies, the variable message signs will also be used to display messages relating to street closures, incidents, construction activities, and travel time.

## Tasks and Deliverables

1. **Environment impact determination for parking guidance infrastructure**. Before implementation can proceed, the environmental impact of the parking guidance infrastructure must be determined.

   Deliverable:

- Determination of the environmental impact associated with the parking guidance infrastructure installation.

2. **Define the parking information system.** After the completion of the Concept of Operations, the SFMTA will develop a System Engineering Management Plan (SEMP) that will specify the system requirements and architecture for the parking information system. As part of the SEMP, SFMTA will specify the scope and goals for the parking information system and how information will be made available to motorists. As part of this process, the SFMTA will work with the Metropolitan Transportation Commission (MTC) to develop a technical memorandum for how data must be provided to the 511 system so MTC can make it available on the region's 511 traveler information system.

   Deliverable:

   - System Engineering Management Plan with system requirements and project architecture
   - Technical Memorandum outlining integration with regional (511) and SFMTA-specific traveler information systems in collaboration with MTC

3. **Integration with traveler information systems**. After the parking information system is defined, the implementation and necessary software integration can begin in order to start making the parking information available to motorists.

   Deliverable:

   - Do necessary integration to provide data to various channels (e.g., 511 and SFMTA.com)

4. **Make parking data available.** The SFMTA will work with MTC as necessary to resolve issues that arise with SFMTA data delivery to the MTC's 511 service, and assist, as possible, the MTC's efforts to integrate the data into their 511 service. During this task, the SFMTA will make parking information available via its website and will explore other possible channels.

   Deliverables:

   - Assist MTC as necessary with its integration of SFMTA parking data into 511
   - Make parking information available via the SFMTA website and, potentially, other possible channels.

5. **Install parking guidance infrastructure.** During this task, all necessary infrastructure for the parking guidance system will be installed. This infrastructure includes installation of: variable message signs and static guide signs; communications links including fiber optic cables, conduits, and pull boxes; and replacement of traffic signal controllers and cabinets in order to interface the communications links and variable message sign controllers.

Deliverable

- Installation of all parking guidance infrastructure

6. **Do necessary software integration between parking data sources, SFgo, and variable message signage.** Once the variable message signage is installed, it must be integrated with the parking garages' revenue system in order to acquire real-time space availability information. Parking availability information from parking garages will also be interfaced with the SF**go** Transportation Management Center (TMC) to monitor, maintain, and display other real-time traffic information (such as street closures, incidents, construction activities and travel time) when appropriate.

   Deliverable

   - Integration of variable message signs with garage revenue systems and SF**go.**

## Schedule

1. Implementation plan for parking information
   a. Dates: August 2008
   b. Deliverable: Finalize technical memorandum for integration of parking information into traveler information systems
2. Make parking information available
   a. Dates: September 2008 – April 2009
   b. Deliverable: Integrate parking and price information into 511, SFMTA website, and other possible channels
3. Environment impact determination for parking guidance infrastructure
   a. Dates: February 2008
   b. Deliverable: Complete an environmental impact assessment
4. Installation of parking guidance infrastructure
   a. Dates: April 2008 – September 2009
   b. Deliverable: Design, procure, and install parking guidance infrastructure
5. Software integration with garage revenue system and SFgo
   a. Dates: July 2008 – September 2009
   b. Deliverable: Design and implement the software integration

# Enforcement

## Pilot overview

Active management of parking resources requires consistent levels of adequate enforcement. As part of the SFpark pilot projects, SFMTA Enforcement has agreed to provide a dedicated group of Parking Control Officers (PCOs) for parking enforcement in pilot and control areas to provide a consistent level of enforcement throughout the pilots. This is a crucial part of the before/after data analysis, both of the changes to parking management as well as cost-benefit analysis of the net costs and benefits of changes to enforcement levels and strategies.

In addition to a consistent level of dedicated enforcement, SFMTA plans to test new approaches to enforcement during the pilots, which may include:

- **Aligning enforcement staffing to better correspond to actual parking demand patterns** – Parking violations do not stop on nights and weekends, but the number of PCOs goes down significantly during that time, in part because of inadequate staffing and labor costs. Installation of the parking occupancy sensors will provide the SFMTA with the data that could be used to tailor parking enforcement beats and hours to provide an appropriate level of enforcement to match variable parking demand in different areas of the City at different days of the week and times of day. For pilot projects that extend metering into the evening and weekends, resources will be shifted and more resources provided to enforce parking regulations during this time as well.
- **Predictive enforcement** – Using data from in-street sensors, systems can be put in place to provide SFMTA Enforcement with patterns of past violations to help direct PCOs to areas where and when they are most likely to find the highest number of violations, either within existing enforcement beats or newly defined enforcement areas and/or strategies.
- **Different methods of prioritizing enforcement** – The pilots may be an opportunity to test allocating PCO resources to high priority parking violations and or areas that impact the efficiency of the total transportation system. For example, enforcing parking regulations on primary transit corridors as a way to reduce parking-related delays to Muni may be a higher priority than other kinds of violations in other locations.
- **Use of handhelds that allow PCOs to utilize real-time enforcement data in the field** – Networked sensors and meters will provide a new level of real-time information about violations. This information can be provided to PCOs in the field, helping to make their enforcement efforts more targeted and efficient.

Effective and efficient parking enforcement is critical to the success of SFpark pilot projects. By providing a credible threat of enforcement, it will help demand-responsive pricing function as expected to reduce congestion by helping to achieve availability goals, and increase compliance with parking regulations (and, therefore, reduce violations).

## Tasks and Deliverables

1. **Finalize enforcement implementation plan**. SFMTA will develop a final enforcement implementation plan that includes more detail about what approaches and strategies will be tested where.

   Deliverable: SFpark **Pilot Project Enforcement Plan**

2. **Implement enforcement implementation plan**. Improved enforcement will be implemented according to the timing specified in the SFpark **Pilot Project Enforcement Plan**.

   Deliverables: Implement activities specified in SFpark **Pilot Project Enforcement Plan**

3. **Procure new enforcement equipment.** The pilot projects will purchase necessary equipment to enable SFMTA Enforcement to effectively provide a higher level of enforcement and evaluate the feasibility effectiveness new methods of enforcement that leverage investments in parking technology.

   Deliverables:

   - Necessary procurement documents for enforcement handhelds and vehicles
   - Implement the use of new enforcement techniques in pilot and control areas that utilize the new technology

## Schedule

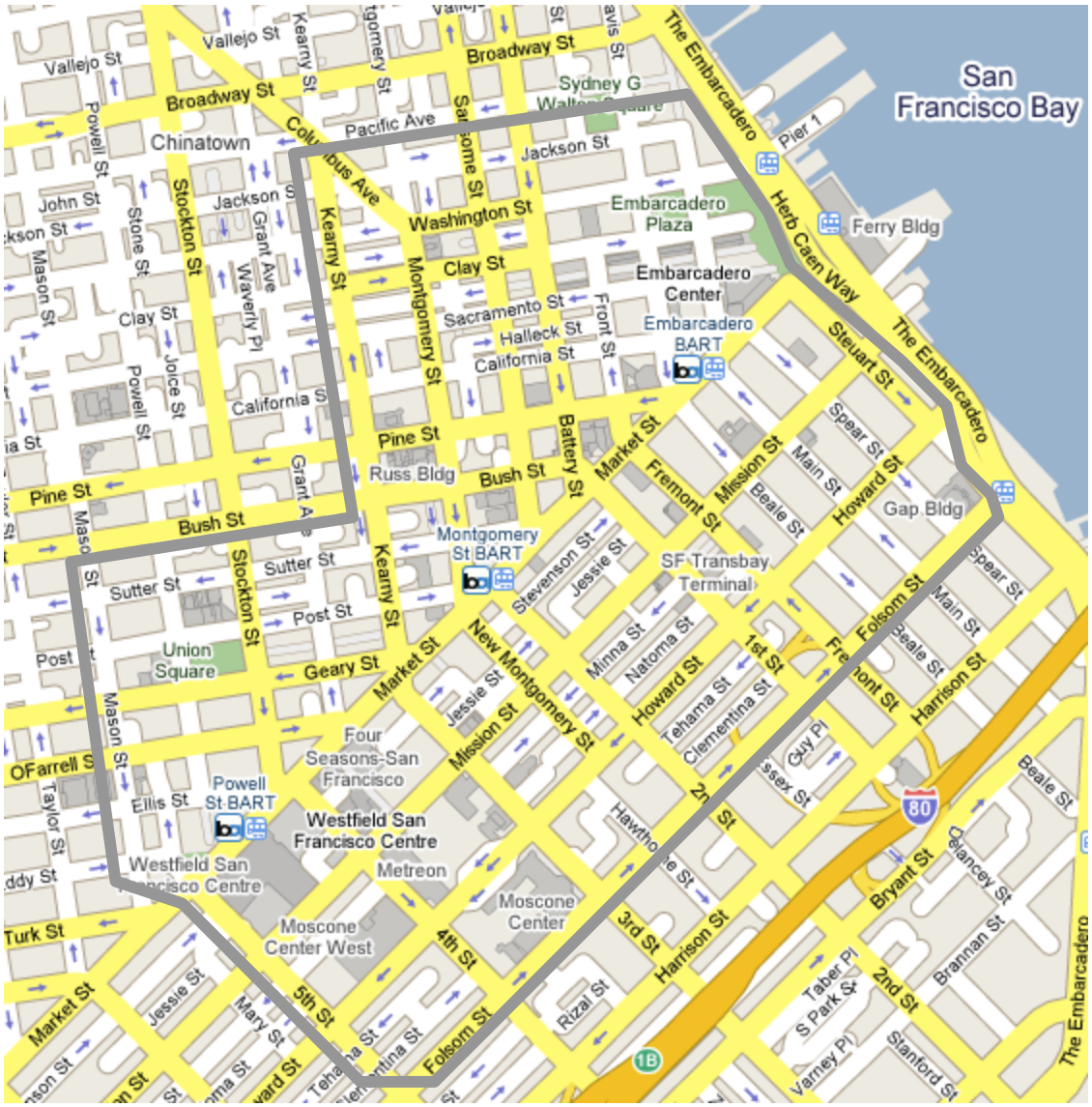
1. Enforcement implementation plan
   a. Date: August 2008
   b. Deliverable: Finalize SFpark **Enforcement Strategic Plan**
2. Implement enforcement plan
   c. Dates: October 2008
   d. Deliverable: Institute improved enforcement
3. Procurement of enforcement equipment
   a. Dates: June 2008 – December 2008
   e. Deliverables: Procure new enforcement handhelds, Software integration for new

# Appendix: Maps of Parking Pilot Areas

The following maps describe the extent of the pilot project areas. The borders are approximate and will be refined during more detailed project planning. The pilot projects will not add additional meters in the project areas; the borders refer to the evaluation area, and in particular where in-street sensors will be used to evaluate the effect of changes in parking management.

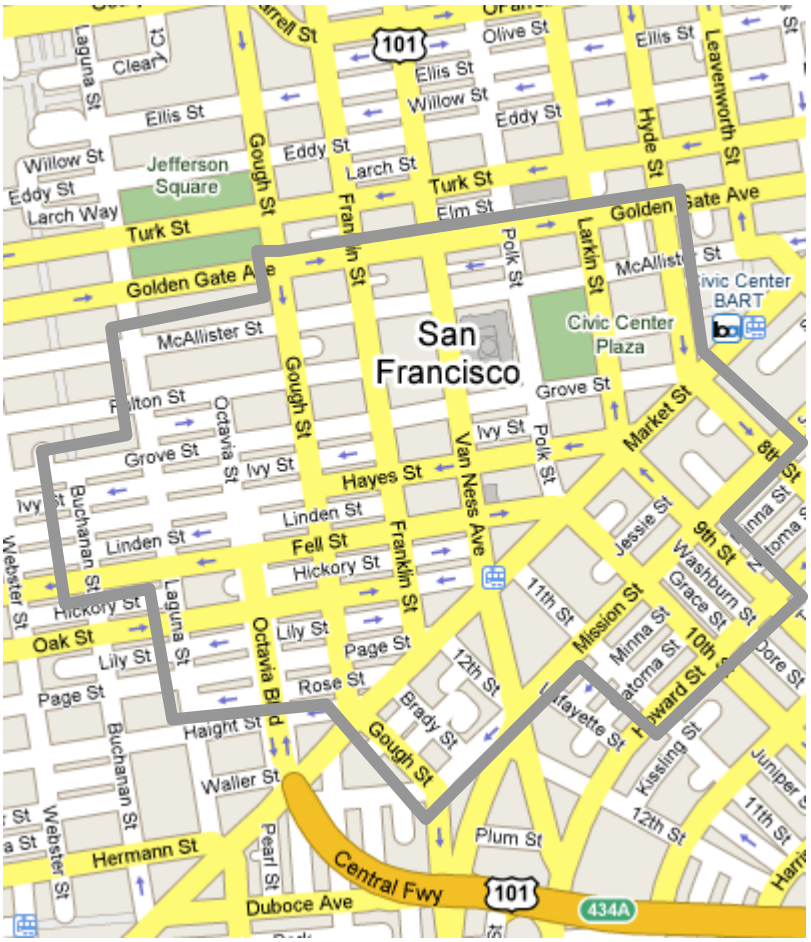
## Downtown pilot area

Area bounded by Jackson Street, the Embarcadero, Folsom, 5th Street, Mason Street, Bush Street, and Kearny Street.



## Civic Center/ Hayes Valley

Area bounded by Golden Gate Avenue, Hyde Street, 8th Street, Mission Street, 9th Street, Howard Street, 11th Street, Mission Street, Gough Street, Haight Street, Laguna Street, Fell Street, Buchanan Street, Grove Street, Laguna Street, McAllister Street, and Gough Street.



# Fillmore

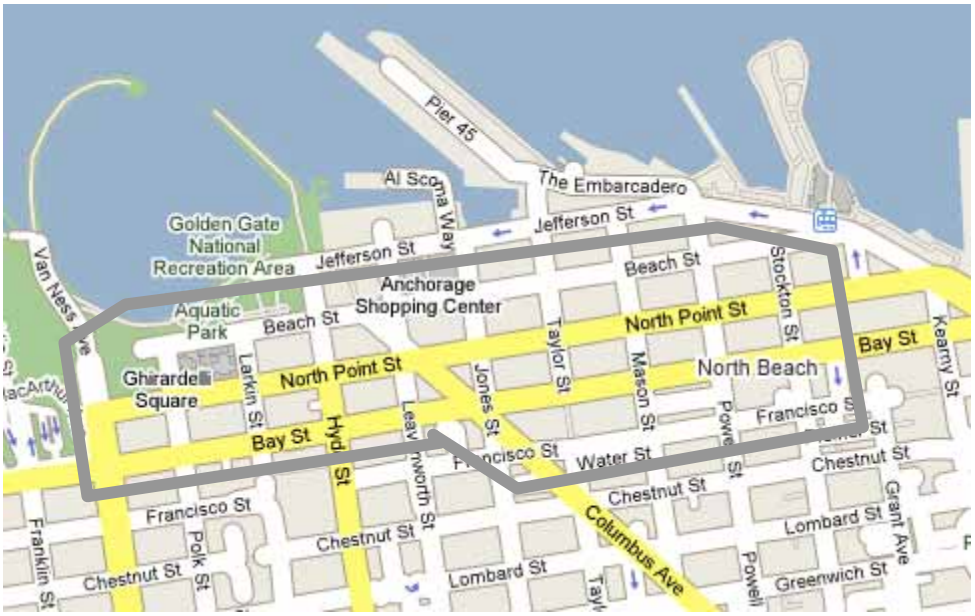
Area bounded by Jackson Street, Webster Street, Sutter Street, Laguna Street, Geary Boulevard, Webster Street, McAllister Street, Steiner Street, Bush Street, Pierce Street, Sacramento Street, and Steiner Street.

# Chestnut/ Lombard

Area bounded by Bay Street, Fillmore Street, Buchanan Street, Greenwich Street, Broderick Street, Richardson Avenue, and Baker Street.

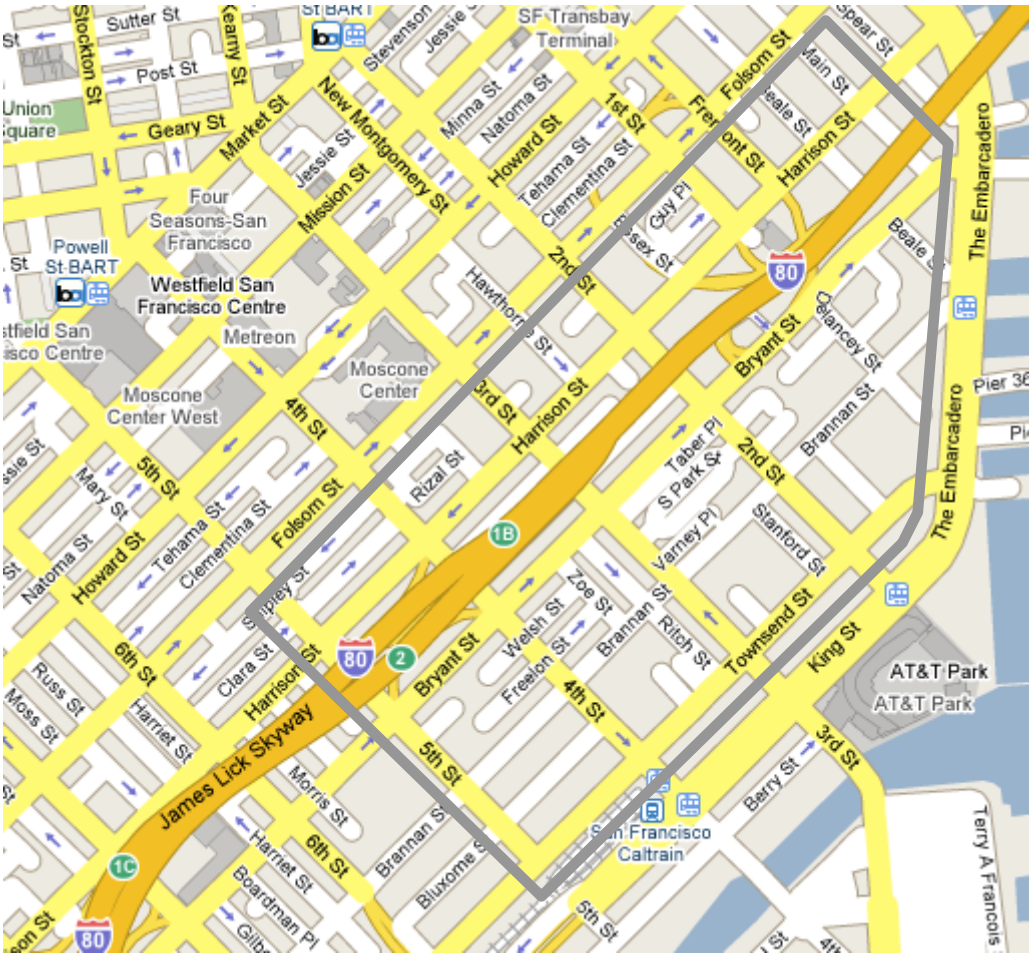
# Fisherman's Wharf

Area bounded by Jefferson Street, Stockton Street, Francisco Street, Columbus Avenue, Bay Street, and Van Ness Avenue.



# South Embarcadero

Area bounded by Folsom Street, the Embarcadero, King Street, and 5th Street.



# Mission/ Valencia

Area bounded by 14th Street, Guerrero Street, 24th Street, and South Van Ness Avenue.