DATE: April 28, 2014

TO: Honorable Mayor and City Council

FROM: Martin Alkire, Principal Planner
Terry Blount, Assistant Community Development Director/Planning Manager
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VIA: Daniel H. Rich, City Manager

STUDY SESSION MEMO

CITY OF MOUNTAIN VIEW

TITLE: **North Bayshore Precise Plan**

PURPOSE

The purpose of this Study Session is for the City Council to review traffic data and provide direction on North Bayshore Precise Plan transportation strategies.

At the Study Session, the Precise Plan team will also confirm that the Precise Plan can achieve the 45 percent Single-Occupancy Vehicle (SOV) target endorsed by the City Council as part of the Shoreline Transportation Study. This can be achieved if Transportation Demand Measures (TDM) are applied to North Bayshore companies that are redeveloping, and to the campuses or buildings of these companies that are not expanding. It will also require multiple improvements to the transit, bicycle, and pedestrian network. This also assumes that smaller companies not redeveloping will reduce their SOV rates by utilizing network improvements and TDM programs and services.

This report also discusses Precise Plan strategies such as monitoring TDM performance over time to ensure this target is achieved, and implications and options if this target is not achieved. At the conclusion of the Study Session, staff will seek Council direction to proceed to drafting the detailed Precise Plan.

BACKGROUND

Council and the Environmental Planning Commission (EPC) have held a number of Study Sessions on the North Bayshore Precise Plan and previously provided direction on land use and transportation network strategies. Key meeting dates and topics included:

- February 25, 2014—City Council. Character area boundaries, building heights, and urban design visualizations.

- January 14, 2014—City Council. Character areas, floor area ratio (FAR), development standards framework, building heights, and urban design concepts.

- January 8, 2014—EPC. Character area boundaries, FAR, development standards framework, building heights, and habitat overlay zone.

- December 10, 2013—City Council. Sustainability framework, land use options, transportation network, street typologies, and TDM strategies.

- December 4, 2013—EPC. Sustainability framework, land use options, transportation network, street typologies, and TDM strategies.

- October 15, 2013—City Council. Precise Plan "character areas," habitat overlay zone, draft vision, and guiding principles.

- September 25, 2013—EPC. Draft vision; guiding principles; and preliminary land use, mobility, and open space concepts.

- September 16, 2013—City Council. District-wide sustainability concepts.

Additionally, the City Council endorsed key North Bayshore transportation improvements and strategies as part of the North Shoreline Transportation Study in February 2013, including the 45 percent SOV target (see Attachment 1). The Precise Plan further refined and tested many of these key improvements and strategies.

This report provides an update of key Precise Plan transportation topics and strategies. Additional information on these topics will be presented by the Precise Plan team at the Study Session.

<u>December 10, 2013 City Council Meeting</u>

At this meeting, the City Council reviewed preliminary Precise Plan land use and transportation strategies. Council also requested another Study Session when the traffic data was available to discuss final Precise Plan policy direction. Council comments from this meeting on transportation strategies included:

- **Transportation Network**

  - General support for proposed transportation network.

- Majority of Council did not support further study of a Charleston bridge connection into North Bayshore.

- No new roads should be included along Stevens Creek.

- Bicycle/pedestrian focus is important to create a campus-like atmosphere with less emphasis on vehicles.

- Dedicated lanes along Shoreline Boulevard should be considered for transit.

- Study impacts of buses going downtown; consider the capacity of the Downtown Transit Center.

- Parking structures should be built to replace surface parking.

- Network should support regional transportation connections.

- **Street Typologies**

  - General support for the proposed street typologies.

  - Amphitheatre Parkway may not be the best auto-oriented street due to its location next to Shoreline at Mountain View.

  - Concern about the human scale of the transit boulevard.

- **Transportation Demand Management (TDM)**

  - Broad support to apply TDM to new and existing development; area companies should apply TDM to all of their buildings.

  - Desire to see short- and long-term mechanisms for linking growth with improvements to see its effect on achieving mode-share target.

  - Need to look at concrete trip numbers and not just percentage reductions; concern we will not get desired result.

Public comments on transportation strategies from this meeting included:

- Support for "breaking up" the large blocks. Support new overcrossing over Highway 101.

- General support for proposed transportation solutions.
- Restrict parking supply to align with vehicle trip-reduction goals.
- Bicycling and walking are difficult in current environment.
- Concern over alignment of future connection to Joaquin Road and splitting the SyWest parcel.
- New TDM objectives could make the City uncompetitive with other cities.
- Supply as much parking as possible.

April 23, 2014 EPC Meeting

The topics in this staff report were reviewed by the EPC at their meeting of April 23. Due to the short turnaround times between the EPC and Council meetings, staff will provide a written summary of EPC comments prior to the City Council Study Session.

DISCUSSION

Existing Transportation Conditions Summary

The City's transportation consultants, Fehr & Peers, collected updated North Bayshore Precise Plan transportation data in February 2014. The following is a summary of their key findings.

Gateway Locations Studied. The following map shows interchange "gateway" locations that were studied to determine existing trip characteristics into and out of North Bayshore, as noted below. Three are for vehicles and two are multi-use paths.

Map 1—Gateway Locations

Gateway Preferred Access. Approximately 80 percent of vehicles use the North Shoreline Boulevard or Rengstorff Avenue gateways to move into or out of North Bayshore while 20 percent use San Antonio Road.

Peak-Period Vehicle Trips and Capacity. During the 7:00 a.m. to 10:00 a.m. peak period, there are approximately 16,700 vehicle trips across all gateway locations combined. Of this total, approximately 13,900 are inbound trips. The vehicle capacity during this period has been calculated at approximately 21,900 trips (approximately 18,900 inbound trips). Therefore, there is an overall capacity of approximately 5,000 inbound vehicles over the three-hour peak period. For this report, "vehicle capacity" is defined as the maximum number of vehicles that can be accommodated on the existing roadways before their movements become severely restricted.

Peak-Hour Vehicle Trips. During the 8:45 a.m. to 9:45 a.m. peak hour, there are approximately 7,100 (inbound and outbound) vehicle trips across all gateway locations combined; of this total, 6,100 are inbound trips. The vehicle capacity during this period across all gateway locations combined has been calculated at 8,100 trips (inbound and

outbound); 7,000 are inbound trips, so there is a capacity for approximately 900 additional inbound vehicles.

Gateway Peak-Hour Conditions. During the 8:45 a.m. to 9:45 a.m. peak hour, at the North Shoreline Boulevard gateway, there are approximately 2,430 inbound trips, with an inbound vehicle capacity of approximately 2,490 inbound trips. Thus, Shoreline Boulevard is over capacity. At the Rengstorff Avenue gateway, there are approximately 2,680 inbound trips, with an inbound vehicle capacity of approximately 2,960 trips; and at the San Antonio Road gateway, there are approximately 990 inbound trips, with an inbound vehicle capacity of approximately 1,530 trips.

Mode Share. During the a.m. peak hour, travelers to North Bayshore use the following modes: 51 percent drive alone (SOV); 33 percent take transit/shuttle; 12 percent carpool; and 4 percent bike or walk. This SOV rate is unprecedented when compared to other similar suburban office park settings. During the a.m. peak period (7:00 a.m. to 10:00 a.m.), the SOV rate is 57 percent. This difference in SOV rates could be because the peak hour is the most highly congested time period, which is when commuters have the greatest incentive to use modes other than the SOV.

Growth and Transportation Improvement Strategies. To fully accommodate the additional 3.4 million square feet envisioned for North Bayshore, a combination of strategies would be required, including applying the 45 percent SOV target to all development (new and existing), making improvements such as increasing the length of some turn lanes, and employer cooperation on staggering work hours of area companies during peak commute periods. Shifting peak hour vehicle trips to Rengstorff and San Antonio gateways, where there is existing capacity, is also an important strategy requiring changes in travel behavior.

Summary Findings

- **Limited Vehicle Capacity.** The North Shoreline Boulevard gateway is at capacity, and there is limited vehicle capacity at other gateway locations. The two gateways with some vehicle capacity are not evenly used. San Antonio has the greatest capacity.

- **System Improvements.** There are limited operational improvements that may be feasible on certain local roads, such as increasing lengths of turning lanes to accommodate more vehicle queuing. However, to be conservative in how transportation network changes could improve roadway conditions, no major changes in physical infrastructure, such as freeway interchange modifications, are assumed.

- **Strategies.** Applying the 45 percent SOV target to existing and new development, along with additional strategies such as spreading vehicle demand across all of the gateways (including the currently underutilized San Antonio Road gateway) and across multiple hours of the day will allow the additional 3.4 million square feet of planned North Bayshore growth to be accommodated.

- **Trip Cap.** Information from the existing conditions work can be used to develop a "trip cap" number should this approach be desired (discussed later in report).

Street Typologies, Transportation Network, and Transportation Demand Management (TDM) Policies and Programs

Nelson\Nygaard, the Precise Plan's transportation consultants, previously presented information to the EPC and Council on potential changes to the area's transportation network and TDM policies and programs. The following is an updated summary of the key points from these topics.

Street Typologies (or Types)

Street typologies enable streets to be designed to prioritize movement of different travel modes. For North Bayshore, some streets are proposed to be designed to enable the most efficient use of transit vehicles, while others are proposed to serve primarily vehicles because they provide direct connections to freeways. These typologies generally align with the "complete streets" policy guidance from the City's General Plan.

Council and EPC generally supported the proposed Precise Plan street typologies, as described in Table 1 below while Map 2 shows the envisioned complete street network.

Table 1—Street Typologies

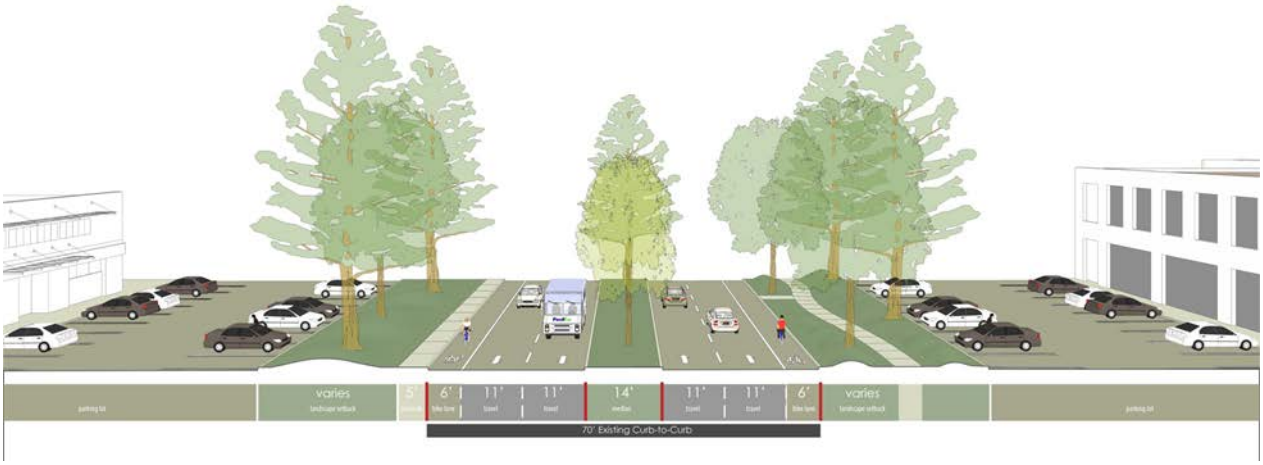
Type	Definition	Design Guidance	Policies
Gateway Boulevard	Major entries to North Bayshore and other arterials, with high-quality facilities for walking and biking.	Travel Lanes: 2+2 plus median Bicycle Facilities: Cycle track required. Bicycle lanes may be provided in addition. Sidewalk: 10′ typical, 12′ preferred, 5′ minimum. 5′ minimum landscape buffer between sidewalk and travel lanes. Parking Access/Driveways/Loading: Not allowed, except for properties not served by Access Street. Transit: Highest-quality bus stop amenities. Signal prioritization. Stops may be in traffic lane or in duck-out. Median: Yes, except where left-turn pocket replaces. Emergency Vehicles: May use cycle track.	Where there is a tension between transit and other motor vehicles, design and manage the roadway to improve pedestrian, bicycle, and transit movement through the corridor without regard to vehicle delay. Additional property dedications may be necessary to achieve desired sidewalk width, incorporate bicycle facilities, and/or turn lanes.
Transit Boulevard	Design for high-frequency transit and provide a high level of rider and pedestrian amenities. This type may be overlaid onto other street types.	Travel Lanes: Varies. Typically 2+2 plus median. Bicycle Facilities: Cycle track required. Bicycle lanes may be provided in addition. Sidewalk: 15′ typical, 12′ minimum. 5′ minimum landscape buffer between sidewalk and travel lanes. Parking Access/Driveways/Loading: Not allowed, except for properties not served by Access Street. Transit: Highest-quality bus stop amenities. Signal prioritization. Transit-only lanes and queue jumps as necessary to reduce delay. Stops typically in lane. Median: Yes, except where left turn pocket replaces. Emergency Vehicles: May use cycle track and bus lanes.	Dedicated transit lanes and transit queue jump lanes may be necessary to minimize person delay while maintaining acceptable vehicle delay. Bus stops should have highest level of pedestrian investment.

Type	Definition	Design Guidance	Policies
Access Street	Distribute auto traffic from Gateway Boulevards to parking lots	Travel Lanes: 1+1, plus optional median. Bicycle Facilities: Bike lane or shared street with traffic calming Sidewalk: 5′ minimum clear, plus 5′ minimum between sidewalk and curb for landscape and driveway ramps. Parking Access/Driveways: Yes. Most parking accessed from these streets. Median: Optional.	Design so that vehicles travel less than 25 mph so that bicycles can share travel lane with cars and pedestrians can safely walk across the street at any location. Discourage regional traffic from using these streets.
Green Street	Provide a very high-quality walking and cycling environment.	Travel Lanes: None Bicycle Facilities: Multipurpose path. Parking Access/Driveways: Not permitted.	Landscape character and continuous bikeway and pedestrian paths are more important than vehicle capacity or vehicle delay. Where Green Streets cross a Gateway Boulevard or Transit Boulevard, a traffic signal should generally be provided. Special care should be taken where Green Streets intersect all other street types to ensure safe and comfortable crossings.

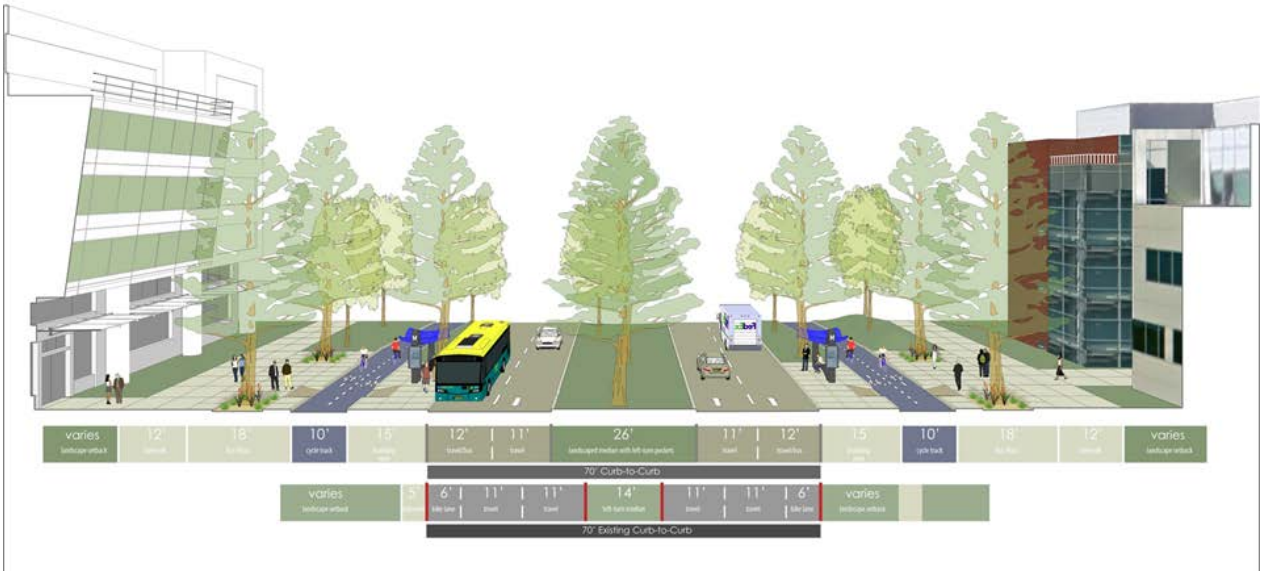
Typical Street Cross Section: North Shoreline Boulevard

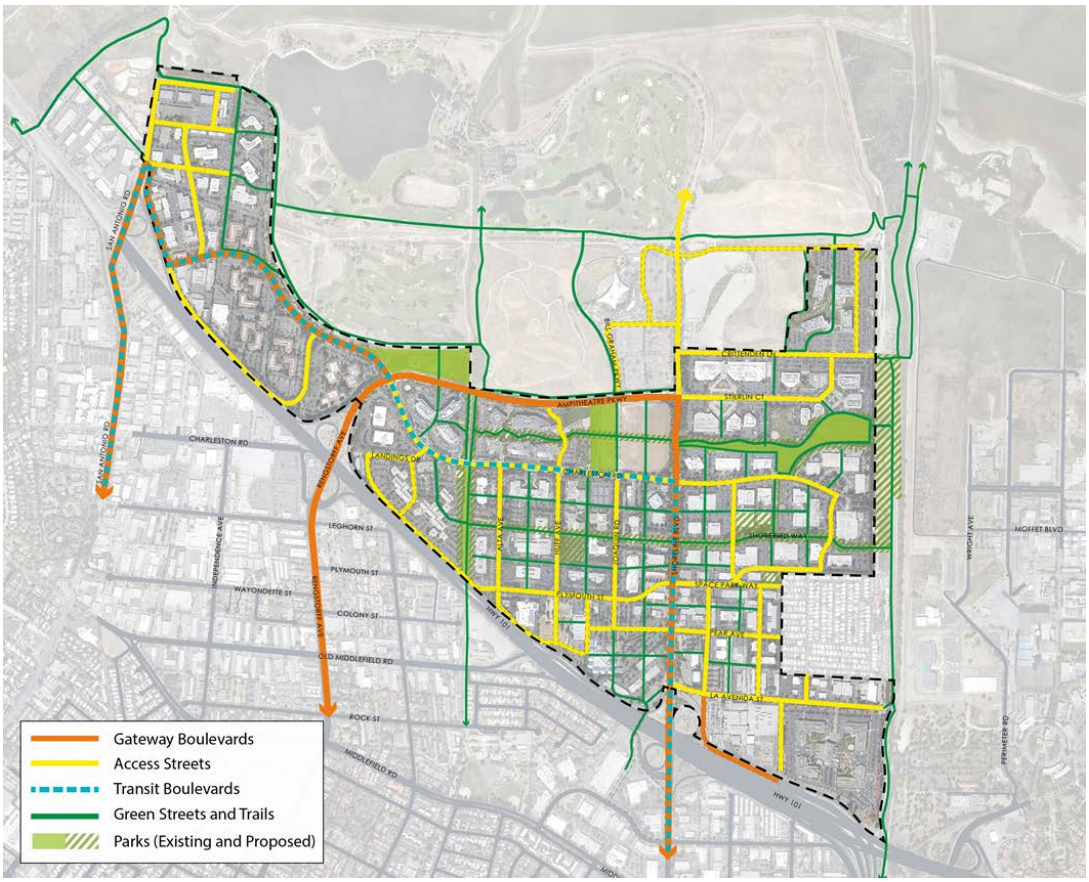
The graphics below show the existing condition of North Shoreline Boulevard and how it could be redesigned with new transit and bicycle facilities. Staff notes that further study would be needed during the detailed street design phase to assess potential impacts to Heritage trees and right-of-way acquisition issues along this corridor.

Shoreline Blvd (70' Existing Curb-to-Curb)



Shoreline Blvd Alternative A (70' Curb-to-Curb)





Map 2—Complete Street Network with Street Typologies

Recommendation No. 1: Street Typologies and Street Network

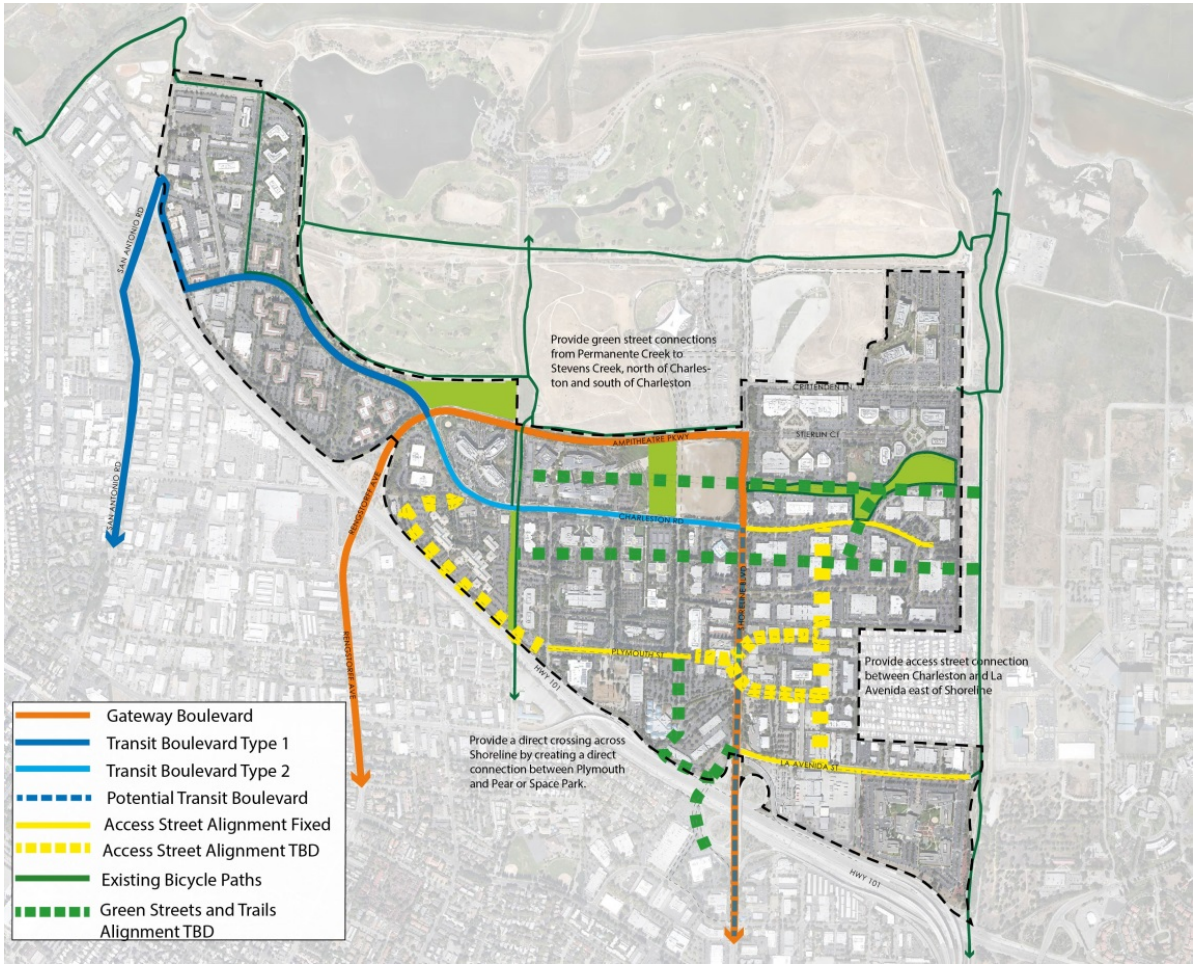
Staff recommends that the Precise Plan include the proposed street typologies and complete street network, shown above.

Transportation Network Backbone

The following map and table represent proposed network "backbone" improvements. These are priority improvements most critical to ensuring the overall network operates efficiently and improves access for transit, vehicles, bicyclists, and pedestrians. These network improvements show general locations, but the exact alignment may need to shift based on development patterns and opportunities over time. The Precise Plan will include both a map and text that clarifies the overall intent of this strategy.

A funding and financing strategy will be presented to the EPC and Council in fall 2014 to detail how and when these priority improvements could be implemented. In

general, the improvements will be funded through a combination of developer contributions, Shoreline Community funds, and regional grants.



Map 3—Transportation Network Backbone

Table 2—Transportation Network Backbone Summary

Roadway	Boundary	Existing	Proposed	Existing ROW (midblock)	Proposed ROW (midblock)
High Priority					
North Shoreline Boulevard	Highway 101 to Plymouth Street	3+2 lanes Turn pockets Bike lanes both directions	3+2 lanes Turn pockets Two-way cycle tracks on each side	84′	104′ (10′ on each side for dual direction cycle tracks)
North Shoreline Boulevard	Plymouth Street to Amphitheatre Parkway	2+2 lanes Turn pockets Bike lanes both directions	2+2 lanes Turn pockets Two-way cycle tracks on each side	70′	90′ (10′ on each side for dual direction cycle tracks)
Charleston Road	North Shoreline Boulevard to Amphitheatre Parkway	2+2 Turn pockets Bike lanes in both directions	2+2 lanes 2 of which are transit only Turn pockets Two-way cycle tracks on each side	72′	82′ (cycle tracks replace bicycle lanes and 3′ buffer added) to 131′ (transit waiting areas, green space)
Garcia Avenue	Amphitheatre Parkway to Bayshore Parkway	1+1 lane Turn pockets Bike lanes in both directions	1+1 lanes Turn pockets Cycle tracks on each side	50′	50′ to 106′, depending on configuration
New east-west direct crossing across North Shoreline Boulevard	Potential connections include modifying Plymouth Street to connect with Space Park Way or Pear Avenue	N/A	1+1 lane Bicycle lanes on each side	N/A	38′ (11′ travel lanes, 5′ bicycle lanes, 3′ buffer)

Roadway	Boundary	Existing	Proposed	Existing ROW (midblock)	Proposed ROW (midblock)
East-west greenway Connection No. 1	South of Charleston Road connecting to Permanente and Stevens Creek Trails	N/A	Multi-use path	N/A	11′ to 15′[1]
East-west greenway Connection No. 2	Between Amphitheatre Parkway and Charleston Road connecting to Permanente and Stevens Creek Trails	N/A	Multi-use path	N/A	11′ to 15′[2]
Bridge over Highway 101 west of North Shoreline Boulevard	N/A	N/A	May be pedestrian and bike only or combined 1+1 lane for transit	N/A	Unknown
Signalized bike crossings	East-west Greenway Nos. 1 and 2 at North Shoreline Boulevard	N/A	N/A	N/A	N/A
Medium Priority					
Frontage Road along Highway 101	North Shoreline Boulevard to Landings Drive	N/A	1+1 lane	N/A	22′
North-south connection between Pear Avenue and Charleston Road east of North Shoreline Boulevard	La Avenida at North Shoreline Boulevard and Charleston Road	N/A	1+1 lane	NA	22′

[1] AASTO Bicycle Design Guidelines 2012
[2] AASTO Bicycle Design Guidelines 2012

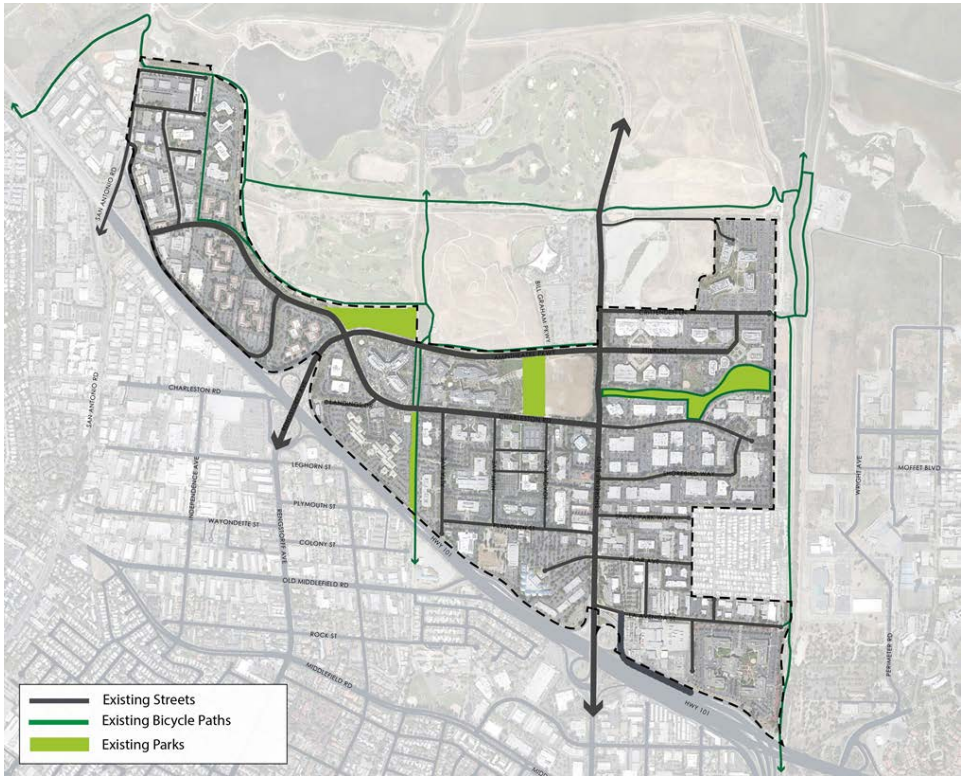
Roadway	Boundary	Existing	Proposed	Existing ROW (midblock)	Proposed ROW (midblock)
North Rengstorff Avenue	Charleston Road to Highway 101	2+2 lanes Turn pockets Bike lane in north-south direction	2+2 lanes Turn pockets Cycle tracks on each side	Varies	Additional 3′ on each side of the roadway (convert bike lanes to cycle tracks)
San Antonio Road	Bayshore Parkway to Highway 101	1+2 or 1+1, depending on segment Turn pockets	Same as existing	Varies	Varies
Amphitheatre Parkway	North Shoreline Boulevard to Charleston Road	3 to 4 travel lanes Turn pockets Bike lanes both directions	2 + 2 travel lanes Turn lanes Cycle tracks on each side	56 to 82′	Additional 3′ on each side of the roadway (convert bike lanes to cycle tracks)
Bicycle facilities connecting Highway 101, North Shoreline Boulevard, and Plymouth Street	The alignment is TBD but would run through the SyWest property to provide a connection from North Shoreline Boulevard and/or future pedestrian bridge and Plymouth Street	N/A	Multi-use path	N/A	11′ to 15′[3]
North Shoreline Boulevard northbound off-ramp	N/A	N/A	N/A	N/A	N/A

[3] AASTO Bicycle Design Guidelines 2012

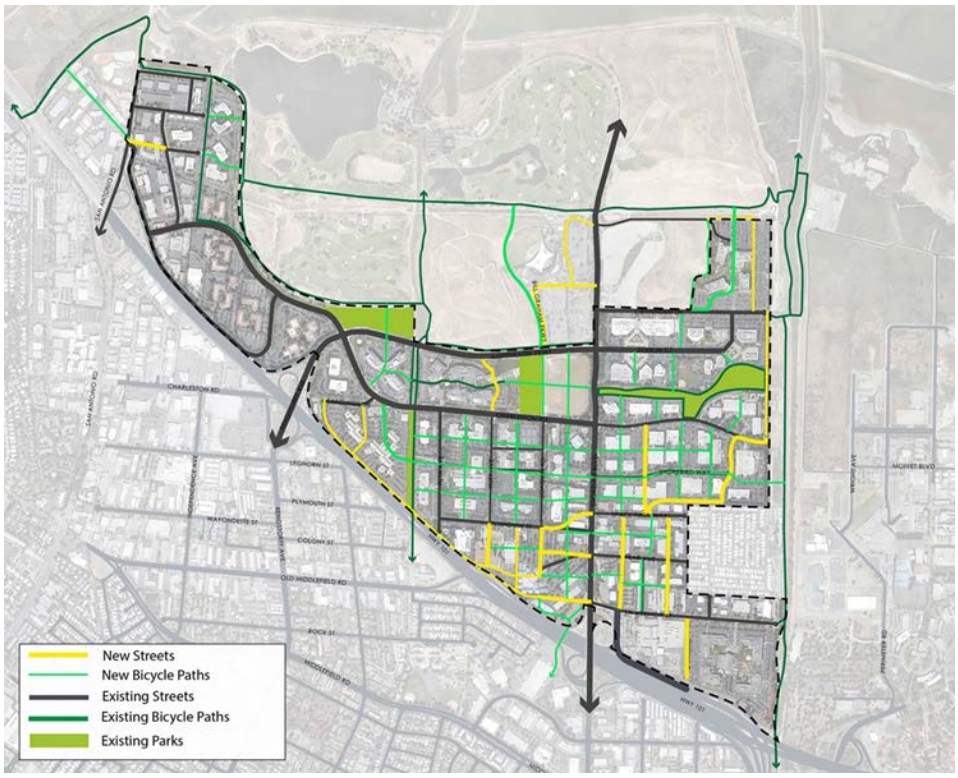
Roadway	Boundary	Existing	Proposed	Existing ROW (midblock)	Proposed ROW (midblock)
Lowest Priority					
Stierlin Court	Crittenden Lane to Amphitheatre Parkway	1 + 1 lane	1 + 1 lane Bicycle lanes in each direction	60′	60′
La Avenida	Stevens Creek to North Shoreline Boulevard	1+1 lane	1+1 lane Bicycle lanes in each direction	50′	50′

Bicycle Network

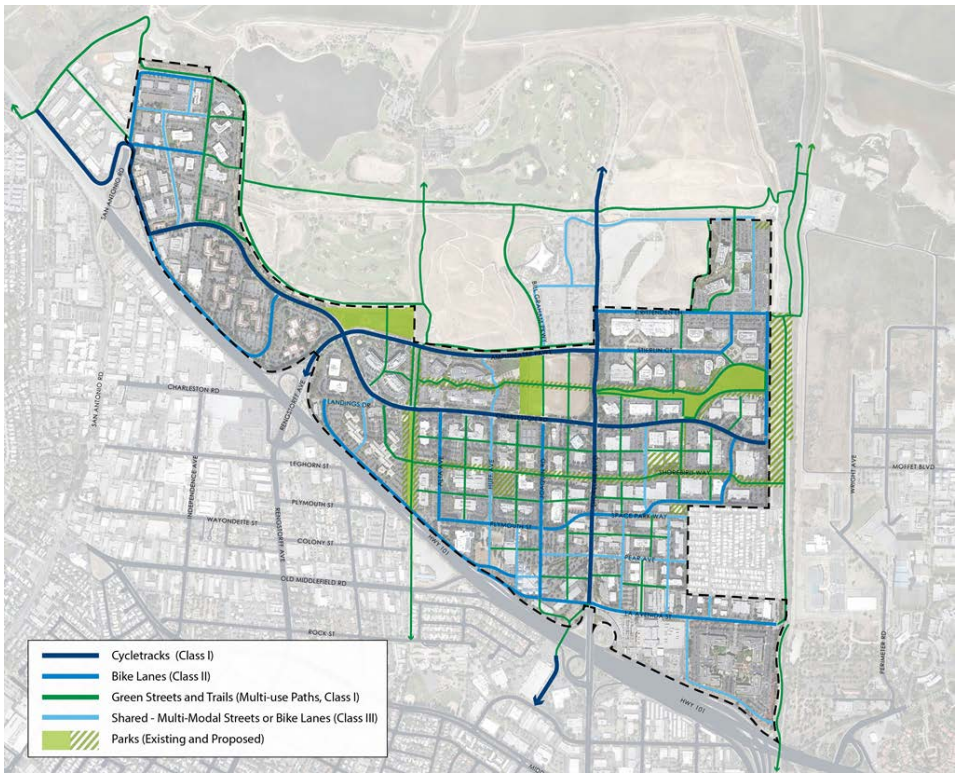
The North Bayshore bicycle network is a critical part of the area's overall mobility strategy. The network backbone summary includes several key bicycle network improvements. The following maps show the existing and planned bicycle network envisioned by the Precise Plan. The Precise Plan will include clarifying text to accompany these maps stating that the exact alignment of this new network will likely need some modification based on development and ownership patterns over time.



Map 4—Existing Streets and Bicycle Facilities



Map 5—New Streets and Bicycle Facilities



Map 6—Complete Bicycle Network

Recommendation No. 2: Transportation Network Backbone

Staff recommends that the Precise Plan include the proposed transportation network backbone of priority transportation improvements outlined in the previous diagrams.

Transportation Demand Management (TDM) and Precise Plan Strategies

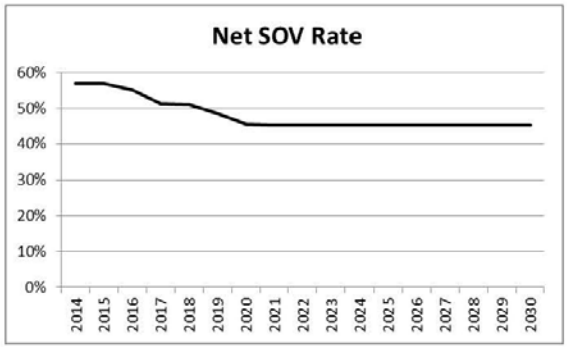
45 Percent Single-Occupancy Vehicle (SOV) Target

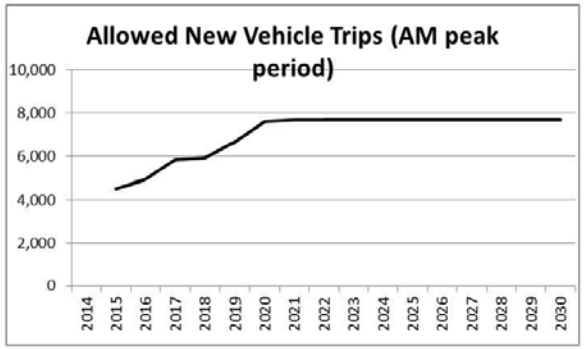
The North Shoreline Transportation Study studied an ambitious 45 percent target for Single Occupancy Vehicle (SOV) a.m. peak period trips (generally within the 7:00 a.m. to 10:00 a.m. period) for North Bayshore. This 45 percent SOV mode-share target will be included as a Precise Plan requirement for new development.

The 45 Percent SOV Target and Multiple TDM Strategies

The 45 percent SOV target can be achieved by using multiple TDM strategies. The following table demonstrates how these strategies could work together over time. The table assumes that the 45 percent SOV requirement would apply to both new and existing development; that the bicycle and pedestrian network and programs will significantly expand; and that the transit mode share increases as Caltrain and light rail service grow and additional shuttles operate from downtown to North Bayshore and utilize dedicated lanes. The charts also show how the multiple strategies, combined with SOV reductions, could then allow some additional increment of a.m. peak hour trips over time.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Active Transportation																	
Planned Cycle Tracks and Protected Lanes			Shoreline, Charleston, Permanente Extension														
Other Strategies		Expanded Bike Sharing Programs; Citywide Bicycle Improvements															
Mode Share	5%	5%	6%	7%	8%	9%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Caltrain & Light Rail																	
Average Shuttle Load	20	20	25	25	30	30	35	35	35	35	35	35	35	35	35	35	35
Shuttle Operation		Company Expansion			TMA Operation												
Shuttle Facilities		Shuttle Area at TC; Shoreline Lanes															
Transit Milestones					* BART/LRT Connection		* Caltrain Electrification										
Other Strategies			Transit Center Improvements; Company Transit Subsidies														
Mode Share	4%	4%	7%	8%	9%	11%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Other Modes																	
Commuter Bus Mode Share	26%	26%	25%	27%	23%	22%	22%	21%	22%	22%	22%	22%	22%	22%	22%	22%	22%
Commuter Bus Facilities			Charleston Transit Blvd.														
Other TDM and Ridesharing Mode Share	8%	8%	8%	8%	9%	9%	9%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Net SOV Rate	**57%**	**57%**	**54%**	**51%**	**50%**	**49%**	**46%**	**45%**	**45%**	**45%**	**45%**	**45%**	**45%**	**45%**	**45%**	**45%**	**45%**





Transportation Management Association (TMA)

Corporations and property owners have formed the Mountain View Transportation Management Association (TMA) to reduce trips from major employment areas in Mountain View, including the North Bayshore area. The TMA may potentially operate and manage key North Bayshore TDM programs and services, and could help facilitate potential partnerships with different companies and property owners. However, ultimately the City will be responsible for placing TDM measures on new development and for monitoring TDM implementation over time.

Strategy 1: Traditional TDM Program

Overview

The traditional TDM program approach would include a core set of TDM measures all employers seeking City entitlements must offer their employees, along with a list of optional measures employers may choose from. TDM implementation can be done by employers, the Transportation Management Association (TMA), or a combination of both.

Employers would have a vehicle trip/mode split requirement (e.g., 45 percent SOV) they would have to meet based on the goals established by the City. This would be enforced through an annual monitoring program. Companies that do not meet their vehicle trip target would be required to implement additional TDM measures. If, after implementing additional measures, they still cannot achieve their trip cap/mode-split target, they would be required to implement additional TDM measures and pay fines to help fund area transportation programs.

The list of core TDM measures should be kept relatively short to provide employers with some flexibility in determining what measures will work best at their location and with their employees. Recommended core TDM measures include the 45 percent vehicle trip reduction requirement, participation in the TMA, an on-site transportation coordinator to serve as a TMA liaison and oversee internal TDM programs, and on-site secure long-term and short-term bicycle parking.

Effectiveness and Impacts

The Precise Plan team previously shared information with the EPC and City Council on the potential effectiveness of this approach. A preliminary analysis estimated that if TDM were only applied to the new 3.4 million square feet of Precise Plan growth, an

SOV rate of 53 percent could be achieved for the district during the peak period, compared to the current 57 percent rate. This initial SOV rate could be reduced further to approximately 49 percent if employees from companies without TDM requirements were able to participate in TDM programs such as shuttle services.

A second scenario evaluated the General Plan maximum of approximately 10.7 million square feet of developable area in North Bayshore and concluded that roughly 8.5 million square feet could be required to meet the SOV mode-share goal, either through new development or expansion by existing employers. This scenario could result in a 45 percent SOV mode share only if the remaining approximately 2.0 million square feet reduced its mode share by approximately 20 percent from the existing district average (previously estimated at about 61 percent) by participating in area TDM programs.

The effectiveness of the overall North Bayshore TDM strategy depends on the following:

- Companies will expand TDM to both their expanded and existing facilities;

- The Precise Plan will use FAR bonuses and/or encourage development agreements to provide incentives for companies to expand their TDM programs to their existing facilities;

- Companies exempt from TDM requirements will utilize area improvements and services that will expand over time and be available for all area employees.

If current employers do not choose to expand or do not expand as much as anticipated, then these requirements will not be able to cover as great a percentage of the developable square footage as predicted, and the district-wide mode split may not be achieved. For example, if only 6 million square feet is subject to the SOV requirements, the district-wide SOV peak-period mode share will only drop to 49 percent. This SOV rate could be reduced further to approximately 47 percent if employees from companies without TDM requirements were able to participate in TDM programs such as shuttle services.

Administration and Monitoring

The City will need to work with each employer to develop and approve their TDM plan.

In terms of monitoring, employers will need to conduct an annual employee transportation survey to determine their employee mode split. If a vehicle trip cap is

set, then an employer will need to conduct an annual vehicle trip count of the number of vehicle trips entering and exiting their property over a several-day period. Each employer would then be required to verify its findings with the City to determine if they comply with the established target. The City expects the Precise Plan to include financial penalties for potential noncompliance as was done with recent projects with required TDM measures.

As with the approval of the TDM plans, the City would be responsible for reviewing the findings of the annual monitoring program. The City would need to work with those employers who have not met their target to determine what additional measures are required.

Strategy 2: Traditional TDM Program + Vehicle Trip Cap

Overview

Strategy 2 builds upon the traditional TDM program strategy by including a district-wide vehicle trip cap.

The vehicle trip cap would be based on the combined vehicle trip capacity during the 7:00 a.m. to 10:00 a.m. peak period at the three main entry points to North Bayshore. This trip cap would be 21,900 total trips (18,900 inbound trips). This would allow a net increase of 5,200 total trips (5,000 inbound trips) over existing a.m. peak-period trips. No trip cap restrictions would be placed on individual employers; however, once the district-wide trip cap is reached, no new development entitlements would be issued until the number of vehicle trips during the peak period is reduced below the trip cap.

Effectiveness and Impacts

By using roadway capacity to dictate allowable development, the City will be better able to ensure the vehicle trip cap is not exceeded. If the trip cap is exceeded, then no further new development would be allowed in North Bayshore until the number of vehicle trips is reduced.

Administration and Monitoring

This approach puts the responsibility for reducing vehicle trips on employers and property owners should they wish to continue to develop. The City would monitor vehicle trips at the three entry points. Counts would need to be conducted several times per year. In essence, the entire North Bayshore Area would need to work

together to demonstrate compliance with the trip cap in order to expand their facilities in the future.

If monitoring reveals that vehicle trips continue to grow and strain vehicle gateway capacity, then additional measures or restrictions would be required by the Precise Plan. These could include funding and implementing multi-modal improvements identified in the Precise Plan funding and financing strategy prior to allowing any additional new development. Improvements could include new cycle tracks or dedicated bus lanes, or expanding TDM services such as enhanced shuttle service.

Strategy 3: Traditional TDM Program + Vehicle Trip Cap + Congestion Pricing Policies

This strategy would include the first two strategies with policy language added to the Precise Plan allowing congestion pricing at a later date if needed. An overview of congestion pricing is provided below.

Overview

Congestion pricing involves charging motorists a fee to drive in specific, congested areas at particular times of day. Generated revenues can then be used to fund transportation improvements such as increased transit service, roadway improvements, and bicycle and pedestrian projects to accommodate the shift in travel behavior away from SOV. Implementing congestion pricing programs in California requires approval from the State legislature.

Congestion Pricing Components

The basic characteristics of a congestion pricing program include:

Charging area. The location and size of the charged area is perhaps the most important component of a congestion pricing program.

Charge type. The simplest forms of congestion pricing include a fee for crossing into an area as a driver (in and out) or a fee for driving within an area (internal movements). This can be levied once per day or period, or once per crossing.

Pricing structure. This addresses the time of day for charges and whether the fee will be fixed or variable.

Detection and payment mechanisms. Every road pricing program must include infrastructure to enable detecting vehicles entering the charging area and methods of collecting or paying fees. An example from the congestion pricing program in London is shown below.

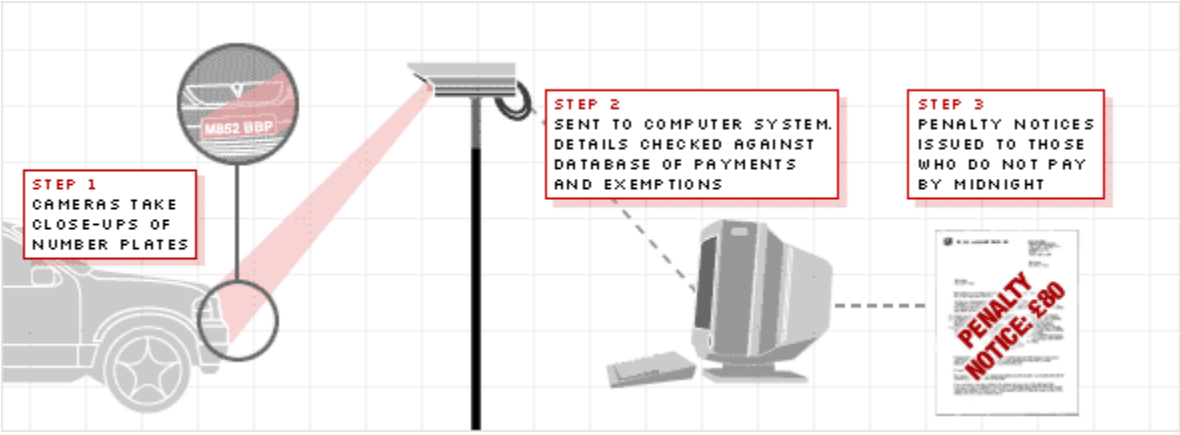


Figure 1—London Congestion Pricing Infrastructure

Complementary enhancements. A congestion pricing program must provide alternative services to allow shifts away from SOV, such as increased transit, biking facilities, traffic management, etc., and clearly describe such improvements to the public.

Monitoring and evaluation. To help demonstrate and deliver on the program objectives, road pricing programs include some measure of data collection, reporting, and periodic adjustments. Monitoring can range from monthly, quarterly, or annual periods.

Administration and management. This includes all activities such as fee collection, enforcement policies, discount policies, and implementation of complementary services. Several congestion pricing programs have administrative/management fees ranging from 15 percent to 30 percent, depending on the number of trips charged, fee level, size monitoring infrastructure, and range of enforcement and discount policies.

Congestion Pricing Program Examples: London and Stockholm

Congestion pricing programs in these cities have demonstrated the following benefits.

- Faster travel times for all travelers, including motorists;
- Greater traffic and transit reliability;

- Net revenue for transportation enhancements;
- Reduced greenhouse gas emissions and improved air quality; and
- Reduced pedestrian and bicycle safety incidents.

Several of the drawbacks for the London program include:

- The fee is not based on how many miles a vehicle is driven within the charging area;
- The fee is the same regardless of the time of day; the fee is not higher during the most congested periods and lower during less congested periods;
- The fee does not vary by location; it would be more efficient to have higher rates on more congested roads;
- The system has relatively high overhead costs; and
- Transit service is crowded and unreliable, although this is improving.

For the Stockholm program, one drawback was that drivers within the charging area did not reduce their driving as much as anticipated; this indicates that they drove more within these areas to take advantage of the reduced traffic.

Congestion Pricing in North Bayshore: Potential Benefits and Drawbacks

The following are several potential benefits to congestion pricing in North Bayshore:

Focused strategy. A congestion pricing program would be a focused strategy to address the core issue of reducing North Bayshore congestion during commute periods.

Infrastructure savings. A reduction in traffic volumes, especially peak-period demand, can save time, money, and space dedicated to oversized roadways and/or prevent or postpone roadway expansions. For North Bayshore, this could potentially reduce or delay the need for costly improvements, such as new or reconfigured off-ramps or interchanges.

Revenue for improvements. As noted, congestion pricing can provide revenues to help fund transportation improvements such as transit service, roadway improvements, and

bicycle and pedestrian projects to accommodate the shift in travel behavior away from SOV.

Improved transit operations. Transit vehicles often operate in the same congested streets that motorists use, although transit carries far more people per vehicle than a car. Simply reducing the number of vehicles on the street can help improve transit operations by reducing the impact of that congestion.

Fewer pedestrian and bicycle incidents. Congestion pricing revenues can further improve pedestrian and bicycle safety through additional pedestrian and bicycle safety enhancements.

The following are several potential drawbacks to congestion pricing in North Bayshore:

Public perception. There could be negative public perception over how a program might impact users besides commuting employees (i.e., park, theater, and museum visitors; small business/retail employees).

Employer concerns. Area employers could be concerned over how much a program would cost commuters and that such a program may make the area more costly to do business than surrounding cities.

Novel approach. Since congestion pricing is a relatively new approach with limited U.S. examples, further feasibility analysis would be needed to confirm the costs and implications of such a system in North Bayshore.

RECOMMENDATION

1. Street Typologies and Street Network

   Staff recommends that the Precise Plan include the proposed street typologies and complete street network.

   Option: Modify the proposed street typologies and/or street network.

2. Transportation Network Backbone

   Staff recommends that the Precise Plan include the proposed transportation network backbone of priority transportation improvements.

   Option: Modify the proposed transportation backbone network.

3. TDM Strategies

Staff recommends TDM Strategy No. 3 (Traditional TDM + Vehicle Trip Cap + Congestion Pricing Policies) as the preferred TDM Strategy for the Precise Plan.

Alternatives: (1) Recommend TDM Strategy No. 1;
(2) Recommend TDM Strategy No. 2; or
(3) Provide direction on other transportation strategies.

NEXT STEPS

The EPC and City Council have previously provided input and direction on several major Precise Plan topics, including a preferred land use strategy that allows more freeway-focused growth; the location and urban design guidance for Precise Plan "character areas" (Core, General, Edge); the location of maximum building heights; and policy direction on key topics such as a Habitat Overlay Zone, sustainability framework, and FAR bonuses. Attachments 2 and 3 include key draft Precise Plan land use strategy maps. With final Council direction on transportation topics, the Precise Plan team will be able to finalize content for the Draft Precise Plan. The Draft Precise Plan and EIR will then be released for public review in July 2014. Hearings on the Precise Plan are expected in fall 2014, at which time the EPC and City Council can review the details and how the different Precise Plan elements are integrated, and then fine-tune the materials as deemed appropriate.

PUBLIC NOTICING

Courtesy notices were sent to the North Bayshore Precise Plan interested parties list.

MA-TB-RT/7/CAM
891-04-28-14SS-E

Attachments:
1. North Shoreline Transportation Study: Key Strategies
2. Draft North Bayshore Precise Plan Preferred Land Use Strategy
3. Draft North Bayshore Precise Plan Maximum Building Heights