To: Professor Gen
From: Sandy Chan
Subject: Policy Briefing
Date: July 11, 2007

Summary Memorandum

In urban areas around the world, traffic congestion has become a serious problem, causing delays, lost productivity, pollution and driver stress. It is a policy issue because government is needed to address the overuse of public roads. This paper examines the prospect of congestion pricing as a way to alleviate congestion in downtown San Francisco. In doing this, it is useful to look at the broader context of congestion management, of which congestion pricing is just one form.

Before congestion management became a major focus of urban transportation planning in the 1960s, free road travel was the norm. States were prohibited from charging tolls on roads built with federal aid because it was believed that free and open highways stimulate economic growth and development. With the post-war increase in car and home ownership rates came the growth of urban travel, however, and this ultimately contributed to the degradation of the environment and caused traffic congestion.

The 1970s were a host to several acts that addressed these urban ills. The maximization of existing road capacity and decreased reliance on foreign oil were encouraged through the promotion of carpools, transit and bicycle lanes. Whereas transit had not been deserving of federal funds during the post-war boom, it was now being seen as an efficient way of alleviating traffic congestion and pollution. At the local level in San Francisco, congestion management has taken many forms as well. The city's Transit First policy, for example, guides its transportation decision-making, which gives preference to transit, high occupancy vehicles, bicycle lanes and paths for walking. The study of congestion pricing as a form of congestion management places it in the formulation stage of the policy cycle. Even so, we have seen other forms of congestion management that have gone through full cycles, which will be described in the paper.

The stakeholders who would be involved in a congestion pricing scheme are business interests, people who drive into downtown, environmental groups, residents, City Hall and SF Muni. Kingdon's Multiple Streams model and Baumgartner and Jones' theory of punctuated equilibrium offer useful insights as to how issues are pushed onto the political agenda by the interactions of the various stakeholders involved. Kingdon's model can be used to explain the ripeness of congestion pricing as the result of the visibility and recognition of the congestion problem, the various solutions that institutional and non-institutional players have come up with to address the problem and the general consensus that the problem needs resolution. Baumgartner and Jones' theory of punctuated equilibrium can be used to describe the seemingly sudden change in the way public transit was viewed following new information and events that altered people's social reality, or bounded rationality.

Because these process models provide only limited guidance on how a policy issue will fare in the adoption, implementation and evaluation stages, however, we must look to the dynamics and relative powers of the stakeholders involved. It appears that because more groups would be in favor of congestion pricing in downtown San Francisco, and because opposing groups are not strongly united, congestion pricing will eventually be adopted.

Introduction

In urban areas around the world, traffic congestion has become a serious problem, causing delays, lost productivity, pollution and driver stress. In economic terms, traffic congestion is an example of the tragedy of the commons. Because most public roads are free to use, there is little incentive for motorists not to overuse them. To affect the behavior of motorists, economic theory would suggest putting a price on the usage of the road in order to bridge the gap between supply and demand. The public problem of traffic congestion is a policy issue because government is needed to address the overuse of public roads.

This paper will examine the prospect of congestion pricing in downtown San Francisco within the broader context of congestion management. Congestion pricing is a transportation demand management strategy that involves the imposition of a fee on motorists who use congested roads. After an analysis of the various stakeholders who would be involved in a congestion pricing scheme, this paper will apply policy process models to predict the future of congestion pricing in San Francisco.

Background

Downtown San Francisco, which encompasses the north-eastern quadrant of the city, is the hub of the city's busiest activity. Comprised of the Financial District, Union Square and Fisherman's Wharf, this area is the center of tourism and commerce. Because of this concentrated activity, many parts of downtown average between five to ten miles per hour during peak-hour traffic. The congestion frustrates drivers, hinders reliable transit service and creates unnecessary pollution from idling vehicles. According to the Texas Transportation Institute's latest Urban Mobility Report (2005) motorists in the San Francisco-Oakland area sit in the second longest traffic delay of all very large urban areas, at 72 hours per traveler per year, wasting $2,605,000,000 in fuel annually (p. 15). As San Francisco's population is projected to increase

from 798,680 residents to 940,000 and its job growth to increase by forty three percent by the year 2030 (from the year 2000), the city's leaders are looking for ways to accommodate this growth in light of the congestion problem (San Francisco County Transportation Authority [SFCTA], 2007, p. 10).

In 2006, the city's Transportation Authority received $1.04 million from the Federal Highway Administration's Value Pricing Pilot program to study the feasibility of congestion pricing in downtown San Francisco. While the study is still being conducted and there are no details as to how the system will work, the transportation authority is looking for lessons from the city of London, which implemented congestion pricing in the eight square miles of central London in February of 2003. The city charges a little over $16 per day to motorists who enter the fee zone on weekdays between 7am and 6pm. Payment can be made online, by phone, mail or text message, and at kiosks, stores or gas stations. Enforcement is done with cameras set up along the roads that record license plate numbers of vehicles and matches them with those on a list of paid vehicles. Since the program's inception, congestion has dropped eighteen percent, bus service has improved and attracted more ridership and bicycling rates have increased. Furthermore, revenues from congestion pricing have been used to improve transportation infrastructure (Litman, 2006, p. 3-6).

Policy Cycle

Before looking at the status of congestion pricing within the policy cycle, it is useful to examine the broader context of congestion management, of which congestion pricing is just one form. Congestion management became a major focus of urban transportation planning in the 1960s. Before this time, free road travel was generally the norm. The Federal-Aid Highway Act of 1916 prohibited states from charging tolls on roads built with federal aid. The rationale for this prohibition was that free and open highways stimulate economic growth and development

(Congressional Budget Office, 1992, p. 13). As the post-WWII boom increased automobile and housing demand, however, an increasing number of people who lived far from their jobs depended more and more on automobiles to travel the distance to work. This growth of urban travel contributed to the degradation of the environment and caused traffic congestion. With only limited road expansion physically and financially possible, new approaches were needed to meet travel demand within existing road capacity.

One approach was to improve mass transit in order to carry more travelers who would otherwise drive. Whereas the federal government had supported highway and road development in the first half of the twentieth century, the problem of congestion shifted its focus and funding on transit, as exhibited by the 1974 National Mass Transportation Assistance Act, which authorized the use of federal funds for transit operating assistance (Weiner, 1997, p. 66).

The oil crises of the 1970s also played a role in shaping transportation policy. Numerous energy conservation acts passed this decade required states to promote carpools and vanpools and give preferential treatment to transit, high occupancy vehicles (HOV), bicycle lanes and pedestrian walkways in order to decrease reliance on gasoline consumption. Employers would encourage fuel-saving behavior by offering transit subsidies, rideshare matching services, preferential treatment for pooling vehicles, flexible work schedules and payroll deductions for transit passes and pooling activities (Weiner, 1997, p. 78).

In 1976, a year after Singapore had successfully implemented its cordon-based pricing system, the U.S. Department of Transportation invited the mayors of eleven cities to try out congestion pricing schemes. Madison, Wisconsin; Berkeley, California; and Honolulu, Hawaii were the most promising of these cities, but their mayors declined the invitation, citing harm to business, coercive interference with travel rights, regressive impacts on the poor and inadequate information dissemination and promotion. It would not be until the early 1990s that interest in

road pricing schemes would be revisited, largely due to the inability of some urbanized areas to meet national ambient air quality standards of the Clean Air Act (Weiner, 1997, p. 80).

The 1980s saw the expanded use of microcomputer technology in urban transportation planning. Microcomputers would aid in maximizing the use of existing road capacity by performing analytical and planning functions. This technology would eventually be used with metering lights and electronic traffic notification systems to manage traffic congestion. Electronic toll collection (ETC) is another tool that resulted from technological advancement. In California, the Golden Gate Bridge, Highway and Transportation District (GGBHTD) was involved in pioneering the development of ETC systems in the early 1970s (Weiner, 1997, p.107). Three decades later, the system would be fully implemented on eight bridges in the San Francisco Bay Area, making toll collection more efficient and traffic flow in toll plazas smoother.

In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA), requiring states and metropolitan areas to develop and implement systems for managing, among other transportation-related concerns, traffic congestion. These systems were to assist state and local decision makers in selecting cost-effective policies, programs and projects to protect and improve the nation's transportation infrastructure (Weiner, 1997, p. 153). As such, congestion management agencies were created in every county. In San Francisco, the County Transportation Authority (CTA) plays this role.

At the local level in San Francisco, congestion management has taken many forms as well. Transportation planning is guided by the city’s Transit First policy, the principles of which include the following:

- Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.
- Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.
- Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.
- New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.

(San Francisco City Charter, Section 16.102)

Acting on these principles, the Municipal Transportation Agency (MTA) has completed projects to make downtown streets less amenable to automobile traffic. For example, it has recently widened transit-only bus lanes and created bulb-out bus stops along the downtown portion of the 38 Geary Boulevard line, SF Muni's busiest line, in order to allow buses more maneuverability. This project removed an entire mixed-use lane that previously had been available to automobiles. Another decision in keeping with the Transit First policy was to not build additional parking for the new portion of the Westfield Shopping Centre, which added 110 stores and is expected to draw 25 million people annually, according to *The San Francisco Chronicle*.

Traffic congestion is a well-recognized problem in San Francisco, and the various stakeholders in the city have placed it high on the policy agenda. The study of congestion pricing as another means of alleviating the problem puts it in the formulation stage of the policy cycle. Even so, we can see that it has gone through a full cycle in London, with planned expansion to other congested parts of the United Kingdom, as well as in Singapore and Stockholm.

Furthermore, we have seen other forms of congestion management, including the use of toll and carpool lanes, which have gone through several policy cycles, as represented by the passing of legislation described earlier in this section.

With the particular concept of congestion pricing, both institutional and non-institutional players have contributed to its status in the formulation stage of the policy cycle. District 1's Supervisor Jake McGoldrick is the one who encouraged the CTA to apply for the federal funds to study the feasibility of congestion pricing. He also wrote an article in *The Examiner* encouraging the city's residents to keep an open mind on congestion pricing. Some non-institutional players who have been crucial in this stage include transit rider advocacy groups, like Rescue Muni, which push for improvements in the city's transit system as a way to combat downtown congestion, and think tanks, like the San Francisco Planning and Urban Research Association (SPUR), which conduct research and create publications to educate the public and institutional players about sustainable development and retaining the city's vitality. Through expertise, advocacy and education, these non-institutional actors have played a large role in not only defining traffic congestion as a serious problem but also identifying reasons and ways to manage it.

Stakeholder Analysis

As expected, there will be people who favor or oppose congestion pricing in downtown San Francisco. The following are major groups who have a stake in the policy outcome.

Business Interests

San Francisco's Financial District is known as the "Wall Street of the West." The legacy of the California Gold Rush turned the city into the principal banking and finance center of the west coast. Many large financial institutions, multinational banks and venture capital firms are based or have regional headquarters in San Francisco. Furthermore, tourism, a $7.5 billion industry, is the backbone of the city's economy. Over 15 million visitors come to San Francisco every year. Finally, downtown San Francisco's shopping area is one of the largest in the west, touting a wide variety of shops to appeal to consumers' tastes.

Given the importance of downtown commerce to San Francisco's economy, business interests exercise considerable leverage over policy outcomes. However, their reaction to congestion pricing may not be united. Some willingly accept that downtown traffic and parking conditions are so unaccommodating to automobiles that mass transit is the best way to travel. As Steve Eimer, vice president of development for the Westfield Group, told *The San Francisco Chronicle*, "The use of mass transit is the most convenient way to go to the center."

Parcel and freight delivery companies might benefit from the smoother traffic flow that congestion pricing can bring. Even though a truck is charged a fee for driving within the congestion zone, it might be able to make more deliveries if it spends less time inching along in traffic. In fact, traffic fees are an accepted business norm with many parcel companies. United Parcel Service (UPS), for example, is the city's number one parking violator, paying $673,334 in fines for 11,788 tickets in 2006, according to *The San Francisco Chronicle*. It is enrolled in a monthly corporate plan with the city's municipal transportation agency to pay its tickets in bulk.

As such, it appears that San Francisco's downtown location is so important to companies that they either accept having to pay a premium, one way or another, to do business here, or they accept that public transit or taxis are the most convenient mode of travel.

Still, others may oppose congestion pricing because it can shoe away potential clients, customers or employees. Lobbyists for the Building Owners and Managers Association of San Francisco, for example, believe that congestion pricing might become a disincentive to locate or maintain businesses in the city. Customers or clients may stay away from downtown altogether if they face, for example, a bridge toll, a downtown parking fee and then another fee for driving in a congested area. Furthermore, excessively high commute fees can keep companies from being able to attract and retain talented employees, thereby potentially crippling their organizational health.

People who drive into downtown

For some people, transit is not a convenient or preferable option, so they choose to drive into downtown. They may not live close to a transit stop, or they believe transit is unreliable, unsanitary or dangerous or it fails to meet their needs in other ways. They may be shoppers or workers and they may live within or outside of San Francisco. They will argue that they already pay many fees just to drive (tax and title fees upon the vehicle's purchase, tolls and parking fees), and it would be unfair to impose on them yet another fee. Furthermore, the city will have to use a tracking device to implement a congestion pricing system, and some may view this as an intrusion on their privacy.

While there appears to be no organized unity among these stakeholders, their interests are represented by business interests who will oppose congestion pricing. These stakeholders are their shoppers, customers, clients and employees.

Environmentalist Groups

True to San Francisco's history of activism, environmentalist groups have long called for congestion management to alleviate pollution, and they serve as a watchdog on the city's operations as they affect the environment. In 1989, for example, the Sierra Club Legal Defense Fund and the Citizens for a Better Environment filed lawsuits in the Federal District Court of Northern California, claiming that the State of California and the Metropolitan Commission of San Francisco had violated provisions of the Clean Air Act Amendments of 1977 by not doing enough to meet the clean air standards (Weiner, 1997, p. 142). Because congestion in downtown causes unnecessary pollution, it is likely that environmental groups will support congestion pricing.

Residents

San Francisco residents also have a history of activism. When the growth of highways expanded to the Bay Area in the late 1950s, residents revolted and limited highway construction to mostly aerial structures along the city's boundaries. Following the damage to the Embarcadero Freeway caused by 1989's Loma Prieta Earthquake, residents chose to demolish the freeway altogether, preferring the construction of street-level boulevards instead.

In the early 2000s, the Rincon Hill and South of Market (SOMA) areas began to experience a housing boom as the city made efforts to transform the derelict industrial area into vibrant, mixed-use neighborhoods. The proximity of these areas to downtown will surely spark concern over traffic congestion. As residents will want wider sidewalks and spaces to congregate, they will likely continue the history of resident activism by supporting congestion pricing in downtown to discourage traffic congestion close to them.

City Hall – Board of Supervisors

As the legislative body of San Francisco, the Board of Supervisors must consider resolutions for the city's problems that will ensure the vitality of the city in the long run. This means that policies must be designed to support economic growth while improving the city's quality of life. A key to achieving this is through effective public transit. City Hall knows that its performance will be judged, in part, on the success of the transit system, so it would prefer to be able to adopt a congestion pricing scheme that will generate revenues for transit and reduce traffic congestion that hinders transit reliability.

San Francisco Muni

Transit currently carries the bulk of trips downtown, but it must be able to carry more if downtown growth is to succeed. The better the transit system, the more likely people will get out of their cars, which means less traffic congestion and air pollution.

San Francisco's Muni provides almost 700,000 trips a day and operates 80 routes throughout the city, making it the busiest transit provider in the Bay Area (San Francisco Municipal Transportation Agency, 2007). The system is designed so that no resident of San Francisco should live more than a quarter-mile from a transit stop. However, it has suffered from staffing and funding shortages and labor issues which have ultimately hampered its ability to give prompt service, improve communications equipment and maintain its facilities.

Congestion pricing would direct much-needed revenues to Muni as well as allow Muni vehicles to operate in less traffic in the downtown area, thereby improving its timeliness. Because Muni is central to the transportations needs of the city's residents, it will be difficult to ignore its preferences.

Process Models

Multiple Streams Model

Kingdon's Multiple Streams model is a useful lens in examining the broader context of congestion management as it relates to congestion pricing. It provides a practical way to see how the right timing and the right conditions have allowed congestion management to become an undeniable issue.

The problem stream: The problem of traffic congestion is very visible because it affects urban motorists on a daily basis. As mentioned earlier, congestion has caused costly delays, frustration and pollution.

The policy stream: Even before policy issues become part of the agenda setting stage, experts in their respective areas are already thinking of solutions for them. According to Kingdon (as cited in Theodoulou and Kofinis, 2004, p. 121), "the policy stream represents the essential ideas and solutions debated and bantered among the various policy-making actors and policy entrepreneurs." Before congestion management was implemented in urban areas on a broad scale, computer scientists and economists were devising solutions for traffic congestion according to their specific areas of expertise. Computer scientists were developing technology that could manage the queuing of traffic, for example, while economists were pressing for pricing mechanisms during peak times to affect motorist behavior.

The political stream: The political mood has shifted toward an acceptance of congestion management as part of everyday life. Where once we expected roads to be free, we realize now that roads are finite goods. What also helps to influence political mood is a small victory or hope that it will succeed. In this case, San Francisco can point to London's experience with congestion pricing as a success that the city should strive to emulate.

Policy window: A window of opportunity opens when all three streams converge and actors take advantage of the opportunity to push forward their agendas. With traffic congestion being a serious problem today, with numerous solutions to the problem and with a political mood in society that is open to suggestions on ways to manage resources efficiently to contain congestion, the conditions are ripe for congestion pricing to appear as a means to combat the problem. Supervisor McGoldrick has taken advantage of this policy window by initiating the CTA study and alerting the city's residents to the prospect of congestion pricing.

Punctuated Equilibrium

Baumgartner and Jones' theory of punctuated equilibrium can be used to understand the evolution of transportation policy as it relates to public transit. The post-war boom saw automobile and home ownership rates rise, which in turn caused transit usage to fall dramatically. Even as transit providers struggled to remain in operation, the federal government did not see their struggle as something that needed remedy via funding. Soldiers had returned from war to reunite with their families, and car and home ownership were positive signs that many in society were making progress in fulfilling their dreams. Here, public transit had a low policy image, as Baumgartner and Jones would argue. This trend would remain in equilibrium for several decades until several dramatic changes occurred to reverse it.

As mentioned earlier, the oil crises in the 1970s helped shift the focus of federal funding from road development to mass transit in an effort to reduce dependence on foreign oil. Also, whereas automobile ownership had been part of the American dream, environmentalists were finding that automobiles were polluting the environment. Baumgarter and Jones (as cited in Theodoulou and Kofinis, 2004, p. 93) say that "dramatic change is possible because preferences of individuals for certain policies are not fixed indefinitely. As individual opinions change, so can the attention and understanding of a policy issue." Here, the dramatic events of the oil crises

and the new information about automobiles found by environmental interest groups gave rise to a shift in the public's bounded rationality, which, in turn, gave mass transit a positive policy image, thereby helping transit providers gain consideration from the federal government for funding.

It appears that this positive policy image of mass transit has since been upheld and internalized by local governments in urban areas. This is most likely because environmental problems and traffic congestion persist, and transit is seen as an effective transportation alternative. We have yet to see whether a new disturbance will change this image of public transit.

Prognosis

Although the Multiple Streams and Punctuated Equilibrium models offer insights into how policy issues appear on the agenda and the dynamics of the actors who push them there, they offer limited guidance as to how a policy issue will fare in the adoption, implementation and evaluation stages of the policy cycle. Still, through an understanding of the stakeholders involved, we can make a prognosis as to what will happen with congestion pricing in the policy cycle.

Kingdon's model tells us that the timing is right. The political climate is generally favorable towards congestion management, the technology exists to make it work in downtown San Francisco and the problem of traffic congestion is serious enough to warrant government intervention. Furthermore, we know that it works in London.

The outcome of the policy issue will be characterized by the interactions between stakeholders as they strive to get what they want. It appears that there are more groups who would be in favor of congestion pricing than against it. The opposition, furthermore, does not appear to be strongly united. The same congestion fee that will help drivers move faster in traffic

and be more productive may deter other drivers from even coming into the downtown area. Meanwhile, the city has a history of activism, and as the population grows, there will be more demand for livable space in which people can bike, walk and congregate. As such, I expect that congestion pricing will be implemented in downtown. Muni will need to make some drastic service improvements first, but as downtown traffic worsens, congestion pricing will become the clear solution.

References

Cabanatuan, M. (2006, September 28). Mall expands – parking doesn't. *The San Francisco Chronicle*. Retrieved July 6, 2007, from http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/09/28/MNG89LEBTL1.DTL

Congressional Budget Office. (1992). *Paying for highways, airways, and waterways: How can users be charged?* Washington, DC: U.S. Government Printing Office

Gordon, R. (2007, February 24). Parking tickets by the truck load. *The San Francisco Chronicle*. Retrieved July 6, 2007, from http://sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2007/02/24/MNGMPOAK521.DTL

Litman, T.A. (2006). *London congestion pricing: implications for other cities*. Victoria: Victoria Transport Policy Institute.

Lomax, T., Schrank, D. (2005). *The 2005 Urban mobility report*. College Station: Texas Transportation Institute.

McGoldrick, J. (2006, May 15). Keep open mind on 'congestion pricing.' *The Examiner*. Retrieved July 6, 2007, from http://www.examiner.com/a-108266~Keep_open_mind_on__congestion_pricing_.html

San Francisco County Transportation Authority. (2007). *Mobility, access, and pricing study overview*. Retrieved July 5, 2007, from http://www.sfcta.org/images/stories/Planning/CongestionPricingFeasibilityStudy/PDFs/SFMAPS_StudyOverview_May2007.pdf

San Francisco Municipal Transportation Agency. (2006). *San Francisco transportation fact sheet*. Retrieved July 6, 2007, from http://www.sfmta.com/cms/uploadedfiles/dpt/FactSheet2006Mar.pdf

San Francisco Planning and Urban Research Association. (2005). *Parking and livability in downtown San Francisco*. Retrieved July 3, 2007, from http://www.spur.org/documents/pdf/050101_report_01.pdf

Theodoulou, S.Z., Kofinis, C. (2004). *The art of the game: Understanding American public policy making*. Belmont: Wadsworth/Thomas.

Weiner, E. (1997). *Urban transportation planning in the United States: An historical overview* (5th ed.). Washington, DC: U.S. Government Printing Office

Congestion Management Timeline