Memorandum

Date: March 23, 2018

To: Transportation Authority Board

From: Eric Cordoba – Deputy Director Capital Projects

Subject: 4/10/18 Board Meeting: San Francisco Freeway Corridor Management Study Update

RECOMMENDATION ☒ **Information** ☐ **Action** None. This is an information item. **SUMMARY** To address freeway congestion and anticipated growth in travel on the US 101/I-280 corridor, we are conducting a study to explore the feasibility of a carpool or express lane between the US 101/I-380 interchange near San Francisco International Airport and Downtown San Francisco. Preliminary results indicate the feasibility of both a carpool lane and express lane alternative. Outreach with advocacy and community groups has helped refine the scope of additional analyses that will be required to advance these alternatives through the next stages of planning. We are seeking guidance from the Board and public and anticipate bringing the study back for board approval in late Spring2018.	☐ Fund Allocation ☐ Fund Programming ☐ Policy/Legislation ☒ Plan/Study ☐ Capital Project Oversight/Delivery ☐ Budget/Finance ☐ Contract/Agreement ☐ Other: _____

DISCUSSION

Background.

The San Francisco Freeway Corridor Management Study (FCMS or Study) is a high-level feasibility study and assessment of freeway management strategies for improving travel time and reliability for travelers on US 101 and I-280 in San Francisco. The Study is focused on producing near and mid-term recommendations for implementation in the next five to ten years. The need for the Study was identified in the 2013 San Francisco Transportation Plan, which forecasts a continued increase in demand for travel by San Francisco residents, visitors, and workers to and from Downtown and the Eastern Neighborhoods and the Peninsula and South Bay. Introducing active management strategies to existing freeways can help move both current and future travelers in the corridor more reliably and efficiently. Recognizing this, the Board adopted the FCMS Phase 1 report in January of 2015. Phase 1 established the study's purpose and need and goals framework centering on the need for increased person-throughput and reliability, while utilizing the existing right of way and minimizing impacts to local communities. The Phase 1 report also identified a range of strategies for performance-based assessment in Phase 2.

Carpool lanes are already in operation on US 101 from Morgan Hill to Redwood City, covering about 42 miles along the Peninsula, primarily in Santa Clara County. Caltrans and San Mateo County are currently in the environmental assessment phase of a project to extend managed lanes on US 101 from

Redwood City to the I-380/US 101 interchange, approximately 14 miles. We are collaborating with the San Mateo City and County Association of Governments (C/CAG) and the San Mateo County Transportation Authority (SMCTA) to study managed lanes north of I-380 on US 101 in San Mateo county and into San Francisco and have recently participated in the 3-county Caltrans corridor study for the US 101 corridor from Santa Clara to San Francisco. We last brought an update on our San Francisco segment (FCMS Phase 2) planning work in December 2017, focusing on potential physical and operational alternatives to improve corridor conditions. This month, we are presenting results of the preliminary operational analysis and outreach efforts we have undertaken to date.

Alternatives.

The FCMS study is exploring options for dedicating a lane on portions of US 101 and I-280 for High-Occupancy Vehicles (carpools and transit). Consistent with other carpool lanes in the Bay Area, these lanes could have minimum occupancy requirements of either two or three persons. If deemed necessary, price management in the form of Express Lanes could be used with either of these configurations. Express Lanes could provide the right tool to achieve a balance of traffic that gives buses, carpoolers, and other vehicles in the lane faster travel time and reliability without adding significant delay to the remaining general-purpose lanes. Express Lanes can give people a choice to get where they need to go faster and more reliably, with the price to enter for non-carpools determined by demand. Eligible carpools and buses would access the lane at no cost.

The FCMS study team collected information on operational and physical constraints on San Francisco's freeways and has determined that one potential feasible configuration could entail the features described below:

- Southbound, the existing configuration of the I-280 and US 101 freeways allows for the creation of a continuous lane by restriping the existing freeway. A carpool or Express Lane could operate along I-280 between the intersection of 5th and King Streets and US 101, continuing through the interchange to US 101 into San Mateo County, covering a distance of about five miles.
- Headed northbound, because I-280 exits from the right side of Northbound US 101, any carpool or Express lanes entering San Francisco from San Mateo county will likely end at or near the county line. However, the Study identified an opportunity to provide priority for Northbound carpools and buses for approximately one mile along the I-280 headed into South of Market, from about 18th Street to 5th Street.

Attachment 1 includes a lane diagram figure illustrating this concept.

Initial Operational Analysis and Preliminary Results.

The configuration detailed above was analyzed at a high level for performance across four potential operational policies in the near term (2020):

- No Build, where the configuration of freeways remains as it is today. This serves as a point of comparison for the following three build scenarios.
- High Occupancy Vehicle (HOV) with a two-person minimum requirement (HOV2+).
- HOV with a three-person minimum requirement (HOV3+).
- Express Lane with a three-person minimum requirement to access the lane at no cost and a demand based, variable toll for others to access the lane (EL3+).

The analysis was performed by determining the demand for travel across all modes and routes in each scenario in the Transportation Authority's travel demand model, SF-CHAMP, and then applying these demands to a high-level, morning and evening peak hour traffic model. This analysis provided information about travel times and delays for both carpool/Express Lane users and non-users, estimates of the change in number of people moved through the corridor, and city/area-wide metrics like overall vehicle miles traveled and air quality impacts.

Preliminary results of the operational analysis indicate technical feasibility of the proposed lane configuration (based on overall person throughput of the facility and level of delay to vehicles in general purpose lanes) under at least two of the three evaluated operational policies, HOV2+ and EL3+. In 2020, all operational policies result in free-flow conditions in the carpool or express lane, representing a time savings over the 2020 no-build configuration of about four to nine minutes, depending on time of day and direction. In the general purpose lanes, compared to the no-build configuration:

- HOV2+ increases delay to general purpose lane users by about two to three minutes in both the morning and evening in all directions except northbound, where travel times decrease by about two minutes. Person throughput at Harney and Mariposa Streets increases by between 600 to 1900 travelers, depending on direction and time of day, an increase of 13% to 43%.

- HOV3+ increases delay to general purpose lane users by about six to 14 minutes in both the morning and evening in all directions except Northbound, where travel times decrease by about two minutes. Person throughput at Harney and Mariposa Streets decreases in some times and directions as a result of significant new congestion, by between 500 and 1100 fewer travelers, or a reduction in 5% to 12%, while in other times person throughput increases by between 200 to 1600 travelers, an increase of 7% to 33%.

- EL3+ increases delay to general purpose lane users by about two to four minutes in the northbound direction in the evening and southbound direction in the morning, while saving general purpose lane users about three minutes in the northbound direction in the morning and the southbound direction in the evening. Person throughput at Harney and Mariposa Streets increases by between 100 to 2200 travelers, depending on direction and time of day, an increase of 2% to 43%.

These results indicate that both HOV2+ and EL3+ could advance the goals of this study and warrant more detailed evaluation. HOV3+ creates substantial additional congestion in the corridor, reduces person throughput, and should be dropped from further study.

Outreach.

The study team has met with numerous community, advocacy, and business groups to introduce and hear feedback on the concept of a freeway management strategy in San Francisco, including the potential for Express Lanes. These meetings are summarized in Attachment 2. Feedback from outreach to date has been generally neutral to positive, with most participants agreeing with the need for and goals of the study. Many people had specific questions about the proposed physical configuration and some expressed early support or skepticism. Nearly all emphasized the importance of questions of equity and transparency: which travelers would benefit from this project, who would pay, and how would money be spent in any express lane alternative.

For the remainder of 2018, the study team will reach out to further introduce the study, its goals, and its initial findings. The audience for this effort includes community groups, merchants, residents, and likely users of the freeway, with a focus on those who work or live close to the freeways. Feedback from these groups at this early phase will help shape the more detailed analyses that are proposed to follow, including gaining an understanding of what is of most importance to the various stakeholders.

Next Steps.

The FMCS is a feasibility study intended to provide a high-level investigation into the viability and desirability of a freeway management concept. The complete study, including a full analysis of the proposals outlined and preliminarily analyzed here, will be presented to the Board in late spring following additional public outreach. The next phase of analysis, jointly funded by the Transportation Authority and San Mateo County, will be the project scoping phase under the Caltrans project development process with the Project Initiation Document as the deliverable, and will take approximately 12 months. The approval of a cooperative agreement between the Transportation Authority and Caltrans to begin this next phase of the study is included as a separate agenda item.

FINANCIAL IMPACT

None. This is an information item.

CAC POSITION

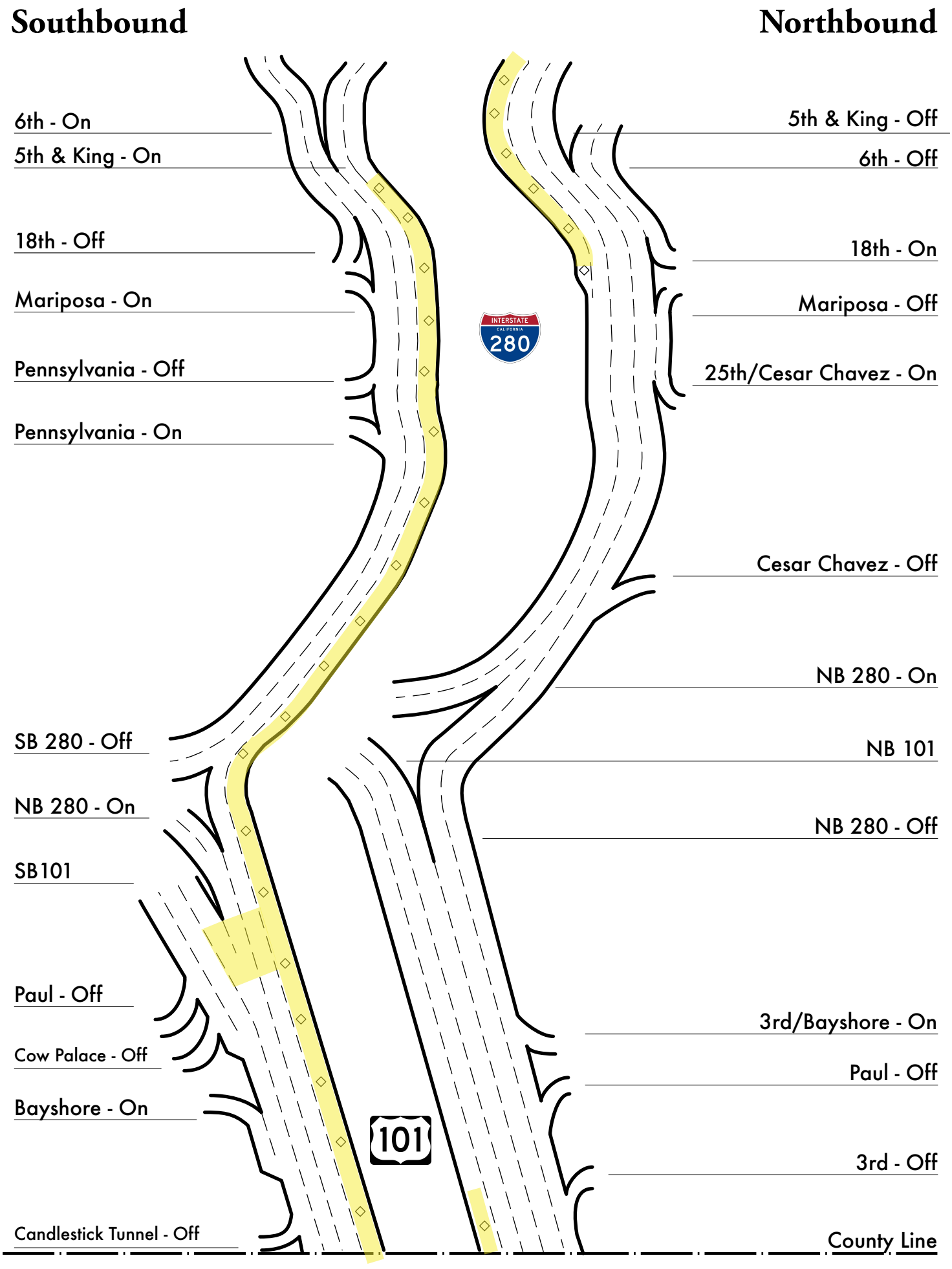
None. This is an information item. The CAC was briefed on the preliminary results at its March 28, 2018 meeting.

SUPPLEMENTAL MATERIALS

Attachment 1 – Conceptual Lane Diagram

Attachment 2 – Outreach Summary

Attachment 1: Potential US 101 & I-280 Carpool/Express Lane Configuration



Attachment 2
Freeway Corridor Management Study - Outreach Summary

Community Contacts
Organization
API Council
Bayview - Hunter's Point CAC (Full Meeting)
Bernal Heights Neighborhood Center
Chinatown Community Development Center
Chinatown TRIP
Mission Bay CAC
New Mission Terrace Associaiton
Portola Neighborhood Association
Potrero Hill Boosters
Si Se Puede
South Beach, Rincon, Mission Bay Neighborhood Assoc (Full Meeting)
Southeast Community Facility
TJPA CAC
Citywide Contacts & Advocacy Groups
Organization
SF BOMA
Bay Area Council
SF Chamber of Commerce
SF Bicycle Coalition
SF Transit Riders
SPUR
TransForm
Urban Habitat
WalkSF