



## FINAL SAR 98-1 STRATEGIC ANALYSIS REPORT on MULTIMEDIA GULCH

Initiated by Commissioner Katz  
Adopted by San Francisco County Transportation  
Authority Board on March 8, 1999

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## I. INTRODUCTION

### Purpose of Document

This report provides the SFCTA Board with a brief but comprehensive summary of transportation-related issues in the Multimedia Gulch. This Strategic Analysis Report, or SAR for short, highlights for the Board the significance of these issues in areas of SFCTA jurisdiction, and identifies implications for future policy decisions by the Board in its capacity as administrator of Proposition B (sales tax) funds and as Congestion Management Agency for San Francisco. Every effort was made to make this a factual document, avoiding speculation, and leaving judgment to the reader. This document was designed to inform policy-level decision-making, and its abbreviated length (only 11 pages plus exhibits) optimizes its usefulness to Authority Board members. Technical discussion has been condensed and only facts deemed essential to outline the policy-level issues are included. Additional information is available from the sources cited, or by calling José Luis Moscovich, Director of Plans and Programs, at (415) 522-4803.

### Summary

The Multimedia Gulch SAR was initiated in January 1998 at the request of Commissioner Katz. Multimedia Gulch is the nickname for an area south of Market Street that has a high concentration of multimedia and related firms. Commissioner Katz requested and the Board approved the preparation of a SAR that explores two main issues: unmet

transportation needs in the Multimedia Gulch and potential solutions, and the impact of transportation issues on multimedia business retention. The Board also directed staff to explore welfare-to-work connections/opportunities in the Gulch. The SAR examines these issues and provides a context and road map for policymakers about transportation improvements in the Gulch. It also makes specific recommendations.

The SAR analyzes current conditions and assesses the need for transportation improvements in the Gulch. The Gulch is one of the most accessible areas of the City, well served by freeways and regional transit. However, it is clear that traveling *within* the Gulch by transit can be difficult. The SAR also reviews some initiatives to improve the transportation system in the Gulch that are being developed by the San Francisco Partnership's Multimedia Task Force Transit Work Group. We evaluated these initiatives in terms of effectiveness, system performance, implementation issues, and cost. We also provide suggestions for further refining the initiatives, and identify other opportunities for improving all aspects of transportation system performance.

A review of the existing studies indicates that while significant, transportation does not appear to be *the* critical factor affecting industry retention in San Francisco. Rent levels and real estate supply appear to be stronger explanatory factors. It also appears that the transportation needs of the multimedia industry are not industry-specific, but are instead common to most businesses located in the Gulch. Therefore, transportation improvements proposed for the multimedia industry would also benefit the broader community in the Gulch.

There are a number of major transportation projects planned or underway that will improve access in the Gulch. There are also significant land developments planned and underway that will affect travel demand and travel patterns in the Gulch. The countywide transportation plan process (currently underway) is recommended as the best way to comprehensively address transportation needs in the Gulch over the medium and long-term. Finally, the Gulch will be affected over the next 5 to 7 years by Caltrans freeway seismic retrofit and construction work. The SAR recommends that the Authority work closely with Caltrans and city departments to develop the Traffic Mitigation Plan for this period.

## II. BACKGROUND

This section reviews relevant transportation studies and plans that address the Multimedia Gulch, as well as some

of the reports prepared for the Multimedia Summit held in February 1998.

### **South of Market Area Plan of the General Plan,**

*Planning Department (1990):* The transportation section of the South of Market Area Plan provides background information, identifies shortcomings and proposes solutions to improve access to the area. The plan explains the context for the area's current transportation problems: a change in land use from low-intensity industrial to higher-intensity office, commercial, and residential uses — coupled with a growing dependence on the automobile. This has resulted in more traffic congestion, higher costs for scarce parking, and an inadequate local transit network. The plan suggests that implementation of the City's transit first policy, use of transportation demand management strategies, and expansion and better management of the parking supply will address some of the area's transportation issues.

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The plan's primary strategy is to implement the City's transit first policy in the area by extending the MUNI service network and by increasing service frequencies on all lines. The document notes that north/south service between 5<sup>th</sup> and 8<sup>th</sup> Streets is the most limited in the greater downtown district, and suggests the need for new transit lines in this area. The plan also suggests that consideration be given to an extension of the MMX light rail from the Caltrain depot to Showplace Square and then on to the Van Ness corridor. Such a connection would improve east/west transit service and also improve linkages from the Upper- and Mid-Market areas to SOMA.

**Multimedia in San Francisco, Planning Department (1997):** This report points out that good transportation connections to clients, services and employees is a key issue for the growing multimedia industry. The report highlights the transportation advantages which the Gulch has — particularly the Caltrain connection. The major transportation concerns of the firms surveyed for this report were increased traffic congestion, lack of parking for employees, and inadequate public transportation service. The report also notes that major land development and transportation infrastructure changes will continue to affect the area, and that a comprehensive approach to traffic, parking, and transit problems is needed to solve these problems.

### **A Survey of the Interactive Media Industry in San Francisco, MDG.Org, Coopers & Lybrand L.L.P., San Francisco Redevelopment Agency,**

*"Affordable parking and public transportation were identified respectively as the 2<sup>nd</sup> and 3<sup>rd</sup> highest ranking areas that the City needs to improve in order to maintain its competitiveness."*

*San Francisco Partnership (1998):* This 1997 survey of 77 multimedia companies in San Francisco assesses the relative importance of location decision factors for these firms. The survey found that rent consideration was of paramount importance. Affordable parking and public transportation were identified respectively as the 2<sup>nd</sup> and 3<sup>rd</sup> highest

ranking areas that the City needs to improve in order to maintain its competitiveness.

### **San Francisco and the Future of Interactive Media,**

*A.T. Kearney, Inc. (1998):* This report from the San Francisco Multimedia Summit of 1998 highlights the factors that are most critical to multimedia companies and rates how well San Francisco meets the identified needs. An interactive survey on this topic was administered at the summit. Summit participants gave access to affordable parking and public transportation a critical rating of 21% and 18% respectively, compared to 69% for access to qualified labor pool (highest ranked factor) and 30% for affordable facilities (third highest ranked factor). Participants were also asked how well San Francisco meets the industry's needs. Affordable parking received a 19% rating and public transportation a 49% rating. In response to a different question, over half of those surveyed agreed that expanding the public transit system is critical to multimedia companies.

## **III. STRATEGIC ANALYSIS**

### **A. Needs Assessment**

For the purposes of the SAR, the Gulch is defined as the area south and east of Folsom Street and north of 22<sup>nd</sup> Street (Figure 1). Existing conditions in the Gulch were reviewed to identify areas where transportation improvements may be needed. These needs were assessed for travel by auto, transit, bicycle, and by foot. There are already many transportation improvements planned, underway, or recently completed that will help address the identified needs. Figure 2 provides an areawide view of the key improvements.

#### **Automobile Access**

Two freeways (I-280 and I-80/U.S. 101) serve the Gulch, making it one of the most accessible areas of the City from the regional freeway system. Most of the Gulch is characterized by wide streets, allowing traffic to move quickly by San Francisco standards. Gulch streets that provide access to the freeways, particularly in the SOMA,

are typically congested during peak periods. For instance, the most recent level of service monitoring data from the Congestion Management Program indicates that 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, and Bryant Streets are at a LOS D during the p.m. peak. During the same period, segments of I-280 and U.S.101 are at a LOS F, the most congested condition.

Gulch employees are less likely to commute by transit and more likely to carpool or drive alone than are employees working downtown<sup>1</sup>. Less expensive parking rates in the Gulch and a lower level of transit service compared to downtown help explain the higher drive alone share in the Gulch.

Auto access to and circulation within the Gulch are being improved by various transportation projects such as the new I-280 touchdown ramps (completed), the reconstruction of King Street from The Embarcadero to 4<sup>th</sup> Street (completed), and the future implementation of the Department of Parking and Traffic's Integrated Traffic Management System (ITMS). The ITMS will include a traffic management center, remote monitoring devices (e.g. video, loop detectors), variable message signs, and a communications network. It will allow DPT to implement responsive traffic signal timing, to notify travelers of real time traffic conditions via TravInfo (internet) or other means, and to more effectively direct personnel (e.g. parking control officers) to respond to congestion. Roadway improvements will also be undertaken in coordination with the development of Mission Bay, including intersection improvements at Townsend and 4<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> Streets, construction of an I-280 frontage road (King St. from 5<sup>th</sup> St. to Berry St.) and the Illinois Street rail and truck bridge. Some of these improvements will be funded by the City, and others by the Mission Bay developer.

Caltrans has begun a series of projects to seismically retrofit I-280 and the western approach to the Bay Bridge and will soon begin work on the replacement of the east span of the Bay Bridge. There will be temporary construction-related impacts stemming from ramp and road closures, and likely permanent loss of parking under I-280. These projects will complicate access to and circulation within the Gulch. The Authority's Traffic Mitigation SAR (scheduled for a release in draft form in April/May) will address the need for a coordinated City response to potential traffic, circulation, and parking impacts associated with the Caltrans projects, as well as with other projects (both transportation projects and private land developments) occurring in the downtown and SOMA during the same time period.

<sup>1</sup> Census Transportation Planning Package: Urban Element, CD-Rom, U.S. Dept. of Transportation, Bureau of Transportation Statistics, 1990.

### Transit Access

**MUNI:** Compared to the rest of the greater downtown area, Multimedia Gulch has distinct gaps in its local (MUNI) transit network. (Regional transit service and taxis are addressed in the following sections.) As noted in

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the SOMA element of the General Plan, north/south service in the area between 5<sup>th</sup> and 8<sup>th</sup> Streets is the most limited in the greater downtown area (Figures 3 & 4). There are north/south MUNI lines that serve this area, such as the 27 Bryant and 42 Downtown Loop. However, they

run east/west between 5<sup>th</sup> and 8<sup>th</sup> Streets. So while there is north/south service to Market Street or to areas beyond, there is no direct north/south service for short distance travel with the SOMA. This is partially a result of the SOMA street grid, which is set at an angle relative to the surrounding street grids (see Figure 2). There is also a gap in east/ west service between Brannan and 16<sup>th</sup> Streets. For example, the intersection of 7<sup>th</sup> and Berry Streets is over .4 mile away from any east-west transit service. In addition to these service gaps, there is no direct connection from the Mission District to the Caltrain Depot. This connection may be increasingly important to

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the multimedia industry since the Gulch is expanding toward the Mission District. Finally, as traffic congestion worsens in SOMA, it adversely affects the reliability of MUNI bus service. It should be noted that MUNI's scheduled service and route coverage in the Gulch meets MUNI's policy standards. However, these standards are meant to ensure just a minimum level of service citywide. The decision whether to provide service greater than the minimum standard is one which policy makers must determine.

MUNI is working on a number of projects designed to improve reliability and maintain or decrease travel time. For instance, approximately 100 signals citywide will be retrofitted with transit signal pre-emption, which will reduce delay for MUNI vehicles at those intersections. Gulch streets that are proposed for transit signal pre-emption include Potrero Avenue and Mission Street. MUNI is also preparing a demonstration of the proof-of-payment system on the 30-Stockton. This is intended to speed up the boarding process. If successful, it could be expanded to other bus routes in the City. DPT and MUNI have proposed a new transit-only lane on 3<sup>rd</sup> Street between Folsom and Market Streets. This has been

identified as a critical bottleneck for MUNI service in the SOMA.

A number of improvements in Muni service are underway which will increase access to the area and improve circulation within it. The recently completed MUNI Metro Extension (MMX) to the Caltrain Depot improves connections not only to Caltrain, but also to the southern and eastern parts of Multimedia Gulch. MUNI is also moving forward with the 3rd Street Light Rail line. The first phase, expected to be operational by 2003, will run as far north as the Caltrain Depot and connect with the MMX and Market Street subway. The first phase will also include an intermodal (MUNI and Caltrain) station at Bayshore. Subsequent phases will include a central subway extending the 3rd Street light rail line north of Market Street into Chinatown. This will improve connections between the Gulch and north of Market and will bypass surface street traffic in the congested downtown area. Construction of the light rail line will also provide an opportunity for the City and/or a private company to install fiber optic cable — critical infrastructure for the multimedia industry.

MUNI has developed preliminary plans to gradually extend bus service to Mission Bay. Currently, MUNI plans to reroute the 22 Filmore line to provide direct east/west service to Mission Bay along 16<sup>th</sup> Street. In addition, either the 30 or 45 line would be extended south of the Caltrain Depot to replace existing service on the 22 line east of Connecticut Street. The proposed alignment of the 30 or 45 line would run either on Townsend Street north of Mission Bay or on Mission Bay Street south of the China Basin before continuing south to Potrero Hill. One trade-off associated with this proposal involves the decision to provide the most direct service possible to Mission Bay versus providing a less direct route that would also connect the Gulch to the Caltrain Depot and to Mission Bay.

**Regional Transit:** The northern part of Multimedia Gulch (north of 16<sup>th</sup> St. and China Basin) is well served by the regional transit network. All of the major regional transit connections in San Francisco are located within or adjacent to the SOMA area: the Market Street subway (BART and MUNI Metro service), the Ferry Terminal, the Transbay Terminal, and the Caltrain Depot.

There are several projects planned or underway that will improve regional transit service to the Gulch. For example, the future China Basin ferry terminal will provide service to the East Bay, Marin County, and Vallejo. Caltrain has developed a Rapid Rail Plan, which when implemented, will increase frequency and capacity and decrease travel time to and from the Peninsula.

BART is expecting to increase service reliability with the implementation of a new automatic train control system. The extension of BART to the San Francisco International Airport will provide a high quality connection to the airport and northern peninsula. Finally, BART, the City, and local non-profit organizations have recently been awarded funds to help improve transit, bicycle, and pedestrian connections and redesign the plazas at the 16<sup>th</sup> and 24<sup>th</sup> Street BART stations. With the development of Mission Bay, the 16<sup>th</sup> Street Station may become an important transit connection between the Mission and the Gulch.

The greatest need for improving regional transit access to the Gulch involves the local (MUNI) transit connection between regional transit and the Gulch. Reliability of service is an issue as are certain gaps in service such as the previously mentioned lack of service on Townsend, west of the Caltrain Depot. The fact that several Gulch employers subsidize private shuttle service to and from BART and MUNI Metro provides anecdotal evidence supporting the need to improve connections to regional transit.

**Taxis:** Taxis can complement other transit service in the Gulch and help address some of the existing gaps in MUNI service. They may be particularly useful during the midday or evening when transit service is less frequent. During peak traffic periods, however, taxi service is impacted by congestion and response times may be increased. If the diamond lane network is expanded in the Gulch, taxi service would benefit since taxis are allowed to use the diamond lanes and would be able to avoid some traffic congestion by doing so.

Up to 400 new taxicab medallions will be issued in 1999. In addition, through the creation of the new Taxicab Commission, the City will be able to better respond to issues of concern to taxi patrons, particularly the supply and responsiveness of cabs. The Commission may also be able to explore other improvements such as a web-based centralized dispatching function. This might have particular appeal to the many multimedia workers who have ready Internet access.

### **Bicycle Access**

Multimedia Gulch is well-suited for bicycle travel and has the potential for increased bicycle use. As in the rest of the city, bicycling in Multimedia Gulch can be inconvenient, unpleasant, and unsafe. This is due to a number of factors: heavy traffic volumes — including substantial truck traffic; a network of wide one-way streets which allows autos to travel relatively fast; and a lack of bicycle lanes on many streets. Most bicycle accidents occur north and west of Bryant Street on streets such as

Folsom, Harrison, 3<sup>rd</sup>, 5<sup>th</sup>, and Division, where auto traffic is heaviest and where bike lanes generally don't exist (See Figure 5).

The City has established a substantial bicycle network in the Gulch, and planned extensions of this network will improve bicycle access and safety (See Figure 6). In addition to the Bicycle Plan improvements shown in Figure 6, the Mission Bay infrastructure plan includes bike lanes, wide curb lanes, and rubberized railroad crossings to improve safety for cyclists. Also, city legislation now requires showers and lockers in new buildings and those undergoing major renovations, as well as bicycle parking in existing and new garages. It should be noted that there are tradeoffs to be considered when expanding the bicycle network, particularly when planned improvements would require removal of a lane of traffic. Generally, improvements in bicycle safety and convenience must be balanced with possible increases in traffic congestion and delays to surface transit service.

In addition to the growing bicycle network, bicycle travel in the Gulch has many pluses. The Gulch is quite flat, making bicycle travel relatively easy and fast compared to other parts of the City. The relative lack of transit service in some areas of the Gulch and the parking and congestion problems which make auto travel less convenient make bicycle travel a comparatively attractive option. All of the regional transit operators that serve the Gulch currently accommodate bicycles or have plans to do so in the near future. Finally, based on anecdotal evidence, bicycle travel is an attractive mode of travel for much of the workforce in the area because of their often flexible hours, casual dress codes, relative youth, and the social acceptance of bicycling. Many Gulch employers currently provide bike parking and changing facilities. Improving bicycle access and safety in the area is an attractive and relatively inexpensive option for addressing some of the transportation needs in the Gulch.

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### **Pedestrian Access**

Pedestrians face a number of mobility barriers in the Gulch. For example, several streets in the area lack sidewalks (e.g. Townsend St.). Accidents involving pedestrians are widespread across most thoroughfares in SOMA (See Figure 5). Part of the problem is the nature of the street grid itself. In the east/west direction, many SOMA blocks are around .3 mile long, more than double the length of the typical block north of Market Street. In the north/south direction, the major streets are intersected by alleys, but crosswalks only exist at major intersections. Given that about half of accidents involving pedestrians

happen beyond the intersection, signalized mid-block crosswalks at key locations might provide some relief to this problem, to be balanced against cost and traffic flow impacts. Another pedestrian safety improvement may be installation of in-roadway flashing crosswalk lights at unprotected mid-block pedestrian crossings. These devices make crosswalks and pedestrians more visible to motorists. These installations cost about \$20,000 per location and are currently considered experimental by Caltrans<sup>2</sup>.

Streets in the Gulch are quite wide and require a long time for pedestrians to cross. Sidewalk bulb-outs at certain intersections would reduce pedestrian crossing times and improve pedestrian visibility. Other traffic calming techniques that slow speeding vehicles without restricting the flow of traffic on major thoroughfares — such as street trees and medians, could also help improve pedestrian safety.

Vehicles running red lights, and turning vehicles — especially on one-way streets and at freeway ramps — also present a hazard to pedestrians. The City's red-light photo-enforcement program has targeted many intersections in the SOMA area. According to DPT, it has resulted in a 40% reduction in red-light running at specific intersections, and a significant reduction in injury accidents.

## **B. Analysis of Multimedia Transit Working Group Proposals**

The San Francisco Partnership (SFP), a public-private venture with a mission to attract and retain jobs in San Francisco, has established a Multimedia Task Force to help ensure that San Francisco remains the national and international focal point of the industry. The task force has a number of work groups including the Transit Work Group. This work group was originally formed to identify needed improvements in public transit service that would improve its convenience and safety for employees of multimedia and related industries, but has since expanded its focus to other transportation needs in the SOMA — such as parking. It has also recognized that the needs of the multimedia industry aren't unique and has begun to reach out to other SOMA businesses in order to expand the base of support for needed transportation improvements.

<sup>2</sup> Department of Parking and Traffic.

The Transit Work Group has three transportation initiatives currently under development. These initiatives — the SOMA transit loop, the Blue Diamond Lane Proposal, and satellite parking — are discussed below. Our discussion is focused on effectiveness, transportation system performance, implementation issues, and order of magnitude costs, and it aims to identify the key policy issues and tradeoffs involved.

**SOMA Bus Loop** — The Transit Work Group has proposed shuttle bus service that would improve connections to regional transit and internal circulation within the Gulch. While the specific route has not been identified, the Transit Work Group has suggested that the loop would connect the Caltrain Depot and MUNI Metro Extension (MMX) with various multimedia employment sites in the Gulch. A sketch level map of the proposed service is shown in Figure 7. According to the Transit Work Group, the service could be provided by MUNI or by a private operator. The proposal also assumes more frequent peak hour service on MUNI's 12, 19, and 27 lines and more reliable MUNI service in general. Rather than providing a detailed review of the proposed route, something which is beyond the resources available for this SAR, this section provides guidance on developing an effective shuttle route and highlights the key policy concerns and tradeoffs associated with implementation of such a service.

The first step of any shuttle service proposal is identifying the need for the service. The Transit Work Group has started to do this through some informal surveys of multimedia industry workers and is planning to do another survey of multimedia employers to obtain further information. If MUNI is to operate the service, then an areawide assessment of the number of employees and residents in the Gulch is needed to help determine whether an increase in service and/or rerouting of existing service is warranted. To provide some perspective, Figure 8 shows the number of employees per square mile for each Census tract in the city<sup>3</sup>. The tracts that roughly correspond to the Gulch (see Figure 8 inset) do not have the very high levels of employment density found in the Financial District; nevertheless, the Gulch tracts have an employment density more than 3 times greater than the citywide average. Furthermore, employment density should increase in the Gulch with the development of Mission Bay. Based on this alone, the Gulch may not be able to support the same intensity of transit service as the Financial District, but it clearly could support a higher level of transit service than other areas of the city located outside of the downtown.

<sup>3</sup> *Projections '98*, Association of Bay Area Governments.

Information about the travel patterns of potential users is also needed to help determine whether the service should be publicly or privately operated, the level of service provided (e.g. commute vs. all day), and the route. One way to obtain this information is to survey the employees in the area. At a minimum, the survey should ask for the following information: residence location (nearest intersection if in San Francisco, zip code if in another county); work location (nearest intersection); time start and end work; current mode of transportation; and if transit is used which operator is used, which route is used, and which stations/stops are used. In addition, the survey should ask where the employees need to travel to during the work day (nearest intersection) and how often they need to do so.

The bus loop proposal does address a real gap in transit service, both in terms of east/west service (e.g. along Townsend Street) and in terms of circulation within Multimedia Gulch. It does duplicate some existing MUNI service on the 19, 22, and 15 lines. A loop that connects to regional transit and serves internal circulation needs would attract the most riders. Given this, the

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Transit Work Group's proposal would be strengthened were it to include a connection to BART, either at the 16<sup>th</sup> Street station or at a Market Street station.

Most riders of the proposed SOMA loop would likely be those who already take transit, although such service would attract some riders who currently drive and possible some cyclists. The 1990 Census data indicates that 30% of Gulch employees commute by transit, compared to 45% in the downtown. Since the shuttle would likely duplicate some MUNI service, some riders would use the shuttle in lieu of the MUNI service they already use.

Even with a connection to regional transit, the ridership for such a shuttle service might be below the threshold necessary to provide additional MUNI service. In this case, private shuttles or taxis should be explored. A private carrier might be able to provide more flexible and responsive service than MUNI since service could be tailored specifically to meet the needs of the multimedia firms. Taxi service could supplement transit service in the Gulch, particularly during the evening when transit service is reduced.

*Funding Issues:* If a need for improved MUNI service in the Gulch is identified, the decision to provide the improved service should be made in a citywide context since operation and maintenance funds are limited and other areas of the City may also need improved service.

Nonetheless, MUNI is already developing plans to reconfigure service to serve Mission Bay. We recommend that MUNI take advantage of this opportunity and consider the possible need for improved service in the Gulch at the same time.

Funding for a private shuttle would likely be a combination of employer contributions and passenger fares. Private shuttles are eligible for some public grants, but it would be challenging to secure grants if the shuttle service duplicates existing public transit service. The use of certain technologies can increase eligibility for public grants, regardless of whether the shuttle is privately or publicly funded. For instance, the proposed shuttle bus service could be operated using clean fuel vehicles. This creates eligibility for certain air quality-related grants, such as the Transportation Fund for Clean Air (TFCA). However, there are associated maintenance costs and infrastructure requirements (e.g. appropriate fueling facilities) that need to be taken into consideration. There are also funding sources that specifically target the use of smart technologies (e.g. automatic vehicle locator systems).

**Blue Diamond Lane Proposal** — In an effort to preserve the speed of existing transit and increase reliability, the Transit Work Group has developed the Blue Diamond Lane proposal. The proposal includes re-stripping diamond lanes using blue paint and installing blue LED signs to increase visibility; allowing carpools to use the diamond lanes, expanding the existing network of transit lanes to cover all transit routes in the city, and establishing coordinated marketing and enforcement campaigns. The proposal also asks the City to proactively institute diamond lanes in the South of Market Area before the traffic gets worse (e.g. before the ballpark opens), based on the rationale that it would be easier to implement diamond lanes now, rather than trying to do it under more congested conditions. Various aspects of the Blue Diamond Lane proposal are discussed in the sections that follow.

*Blue Striping & LED Signage:* DPT is currently seeking funding to restripe the diamond lanes and replace the current signs with ones that indicate that taxis are allowed to use the transit lanes. As part of this process, DPT should evaluate the current location of the signs to ensure that they are optimally located for high visibility. The decision to use blue striping and blue LED signage would have to consider the drawbacks of using non-standard lane striping. There are uniform national standards for striping and signage that have been designed with safety in mind and that also make it easy for drivers to travel between different cities, states and countries. There are possible legal issues associated with use of non-standard lane

markings. Also, eligibility for some funding sources requires that the national standards be followed.

*Marketing & Enforcement:* The proposal for coordinated marketing and enforcement campaigns could have the same benefits as the blue striping proposal without the safety impacts. Both marketing and enforcement can help significantly increase the effectiveness of the diamond lanes. For instance, a 1986 study of the O'Farrell Street transit lane showed a 33% travel time reduction for buses during the period of high profile enforcement<sup>4</sup>. Only the police department, not the Department of Parking and Traffic's parking control officers, has the authority to enforce transit lanes by issuing moving violations. Therefore, the decision to increase enforcement of transit lanes must be balanced against the need to allocate police resources toward other city priorities. Another option for enforcement is the use of smart technologies. For instance, it may be possible to use cameras (somewhat like the red light enforcement cameras) to enforce the transit lanes.

*Allowing carpools to use diamond lanes:* Currently, only taxis and public transit are allowed to use the center diamond lanes (e.g. such as those on Market Street), while any vehicle may use a diamond lane located along the curb, if required to make a right turn. Existing diamond lanes are located on streets where there are relatively high transit volumes and automobile traffic congestion. The diamond lanes improve transit travel time and reliability. Allowing carpools to use the diamond lanes could negate any benefits that transit receives from the diamond lanes. Carpools would also complicate enforcement and add to driver confusion.

For people commuting to San Francisco, the biggest incentives to carpool are the ability to save travel time (and avoid congestion) by using freeway HOV lanes and to save money by avoiding bridge tolls and parking fees. In order to facilitate carpooling, the City has established carpool pick-up and drop-off zones and has dedicated the Sterling Street on-ramp to "HOV-only and truck" use. To further support carpooling, the Sterling Street on-ramp could be designated as HOV-only, although impacts on truck access would need to be considered, and an HOV lane could be established on the I-280 off-ramp at King Street. Both these proposals would require further study to see if they are functionally feasible. Another way to encourage carpooling is to make it easier to find someone with whom to carpool. A proposal by the Environmental Defense Fund (EDF) to provide real time carpool matching services via the internet may have particular

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<sup>4</sup> Ibid.

appeal to the many Multimedia Gulch workers who have ready access to the internet.

*Expansion of diamond lane network:* The Transit Work Group's proposal would expand the diamond lane network to cover every transit route in the city, making use of parking lanes as commute transit lanes when there are only 2 traffic lanes. While DPT has already instituted TOW-AWAY-NO-STOPPING lanes along many transit routes during peak hours, it does not always result in an additional lane of traffic due to street width limitations. If the purpose is to optimize MUNI operations, then a wide curb lane of approximately 18 feet is ideal<sup>5</sup>. In many cases, the tow-away lane helps to create the wide curb lane, not an additional lane. Furthermore, tow-away lanes often eliminate parking in front of homes and businesses and bring moving traffic close to the sidewalk and pedestrians. These are trade-offs that need to be considered when implementing tow-away lanes, especially along routes with relatively low transit frequencies (e.g. 6 buses per hour).

Establishing transit-only lanes on every transit route in the city would have widespread negative impacts on traffic system performance since it would increase congestion in the remaining mixed flow lanes. For instance, Van Ness Avenue between Fell and Lombard Streets has a peak hour volume of about 615 vehicles per lane. It is at a LOS E during the p.m. peak. Converting one of the lanes to transit only would result in a 50% increase in the peak hour volume for the remaining mixed flow lanes and would bring Van Ness Avenue to a LOS F. Besides the undesirable level of congestion that this may cause, if streets in the Congestion Management Program (CMP) roadway network — essentially all of the arterials, freeways, and major transit streets in San Francisco — fall to a LOS F, it triggers the legislative requirement for a deficiency plan. The intent of the deficiency plan is to mitigate the substandard LOS and restore it to an acceptable level (LOS E or above).

There would be costs associated with development and implementation of the deficiency plan. For instance, improving transit service might be a mitigation measure that would potentially involve both capital and operating costs. It could also be difficult to mitigate such widespread system performance deficiencies. MUNI routes run on about two-thirds of the CMP roadway network. Failure to adopt and implement a deficiency plan can result in loss of state and federal transportation funding to the City.

<sup>5</sup> *Transit Preferential Streets Program in San Francisco*, Watry & Mirabdal, 1996.

Overall, this proposal would result in increased enforcement costs to cover the expanded network and increased maintenance costs for striping and signage. These extra resources might be better spent by concentrating on improving transit bottlenecks or on other city priorities.

While extending the diamond lane network to all transit routes is problematic, a reexamination of the City's current diamond lane network may be in order. Using diamond lanes to improve transit service on selected streets is one means to help manage the expected increase in travel demand. This may be particularly true in the SOMA where significant land developments are planned. The City does consider extending the diamond lane network on a case by case basis. Currently, there is a proposal to establish a diamond lane on 3<sup>rd</sup> Street between Market and Folsom Streets.

**Satellite Parking** — The Transit Work Group is exploring the idea of satellite parking, a concept where parking is usually located on the outskirts of congested areas and then commuters use transit to complete the rest of their journey into the urban core. In order for satellite parking to be an effective strategy, two conditions must be met: 1) The parking facility must be located outside of the most congested area — otherwise drivers who have already passed the worst congestion will have little incentive to switch to public transit. 2) There must be an effective transit connection linking the satellite parking and the ultimate destination, typically the employment site. Again, absent a good transit link (one that is reliable and quick), driving the rest of the way remains the most attractive option. If parking at the destination is expensive and/or in short supply, this is an added incentive to use satellite parking.

San Francisco's location on a peninsula makes it especially amenable to satellite parking. The Golden Gate and Bay Bridges are the only means of traveling between San Francisco and the north and east bays. As such, they are significant traffic bottlenecks. For travelers coming from the north and east, the ideal location for satellite parking is outside of San Francisco, beyond the bridge bottlenecks. This satellite parking already exists in the form of Golden Gate Transit park-and-ride lots along U.S. 101, BART station parking in the East Bay, and the ferry terminals in the North and East bays. Congestion on the bridges is one of the reasons San Francisco has the highest transit share in the Bay Area as it is a strong incentives for travelers to use transit or to carpool. The Peninsula-San Francisco corridor is one area where there may be some potential for satellite parking. Because San Francisco has a land connection with San Mateo County, there are more options for travelers (e.g. U.S. 101, I-280, Bayshore



Boulevard). Both Caltrain and BART (Daly City and Colma stations) act as satellite parking facilities. For instance, 78% of those who enter BART at Daly City or Colma exit BART in San Francisco. The planned Bayshore joint intermodal terminal (connecting the Caltrain and MUNI's 3rd Street Light Rail) will also act as a satellite parking location.

There may also be potential sites for satellite parking within San Francisco. These sites should also be located outside of the most congested areas (e.g. downtown and SOMA). In addition, the sites should be located close to existing transit service. This would avoid or reduce the costs associated with providing the transit link. Selecting a site for satellite parking also involves localized issues such as the effects the parking will have on surrounding neighborhoods (e.g. possible increases in traffic) and on the roads used to access the satellite parking.

The transit link is the other critical component of any satellite parking policy. The cost and funding issues for the transit link are similar to those discussed under the SOMA bus loop proposal in the on page 6. However, satellite parking offers opportunities for creative financing. For instance, some of the profits from a privately operated parking facility can be used to subsidize the (public or privately operated) transit link.

Besides satellite parking, there are other ways to address parking supply issues that do not entail provision of additional parking. For instance, pricing policies and metering can help ensure turnover of parking spaces where this is desired (e.g. retail parking) and electronic signs can direct drivers to the nearest available parking space for on-street, lot, or structure parking.

### **C. Analysis of Potential Welfare-to-Work Connections /Opportunities in the Gulch**

For the purposes of this SAR, we have been asked to explore welfare-to-work transportation opportunities related to San Francisco's multimedia industry. Welfare to work is a federal strategy to remove transportation barriers for people receiving welfare who are entering the workforce. It typically addresses the spatial mismatch of entry-level job growth in suburban areas and a welfare population that resides primarily in the urban core. Consequently, transportation solutions usually focus on improving public transportation that serves the reverse commute (from central cities to the suburbs). The framework for this issue in San Francisco is considerably different than the typical welfare-to-work situation described above. Specifically, San Francisco has experienced significant *center city* job growth within a tight regional labor market. Welfare recipients who might

benefit would commute from one part of San Francisco to another rather than traveling from the central city to suburban jobs.

National statistics indicate that relatively few jobs in the multimedia industry have been filled by welfare recipients, as there is a functional mismatch between the type of jobs created in the industry and the education levels and technical skills of those on welfare<sup>6</sup>. Nevertheless, there are San Francisco organizations such as OpNet and the Bay Area Video Coalition, funded partially through the Mayor's Office of Community Development, that provide training, internships, and placement assistance for low-income residents seeking employment in the multimedia industry.

Transit is an important means of transportation for welfare recipients who need to travel to job sites. Auto ownership rates among welfare recipients are typically much lower than among the general adult population nationwide. Many entry-level jobs require employees to work nights and odd hours. Consequently, welfare recipients tend to have a greater need for public transit that provides 24-hour and off-peak service than does the general population. While MUNI does provide off-peak and owl (late night) service to SOMA and the Market Street corridor from all of the neighborhoods with high welfare rates, the service is less frequent than during the midday. San Francisco's welfare population is largely composed of females in their 20's and 30's, often with a single young child. For those who need to make stops at child care centers on the way to "There are a number of developments planned and underway that will have a significant effect on demand and travel patterns in the Gulch....This suggests that a comprehensive approach to addressing transportation issues in the Gulch is needed." or from work, transit can be a difficult and time consuming option.

San Francisco's public sector has responded to the transportation needs of welfare recipients with several initiatives. Free Muni fast passes are provided to welfare recipients who need one to get to work. The Department of Human Services (DHS) also provides a vanpool from the Bayview neighborhood to the San Francisco Airport, a location with many entry-level jobs. In the near future, the Metropolitan Transportation Commission, working with City departments, will be developing a welfare-to-work plan for San Francisco. Other opportunities to improve access to the Multimedia Gulch area for welfare recipients might include taxi vouchers which would be particularly useful to those who work late night hours, when transit is less

<sup>6</sup> *Welfare Reform and Access to Jobs in Boston*, U.S. Department of Transportation, Bureau of Transportation Statistics, 1998.

frequent and waiting for transit may be perceived as unsafe. Also, improvements in MUNI service to and within the Multimedia Gulch will benefit those moving from welfare-to-work as well as the general population.

#### **D. Implications for Authority Policy-Making**

This section attempts to put in perspective the relative influence of transportation factors (congestion, parking supply, accessibility, transit service availability and reliability, safety, etc.) on multimedia industry retention in San Francisco. This section also discusses potential funding issues as well as likely trade-offs in the prioritization and programming of local, state or federal funds for transportation improvements in this area, in terms of policy-level trade-offs involving issues such as equity in the distribution of transportation services and investments, citywide accessibility, and comparative benefits of different types of investments.

A review of existing studies (Section II Background) reveals that while significant, transportation does not appear to be *the* most critical issue affecting multimedia industry retention. Rent levels and real estate supply appear to be stronger explanatory factors. This raises the issue of whether we should use scarce transportation dollars to ensure industry retention when transportation isn't the key issue. However, the transportation needs that have been identified aren't unique to the multimedia industry, but they are instead common to most businesses located in the Gulch. Therefore, transportation improvements proposed for the multimedia industry would also benefit the broader community in the Gulch.

There are a number of developments planned and underway that will have a significant effect on demand and travel patterns in the Gulch such as Mission Bay, Pacific Bell Park, and the Yerba Buena Center and Moscone projects. This suggests that a *comprehensive* approach to addressing transportation issues in the Gulch is needed. The Authority's travel demand forecasting model (under development) will allow analysis of the cumulative impacts of these and other projects. Then through the countywide transportation plan process (also underway), we can develop a comprehensive approach to addressing identified needs with specific short (5-year), mid (10-year), and long-term (20-year) transportation improvements *within the context of the other identified needs in the city*. The plan will be based on realistic assumptions of available funding and can help identify appropriate funding sources for identified priorities.

#### **IV. RECOMMENDATIONS/ NEXT STEPS**

- In order to provide a policy context for a decision on re-structured transit service in the Multimedia Gulch, the Authority should, in coordination with MUNI and

other departments, include in the Countywide Plan (currently under development) a re-evaluation of the overall role of transit in the South of Market area, including data collection about current use, and an order of magnitude assessment of future needs and costs. Related to this analysis, the Authority and MUNI should also provide input to the Transit Work Group on the upcoming multimedia employer survey on transportation issues. Based on the information received from these two tasks, the Authority, working with MUNI and other departments, should outline the next steps for any needed improvements in transit service in the Gulch, specifically providing direction on whether the proposed SOMA bus loop should be implemented or whether other improvements are more appropriate.

- The Authority should work with MUNI and the Mayor's Office of Economic Development to coordinate the transit needs of Multimedia Gulch with transit service plans for the Mission Bay area.
- The City's interdepartmental Transit Preferential Streets committee should revisit the Transit Preferential Street (TPS) network to consider the designation of additional SOMA streets as TPS streets.
- The Authority should work with the Department of Parking and Traffic, MUNI, and other relevant departments to encourage smart management of the existing parking supply, to encourage the application of high technology to ridematching and carpooling (Environmental Defense Fund model), and to explore high tech approaches to the enforcement of transit lanes.
- Using the upcoming SAR on Traffic Mitigation/Coordination in the Downtown/South of Market Area SAR as a starting point, the Authority should work with City departments and Caltrans to refine the Traffic Mitigation Plans for the construction of the east span of the Bay Bridge and for the seismic retrofit of the western approach, to take into account the specific impacts on Multimedia Gulch.
- The Authority should provide input to the Metropolitan Transportation Commission and the Department of Human Services on the Welfare-to-Work plan that will be developed for San Francisco.

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Additional information was provided by BART, the Department of Human Services, the Department of Parking and Traffic, the Planning Department and the Public Transportation Department (MUNI).

#### **V. AUTHORITY STAFF CREDITS**

Maria Lombardo, Senior Transportation Analyst, was the principal investigator for the SAR. Matthew Seubert, Assistant Transportation Analyst, assisted with all aspects of the SAR and was solely responsible for the Welfare-to-Work analysis. Joe Castiglione, GIS/Transportation Analyst prepared all of the graphics with the assistance of Intern Jamie Schmidt.