San Francisco
County Transportation
Authority

1455 Market Street, 22ND Floor, San Francisco, California 94103 415-522-4800 info@sfcta.org www.sfcta.org

Downtown Congestion Pricing Study Policy Advisory Committee
Meeting Notice

Thursday, April 30, 2020: 6:00 p.m.-8:00 p.m.
Virtual meeting conducted via Zoom

1. **Coronavirus and the Downtown Congestion Pricing Study**
    a. Project updates during shelter in place
    b. PAC member breakout discussions
2. **Goals & Evaluation Metrics [Action item]**
    a. Update on Goals & Evaluation Metrics
    b. PAC member discussion
    c. Public comment
    d. PAC member vote
3. **Scenario Screening Process**
    a. Presentation on proposed scenario development and screening process
    b. PAC member discussion
4. **Next Steps**
    a. Project activities over the next two months
5. **Public comment**

Enclosure

1. Memo: PAC Feedback and Staff Responses on Goals and Evaluation Metrics
2. Goals and Evaluation Metrics
3. Scenario Development, Modeling, and Evaluation Process
4. Notes: PAC Meeting #3
5. Notes: Information Session #1: Why We are Studying Congestion Pricing
6. Notes: Information Session #2: Congestion Pricing in Other Cities
7. Notes: Information Session #3: Data & Modeling

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San Francisco Downtown Congestion Pricing Study

Memo: PAC Feedback and Staff Responses on Goals and Evaluation Metrics

This document outlines feedback from the Downtown Congestion Pricing Study Policy Advisory Committee (PAC) on draft Goals and Evaluation Metrics for the study. PAC members provided initial input on goals at their December 20, 2019 meeting, and feedback on a draft Goals and Evaluation Metrics document at their February 20, 2020 meeting. Project staff incorporated this feedback into an updated draft Goals and Evaluation Metrics (PDF) document which will be shared at the PAC's April 30, 2020 meeting. This document summarizes PAC feedback received at the February meeting and outlines staff responses.

Each of the four goals has associated metrics to evaluate how well potential congestion pricing scenarios would meet the goal. The project team aimed to focus each goal around a small number of key metrics in order to keep the project focused and maintain the team's ability to conduct thorough analysis for each metric. The PAC provided feedback about both program resource outputs (e.g. adding more buses) and program outcomes (e.g. transit crowding or travel times). The project team recommends that we incorporate feedback related to outputs into the definition/design of program scenarios or the investment plan, while focusing performance metrics on program outcomes.

Below the project team outlines responses to the feedback the PAC provided and how the feedback was incorporated into the updated Goals and Evaluation Metrics and/or study process.

General Feedback and Questions from PAC Members

PAC Feedback: Overall, PAC members thought the four goal areas (get traffic moving, increase safety, clean the air, promote equity) summarized the main goals of the study well.

PAC Feedback: Can we use a participatory budgeting process to inform where funds should go?

> **Staff Response:** Our program development process includes co-creation workshops centered around a card game where participants develop a congestion pricing program based on their priorities. Participatory budgeting is integrated into the game, as participants select among potential program elements including fee levels, program

subsidies, and transportation investments while balancing overall revenue and costs. Most of these workshops are focused on Communities of Concern (CoCs) to ensure that historically under-invested communities benefit - and are not harmed - by a congestion program. Program development, including investment plan development, will continue to incorporate co-creation and other participatory processes.

Feedback on "Get Traffic Moving" Goal

Get traffic moving so people and goods get where they need to go

PAC Feedback: "Traffic" seems too mode agnostic -- why not add more focus on what you want to move? For example, moving buses or people. Can you add a travel efficiency/occupancy metric?

Staff Response: We chose the term "traffic" because it describes the problem we're trying to solve in the terms the general public can easily recognize and connect with. We also focused on addressing traffic in a general sense because a congestion pricing program would improve transportation for travelers by all modes - people on buses, people walking and biking, businesses moving goods, and people who are paying a fee to drive downtown.

The metrics associated with this goal outline the goal's priorities. The metrics prioritize transit and person trips to emphasize that we want to move more people by efficient modes like transit.

PAC Feedback: Is the "get traffic moving" goal in conflict with the "increase safety" goal? Can we talk about freeing up space for the things you want to move faster (eg. buses) without speeding up cars and hurting safety?

Staff Response: We developed our goals around safety and congestion carefully to ensure that these goals are not at odds: We want to get traffic out of gridlock so it is "moving" but we don't want traffic speeding. The evaluation metric of "reducing vehicle hours of delay" focuses on reducing the time vehicles are stopped in traffic, rather than increasing average speeds.

Data from other cities has shown that reducing the number of cars on the streets through congestion pricing has reduced the number of collisions. Additional ways we can ensure cars are not speeding and meet the study's "increase safety" goal include spending program revenue on measures to calm traffic and/or increase enforcement.

Feedback on "Increase Safety" Goal

Increase safety for people walking, biking, and driving

PAC Feedback: Can you integrate "safety on transit" into this goal?

> **Staff response:** We could potentially address some aspects of personal safety into our program design (eg. by funding transit ambassadors in the investment plan). We don't recommend including "increase safety on transit" as a scenario evaluation metric because a clear methodology does not exist to predict effectiveness for this in a comparison of potential congestion pricing scenarios.

PAC Feedback: Can some of the revenue generated from the program be devoted to pedestrian safety?

> **Staff response:** Yes, we can integrate pedestrian and bicycle safety improvements into the revenue plan.

Feedback on "Clean the Air" Goal

Clean the air to improve public health and fight climate change

PAC Feedback: Can you add public health measures like reduction in the incidence of disease (eg. asthma)?

> **Staff response:** We know that cleaner air and more physical activity are associated with better public health outcomes. We have noted this in the Goals and Evaluation Metrics and are investigating tools that could allow us to add public health metrics to the second, more detailed round of modeling.

Feedback on "Promote Equity" Goal

Promote equity by improving health and transportation access for disadvantaged communities.

PAC Feedback: Suggest saying "advances equity" (not "promotes") to make the language stronger.

> **Staff response:** Staff has incorporated this suggestion into the updated draft of our Goals and Evaluation Metrics.

PAC Feedback: Would like to see a metric showing that travelers who can afford to pay are the ones paying the fee. We don't want low and very-low income people to pay, and we do want higher income folks to pay.

> **Staff response:** The travel costs metric in the equity goal is intended to capture this. Meeting the target to not increase costs for low-income people while adding a fee to shift trips from driving to other modes would result in travel costs increasing for higher income

and not lower income people. We will project the amount and share of fees paid by income group.

PAC Feedback: Do the goals identify the outcomes we want to see for people who are low-income rather than the rest of the population?

Staff response: Yes, we have identified some specific metrics for people who are low-income. For example, one metric is to increase job accessibility. Other equity metrics examine how the three goals around getting traffic moving, increasing safety, and cleaning the air would be met specifically for CoCs.

PAC Feedback: Can you expand your goals to encompass CoCs elsewhere in the Bay Area? For example: Regarding the metric about the number of jobs that can be accessed in 30 minutes: does this metric only apply to San Francisco residents? Can we expand this goal to accommodate people who work in San Francisco but live farther away?

Staff response: Our analysis tools can better evaluate congestion pricing effects on CoCs within San Francisco than effects on regional CoCs.t However, we can and will evaluate effects of a congestion pricing program based on household income at the regional level. To address the need for more analysis of regional equity effects, we have added low-income households to the travel time and job access metrics under the equity goal.

PAC Feedback: Can you add a metric around how much revenue is distributed to COCs?

Staff response: We recommend considering this issue as a congestion pricing revenue investment guideline or principle, rather than a scenario comparison metric. Our equity metrics focus on directing program benefits to CoCs, and are focused on outcomes such as job access, travel costs, and crash reductions rather than program outputs (e.g. amount of revenue spent or transit service provided). We will incorporate PAC feedback regarding program investments as we develop and refine program scenarios. That way, we can develop them to prioritize incentivizing in CoCs, which will help us achieve our equity outcome metrics.

PAC Feedback: Can you include economic access/job access into the equity goal itself (already see it in metrics)?

Staff response: Our aim was to keep the goals broad so that they can be easy to understand and encompass a number of metrics and benefits. By keeping the existing goal broad, we can be inclusive of other important benefits for CoCs (e.g. crashes).

PAC Feedback: Workforce development (captured by the access to employment metric) is important - can we include the metric “increase access to affordable housing,” too? The

Sustainable Communities Strategy brings housing and transportation together. Housing downtown is not affordable. Creating opportunities for more people to live downtown would prevent people from being pushed to areas that are not transit accessible. People who have been pushed out need to travel into the city.

> **Staff response:** Our primary metrics are transportation-focused but we recognize the need to keep issues like affordable housing in mind. We have identified affordable housing in the "additional community priorities" section of our Goals and Evaluation Metrics.

Feedback on "Additional Community Priorities"

PAC Feedback: Will congestion pricing potentially impact jobs moving around the region?

> **Staff response:** We do not anticipate that a congestion pricing program would move jobs outside of San Francisco. Our 2010 study on congestion pricing found that business effects of a congestion pricing program would be broadly neutral. As we develop an updated study, we are working with the business community to ensure that a congestion pricing program is tailored to the needs of various business types and their employees.

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San Francisco Downtown Congestion Pricing Study Goals and Evaluation Metrics

Draft April 2020

Congestion affects everyone

Traffic congestion affects everyone: clogged streets slow travelers down, worsen air pollution, and increase the likelihood of crashes. Traffic congestion also impacts health and quality of life in nearby neighborhoods.

Although San Francisco's record levels of congestion have now vanished due to the global pandemic, in the past the city's economy has been resilient. The future beyond this pandemic is uncertain, but without intervention we expect a rebounding economy to bring the return of congestion and its negative impacts. The pandemic is spurring cities to envision the future they want to see. Congestion pricing would not be implemented during a pandemic or recession but we can plan today for a return to economic vibrancy without congestion.

When streets are congested:

- **If you're on a bus:** Traffic also delays your trip, sometimes even if you're in a bus-only lane.
  - Buses go 6 mph downtown, even slower than private cars (which average 9 mph), in the evening commute period

- **If you're in a car:** traffic delays your trip
  - You spend about 115 hours a year in traffic.[1]
  - Between 2009 and 2019, arterial auto speeds in Northeast San Francisco declined by approximately 30%.

- **If you walk or bike:** You're more likely to be injured when there are more cars on the road.
  - The downtown area is one of the highest injury areas for people walking and biking, with a high concentration of streets on the Vision Zero high-injury network

- **If you live or work downtown:** You're breathing in more air pollution because of traffic.
  - Vehicles cause most of our region's air pollution, with concentrations of unhealthy pollutants near congested streets and freeways

[1] INRIX 2019 Global Traffic Scorecard

    - Transportation is responsible for the largest share of San Francisco's greenhouse gas emissions (46%)

- **If you are a business:** you may have to wait longer and pay more for deliveries because of congestion.

Congestion in 2019 was concentrated in northeast San Francisco, as shown in Figure 1, and about half of all trips in northeast San Francisco were made in private cars and ride-hail vehicles.

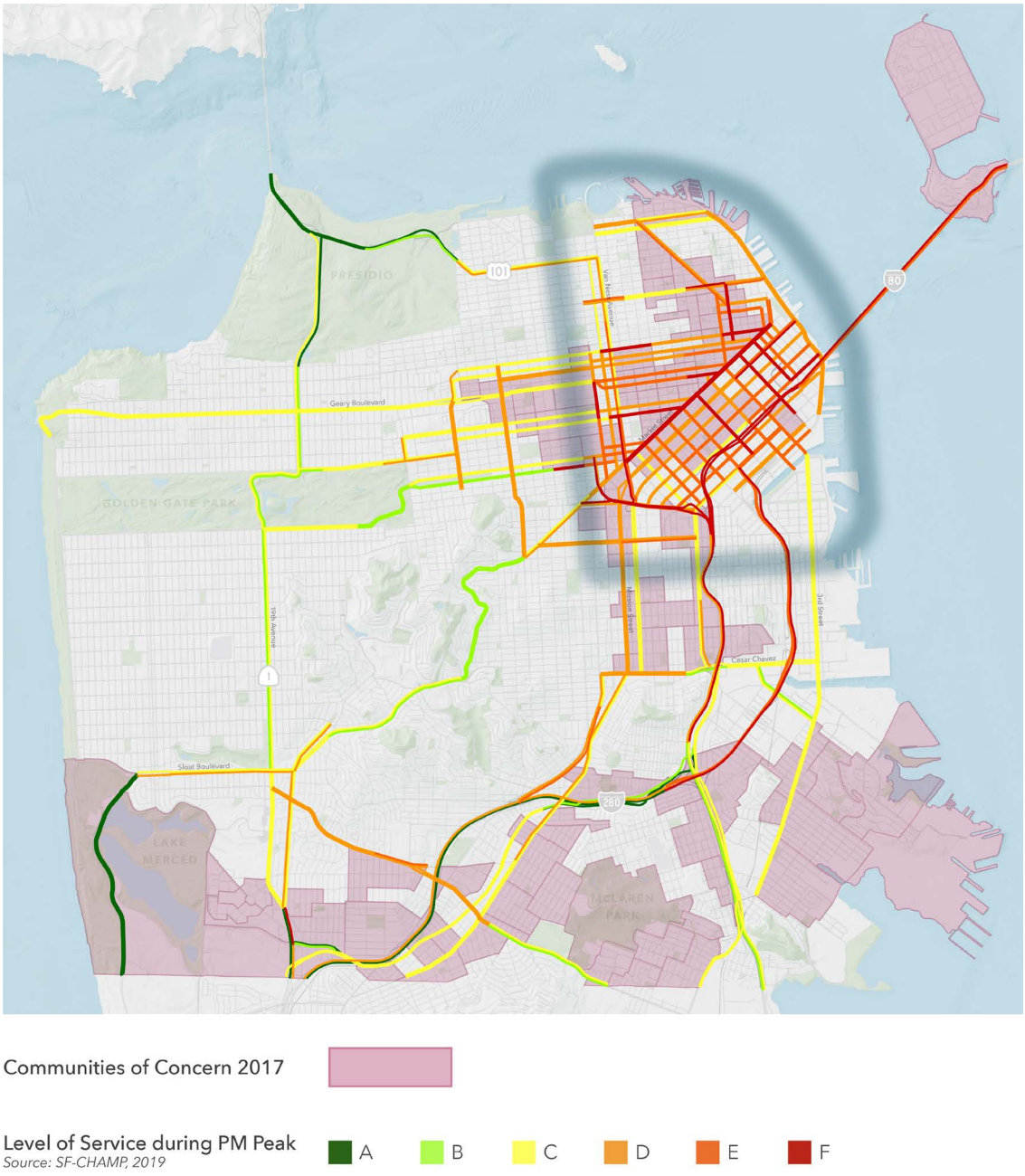


Figure 1: Auto Speeds in San Francisco

The increase in San Francisco's levels of congestion from 2010 to 2019 can be primarily attributed to two main primary factors: **1) population and employment growth in the Bay Area, and 2) the proliferation of ride-hail services, such as Lyft and Uber.** These phenomena had an especially large impact on congestion in Northeast San Francisco. The Bay Area and San Francisco grew rapidly. From 2010 to 2018, San Francisco's workforce grew at an

average annual rate of 3.7% and its population at an average annual rate of 1.2%. Ride-hail services proliferated in San Francisco, contributing significantly to congestion. As of 2016, ride-hail vehicles made over 170,000 vehicle trips within San Francisco on a typical weekday, accounting for 15% of all intra-San Francisco vehicle trips. On weekdays, ride-hail use was highest during morning and evening commute periods—when congestion is greatest—and at night following the commute period.

Congestion disproportionately affects low-income communities of color. Disadvantaged communities pay the highest costs from traffic congestion because they are more likely to…

- ride the bus, which is stuck in car traffic
- live in areas with higher rates of traffic collisions
- have health impacts like asthma from polluted air
- spend a disproportionate amount of income on transportation, especially those who drive

WHY CONGESTION PRICING

Our challenge

The Transportation Authority monitors congestion on San Francisco streets and tests ways to improve traffic flow. The most space-efficient way to move people in busy areas is when most people travel by transit, walking, and biking. San Francisco has made concerted efforts to encourage modes of travel that allow more people to move in limited street space, including adding transit-only lanes, installing protected bike lanes, and taxing ride-hail trips to support transit, walking, and biking. The City has also implemented the SF Park program, which includes parking pricing policies designed to keep some spaces available on every block and thereby reduces circling and double-parking.

While these efforts helped, they were not enough. For example, SFMTA implemented red transit-only lanes on many streets to improve transit travel times and reliability. While these investments successfully improved transit speeds relative to auto speeds, the overall increase in auto volumes and congestion downtown means transit riders' trips were still delayed by traffic.[2] Buses can still be delayed by cars turning, parking, blocking intersections, or illegally using the transit-only lane. On some key corridors, like 3rd Street and O'Farrell Street, transit-only lanes prevented bus speeds from declining as much as auto speeds but buses still became slower as traffic increased during the most congested periods.

We will not be able to build our way out of this problem – congestion is a result of too much demand for driving and not enough road space to accommodate the demand. Moreover,

[2] SFMTA Red Transit Lanes Final Evaluation Report.
https://www.sfmta.com/sites/default/files/reports/2017/Red%20Transit%20Lanes%20Final%20Evaluation%20Report%202-10-2017.pdf

between now and 2040, the city is expected to add 200,000 new residents and 150,000 new jobs. Even with other planned improvements to the transportation system, traffic congestion is still expected to get worse. **When our economy rebounds, we will need to reduce the number of car trips downtown to make our walking, biking, and transit improvements work.**

Introducing congestion pricing

We are exploring how a fee to drive downtown during busy hours could keep traffic moving. This is a strategy called congestion pricing. Congestion pricing would reduce the number of cars driving downtown, making it one of the most effective tools we can use to reduce congestion. Congestion pricing could help get traffic moving, increase safety, clean the air, and advance equity. Certain groups, like travelers with low incomes or disabilities, could receive an exemption or discount. Revenue from the fee could be reinvested in safer streets and better transit. Using revenue from a congestion charge to improve the transit system could further help reduce the number of people driving alone and make it easier to get around downtown.

Congestion pricing is one tool that has proven to work. For example, London launched its congestion pricing program in 2003 along with increased transit service. The program resulted in a 30% reduction in traffic congestion, 38% increase in transit ridership, and a 12% reduction in greenhouse gasses. Stockholm launched a congestion pricing program in 2007. The program resulted in a 22% reduction in traffic congestion, 5% increase in ridership, and a 14% reduction in greenhouse gases.

Based on results from other cities, the Transportation Authority studied congestion pricing in the 2010 Mobility Access and Pricing Study. The study found that congestion pricing in northeastern San Francisco would significantly reduce peak period vehicle trips downtown and improve the flow of traffic. Projected benefits in the priced area included:

- 12% fewer peak period auto trips,
- 21% reduction in vehicle delay,
- 20% – 25% transit speed improvements,
- 16% reduction in greenhouse gas emissions, and
- 12% reduction in pedestrian collisions.

Congestion pricing is a proven and effective solution to mitigate congestion; it is also a proven strategy to meet city goals of cleaner air, safer streets, and increased equity. Based on the findings of the 2010 study and results from other cities, in December 2018 the Transportation Authority Board directed the agency to launch a new study of congestion pricing in downtown San Francisco with a strong focus on transportation equity (Resolution Number 19-29).

Based on the results of congestion pricing programs in other cities and the projected benefits for San Francisco identified in the 2010 congestion pricing study, city, regional, regional, and state-level plans since then have identified a congestion pricing program as key to achieving a variety of established goals.

- **San Francisco Transportation Plan 2040:** Adopted in 2017, the plan is a citywide long-range investment and policy blueprint for San Francisco's transportation system. It includes congestion pricing as a key strategy to reduce greenhouse gas emissions.[3]
- **San Francisco Climate Action Strategy:** The San Francisco Department of the Environment (SFE)'s 2013 Climate Action Strategy and 2017 Transportation Climate Action Strategy include congestion pricing as one of the most powerful tools available to rapidly reduce greenhouse gas emissions from transportation. The City's Climate State of Emergency Resolution adopted in April 2019 further establishes a goal of 68% reduction in emissions below 1990 levels by 2030 and a 90% reduction by 2050.[4] SFE's 2019 Focus 2030: A Pathway to Net Zero Emissions report evaluates policy strategies achieve these goals, including a target to shift 80% of all trips to sustainable modes (transit, walking, and biking) by 2030. The report identifies downtown congestion pricing as a key policy needed to achieve these established transportation and climate goals.[5]
- **Vision Zero Action Strategy:** Adopted in 2014, Vision Zero is a commitment to eliminate traffic fatalities by 2024 by building better and safer streets, enforcing laws, and

Parking Pricing and Congestion Management

SFMTA implemented the SF Park program in 2010 to better manage the City's parking supply in busy areas through demand-based pricing and ensure one or two spaces would typically remain available on every block. As a result of improving parking availability, the program decreases congestion by reducing circling and double-parking and encouraging drivers to shift trips to off-peak times. However, these effects have not been enough to offset overall increases in traffic congestion.

A 2016 Transportation Authority study of parking supply and utilization found that congestion pricing would be more than twice as effective as expanded parking fees in reducing congestion in the downtown area, mainly because many peak hour trips pass through, rather than end within, the downtown area.

https://www.sfcta.org/sites/default/files/2019-03/Parking_Supply_summary_report_11.29.16.pdf

http://sfpark.org/wp-content/uploads/2014/06/SFpark_Pilot_Project_Evaluation.pdf

[3] https://www.sfcta.org/projects/san-francisco-transportation-plan

[4] https://sfenvironment.org/policy/resolution-in-support-of-the-san-francisco-climate-emergency-declaration

[5] https://sfenvironment.org/sites/default/files/fliers/files/sfe_cc_climateactionstrategyupdate2013.pdf

adopting street safety policies to effect change.[6] Released in 2019, the Action Strategy outlines how to achieve Vision Zero and identifies congestion pricing as a key policy needed to achieve the goal.[7]

- **Transportation Demand Management Ordinance and Plan:** Adopted in 2016, the ordinance strives to reduce the need for driving trips in San Francisco and shift trips to walking, biking, and transit. The plan identifies strategies, including congestion pricing, needed to encourage sustainable modes of transportation.[8]
- **Transportation Task Force 2045 Report:** Released in 2018, the report identifies funding needs, gaps in resources, and potential revenue options. It includes congestion pricing as a way to fund transportation improvements and meet the city's transportation policy objectives.[9]
- **Plan Bay Area 2040:** Adopted in 2017, Metropolitan Transportation Commission's long-range Regional Transportation Plan and Sustainable Communities Strategy for the Bay Area identifies transportation and land use strategies to enable a more sustainable, equitable and economically vibrant future for the region. The plan includes downtown congestion pricing in San Francisco and rated it as a high-performing project given its benefits including shortening travel times, reducing air pollution, and improving health and safety.[10]
- **California Sustainable Communities and Climate Protection Act Progress Report:** Released in 2018, the report provides an update on Senate Bill (SB) 375, which recognizes the critical role of integrated transportation, land use, and housing decisions to meet climate goals. It identifies road pricing programs as an important element to meeting the state's greenhouse gas reduction goals.[11]

[6] https://www.visionzerosf.org/about/what-is-vision-zero/

[7] https://www.visionzerosf.org/wp-content/uploads/2019/04/VZAS_040419_web.pdf

[8] https://www.sfmta.com/projects/transportation-demand-management

[9] https://www.sftransportation2045.com/sites/default/files/pdfs/Final_Report/T2045%20TF%20Report%20for%20TA%20Board_v2.pdf

[10] http://2040.planbayarea.org/about

[11] https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

Study Goals

A congestion pricing program in San Francisco could lead to fewer car trips, shorter travel times, safer streets, and cleaner air. Congestion pricing is one of the most effective tools available to achieve these outcomes. Discounts and exemptions can be built into the program to protect communities of concern and other disadvantaged people in the region who need to drive.

Based on the experience of other cities that have implemented congestion pricing and the 2010 study of what the policy could achieve in San Francisco, we estimate that **we need to reduce peak period vehicle trips in northeast San Francisco by at least 15%** in order to meaningfully reduce congestion and achieve the four goals below.

The Transportation Authority strives to develop a fair and equitable program for public consideration, driven by four goals. These goals are in draft form and will be revised with input from the public to shape a potential congestion pricing program that meets San Francisco's unique needs. The draft goals are as follows.

1. **Get traffic moving** so people and goods get where they need to go

2. **Increase safety** for people walking, biking, and driving

3. **Clean the air** to support public health and fight climate change

4. **Advance equity** by improving health and transportation access for disadvantaged communities

The need to reduce peak period vehicle trips by 15% to meet these goals is based on the experience of other cities and the previous congestion pricing study in San Francisco. For example, in London an 18% reduction in vehicles in the congestion charging zone over the first year of the program's implementation was needed to achieve the program's benefits. Similarly, in Stockholm traffic crossing the cordon decreased about 20% when the congestion pricing program was implemented, although the program goal was to reduce vehicle volumes by only 10% to 15%. In San Francisco, the Transportation Authority's 2010 congestion pricing study projected that a 12% reduction in vehicle trips in the recommended pricing zone would result in substantial congestion reduction, but traffic volumes have increased significantly since completion of that study. Therefore, we expect we need to achieve a larger 15% reduction in peak period vehicle trips from current levels to achieve the program goals.

Evaluation Metrics

The four study goals will be used to evaluate different congestion pricing policy scenarios. To create a data-driven evaluation process, each goal is supported by metrics that are based on existing data sources and can be evaluated using quantitative and/or qualitative tools to identify the likely performance of different scenarios relative to the study goals. Where possible, metrics will be evaluated using the Transportation Authority's travel model (SF CHAMP). In many cases, a metric supports more than one goal; in these cases, the metrics are listed under the primary goal. However, many equity metrics consider how effects in other goal areas are distributed to disadvantaged communities; these equity-focused variants of each metric are grouped under the equity goal. Where appropriate, each metric will be produced for the study area, the city, the region, and communities of concern. Since congestion pricing would only be implemented when economic growth and congestion return, metrics will be used to measure expected program success relative to congested conditions by using 2019 as the baseline comparison period.

The program scenarios will be developed through an iterative process, starting with a long list of design options (e.g., area, time, price, exemptions) that will be refined through technical evaluation and public input. The long list of options will be shaped into a small set of more refined alternatives and further evaluated to identify which best meet the project goals. Ultimately, the technical and public evaluation process will help the study team identify a recommended scenario for consideration by the Transportation Authority Board and a determination of whether to move forward with next steps toward possible implementation. The four study goals and accompanying metrics for use in the evaluation process are outlined below.

1. GET TRAFFIC MOVING SO PEOPLE AND GOODS GET WHERE THEY NEED TO GO

If more people replace driving trips with transit, walking and biking trips, or travel outside peak hours, San Francisco streets would operate more smoothly and predictably; this means shorter and more reliable travel times for people on buses and in cars.

METRIC		TARGET	DATA SOURCES
T-1	Vehicle trips	Decrease peak period vehicle trips by 15%	Peak and off-peak vehicle trips
T-2	Vehicle delay	▪ Decrease the amount of time vehicles are sitting in traffic ▪ Decrease the amount of time that transit vehicles are sitting in traffic	▪ Total vehicle hours of delay ▪ Transit vehicle hours of delay
T-3	Person trips	Maintain the number of daily person trips	Daily person trips
T-4	Transit crowding	Decrease the time spent in crowded conditions on transit	Total hours in crowded conditions

2. INCREASE SAFETY FOR PEOPLE WALKING, BIKING, AND DRIVING

The number of miles vehicles are driving is a major predictor of traffic collisions, so traffic safety is expected to improve if more people shift to non-driving trips as a result of congestion pricing. A congestion pricing program could also provide revenue to be invested in infrastructure projects that make travel safer and more comfortable.

METRIC		TARGET	DATA SOURCES
S-1	Crashes	Decrease fatal and serious injury crashes in the study area	▪ Baseline Crash Statistics [SWITRS] ▪ Program scenario vehicle miles traveled

3. CLEAN THE AIR TO IMPROVE PUBLIC HEALTH AND FIGHT CLIMATE CHANGE

With a shift away from driving, San Francisco can reduce greenhouse gases and other pollution to improve public health and fight climate change. Cleaner air and a shift toward active and other sustainable travel modes also have other public health benefits, such as reducing asthma rates and increasing physical activity.

METRIC		TARGET	DATA SOURCES
A-1	Greenhouse gas emissions	Reduce greenhouse gas emissions	CO_2 emissions
A-2	Local emissions	Reduce unhealthy particulate emissions (PM2.5)	PM2.5 emissions
A-3	Mode split	Increase share of person trips by sustainable modes (transit, walking, bicycling)	▪ Mode split ▪ Peak hour mode split

4. ADVANCE EQUITY BY IMPROVING HEALTH AND TRANSPORTATION ACCESS FOR DISADVANTAGED COMMUNITIES

Congestion pricing provides an opportunity to create a more equitable transportation system. Better performing streets allow for more reliable transit service and faster trips to downtown for disadvantaged communities. Potential revenue from a congestion pricing program could also support targeted investments in disadvantaged communities to improve transportation, safety, and air quality, as well as support program discounts.

METRIC		TARGET	DATA SOURCES
E-1	Travel time	Decrease travel time downtown for low-income households and from communities of concern	▪ Travel time to study area from communities of concern, by mode ▪ Travel time to study area for low-income households, by mode
E-2	Travel costs	Maintain travel costs as a percent of household income for low-income households	Daily costs for trips to the study area by income group
E-3	Job access	Increase the number of jobs that can be accessed within 30 minutes by auto or 45 minutes by transit for low-income households and from communities of concern, by mode	▪ Percent of population in communities of concern that live within a 30-minute travel time by auto or 45 minutes by transit of the study area, by mode ▪ Percent of low-income households that live within a 30-minute travel time by auto or 45 minutes by transit of the study area, by mode
Distribution Metrics for Goals 1, 2, and 3:			
E-T-1	Vehicle trips	Same as T-1, segmented by income level	Same as T-1, segmented by income level
E-T-3	Person delay	Same as T-3, segmented by income level	Same as T-3, segmented by income level
E-T-4	Time in crowded transit	Decrease the time spent in crowded conditions on transit, segmented by income	Time spent in crowded conditions, segmented by income level
E-S-1	Crashes	Same as S-1, segmented by Communities of Concern vs non-Communities of Concern	Same as S-1, segmented by Communities of Concern vs non-Communities of Concern
E-A-2	Local emissions	Same as A-2, segmented by Communities of Concern vs non-Communities of Concern	Same as A-2, segmented by Communities of Concern vs non-Communities of Concern

Additional Community Priorities

Congestion pricing in San Francisco could have broader effects beyond the four primary program goals and the Transportation Authority's initial stakeholder outreach identified broader community priorities that a congestion pricing program would need to support. The priorities below may be less direct and difficult to measure, so will not be quantified through the evaluation process, but will be considered through qualitative discussions as program alternatives are developed and refined. The aim will be to ensure that congestion pricing would at least be neutral or, where possible, have positive effects on the following priorities. Some of the metrics outlined above to support the specific program goals may also provide value to these discussions.

1. **Support the stability of communities of concern and other disadvantaged groups** (e.g. women, LGBTQ people, children and youth, older adults, people with disabilities, and people of color) though improved overall affordability, including access to affordable housing, and personal security.

    - Reducing traffic delay and increasing transit investments could potentially reduce travel times between northeast San Francisco and locations in the city and region that are more affordable but currently less accessible.
    - Program investments could contribute to a greater sense of personal security on streets and on public transit (e.g. more frequent transit to reduce waiting times, transit ambassadors, or streetscape or lighting upgrades).

2. **Support local businesses and the arts** by maintaining the number of people traveling to northeast San Francisco neighborhoods, ensuring business travel and goods movement are cost-effective and efficient, and by contributing to an enjoyable environment for people to spend time in the area.

    - Maintaining the number of people traveling to and within northeast San Francisco, as measured in metric T-5, would ensure community members and visitors have access to local businesses, arts and culture.
    - Reducing traffic congestion could allow auto- and truck-dependent services, such as deliveries and contractors, to be able to complete more business activities per day.
    - Reducing traffic congestion and implementing street safety investments could make northeast San Francisco a more enjoyable place to spend time.

Step 3: Scenario Development, Modeling, and Evaluation Process

San Francisco County Transportation Authority

IN EACH ROUND, THE FOLLOWING ACTIONS ARE PERFORMED

- Establish options (or bring them from the previous round)
- If necessary, re-adjust base price to ensure 15% vehicle trip reduction
- Evaluate project goal outcomes
- Remove fatally-flawed options (e.g., technically infeasible, can't achieve 15% vehicle trip reduction, increases travel costs for low-income households)
- Advance scenarios that best meet project goals while minimizing costs to travelers

ROUND 1

Basic Design

Geography:

2010 recommended area

Smaller alternative area

Configuration:

Inbound Cordon Charge

Bidirectional Cordon Charge

Peak Direction Cordon Charge

Area Charge
Charge all trips within zone

Per-mile charge

Charge Amount:
$2 to $10 per crossing, trip, or mile

Hours of Operation:
Peak Period or Daytime

ROUND 2

Investments

Transit service increases

Safety, streetscape, or other investments*

ROUND 3

Discounts and Exemptions

Fee Discounts:

Means-based

Zone resident

Bridge toll rebate

Daily max

People with disabilities*

Transit Discounts:

Means-based

Special Cases:

Outbound cordon (PM only)

TNC-only charge

High performing scenarios identified for further consideration

* Non-modeled policies, evaluated separately

Step 3: Scenario Development, Modeling, and Evaluation Diagram

San Francisco County Transportation Authority

IN EACH ROUND, THE FOLLOWING ACTIONS ARE PERFORMED

- Establish options (or bring them from the previous round)
- If necessary, re-adjust base price to ensure 15% vehicle trip reduction
- Evaluate project goal outcomes
- Remove fatally-flawed options (e.g., technically infeasible, can't achieve 15% vehicle trip reduction, increases travel costs for low-income households)
- Advance scenarios that best meet project goals while minimizing costs to travelers

ROUND 1

Basic Design

→

ROUND 2

Investments

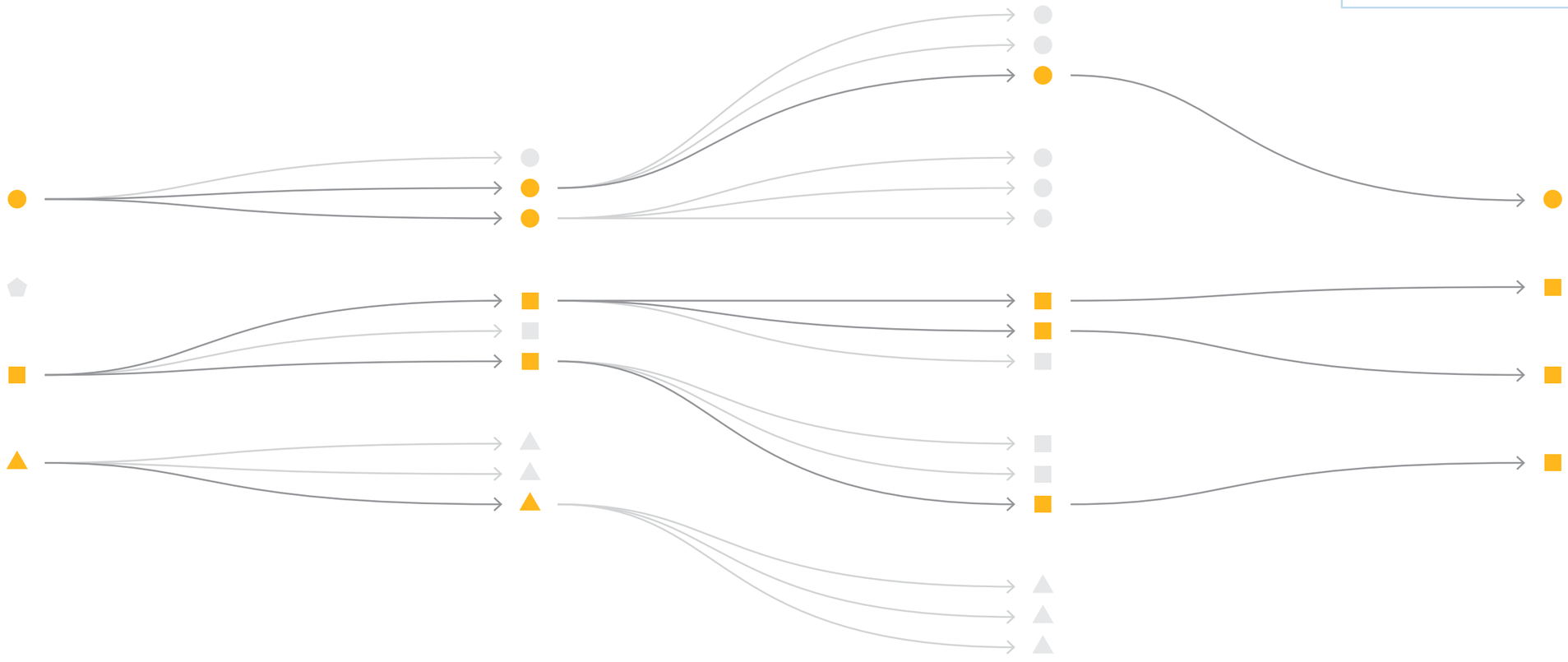
→

ROUND 3

Discounts and Exemptions

→

High performing scenarios identified for further consideration



Draft Meeting Notes

Downtown Congestion Pricing Study Policy Advisory Committee Meeting #3

Date: February 20, 2020

Packet: Please follow this link for all materials shared in meeting, including presentations noted below.

Project Staff

- Tilly Chang, Executive Director, Transportation Authority
- Rachel Hiatt, Assistant Deputy Director for Planning, Transportation Authority
- Colin Dentel-Post, Senior Transportation Planner, Planning
- Eric Young, Director of Communications, Transportation Authority
- Paige Miller, Senior Communications Manager, Transportation Authority
- Drew Cooper, Senior Transportation Modeler, Technology, Data, and Analysis, Transportation Authority
- Michelle Beaulieu, Senior Transportation Planner, Policy and Programming, Transportation Authority
- Kimberly Venegas, Communications Coordinator
- Brooke Staton, Co-Founder, Managing Partner, Reflex Design Collective
- Julia Kong, Managing Partner, Reflex Design Collective
- Paisley Strellis, Director, Civic Edge Consulting

Policy Advisory Committee (PAC) Members in Attendance

APA Family Support Services, Central City SRO Collaborative (Evan Oravec), Chinatown Community Development Center (Chris Man), ClimatePlan (Amy Hartman), Commission on the Environment (Tiffany Chu), Greenlining Institute (Alvaro Sanchez), Hayes Valley Neighborhood Association (Robin Levitt), La Raza Centro Legal (James Ford), Mission Economic Development Agency (Rajni Banthia), Potrero Boosters Neighborhood Association (J.R. Eppler), San Francisco Bicycle Coalition (Janice Li), San Francisco Chamber of Commerce (Rodney Fong), San Francisco Council of District Merchants Associations (Maryo Mogannam), San Francisco Giants (Josh Karlin-Resnick), San Francisco Human Rights Commission (Brittni Chicuata), San Francisco Transit Riders (Peter Straus), San Francisco Travel (Jessica Lum), South Beach | Rincon | Mission Bay Neighborhood Association (Bruce Agid), Senior and Disability Action (Pi Ra), TransForm (Hayley Currier), Transportation Authority Citizens Advisory Committee (John Larson), Uber (Chris Pangilinan), Union Square Business Improvement District (Bri Caspersen), Vietnamese Youth Development Center (Judy Young), Walk San Francisco (Jodie Medeiros), West of Twin Peaks Central Council (Steve Martin-Pinto), Yellow Cab of San Francisco (Chris Sweis),

Not in Attendance
A. Philip Randolph Institute, El Centro Bayview, San Francisco Labor Council, San Francisco Bay Area Planning and Urban Research Association, South of Market Community Action Network, UCSF Mission Bay, Young Community Developers

Agenda Item 1: Policy Advisory Committee Updates [Presentation]
Updates on PAC activities based off of PAC member feedback.

PAC members provided feedback at the December meeting that the project timeline felt rushed. In response, the project is being extended by three months and two additional PAC meetings are being added to create a more robust opportunity for feedback and time to incorporate that feedback into the project.

Agenda Item 2: The Greenlining Institute's Mobility Equity Framework [Presentation – begins on page 6]
Hana Creger, Environmental Equity Manager at the Greenlining Institute presented on her organization's framework for determining what mobility options best serve communities and promote equity.

- The Greenlining Institute is a policy, research, organizing, and leadership development institute working for racial and economic justice, with the goal of bringing opportunities and a better quality of life to low-income communities of color.
- Racist transportation and housing policies have long impacted low-income communities of color.
- The Mobility Equity Framework aims to combat these longstanding racist policies and provide metrics for evaluating mobility options based on their equity outcomes.
- A person's commute time is the single greatest factor in their escaping poverty.
- The way our transportation system has been built to promote an auto-centric lifestyle means that there are a number of unsafe conditions, including congestion, that disproportionately impact low-income communities.
- Choosing mobility options that promote equity helps to create opportunities, protect vulnerable communities, and redistributes power.

Committee member: Can you share an example of where a community used the framework successfully?

- **Staton:** We worked on this in D10 and an interesting discovery was the need for a multilingual transportation coordinator who could arrange ride shares. People didn't mind not speaking the same language as their driver if they were able to communicate with a coordinator who set up their rides.

Committee Member: How do taxis and TNCs play into your framework?

- **Creger:** We ranked all of the mobility options and taxis came in above TNCs because of their labor practices. Framework does take labor practices and the gig economy into consideration.

Committee Member: We are seeing a shift from low-income people living in urban centers to the suburbs. How does your framework address that?

- **Creger:** Yes, low income folks have been pushed out of the transit rich cores and we need to do congestion pricing correctly to make sure that we don't further alienate people. We are exploring options to make transportation more accessible to people in these new conditions. Even additional access to transit is in need of scrutiny with regard to equity. Is it equitable for someone to have a two-hour commute on transit?

Dentel-Post: We wanted to acknowledge that a lot of work has been done to try and answer the question of how to plan transportation in an equitable way. We are looking to that work and using it to inform this study. We think that this framework in particular provides a good perspective to measure success in an equitable way. We've used Greenlining's work as we drafted the goals, objectives, and metrics we will discuss tonight.

Agenda Item 3: Goals and Objectives [Presentation** – begins on page 20 **+ Activity]
A presentation by SFCTA staff on goals, objectives, and metrics, followed by small group work to review

- PAC members provided feedback at the December meeting that the goals and objectives should be more focused on specific areas where congestion pricing will make the most difference and based on existing city policy.
- PAC members also requested to see more detailed metrics for each goal area.
- We want to make sure PAC members have enough time to consider these goals and objectives prior to voting on them. We will not vote tonight. We will vote at the April PAC meeting and if the goals and objectives are still not ready we may need to schedule an emergency workshop to finalize them. We hope that won't be needed!

Group 1 Report Out

- We thought the goal "buckets" were good.
- We looked at equity in more detail and would like to see more about how the money will be spent and who decides how the money is spent – a participatory budgeting process that ensures it is accomplishing the equity goals as stated.
- Would like to see more detail about accomplishing the environmental goals for the city.
- Would like to see a metric showing that the "right" people are paying. We don't want low and very-low income people to pay, and we do want higher income folks to pay.

Group 2 Report Out

- Speed is a less valuable metric than travel time for people.
- Would like to see participatory budgeting clarified – want to make sure the "right" drivers are paying.
- Would be interested in a travel efficiency/occupancy metric.

- Safety should include safety on transit.
- Clean the air is good!
- Get traffic moving: “traffic” seems too mode agnostic.
- Will congestion pricing potentially impact jobs moving around the region?
- Want to consider origins of trips.

Group 3 Report Out:

- We’ve done a pretty good job of narrowing the goals to four
- Need something about how the money is spent and who decides how – “a participatory budgeting process.”
- The goals could link to a larger sustainability vision.
- Want something indicating that the right people are paying – don’t want low and very low-income folks paying, do want high income people to pay.
- “Advance equity” not “promote.”

Group 4 Report Out:

- Safety: adding in entire system, but want to increase safety on transit
- Equity: look at mode share for low income folks and if there is any goal around that idea, what are the consequences of congestion pricing on people who are low income?
- Does congestion pricing promote more jobs scattering around the region? What are the consequences of that?
- Clean the air – this one looks good
- Took issue with “traffic” - too mode agnostic
- Want people to be prioritized over goods
- Want to know if some of the money generated could be devoted to pedestrian safety
- Noticed there is a focus on transit crowdedness – why is that the measure rather than something that looks at quality (timeliness, speed)
- Overall happy with the new goals

Group 5 Report Out:

- The shorter list is an improvement.
- Some goals might be in conflict with one another, for example safety could be in conflict with get traffic moving (speed).
- Clean the air does not convey enough urgency, maybe say mitigate climate change/fight climate change.
- Clean the air - a measure could be reduction in public health incidents and of cancer risk that might be relevant.
- Get traffic moving - person trips is important
- Increase safety- Consider sources other than SWITRS, speeds could be a measure of safety (metric); maybe add a monitoring of average speed.
- Promote equity - expand how communities of concern elsewhere in the Bay area are impacted by congestion pricing.

- Would be good for us to have a breakdown of where people are coming from around the Bay Area.

Large group discussion:

Committee member: We talked about the experience of transit and being able to capture that.

Committee member: A lot of people talked about the notion of moving traffic faster. There's concern that if you free up the streets, will the increased speeds lead to safety issues. Speeding up transit is a good thing, services and goods, that's a good thing, but speeding up cars is not a good thing.

Committee member: The speed should only rise to a certain threshold – what is the perception of safety for those walking, biking, and driving.

Committee member: We are seeing vehicle speeds slow down, but fatalities are going up. Why did we have faster speeds a few years ago and fewer fatalities.

- **Dentel-Post**: There's a correlation between the number of vehicles on the road and the number of fatalities. The more cars there are, the slower traffic moves but the more collisions and fatalities occur. We hear the concern about not wanting to move safety in the wrong direction.

Agenda Item 4: Outreach Update [Presentation** – begins on page 45**]

Agenda item 5: Next Steps
Present co-creation materials, committee members give feedback.

Agenda item 6: Public Comment

Public comment: Confirm that the time of day is peak period?

- **Staton:** Yes

Public comment: How did you determine the income level of trips?

- **Cooper:** We estimate based on large samples of observed behavior collected through our travel diary study.

Public comment: Are we thinking about the people who live downtown?

- **Staton:** Yes.

Public comment: Why are we talking about a 15% reduction in car trips rather than a greater reduction?

- **Dentel-Post:** We are not trying to prevent people from travelling downtown, we are trying to address congestion. We've looked at other cities who have used this

tool – they all show that we can significantly move the needle on our goals by reducing 15% of car trips. If people like congestion pricing and people want to adjust it to reduce car trips further we can do that once it's implemented.

Public comment: SF Taxi Workers Alliance. I want to become an alternate member of the PAC. I live in San Rafael and hate to come to the city when I am not working, but I really care about this. Congestion is horrible. Would like to suggest that some of the money subsidize taxi trips to underserved neighborhoods. Would also like to suggest reduced numbers of TNCs. Want to create additional traffic oversight and have more traffic control officers.

Public comment: Love the work you are doing. Want to hear people moving towards the "right" price. We want the goal to be none of us driving – concerned about the goal of "rich people paying."

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DRAFT MEETING NOTES

Downtown Congestion Pricing Information Session: Why We are Studying Congestion Pricing

Date: March 4, 2020

Packet: Follow this link for all materials shared in meeting.

Project staff:

- Rachel Hiatt, Assistant Deputy Director for Planning, Transportation Authority
- Colin Dentel-Post, Senior Transportation Planner, Transportation Authority

Policy Advisory Committee Members in Attendance

- Steven Cornell, San Francisco Council of District Merchants Associations
- Peter Straus, San Francisco Transit Riders
- Rajni Banthia, Mission Economic Development Agency
- Chris Sweis, Yellow Cab of San Francisco

Not in Attendance

APA Family Support Services, Central City SRO Collaborative (Evan Oravec), Chinatown Community Development Center (Chris Man), ClimatePlan (Amy Hartman), Commission on the Environment (Tiffany Chu), Greenlining Institute (Alvaro Sanchez), Hayes Valley Neighborhood Association (Robin Levitt), La Raza Centro Legal (James Ford), Potrero Boosters Neighborhood Association (J.R. Eppler), San Francisco Bicycle Coalition (Janice Li), San Francisco Chamber of Commerce (Rodney Fong), San Francisco Giants (Josh Karlin-Resnick), San Francisco Human Rights Commission (Brittni Chicuata), San Francisco Travel (Jessica Lum), South Beach | Rincon | Mission Bay Neighborhood Association (Bruce Agid), Senior and Disability Action (Pi Ra), TransForm (Hayley Currier), Transportation Authority Citizens Advisory Committee (John Larson), Uber (Chris Pangilinan), Union Square Business Improvement District (Bri Caspersen), Vietnamese Youth Development Center (Judy Young), Walk San Francisco (Jodie Medeiros), West of Twin Peaks Central Council (Steve Martin-Pinto)

Agenda Item: Introductions

1. Chris Lepe, Regional Policy Director, Transform
2. Steve Boland, Transit Planning, SFMTA
3. Megan Weir, SF Department of Public Health

4. Rich Chien, Climate and Building Team, SF Department of the Environment

Agenda Item: Presentations

Colin Dentel-Post: Congestion pricing has been recommended in a number of city studies starting with the Transportation Authority's first congestion pricing study, the Mobility Access and Pricing Study, in 2010. That study found that congestion pricing would have benefits in a number of different areas, including congestion, safety, and greenhouse gas emissions. As a result, congestion pricing has since been incorporated into plans to meet a variety of different city goals. The panel today includes representatives from different agencies and organizations to cover each of our study's four goal areas: to get traffic moving, clean the air, improve safety, and advance equity. Each presentation will focus on other actions underway to make progress in the respective goal area and how congestion pricing fits in and could help us ultimately achieve the goal.

Rachel Hiatt: As a congestion management agency, the Transportation Authority has the role of monitoring congestion and devising strategies to manage it. The SF Transportation Plan (SFTP) is the long-range transportation plan for San Francisco. The last SFTP in 2013 included congestion pricing as a strategy. The 2013 Regional Transportation Plan analyzed congestion pricing as well.

Another role of the SFTP is to guide investment of revenues, including local sales tax.

One of the questions we asked in the 2013 SFTP was, "what would it take to meet our big goals in managing travel?" We developed aspirational scenarios to figure out what policy strategies we'd need to meet our mode share and GHG reduction goals. We had a significant challenge meeting the goals, but a consistent finding was that investing in transportation supply alone did not get us to our goals. Those scenarios that got us closest were ones that used congestion pricing. We developed the aspiration scenarios without resource constraints, but the plan's final recommendations included a resource-constrained list of programs and projects, including congestion pricing.

Overall, we found we need to manage driving to get us closer to our goals. We are updating the SFTP now. You can learn more at ConnectSF.org.

Steve Boland: My presentation is about the current transit operating environment. 70% of our riders are on buses. We operate mostly in traffic citywide, even with the addition of transit-only lanes. Congestion has only gotten worse. Average operating speed citywide is less than 8 mph. Bikes beat us.

Strategies to improve service include increased operator hiring, modernizing the fleet and a near-term focus on subway reliability. Longer-term, we are planning technology upgrades with a modern train control system.

Today I'll focus primarily on the Muni Forward program, which is a number of things. It includes transit priority projects, and it touches all of the busiest corridors. Our red carpet lanes are the highest-profile form of transit priority. They cover up to 20 miles citywide. Less visible but also effective is redesigning our stops so buses don't have to pull out of traffic and then back into traffic. So we're building more transit bulbs or transit islands. When we make infrastructure changes that improve reliability we see ridership go up.

Our transit quick-build program helps us shorten the time needed to make infrastructure improvements. In the current operating environment, our vision is to eliminate needless delay, meaning we stop only at stops. We want at-grade transit to work like a subway.

It's not so much a technical problem but a political problem. As long as we have congested streets it increases the need for transit lanes. Because transit lanes are not physically separated from traffic, even with red lanes enforcement is an issue.

Megan Wier: Congestion pricing is a transformative policy for our vision zero goals. Vision Zero is a commitment to eliminate traffic deaths and reduce severe injuries. Congestion pricing is a critical piece to helping our vision zero policy.

Challenges to Vision Zero are a growing population, an aging population, a growing number of people without housing. Vision Zero focuses on our city's high injury network, the 13% of streets where 75% of crashes happen.

Our high injury network is concentrated in Communities of Concern and also in the city's Northeast quadrant, which is the focus area for congestion pricing.

Congestion pricing is a transformative policy, because it is evidence based. In London and Stockholm, cities saw 20% reduction in severe and fatal injuries. It is increasingly clear that all these goals intersect.

The city's major goals are all interrelated: to reach our Vision Zero goal we also need to address climate issues and help transit. All these things help create a healthier city.

Richard Chien: I'll be talking about the city's effort to update its climate action plan and the role congestion pricing can have in reducing emissions in the sector. 0-80-100-Roots is a brand to frame climate action efforts. Zero waste to landfills. 80% sustainable trips. 100% renewable energy. Roots refers to looking to natural systems to sequester carbon we can't eliminate from these other actions.

We plan to update our Climate Action Plan in November 2020. Emissions have been declining, gone down 36% below 1990 levels. That's the good news.

Looking ahead we think those gains are in danger of heading the wrong way. SF Environment released a technical report that looks at what business as usual would yield for the city compared to the goal scenario.

The business as usual scenario: Our emissions will trend in the wrong direction if we don't implement 0-80-100. Our emissions profile: almost half are from buildings and almost the other half are from transportation. We need to increase mode shift and switch cars to electric.

To get to the goals of the Climate Action Plan we have a working group of many city agencies to look at the technical analysis. We're looking at existing plans and policies to understand potential emissions reductions. If we can point to other efforts, like congestion pricing, it adds to the case these are important efforts the city should invest in.

Chris Lepe: Transform advances equity around transportation. We've looked at a more equitable form of congestion pricing, moving more people in fewer cars.

We look at not just throughput, but health and safety of the surrounding communities. Our report, "Pricing Roads, Advancing Equity" was originally intended to focus on express lanes locally, but became a broader look at congestion pricing and is now influencing other metro areas. A lot of agencies are working to prioritize equity.

From the equity standpoint we're on ground zero, since no one has really done this before. SF and LA have a really powerful role in setting a good example for the nation. Congestion pricing can advance equity but it depends on how it is structured.

The process has to be focused on communities of concern and outcomes. In the past equity was done at the end and mitigations were carried out, like under CEQA. We must focus every step of the way to provide disproportionate benefits to disadvantaged communities.

It matters who pays in congestion pricing. And it matters who benefits. Depending on the mechanism, it can be regressive or progressive. Under congestion pricing you raise revenues and that can be spent on communities where there is the greatest need. For example, in Los Angeles, express lanes are funding clean air buses, increasing frequency of BRT, and creating bike lanes near transit lines.

Agenda Item: Q & A session

Q: PAC Member: Two questions. One is general and the second is for Richard. Richard, are you hoping congestion pricing will reduce the number of cars? Have you seen in other cities that the impact is such that cars are willing to pay that fee and are you using that to sequester emissions? What do you mean by sequester emissions?

A: Richard Chien – We're definitely looking at this from the perspective that pricing will disincentivize trips into the zone. And it will generate revenue to put back into transit projects. Regarding sequestration, it's looking at natural systems like collecting organics and producing high quality compost from that. Some organics can be spread

on range lands or agricultural uses. In reality the amount that can be sequestered is not known precisely.

A: Rachel Hiatt: We're estimating that if we get a 15% reduction in rush hour driving we can achieve the kinds of benefits we're talking about and also significant travel time improvements. We'll also be talking about what other cities have experienced. In London, Stockholm they saw closer to 20% trip reductions.

Q: PAC Member: Any non-obvious benefits that we're hoping to see?

A: Megan Weir: There would likely be a variety of health benefits from more active transportation like walking and biking.

PAC Member: You said we might be looking at a 15% reduction of trips. That sounds too modest. I'd be disappointed if we went through this and reduced trips only 15%.

Q: PAC Member: What is the thinking of how revenue will be used?

A: Colin Dentel-Post: There is not a current plan. We want to develop that plan through this process. This is a three-part policy: fees, discounts/subsidies, and what happens with revenues. That is something that is core to what we want to develop in this process. We'll need to develop those scenarios through an equity-focused process and then we'll analyze those scenarios.

PAC Member: Make sure to embed the spending plan in the equity process. There should be exemptions, not discounts, for low income folks. We advocate for exemptions for low income folks.

PAC Member: An obvious need for revenue is to increase transit service. We need to state that at the outset.

Q: PAC Member: What about the goods movement aspect of the City's Transit First policy? We must have safe movement of people and goods. Goods movement need to be addressed in this program.

A: Colin Dentel-Post: We have four goals for the program. First is to get traffic moving so people and goods get to where they need to go. Goods are something we're looking at.

A: Mari Hunter, SFMTA: The SFMTA just passed a Curb Management Strategy to prioritize curb space for our various needs, including goods movement and loading. How do we provide the right size and location for economic activity? This new strategy allows us to do it holistically. These guidelines will be there for any project.

Q: Member of the public: What is congestion? Is it a perception that you know when you see it?

A: Colin Dentel-Post: We think of it as delay. The amount of time to get somewhere when there is heavy demand compared to time it would take you at less crowded time. We've also looked at measures of speed.

Q: Member of the public: There are a lot of assumptions connected with the word congestion. We're talking about Downtown congestion. Is it uniform downtown? What about outside of downtown? If you're going to address congestion you need to respond to those factors. How will a broad-based strategy address those? And congestion by mode. I know I see it in vehicle lanes. I also see bike congestion and congestion on the sidewalk. I see it in the red lanes with bunching of buses. These things can have major effects on whatever this congestion is – and need to be addressed. Congestion pricing is only one part of mobility management. We need to be more specific about various factors of congestion so we can make judgements.

A: Colin Dentel-Post: Yes, different issues are related. We've tried to talk about pricing as addressing only one piece of getting around the city. It can fund a variety of different ways of helping other congestion like wider sidewalks, helping get at some of the other factors you were pointing out.

A: Mari Hunter: Also there is curb congestion. We're trying to make curbs more efficient. Congestion pricing would help as we work to make transit more efficient. Here is a multiplier effect that congestion pricing gives us.

Q: PAC Member: Curb management is a good strategy but things are evolving. Delivery needs are changing so that's one problem. Will congestion pricing be bad for businesses? Good for them? Has that been studied? Ever since Market Street was changed 15 years ago I can't park on Market because I have 4-wheel vehicle, not six wheels.

A: Colin Dentel-Post: We agree that businesses are an important consideration. One of the things we proposed as a metric of success is to reduce the number of vehicles going downtown but we want to make sure the number of people is not being reduced. We've identified the need for supporting business as a priority. Those are things we hear as concerns that will continue to be part of the conversation.

A: Rachel Hiatt: A takeaway is that details do matter. If we're talking about exemptions or definitions. With this process we can only get so far. But one of the reasons we have you all is to make sure we consider those details early.

Q: Member of the public: If you think about it in more abstract way, the curb lane is another lane. We are using different lanes in different ways. Slower flow might not be congestion. Ants deal with congestion. When you have an ants nest and source of food and limited right of way you have ants coming and going along this pathway. Their flow is consistent. Second of all when there is greater demand, fewer ants leave so they don't have congestion. In some sense the ants can handle the change in traffic by nature of social organization. How will this impact our social organization,

particularly as we come into a world with changing use of vehicles? How will we manage that mobility? We need to have a broader perspective. Like with mobility as a service. How do we coordinate all that?

PAC Member: Make sure revenue goes to bike and pedestrian improvements as well.

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DRAFT MEETING NOTES

Downtown Congestion Pricing Information Session: Congestion Pricing in Other Cities

Date: March 27, 2020

Packet: Follow this link for all materials shared in the meeting.

Watch video: Follow this link to watch a recording of the session.

Project staff:

- Rachel Hiatt, Assistant Deputy Director for Planning, Transportation Authority
- Colin Dentel-Post, Senior Transportation Planner, Transportation Authority
- Grasi Diaz, Planning Intern
- Drew Cooper, Senior Transportation Modeler, Transportation Authority

Policy Advisory Committee Members in Attendance

- Bruce Agid, South Beach | Rincon | Mission Bay Neighborhood Association
- Hayley Currier, TransForm
- Robin Levitt, Hayes Valley Neighborhood Association
- Jodie Medeiros, WalkSF
- Maryo Mogannam, San Francisco Council of District Merchants Associations
- Alice Rogers, South Beach | Rincon | Mission Bay Neighborhood Association
- Peter Straus, SF Transit Riders

Agenda Item: Introduction

Colin Dentel-Post: Welcome to our second voluntary Policy Advisory Committee (PAC) session. Voluntary PAC sessions are forums to discuss topics that the PAC had questions about in November and December meetings - this one is about other cities that have implemented congestion pricing and lessons we might take as we consider congestion pricing in San Francisco.

We do want to acknowledge that the world has changed a lot since our last PAC discussion as we all struggle to adapt to living through a global pandemic. We know that congestion pricing is not top of mind for most people. Not only has congestion vanished, but small businesses are struggling, people are out of work, and we're all trying to keep ourselves and our families healthy. And in times of crisis, we know that people who were already struggling to make it are usually hit the hardest.

Nevertheless, in the past San Francisco's economy has been resilient and the work we do now can help us prepare for a future in which congestion and its health, safety, environmental, and equity impacts return. So we are continuing with our study, focusing on technical work that we can do now, but we have paused public outreach for the time being because of the pandemic. We'll continue to monitor the situation as well as official city health directives to determine an appropriate time in the future to restart our outreach.

We do plan to continue hosting our planned series of PAC meetings since we can do them virtually, although this is a new experiment so we appreciate your patience in bearing with us as we work out any glitches in the process.

Today's agenda is focused on learning from other cities.

To inform our study congestion pricing in San Francisco we look to international examples on how other cities have carried out their programs.

Agenda Item: Instructions on how to use Zoom

Agenda Item: Presentation

Grasi Diaz, Planning Intern:
London

- London has an 8.5 square mile charging zone
- Congestion pricing in London was implemented in 2003 after years of studying congestion pricing
- The first study to consider congestion pricing was in 1964
    - Public transit decline in the 90s is what led to the politically feasible possibility of pursuing another congestion pricing study in 1995 which led to the 2003 system that they have today
    - Before congestion pricing was implemented 90% of Londonders saw traffic congestion as an issue within the central city
    - Prior to adoption, funding for public transit was unreliable
    - London's program charges a flat fee to drive within the central city zone
    - Pricing hours: M-F, 7am-6pm with some exceptions in the winter holiday time
    - Annual net revenue is USD $182.1M which they use for public transit and rail improvements
- Their program structure works similar to FasTrak where drivers register their vehicle information onto a database and it is checked by camera
    - The charge can be paid before/on the day of travel by phone, text, online, or mail
    - Drivers have until midnight on the day of travel to pay the fee or can pay a higher fee the next day. They can also pay through autopay (like FasTrak)
- Even though it is a sizable charge (approx $15 USD), there are exemptions and discounts

    - Discounts
        - Require online registration with the Transport for London website and supporting documents
        - Examples include:
            - Residential discount (90%) - live within the zone
            - Blue badge holder/disabled placard - 100%
            - Vehicles with 9+ seats - 100%
            - Clean vehicle discount - 100%
            - Motor tricycles - 100% discount if the tricycle follows TfL requirements/qualifications
            - Roadside recovery vehicles - 100%
    - Exemptions
        - Don’t require a Transport for London registration as long as the vehicle is registered with the UK driver and vehicle licensing agency which is equivalent to the DMV
            - 2 wheeled cars (motorcycles, sidecars, mopeds)
            - Vehicles used by disabled people that are exempt from the Agency's vehicle tax and have a ‘disabled’ taxation class
- Results of program following first year
    - Transit ridership up 38%
    - GHG down 12%
    - Traffic down 30%
- The 38% ridership on transit increase was primarily on buses - although London is well-known for having an extensive Underground, rail ridership remained consistent before and after charging began.
- Program adjustments
    - Beginning in 2013 London began increasing the congestion charge over time to account for inflation and provide more transit improvements to their system
    - There was a large number of people using TNCs and private for hire vehicles. These were originally exempt from the charge. Over time London decided to charge TNCs and exempt taxis
- Analyze effects of Uber/Lyft
    - Ride hailing has increased congestion
        - Trips by taxi and ride-hailing vehicles as the main mode of journeys increased by 9.8% between 2015 and 2016 alone — and 29.2% since 2000
        - Today, more than 18,000 different ride-hailing vehicles enter the congestion pricing zone each day, with peaks on Friday and Saturday nights
- Adding charges for polluting vehicles
        - Through other charges like ultra low emission zones - this is in addition to congestion charge

- Transport for London has suspended charging to ease travel for critical workers, indicating flexibility to respond to events as they happen
- Key findings
    - Public perception has changed
    - Before congestion pricing was implemented 90% of Londonders disapproved of traffic conditions, but only 39% of Londoners supported congestion pricing. 73% of Londoners believed the charge would be effective.
    - After congestion pricing was implemented, 53% of Londoners supported congestion pricing and 79% believed the charge was effective.
    - Traffic congestion has reduced, but there are concerns with the daily price of the fee because it is extensive. The Transport Committee of London conducted a survey of over 1,000 Londoners in 2016 regarding the congestion charge. 54% of survey respondents said the charge is too high.
        - Of these respondents 64% traveled by bus, 57% by car/van, 18% by bicycle, and 13% by minicab or taxi
- What other cities can learn
    - Periodic evaluation of the program is helpful
        - Evaluation of: Traffic patterns, GHG emissions, transit ridership, and annual net revenues
        - Being cautious when designing the program's discounts and exemptions to not create unintended consequences in terms of increasing trips by some vehicles (in London's case, TNCs)

Stockholm

- Area of the toll zone is around 22 square miles
    - Most of the inner city inhabitants live within the toll cordon (⅔ of total city inhabitants)
- History
    - Was studied and considered for 30 years prior to pilot; in the 90s a tolling proposal was proposed but lacked public and political support
    - Established in 2006 as a pilot, permanent program in 2007
    - Before introduction, ⅔ of residents opposed the proposal
    - Congestion declined by 30-50% during pilot
    - After pilot, and seeing the results, ⅔ of residents voted to make the program permanent
    - Congestion fees directed towards bridge maintenance and public transit improvements
- Program Design
    - Pricing Scheme and Hours
        - Varies by season and time of day
            - Peak season pricing (late spring - fall)
                - USD $1.16-$4.75, $14.25 max
            - Off peak season (winter - early spring)
                - USD $1.16-$3.17, $11.09 max)

        - Daily cap
        - Only on weekdays
    - Annual revenue USD $155M used for transit improvements
    - Program consists of three parts
        - Expansion of public transit
            - Purchased 197 new buses, added 16 new bus lines, and expanded service on existing routes
        - Park-ride facility construction
        - Congestion pricing in city center
- Exemptions
    - Emergency vehicles and buses with a total weight of at least 14 tons
    - Motorbikes and mopeds do not pay
    - Persons with a Swedish parking permit for people with disabilities can apply to the Swedish Tax Agency to exempt a vehicle
    - Businesses can deduct the tax as a cost by notifying the Swedish Tax Agency
- Stats and Facts
    - After a year of implementation
        - Transit ridership up 5%
        - GHG emissions down 14%
        - Traffic down 22%
- Stockholm Key Findings - What Can Other Cities Learn?
    - After the initial pilot, the city examined equity impacts of the program where they learned
        - High income individuals were more affected than low-income individuals
        - Few drivers paid the max of congestion charges
        - Young and low-income individuals benefits from lower transit fares (fares lowered through revenues collected from congestion price)
        - Travel times in the central areas of the city were shorter and a lower percentage of trips were by car
        - These conclusions were determined by researchers at various research institutes (including Lund University, Royal Institute of Technology, and independent consultancies at Transek and Trivector) who looked at varying income levels of Stockholm residents and non-residents as well as mode share
- What Can Other Cities Learn
    - It can be helpful to demonstrate to the public through a pilot (or maybe modeling) that congestion charging can help promote better traffic circulation, reduce greenhouse gas emissions, and increase transit ridership
    - Examine equity impacts before, during, and after pilot and before permanent implementation

New York City

- Zone is Manhattan beneath 60th St.
- First US city to propose the charge and first to have one approved for implementation. State legislature approved it in 2019.
- History:
    - NYC has considered congestion pricing on and off for decades. Recent proposals began in 2006
    - 2014 plan to address geographic and income inequities through congestion pricing, but plan did not pass state legislation
    - Continuing concerns with public transit performance, infrastructure, delays, and slower driving speeds led to another congestion pricing proposal in 2018
    - This is why the major goal of NYC's congestion pricing approach is raising revenue to fund transit improvements
- Phased approach
    - Identifying transit investments and connections between the central business district of NYC and outer boroughs/suburbs
        - Doing so by:
            - Looking at alternatives for driving
            - Improve traffic enforcement
            - Overhaul placard program to make sure everyone who has one is qualified
            - Review bus congestion in CBD
            - Begin early work in zone pricing infrastructure installation
        - (funding for transit by: Legislature supporting the governor's budget proposal to authorize tax increment financing for MTA)
    - Surcharges on taxis and TNCs which began in Feb 2019
        - $2.50 for taxis
        - $2.75 for private ride hail for single users
        - $.75 per customer of shared ride hail vehicle
    - Implementing zone pricing for all vehicles under 60th st
    - Final phase is set to begin in 2021
- Program Design - Pricing Scheme and Anticipated Revenues
    - Pricing
        - Will vary by time of day, the plan right now is for passenger vehicles to only be charged once daily for entering or remaining in the zone
        - Suggested fee between $3.06 and $9.18
        - But legislation proposes higher congestion charging rates $11.52
        - Anticipated annual net revenue $810M-$1.1B
- Exemptions
    - Mostly TBD
    - But, emergency vehicles and drivers with disabilities will be exempt
    - Zone residents with incomes less than $60k per year will receive a tax credit equal to the amount paid in congestion charges

- Anticipated Results
    - TBD, but anticipated that transit ridership will increase from improved transit (buses and rail) and because bus times will improve due to reduced congestion
    - GHG emissions expected to go down approximately 7%
    - Approximately 59,000 fewer daily vehicle trips within the zone (also depends on which charging scenario is chosen)
- Key Findings
    - Advocacy organizations have analyzed the phased approach scheme and have evaluated the best ways to make the program equitable
        - Charge higher costs when congestion is greater
        - Limit exemptions to ensure congestion reduction and revenue goals are met
        - Invest in transit
    - Uniquely, the congestion charge goal was to improve transit compared to other cities' focus on reducing congestion
    - Their goal is very transit investment/revenue target-oriented while for San Francisco it is to reduce congestion, increase safety, reduce greenhouse gases and advance equity
- What Other Cities Can Learn
    - Congestion piercing requires transit investments
        - Continuous access for travelers while promoting mode shift
        - The fee promoted must be significant enough to change driver behavior in order to reduce congestion
        - Equity - revenues distribution should focus on benefits for working class families/low-income users
        - Watch how their program unfolds to learn best practices for other US Cities

Group Discussion
Colin Dentel-Post: A question from PAC member Peter Straus: why was the transit ridership increase so much lower in Stockholm than in London?

Grasi Diaz: One reason could be that Stockholm heavily invested in park and ride facilities as part of their investment package. This was implemented through their pilot program. One assumption that can be made is that people may have switched to different modes, such as carpooling, and less cars as a whole were traveling to central Stockholm, just maybe not on transit. Other trips may have been via biking or not taking the trip at all.

Colin Dentel-Post: Also, London made a large investment in bus service to help carry additional people -- I think that's a big lesson for San Francisco, we could learn from London's experience and increase bus ridership.

Colin Dentel-Post: PAC member Maryo Mogannam has a follow-up about bus improvements with implementation -- yes, in London the bus improvements happened

ahead of the charge to make sure the shift could happen, and that when the charge went into effect, alternatives were ready.

Hayley Currier: Comment: What stood out to me is the use of pilots and change in public sentiment in response to the pilot. That could be a great way to build public support for something that is questionably popular and also to iterate since we don't know exactly what is going to happen. Part of the pilot was also adding bus service which is essential - it has to go simultaneously.

Colin Dentel-Post: We would all agree a pilot is important and we will look into that in more detail when we begin developing the implementation plan.

PAC Member Bruce Agid: I had a question around modeling the increase in transit use in NYC. What capacity is available and how does it line up with the expected increase?

Colin Dentel-Post: I don't think I've seen an analysis of available capacity, but NY's subway lines are generally crowded and a lot of the revenue is intended to go toward repairing the subway, bus service for outer burroughs who don't have great service, and regional commuter rail. I don't currently have an analysis on extra capacity but likely depends on the line or route you're asking about.

PAC Member Peter Strauss: Please comment on how TNCs are approached in these cities and what that means for us?

Grasi Diaz: Even though TNCs are paying a flat fee in London, TNCs are still contributing to congestion in the central zone. TNC policy is something London is analyzing and something that we will, too. Stockholm had limited information on TNC usage and charging. For NYC, there has been a surcharge on taxis and TNCs since February 2019. These fees are passed on to the user.

Colin Dentel-Post: We see the London case as a cautionary note. We know a lot of the increase in congestion and total auto trips downtown are TNCs. They also operate differently - someone driving their personal car into downtown and parking all day is different than someone who drives in, pays once, and drives in the zone all day. As we review different scenarios, we will examine how TNC trips can be incentivized in the same way that personal vehicles will be.

PAC Member: Was transit expanded before congestion charging?

Grasi Diaz: Stockholm did implement transit improvements before the program began. That included 197 new buses, 16 new bus lines, expanded service on existing routes, and park and ride facilities (2,800 new parking spaces).

Member of Public: How would vendors/trucks who have warehouses outside of the congestion pricing zone be impacted?

Colin Dentel-Post: We haven't yet gotten to this level of detail in designing the program for goods movement. The general idea is that trucks are subject to fees during peak

hours because the incentive system is intended to work for everyone. There may be some tradeoffs, learnings from other cities have shown that businesses, while they have to pay the fee, get more deliveries done during the day and their operations are actually more efficient.

PAC Member: Are park and ride bus rides counted as transit trips?

Colin Dentel-Post: Yes if the people park and get onto a bus. No if they park and get in a carpool.

PAC Member: Is there anything we can learn from this period of time when there is no traffic on our streets? Eg. Quality of life benefits, reduced noise, improved air quality. It seems like we have an opportunity to learn about the effects of reducing congestion.

Drew Cooper: There are some interesting things we can learn from this moment. We've started looking at the observed changes in congestion over the past couple of weeks. There has already been interesting work done by others looking at changes in emissions. We should also keep in mind that it's not just traffic that has been reduced, there is also a major public health crisis and potential recession. We need to keep those things in mind before we extrapolate learnings from this situation into congestion pricing. We are looking at what we can learn but with a note of caution.

Colin Dentel-Post: One example is that Muni vehicles are going faster in part due to lack of traffic congestion but they also don't have nearly as many riders, which means you are not stopping at as many stops. One thing is a good thing (reduced traffic) but in a congestion pricing scenario, there would still be a lot of people moving around but they would be on transit instead.

Member of the Public: As a resident in Portside, how will residents be impacted when their lifestyle activities happen in the zone area? Also, when it comes to private charter buses and vans, they shouldn't be charged less. How will they be impacted?

Colin Dentel-Post: Certainly for people who live in a zone, there can be advantages in terms of less congestion in your neighborhood and better quality of life (less noise, improved health and safety). When it comes to getting around, if you're trying to get around outside of peak hours it likely won't affect you much. If you are trying to get around during the charging time, there would be a fee but also less congestion. One thing we'll be looking at in terms of exemptions and discounts is whether people who live in the zone will get a discount.

Grasi Diaz: For London, residents in the zone have a 90% discount. In terms of vans or charter buses, there is no fee for vehicles that have over 9 seats. Stockholm doesn't have a resident discount but they do have a exemptions for buses that weigh over 14 tons. NY's plan is only giving a tax credit for residents who live in the zone and make less than $60K a year.

Colin Dentel-Post: We can continue to review policies in other cities as we shape proposals for San Francisco.

Member of the Public: Can you share the status of San Francisco's study?

Colin Dentel-Post: Right now we are in the process of beginning our screening analysis. As we have shared previously, we were going to do a combination of public outreach -- we did start that process -- we held three community workshops in Tenderloin, Excelsior, and Bayview, we got a lot of great feedback at these workshops around people's interest in paying a fee, what level of fee, and the different types of discount and investment options. We have hit pause on that process due to the pandemic. We will pick back up on community outreach when we're able. Meanwhile, we're starting to screen ideas that we have heard from PAC members and members of the public so far. You can join us at our next session on data and analysis to learn how we're inputting this data into our model and measure how various scenarios measure up against our goals. We'll come up with draft results that we'll share with you. We will be flexible and add things and revise as needed once public outreach picks back up. Our next full PAC meeting is in April where we will share a preview of the scenarios that we're planning to look at and our process. Also we'll share what the results could look like. Our June PAC meeting will feature the actual results from the analysis which we will share and request input on.

Member of the Public: Once you implement congestion pricing, could you expand it to I-80 and the Golden Gate Bridge?

Colin Dentel-Post: This study is focusing on addressing the density of congestion in downtown San Francisco. Other places including Oregon are looking at charging to use freeways. Here in the Bay Area, the focus is on express lanes. So far there has not been a look at charging all freeway lanes in the Bay Area. The Bay Bridge has a form of congestion pricing, when the price is higher at peak times. We also have a note in the comments that Plan Bay Area is looking at charging entire highways.

Member of the Public: What is the timeline of the study?

Colin Dentel-Post: We will look at a full range of screening scenarios, we will narrow that down during outreach and come to a final recommendation by early 2021 which we will bring to our board where we will ask them whether we should move forward. If that happens, there would still be a few more years needed for additional analysis and outreach.

Member of the Public: What mechanism would be used to count cars in the zone?

Colin Dentel-Post: We've not settled on technology yet. There are many different ways we could charge people. The basic idea is that we would want people to have a range of ways to pay the fee. There also needs to be an enforcement mechanism, for

example cameras. There could be different ways to pay such as transponders like FasTrak, a Clipper account, paying cash, or getting a bill in the mail.

Member of the Public: Does New York have bridge tolls and, if so, are they considering discounts for people who will use the bridges to enter the congestion zone?

Colin Dentel-Post: Yes, New York is looking into discounts for people who are traveling on bridges. Not sure if they have decided. In our analysis, we can look at giving discounts to people who already paid on the bridges.

Member of the Public: Will Embarcadero be included in the zone?

Colin Dentel-Post: We have not defined the zone yet, but assumed that Embarcadero would be included in the zone. Is one of the streets that gets congested.

Colin Dentel-Post: Visit our website at sfcta.org/downtown to learn more and sign up for our email list in the yellow bar. We will email you about upcoming meetings and outreach opportunities.

San Francisco
County Transportation
Authority

DRAFT MEETING NOTES

Downtown Congestion Pricing Information Session: Data and Modeling

Date: April 15, 2020

Packet: Follow this link for all materials shared in the meeting.

Watch video: Follow this link to watch a recording of the session. Access Password: B8*^*#w3

Project staff:

- Rachel Hiatt, Assistant Deputy Director for Planning, Transportation Authority
- Colin Dentel-Post, Senior Transportation Planner, Transportation Authority
- Drew Cooper, Senior Transportation Modeler, Transportation Authority
- Paige Miller, Senior Communications Manager, Transportation Authority

Policy Advisory Committee Members in Attendance

- Bruce Agid, South Beach | Rincon | Mission Bay Neighborhood Association
- Hayley Currier, TransForm
- Peter Straus, SF Transit Riders
- Bri Caspersen, Union Square BID
- Brian Haagsman, WalkSF
- Zack Deutsch-Gross, SF Transit Riders
- Amit Kothari, UCSF
- Chris Sweis, Yellow Cab

Agenda Item: Introduction of PAC members

Colin Dentel-Post

Agenda Item: Presentation

Drew Cooper: Led presentation, linked here

Agenda Item: Question and Answer session

Q: PAC member: How do you test and validate the CHAMP model for something like congestion pricing?

A: Drew Cooper: The CHAMP model is sensitive to price and time, and demographics of people. The travel behavior built into the model reflects how people make time and cost tradeoffs when choosing their destination, mode of transport, and time of departure as well as what destinations they go to and what time they choose to go. We can't validate results against observed congestion pricing in San Francisco because we don't have congestion pricing yet. We think CHAMP model results for congestion pricing are intuitive and hold up well against what we see in other regions.

Q: PAC member: It makes me uncomfortable just saying, 'Well it looks like it makes sense.' We need to do more to have confidence in the model than say this seems intuitively right.

A: Drew Cooper: I want to reiterate that at its core it is still a time and money tradeoff question. In 2010, we recommended a pilot of congestion pricing and that will probably be something that will be considered this time.

A: Colin Dentel-Post: We've seen that the results that the model came up with in 2010 study were in line with the results in other cities.

Q: PAC member: In your data, Contra Costa County had very different observed vs estimated data. Does commuting through the East Bay from outside the Bay Area impact the data?

A: Drew Cooper: Contra Costa County flows are the furthest off, partly balanced out by over-estimating Alameda County flows to SF. This could be improved, but the overall differences are small. Yes, the model does account for mega-regional travel, but it is a very small percentage of Bay Area travel.

Q: Member of the public: Has the impact of congestion pricing been modeled for the zone just outside the cordon?

A: Drew Cooper: That is something we intend to look at in our evaluation.

Q: Member of the public: What is the process of screening scenarios? How will you model them?

A: Colin Dentel-Post: We're starting the screening process by adding ideas we've already heard from our outreach and ideas that are tested or used elsewhere into a long list of ideas that we can start doing technical analysis on. When we are able to

resume our outreach, we will incorporate any new ideas we hear into the technical analysis. The process to evaluate scenarios will be iterative.

A: Drew Cooper: We're using project goals to evaluate which of those scenarios work and which don't. Starting with basic design, we'll determine what the right price is that will get us to our target of a 15% vehicle trip reduction. Then we'll look at what discounts and exemptions are appropriate.

A: Colin Dentel-Post: We have a graphic explaining all this and we will discuss this more at our next PAC meeting.

Q: Member of the public: I have lived at Bryant and Embarcadero for 26 years. Our neighborhood is unique and rapidly changing. The modeling should better reflect the residents and it needs to be more current.

A: Drew Cooper: To clarify, the travel survey is from 2012. That is the source of data we use to help us understand tradeoffs on time and cost. We update the other elements more frequently. When we represent the population and employment, we used updated data to reflect current conditions. That is how we account for changes over time. We're also preparing travel surveys for use.

Q: Member of the public: Has the timeline been updated because of COVID-19?

A: Colin Dentel-Post: Things are different from when we started the study, we know that people are facing unique challenges. We see some reasons to proceed if we can, but we first need to have some conversations about when it might be an appropriate time to continue outreach and how we should do it. We plan to discuss this with the PAC and stakeholders in Communities of Concern.

Q: Member of the public: Does the model differentiate between downtown drivers such as delivery workers and Uber drivers?

A: Drew Cooper: Yes, it models people who travel for work and commercial delivery traffic separately.

Q: Member of the public: Is there a quantification of reduced lane miles and speed limits and whether they contributed to increasing congestion?

A: Drew Cooper: Yes, there are inventories. Our agency did work looking at changes in congestion due to changes in conditions in the real world. Specifically, we looked at changes to the transportation network, changes in population and jobs, and growth in Uber and Lyft trips. The high level takeaway is that roughly half of the change in congestion from 2010-16 was due to economic trends and the other half was attributed

to Uber and Lyft. A very small slice was due to changes in roadway network and provision of lanes.

Q: Member of the public: Have you modeled alternatives to congestion pricing?

A: Drew Cooper: Yes, we have looked at parking pricing strategies and a variety of transit investments over several years. The parking pricing study was a response to a similar question following our 2010 study. The parking pricing study determined you could reduce driving, but not to the same degree as with congestion pricing.

A: Colin Dentel-Post: I'll add that one finding in existing conditions is that even with all the planned transit investments coming online, given expected growth, congestion is still expected to get worse over time.

Q: Member of the public: How did you determine 15% trip reduction is ideal?

A: Colin Dentel-Post: The reason we are targeting 15% is for two reasons. First, it is in line with the 2010 study that showed if congestion pricing reduced vehicle trips by 12% it would have significant reductions in traffic delay, speed up transit 20% or more, and have significant other benefits with safety and pollution. Congestion had significantly increased since that study was completed, and 15% is also in line with what other cities have experienced. So we expect a 15% vehicle trip reduction during peak periods will make significant progress toward our four main goals.

Q: Member of the public: It seems like a great deal of your data is outdated. Please comment on how you'll get up-to-date data.

A: Drew Cooper: We're working on building a 2020 scenario that will reflect recent changes. We are also actively tracking changes to the roadway network and looking ahead to roadway projects coming up. That is how we account for current and future changes.

Q: Member of the PAC: Some studies show much congestion is due to TNCs. If you took out TNCs would we still have congestion?

A: Drew Cooper: We don't have any authority to regulate supply of TNCs. We may consider specific pricing approaches to TNCs.

Q: Member of the public: What is the area you are modeling for congestion pricing?

A: Colin Dentel-Post: In 2010, we recommended the northeast part of the city with boundaries at Laguna, 18th Street, and Embarcadero. We'll also seek input on this question and can consider and evaluate a smaller zone as well.

Q: Member of the public: Would you consider having several different layers of congestion pricing zones within each other so you pay more in the most congested areas?

A: Colin Dentel-Post: We'll consider different options including charging people crossing into and out of the zone as well as charging people making trips within the zone, but we want to make sure the system is easy for people to understand.