

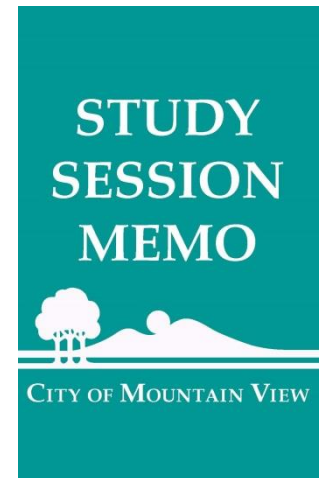
DATE: April 25, 2017

TO: Honorable Mayor and City Council

FROM: Martin Alkire, Principal Planner
Randal Tsuda, Community Development
Director

VIA: Daniel H. Rich, City Manager

TITLE: **North Bayshore Precise Plan Transportation
Analysis**



PURPOSE

The purpose of this meeting is to present additional North Bayshore Precise Plan transportation analysis. The Council is asked to provide input, and then staff will bring any recommended Precise Plan edits back to the Environmental Planning Commission and City Council in June when the Precise Plan will be considered for adoption.

BACKGROUND

The North Bayshore Precise Plan Public Draft was released in fall 2016 and reviewed by the Environmental Planning Commission (EPC) and City Council on November 16 and November 29, respectively. The North Bayshore Precise Plan Environmental Impact Report (EIR) was released on March 2, 2017 and the public comment period ended on April 17, 2017. The Plan and EIR are available on the Planning Division's website at <http://www.mountainview.gov/depts/comdev/planning/activeprojects/northbayshore/nbppupdate.asp>.

The EPC and Council held meetings in 2016 to discuss North Bayshore Precise Plan preliminary transportation analysis. Exhibit 1 includes a summary of comments from these meetings. The staff reports from these meetings can be viewed at <http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=20593> and <http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=20675>.

This report is based on technical analysis and transportation model outputs from the City's transportation consultants. The assumptions and technical information behind this analysis are included in Appendix J, Transportation Impact Analysis, of the North Bayshore Precise Plan EIR.

The EPC discussed this item at their April 19, 2017 meeting. Their comments are included within each topic in the report.

DISCUSSION

The following analysis responds to the following North Bayshore Precise Plan transportation topics and questions discussed at the September 27, 2016 City Council meeting:

- **Live/Work Data Comparison**
 - What is the proportion of live-work residents in similar communities in the San Francisco Bay Area and other urban areas?
 - What are the estimated trip internalization rates for the different North Bayshore land use/gateway capacity scenarios?
- **Vehicle Trip Generation and Gateway Capacity**
 - How do different residential characteristics affect the amount of vehicle trips generated?
 - How much do we need to adjust land use and household characteristics to stay within the gateway capacity?
 - How does the addition of residential uses affect gateway capacity?

The analysis concludes with some transportation-related policy options that could increase vehicle capacity and reduce residential trip generation at the North Bayshore gateways.

I. Live-Work Data

Table 1 below compares live-work data with Mountain View and several Bay Area cities and other cities across the country. The purpose of this data is to present some existing context to this issue, and then compare this data to the live-work data from the North Bayshore land use and transportation scenarios analyzed in this report.

Table 1: Observed Live-Work Percentage of Other Communities

Area	Total Employed Residents	Total Jobs	Jobs / Employed Resident	Live-Work Percentage
City of Mountain View				
City of Mountain View	39,605	62,135	1.6	27.4%
Other Bay Area Communities				
City of South San Francisco	30,850	43,905	1.4	23.7%
City of Pleasanton	32,515	51,695	1.6	33.8%
City of Palo Alto	29,185	80,715	2.8	36.8%
Other Bay Area Neighborhoods				
North Santa Clara	11,180	40,535	3.6	13.6%
Mission Bay (San Francisco)	5,605	27,105	4.8	15.0%
Downtown San José	6,895	35,600	5.2	15.6%
Bishop Ranch (San Ramon)	3,930	19,820	5.0	16.0%
Redwood Shores	6,015	17,795	3.0	18.3%
City of Emeryville	5,775	20,630	3.6	22.3%
North San José	8,270	71,180	8.6	25.7%
Highly Urban Neighborhoods				
Downtown Oakland	2,310	54,955	23.8	29.9%
Downtown San Francisco	9,650	189,865	19.7	38.9%
Downtown Seattle	11,495	112,920	9.8	39.1%
Lower Manhattan	165,840	701,680	4.2	41.5%

Source: Census Transportation Planning Package (CTPP) 2006-2010.

Discussion:

- **Table Data.** Table 1 compares total employed residents for each city, total number of jobs, jobs/employed residents ratio, and the approximate live-work percentages. The live-work percentage listed in the table can also be referred to as a residential trip internalization percentage previously discussed with EPC and Council—the percentage of employed residents of a city who work in that same city or area. The data is based on the Census Transportation Planning Products (CTPP) 2006-2010.
- **Live-Work Comparisons.** Table 1 compares live-work percentages ranging from a low of 13.6 percent for North Santa Clara to a high of 41.5 percent for lower Manhattan. These live-work percentages can be broken down by complete communities (23.7 percent to 36.8 percent), neighborhoods with a high concentration of jobs (13.6 percent and 25.7 percent), and highly urbanized neighborhoods (29.9 percent and 41.5 percent).
- **Live-Work Percentage: An Output that Changes with Residential Type and Parking Supply.** Staff notes that live-work percentages are considered an “output” to various factors or inputs. In other words, the trip internalization percentage reflects factors within a defined area, such as the amount and type of housing, parking ratios, available public transportation options, and number of jobs.

Analysis:

- **Higher Live-Work Percentages and Complete Communities.** The observed live-work percentage tends to be higher in complete communities with lower job concentrations (such as Mountain View, South San Francisco, Pleasanton, and Palo Alto), and tends to be lower in the individual neighborhoods with higher job concentrations (such as North Santa Clara, Downtown San Jose, and Redwood Shores). This finding makes sense due to the size and composition of each area. Complete, full-service cities such as Mountain View and Pleasanton have large populations and a wide range of jobs available in many different sectors, making it more likely for residents to find work within the same city. Neighborhoods such as North Santa Clara or Redwood Shores cover a much smaller geographic area and have employment that is concentrated only in certain industries or job types, so it is less likely for local residents to work nearby.

- **North Bayshore Live-Work Percentages.** Chart 1 below includes estimated live-work percentages for the different Precise Plan scenarios discussed in Section II of this report. Higher live-work percentages were tested by adjusting the number of dwelling units, the residential housing mix, and parking supply. Over time, the actual live-work percentage will be reported through North Bayshore Transportation Demand Management (TDM) monitoring and surveys.

Adding residential uses to North Bayshore is beneficial in that it reduces vehicle trips due to an increased proportion of internalized person trips, meaning that some people could accomplish many or all of their daily needs by traveling within North Bayshore using transit and/or active modes such as biking and walking instead of driving across one of the external gateways. The live-work percentage changes with the number of residential dwelling units, the mix of residential units, and the residential parking supply. Additional supporting data regarding these live-work percentages are included in the North Bayshore EIR (Appendix J, Transportation Impact Analysis).

II. Vehicle Trip Generation and Gateway Capacity

Discussion:

Existing Travel Patterns. The vehicle capacity at the gateways is determined by the amount of both North Bayshore inbound and outbound vehicle traffic. The morning commute hours already include substantial congestion resulting from office workers entering North Bayshore. The evening commute hours, conversely, include substantial vehicle trips exiting North Bayshore.

Additional Scenario Testing. Based on direction from the City Council at their October 18, 2016 Study Session, additional land use and transportation scenarios were analyzed to show how all 9,850 dwelling units envisioned by the Plan could be accommodated with three gateways. These scenarios changed the size of residential unit and parking supply (1.2 parking spaces per dwelling unit to 0.25 parking spaces per dwelling unit) to determine their trip generation. These five additional scenarios are shown in the tan bars in the chart below, with more comments included below. Each scenario indicates their estimated number of vehicle trips. Below each scenario are their inputs, including the number of dwelling units, size of dwelling units, and parking ratio. Each scenario also includes an estimated live-work percentage.

Chart definitions: Standard DU's (2.10 persons/unit); Smaller DU's (1.75 persons/unit); Studio DU's (1.0 persons/unit).



Dwelling Unit (DU) and Parking Scenarios

- **Gateway Capacity.** Horizontal lines on Chart 1 show the adopted gateway capacity (8,100 total a.m. peak-hour vehicles) and the mixed-use gateway capacity with new residential uses (8,290 total a.m. peak-hour vehicles). The gateway capacity assumes that the Precise Plan priority improvements are in place (such as the Plymouth Street realignment with Space Park Way, the Inigo Way extension to Charleston Road, the frontage road along U.S. 101 between Alta Avenue and the Shoreline Commons site, etc.).
- **Chart Bars.** The chart bars indicate the total (inbound and outbound) number of vehicle trips associated with each scenario. Below each bar are the inputs for each scenario, including the number of dwelling units, size of dwelling units, and parking ratio. “Standard dwelling units” refers to a household size of 2.1 persons per dwelling unit; “Smaller dwelling units” refers to a household size of 1.75 persons per dwelling unit; and “Studio dwelling units” refers to a household size of 1.0 persons per dwelling unit. The smaller unit scenario also reflects the policy direction for the Plan of a mix of units trending toward smaller sizes (40 percent studio, 30 percent 1-bedroom, 20 percent 2-bedroom, and 10 percent 3-bedroom). For purposes of this report, this mix of units will be referred to as **neighborhood residential**. In some scenarios, the total traffic may appear lower than the total capacity; however, the scenario exceeds the peak capacity inbound or outbound during the a.m. or p.m. peak hour.

Analysis:

- **Significance of Residential Uses and Travel Patterns.** New residential units in North Bayshore will include some vehicle trips exiting the area during the morning commute period and entering the area during the evening commute period. This generally has a complementary effect to the current vehicle travel patterns in the area. However, as the number of residential units in North Bayshore increases, this residential trip behavior has an impact on inbound North Bayshore traffic and gateway capacity. For example, the planned residential uses for North Bayshore will be on either side of Shoreline Boulevard. This means that much of the traffic leaving in the morning will use the area’s east-west streets, and then turn onto southbound Shoreline Boulevard. Signal timings along Shoreline Boulevard will need to be adjusted to accommodate this increased number of turning vehicles, and left-turning vehicles onto Shoreline Boulevard in particular will interrupt the flow of northbound vehicles entering North Bayshore. Thus, the additional residential traffic causes a small increase in total gateway capacity.

- **Neighborhood Residential (1,500 to 3,000 Dwelling Units, Three Gateways).** As noted, the initial analysis showed that approximately 1,500 to 3,000 dwelling units could be accommodated under the three gateways to/from North Bayshore. These scenarios indicate that approximately 1,500 to 3,000 residential units (purple bars in Chart 1 below) could be added to North Bayshore without exceeding the area's vehicle capacity at the three gateways (Shoreline Boulevard, Rengstorff Avenue, and San Antonio Road). Approximately 1,500 dwelling units could be built if we assume 1.2 parking spaces per unit, or up to 3,000 units with 0.6 parking spaces per unit. The estimated live-work percentages of North Bayshore residents under these scenarios would be between 47 percent and 67 percent.
- **Studio Residential Scenario (9,850 Dwelling Units, Three Gateways).** To accommodate the Plan's vision for up to 9,850 dwelling units with three gateways, studio apartments could be built with a 0.25 parking space per unit ratio. The estimated live-work percentage of North Bayshore residents under this scenario would be 81 percent. That would essentially mean that these units would be very small units with very limited parking. These characteristics would not align with the Plan's direction for a mix of housing sizes that serves a diverse community. It is also unclear how feasible or attractive this housing type and parking ratio would be for residential developers. However, given the large amount of jobs in North Bayshore, some amount of small/studio units at reduced parking ratios would likely be feasible.
- **Parking Ratios and Scenarios.** The Draft Plan is recommending a 0.6 average parking space per unit ratio to support the vision for North Bayshore as an urban, "car-lite" neighborhood. As discussed previously, implementing this lower-than-standard parking ratio may be challenging for residential developers and future residents in the near future given the lack of public transportation options currently in the area. The trip generation analysis tested residential parking supply ratios between 0.25 and 1.2 parking spaces per dwelling unit. The City Council discussed this issue at their November 29, 2016 meeting, and noted that initial residential development in North Bayshore may need a higher parking ratio until more multimodal improvements are in place in the area.

III. Draft North Bayshore Precise Plan EIR

The following is a discussion of key Draft Precise Plan EIR topics, with a focus on transportation.

Transportation – Intersection and Freeway Segments

The EIR uses vehicle level of service (LOS) analysis to measure potential impacts to intersections. LOS levels range from LOS A (free-flowing conditions) to LOS F (where vehicle demand exceeds capacity and results in high levels of vehicle delay). LOS E represents “at-capacity” operations.

The EIR analysis assumes a maximum build-out of 9,850 units and a standard (1.2 parking spaces/unit) ratio in North Bayshore. Staff notes that the Precise Plan sets a high bar for future projects to limit their parking to an average 0.6 spaces per unit. However, the EIR analysis uses the conservative estimate of 1.2 parking spaces per unit since the area has limited public transportation options and a lack of daily goods and services, such as a grocery store. Therefore, some initial projects may need parking that exceeds the Plan’s standards. This conservative estimate was chosen so as not to underestimate potential impacts under CEQA, but does not preclude future projects from addressing the ambitious goals for the Plan by limiting their amount of parking.

The EIR analysis results in significant impacts to a number of intersections and freeway segments. This includes impacts to 22 intersections (either a.m. and/or p.m. peak hours), of which mitigations can be applied to four of these to reduce their impact to less-than-significant levels. The project also results in impacts to 74 freeway segments in the a.m. peak hour and 84 freeway segments in the p.m. peak hour. The City currently does not have a mitigation measure that can help reduce impacts to regional facilities such as freeways, so these impacts remain significant and unavoidable.

The Year 2030 cumulative scenario, which includes the proposed Precise Plan in addition to transportation assumptions in the VTA 2040 Plan and land use projections from the Mountain View General Plan and adjacent cities, would result in impacts to 45 intersections (either a.m. and/or p.m. peak hours), of which mitigations can be applied to six of these to reduce their impact to less-than-significant levels. The Year 2030 cumulative scenario also results in significant impacts to 130 freeway segments in the a.m. peak hour and 121 freeway segments in the p.m. peak hour. The complete list of these intersection and freeway segment impacts, along with other EIR impacts, are included in Section 4.14 of the EIR. Staff notes that additional growth in the region would still result in significant impacts to area intersections and freeways segments, even if the City did not approve the proposed North Bayshore Precise Plan project.

Vehicle Miles Traveled and Level of Service (LOS)

Vehicle Miles Traveled (VMT) is another metric besides LOS that can be used in transportation analysis. The State of California, under SB 743 (adopted September 27, 2013), will change some of the significance criteria used in CEQA analysis. Specifically, once the legislation is implemented, vehicle LOS will no longer be used as a determinant of significant environmental impacts, and an analysis of VMT will be required. LOS analysis has traditionally resulted in mitigation measures that require widening of streets to accommodate additional vehicles.

The timing of implementation of SB 743 is not known at this point, but implementation guidelines may be finalized in 2017, and agencies such as Mountain View will then have two years to comply. Several cities, such as San Francisco, Oakland, and San Jose, are in the process or are already using VMT as a transportation metric in their CEQA analyses. Mountain View has not started the process of potentially replacing LOS with VMT as a metric. This is a significant undertaking that will require outside assistance and staff has identified this issue as a potential work item to be addressed in the future.

Vehicle Miles Traveled and the North Bayshore Precise Plan

The VMT resulting from the North Bayshore Precise Plan is being presented below for informational purposes, as shown in Table 2. It shows that the Draft North Bayshore Precise Plan project increases absolute VMT, but decreases daily VMT per service population for the North Bayshore Area from 31.3 to 29.1.

This demonstrates that providing housing near jobs increases trips that remain within a local area, thus shortening travel distances and increasing residents' ability to accomplish some travel needs by walking, cycling, or using transit. These results also help support other important local and regional transportation and sustainability planning goals, such as creating neighborhoods with more services and active transportation options for residents.

Table 2: VMT Per Service Population (Total VMT Accounting)		
	Year 2030 Cumulative Without Project	Year 2030 Cumulative With Project
North Bayshore		
Daily Vehicle Miles Traveled (VMT)	1,208,320	1,655,690
Service Population	38,650	56,910
Daily VMT Per Service Population	31.3	29.1
City of Mountain View		
Daily Vehicle Miles Traveled (VMT)	6,597,830	6,826,300
Service Population	179,300	197,560
Daily VMT Per Service Population	36.8	34.6
Santa Clara County		
Daily Vehicle Miles Traveled (VMT)	79,671,050	79,653,380
Service Population	3,367,000	3,385,260
Daily VMT Per Service Population	23.7	23.5

Notes: 1. Rounded service population and VMT to nearest 10.

2. Service population is defined as the sum of all residents and employees.

Source: City of Mountain View Model, Fehr & Peers, December 2016.

Greenhouse Gas (GHG) Emissions

Staff also notes that the project's total VMT increases, which results in significant unavoidable GHG emissions impacts. This is because of the large number of units (9,850) proposed by the Plan, the number of vehicle trips they will generate, and their expected travel patterns to other areas in the region. The EIR notes as mitigation that North Bayshore Bonus FAR projects will be required to incorporate feasible project measures in the areas of increased energy efficiency, materials management, and mobility to help reduce GHG emissions resulting from the project. For other North Bayshore residential and commercial projects, the City will develop a list of additional GHG reduction measures based on adopted recommendations from the Bay Area Air Quality Management District, City policy documents, and other sources. A key measure discussed later in this report related to this discussion includes a proposed residential vehicle trip performance standard for North Bayshore.

Stevens Creek Bridge Crossing Analysis

On November 10, 2015, the City Council directed that a further “high-level” analysis be done regarding a potential Stevens Creek bridge crossing. Note that no specific bridge design is proposed at this time; this is a policy-level analysis. The analysis below considered the potential impacts and benefits resulting from a new bridge at either the Charleston Road or La Avenida locations. Based on past studies and the mobility goals for the area, it is assumed that the bridge crossing would not serve single-occupancy vehicles, but could serve transit such as buses, light rail, carpools, or other technologies. It should be noted that VTA is doing a study funded by Google to extend some form of transit from the NASA Light Rail Station into North Bayshore, crossing Stevens Creek at some location.

- **Stevens Creek Bridge Crossing: Transportation Analysis.** The following is a high level transportation analysis of a potential Stevens Creek bridge crossing at either Charleston Road or La Avenida, as shown below.

Map 1: Potential Stevens Creek Bridge Locations



A new Stevens Creek bridge crossing, in general, would result in several transportation benefits for the area:

- Implements a General Plan goal (LUD 17.1)—Improve connectivity and integrate transportation services between North Bayshore, downtown, NASA Ames, and other parts of the City;

- Improves travel times for local and regional transit vehicles that can bypass 2 to 3 miles of congested freeways;
- Improves transit routing options and potential to increase transit service to meet TDM goals in North Bayshore and NASA Ames.

The following is a summary comparison of the two proposed locations, Charleston Road or La Avenida, from a transportation network perspective.

Charleston Road. A bridge at this location would provide a direct connection to the Charleston Road transit boulevard envisioned by the Precise Plan, thus allowing for improved transit circulation and travel times. It would also align better with the current work being done on RT Jones Road on the NASA Ames area.

Its relatively straight approaches would be more compatible with a potential future fixed transit guideway system extension. It would accommodate bicyclists and pedestrians from the Bay Trail, and have minimal impact on the local street networks on either side of the creek. This option would require coordination and approval from NASA Ames, PG&E, the Water District, and possibly other agencies.

La Avenida. To support a bridge crossing at this location, both the east and west approaches would need additional street improvements, such as additional turns, which may make it more difficult to accommodate future fixed transit guideway system vehicles if such a system were developed in the future. This option would also require coordination and approval from the Water District and NASA Ames and the U.S. Army, as it would need to extend through the US Army Reserve property.

- **Stevens Creek Bridge Crossing: Biological Resources Analysis.** The EIR discloses potential impacts from a new Stevens Creek bridge to biological resources in the area, such as plant and animal species and bird strikes from a bridge design, and lists several mitigation measures (i.e., preconstruction surveys of nesting areas; special measures related to protection of fish species; measures to address wetland, aquatic, and riparian habitat and trees; special bridge design parameters to reduce bird collisions) that any future bridge project would need to include. The EIR concludes that for either bridge option, any potential biological impacts could be mitigated to less-than-significant levels through application of mitigation measures. A complete

description of these mitigation measures is included in Section 4.3.5.3 of the EIR.

It is important to note that if any Stevens Creek bridge project were proposed, a more detailed environmental analysis would be required based on the specific bridge location and bridge design which would provide more details than presented in this program-level EIR analysis. Additional information on this topic will be presented at the EPC and Council meetings.

IV. Precise Plan Policy Options

The rest of this report presents two North Bayshore Precise Plan **“policy packages,”** and then includes a discussion of each of the individual policy elements that make up each policy package.

“Policy Package” Options

The following two policy package options include estimated amounts of new housing units based on several policy elements. Both options use the same mix of housing units and parking standard.

The two options are intended to focus Council on the key housing and transportation policy approaches they support for the Precise Plan. The two options provide a context for understanding how the Plan, at a high-level, can either limit the amount of new housing based on existing gateway constraints, or better support the Draft Plan vision of up to 9,850 new units with more gateway improvements.

Table 3: North Bayshore Precise Plan Policy Package Options

		Policy Elements						
Policy Package Option	Approximate Number of Dwelling Units	Mix of Units	Parking	Gateways	Residential Vehicle Performance Standard	Decrease Single Occupancy Vehicle (office)	Congestion Pricing	District Transportation Performance Monitoring
1	~2,500 to 3,000 ¹	Neighborhood Residential ²	0.6 spaces per unit ³	Existing Gateways + Optional Stevens Creek transit-only bridge	Included in option	Not included in option	Not included in option	Included in option
2	~7,000 to 9,850 ¹	Neighborhood Residential ²	0.6 spaces per unit ³	Existing Gateways + Stevens Creek transit- and carpool-only bridge + Charleston Road Underpass of U.S. 101	Included in option	Not included in option	Not included in option	Included in option

¹ Phase in of Plan's parking standards may impact the total number of units.

² Includes 40 percent micro, 30 percent 1-bedroom, 20 percent 2-bedroom, and 10 percent 3-bedroom (Draft Plan standard).

³ Draft Plan standard.

The major difference between the two options is the number of units that can be added to the area based on gateway improvements. Option 1 includes an optional Stevens Creek transit-only bridge; staff notes that the transit-only bridge option does not add significant vehicle capacity. Option 2 assumes a Stevens Creek transit and carpool bridge, as well as a new Charleston Road underpass of Highway 101.

Precise Plan Policy Elements

The following section includes a detailed discussion of the policy elements that comprise the two summary policy package options above. The City Council could adjust the policy packages by policy element, or could create a new policy package by selecting a different mix of policy elements.

1. Adjust Precise Plan Household Characteristics

Discussion:

The Draft Plan includes the following:

- A vision, land area, and zoning standards that could allow up to 9,850 units;
- A unit mix of 40 percent studio, 30 percent 1-bedroom, 20 percent 2-bedroom, and 10 percent 3-bedroom;
- An average parking ratio of 0.6 parking spaces per unit for the area; and
- Analysis using three North Bayshore gateways.

Analysis:

- **Parking Ratio Flexibility.** Based on Council direction from their November 29, 2016 meeting, the Draft Plan will propose language that allows initial residential projects to include more parking than the draft parking standards. The exact parking ratio will be determined based on a project-specific study, noting factors such as proposed unit mix, proposed TDM Plan, and available or proposed multimodal improvements.

- **Adjusting Household Characteristics and Plan Vision.** The Plan's household characteristics, such as requiring smaller units or lower parking ratios, could be adjusted to reduce vehicle trip rates and therefore allow for additional housing units. However, adjusting these characteristics to include smaller units and lower parking ratios would be different than previously described in the Plan's vision and studied in the EIR, and would require additional time and budget which could result in delays to the Precise Plan schedule.
- **Implementation Challenges.** Adjusting these characteristics may result in difficulty for developers to finance or build projects, particularly further-reduced parking ratios, since multimodal improvements have not yet been implemented in the area.

EPC Comments:

- Majority support to maintain the Plan's household characteristics (mix of units and parking ratio).
- Concern over the low parking ratio, but also noted importance of being restrictive with parking in order to achieve the Plan's vision of less cars.

Council Question No. 1: Does the Council wish to adjust the Precise Plan's household characteristics for unit size mix and/or parking ratios?

2. Increasing the Number of North Bayshore Gateways

Discussion:

Currently, there are three gateways into North Bayshore (San Antonio Road, Rengstorff Avenue, and Shoreline Boulevard) which determine the capacity of vehicles that enter/exit North Bayshore. Increasing the number of gateways has the potential to increase the overall vehicle capacity for the North Bayshore Area and spread vehicle traffic more evenly to the local streets. The two additional gateways listed are a Stevens Creek (transit and carpool) bridge and a Charleston Road underpass, which are further described below.

For discussion purposes, Table 1 below describes several residential scenarios (i.e., size, number in household, and parking ratio) and shows how many total residential units can be achieved with each scenario, based on the number of North Bayshore gateways and their vehicle capacity. This is an

initial high-level assessment, but it shows how adding gateways and adjusting residential unit characteristics can affect the number of residential units in North Bayshore.

Table 1: Residential Units by Number of Gateways and Residential Scenario

Residential Scenario	Household Size Per Unit	Parking Supply Per Unit	Total New North Bayshore Residential Units
Existing Gateways: Shoreline Blvd., Rengstorff Ave., San Antonio Road*			
• Neighborhood Residential** with Standard Parking Ratio	1.75	1.2	1,500 to 2,000 DUs
• Neighborhood Residential with Proposed Draft Plan Parking Ratio (<i>DRAFT PRECISE PLAN</i>)	1.75	0.6	2,500 to 3,000 DUs
• Studio Apartments	1.0	0.25	~9,850 DUs
Existing Gateways + Stevens Creek Transit and Carpool Bridge			
• Neighborhood Residential with Standard Parking Ratio	1.75	1.2	3,000 to 4,000 DUs
• Neighborhood Residential with Proposed Draft Plan Parking Ratio	1.75	0.6	5,000 to 6,000 DUs
• Mix of Studio Apartments and Neighborhood Residential	1.0 - 1.75	0.25 to 0.6	~9,850 DUs
Existing Gateways + Stevens Creek Transit and Carpool Bridge + Charleston Road Underpass of U.S. 101			
• Neighborhood Residential with Standard Parking Ratio	1.75	1.2	3,500 to 5,000 DUs
• Neighborhood Residential with Proposed Draft Plan Parking Ratio	1.75	0.6	7,000 to 9,850 DUs

* Could also include a Stevens Creek bridge with transit only, which would not significantly add additional vehicle capacity.

** "Neighborhood Residential" reflects the Draft Plan neighborhood mix of units (40 percent micro/30 percent 1-bedroom/20 percent 2-bedroom/10 percent 3-bedroom).

Stevens Creek Bridge

The EIR analyzed a potential new bridge over Stevens Creek connecting North Bayshore with NASA Ames at either Charleston Road or La Avenida. This bridge would likely be limited to transit vehicles such as shuttles and

buses, but could also potentially serve carpool vehicles, bicyclists, and pedestrians.

The EIR analysis estimates that approximately 30 to 80 a.m. inbound peak-hour buses would shift from using Shoreline Boulevard to this new bridge. This would improve transit vehicle access to/from North Bayshore and would redistribute transit vehicles further from Shoreline Boulevard. If carpool/vanpool vehicles were also allowed on the new bridge, then an estimated 800 to 1,200 peak-hour vehicles might use this new crossing.

Charleston Road Underpass

The North Shoreline Transportation Study completed in 2013 identified a Charleston Road underpass as a potential new gateway into North Bayshore, as shown below.

Figure 4-3: Charleston Interchange



This new underpass could connect Charleston Road on the west side of Rengstorff Avenue with Landings Drive on the east side of Rengstorff Avenue through a tunnel underneath Highway 101. The underpass could include reversible travel lanes to allow commuters into North Bayshore during the a.m. peak period, and then be reversed to allow commuters to exit

North Bayshore during the p.m. peak period. It could also include bicycle and pedestrian access. The underpass could connect with Landings Drive, near the location of Google - Landings' Bonus FAR site reviewed by Council in 2015.

Analysis:

- **Effect of New Gateways.** Adding new gateways to North Bayshore would have a significant impact on adding vehicle capacity to the area and distribution of vehicle traffic to the street system. This would create more vehicle capacity, which in turn could allow more residential units in the area, as shown in the last column in Table 4.
- **Additional Study Needed.** Adding any new gateway requires substantial time and effort, and would require studies to determine feasibility, cost, impacts, and design parameters.

EPC Comments:

- Stevens Creek Bridge
 - Majority support Charleston Road location.
 - Some support use of bridge for carpool in addition to transit.
 - Desire to see more information and analysis of any new carpool/transit use of bridge.
- Charleston Road Underpass
 - All support for adding a feasibility study as a Precise Plan action item.

Council Question No. 2 :

Should the Precise Plan include a policy and action item supporting a new Stevens Creek transit-only bridge crossing, either with or without carpools? If so, should the Plan indicate a preferred location, at either Charleston Road or La Avenida?

Council Question No. 3:

Does the Council support adding a Precise Plan action item for a Charleston Road underpass feasibility study?

3. Include a Residential Vehicle Trip Performance Standard

Discussion:

Residential Vehicle Trip Performance Standard Defined

A residential vehicle trip performance standard is already assumed for the Plan, based on completed trip generation estimates. The Precise Plan could include a policy that formally sets and enforces a performance metric for new residential projects to ensure they are efficient in limiting their number of vehicle trips. The performance standard would be an estimated trip per unit factor, and would be based on the Plan's household residential characteristics (i.e., number of total units, size of unit, parking ratio). The exact standard, if desired, would be determined through a Precise Plan action item.

A new residential development would propose how they planned to meet this standard through their TDM Plan, project design (smaller units, reduced parking), or other measures. If a project could not meet the trip performance standard, then this would be disclosed during the entitlement process, and would note how close the project is to complying with the Plan standard. It could then influence project-level decisions on the size of units, parking ratio, or TDM measures.

The City would then monitor the project's trip performance standard and TDM plan once a year. If a project's approved trip performance standard was not met, then the project would be given additional time to implement new TDM or other measures, such as increased transit subsidies for residents, additional car-share service, increased Transit Management Association (TMA) contributions, and/or charging for parking through unbundled parking. They would then submit a revised TDM Plan the following year, and if they still did not meet the trip performance standard, then additional measures could be considered based on further discussion between a project developer and the City.

Precise Plan and Office Trips. A residential vehicle trip performance standard would be a similar approach to the Plan's performance

measurement approach for office uses in North Bayshore, where office uses must meet a 45 percent single-occupancy vehicle (SOV) rate, and driveway vehicle trip monitoring is conducted at least annually to confirm each office development is generating office trips at or below their fair share of vehicle trips.

Analysis:

- **Focus on Performance and Flexibility.** This approach focuses on a project's performance in meeting vehicle trip reduction goals, yet provides flexibility for how a project could best meet the vehicle trip reduction goal.
- **Cobenefits for Transportation and GHG Emissions.** A trip performance standard is noted in the Draft EIR as a potential mitigation measure for addressing the Plan's increased GHG emissions. A trip performance standard could be an effective strategy that helps reduce both vehicle trips and GHG emissions.

EPC Comments:

- All support adding a standard to the Plan.
- Noted concern that there should be consequences if projects cannot meet standard, such as increased TDM requirements or other considerations.

Council Question No. 4: Does the Council support adding a Precise Plan policy and action item regarding a residential vehicle trip performance standard?

4. Decrease SOV Rate for Office

Discussion:

Currently, the Precise Plan requires new office developments meet a 45 percent SOV rate.

Approximately 2.2 million square feet of Bonus FAR office projects in North Bayshore have not yet been formally entitled. This includes Google – Landings, Shoreline Commons (formerly LinkedIn, now owned by Google), and Rees Properties at Casey Avenue. If the Precise Plan office SOV standard were lowered from 45 percent, then this would shift office-related vehicle

trips to potential residential trips. This could allow for some additional residential units to be built in North Bayshore.

Analysis:

- **Feasibility.** Reducing SOV rates below 45 percent may be challenging at this time without further accelerating investments in transit, multimodal infrastructure, or substantial new TDM requirements.

EPC Comments:

- Majority support for studying this as a Precise Plan action item.
- Concerned over staff resources and when this study could be taken on.

Council Question No. 5: Does the Council support a Precise Plan action item to study the feasibility of reducing SOV rates for office?

5. **Congestion Pricing**

Discussion:

The Precise Plan includes congestion pricing as a potential “last resort” strategy if other strategies are unsuccessful in reducing gateway vehicle congestion. Congestion pricing would involve charging motorists entering North Bayshore during peak demand periods. The revenues generated from this could then be used to fund area transportation improvements. A congestion pricing feasibility study could be added as a Precise Plan action item.

Analysis:

- **Congestion Pricing Feasibility Study.** A feasibility study would include the costs, benefits, and evaluation of a congestion pricing system for North Bayshore.
- **Community Outreach.** Additional community outreach would be needed to solicit community input on any potential congestion pricing system.

EPC Comments:

- Majority support for studying this as a Precise Plan action item.
- Concerned that this study would be too soon, that area is not ready for it.
- Note action item as a “low priority,” or allow “in the future, when resources allow.”

Council Question No. 6: Does the Council support a Precise Plan action item to include a congestion pricing feasibility study?

6. District Transportation Performance Monitoring

Discussion:

Maximizing Residential Units and Gateway Capacity

The Draft North Bayshore Precise Plan envisions a new urban neighborhood of up to approximately 9,850 new units. This maximum residential development envelope was analyzed in the EIR. This report has discussed several high-level strategies and policies to potentially maximize the amount of residential units given gateway capacity limitations.

Monitoring

To report the amount of existing gateway capacity in North Bayshore, the City prepares an annual North Bayshore Trip Cap report. The Draft Precise Plan requires projects to submit an annual TDM report to the City. Some of the Draft Plan’s TDM measures include requirements such as Mountain View TMA membership, subsidized Caltrain passes for residents, car-share parking spaces, unbundled parking, and others. The Plan also requires an annual TDM Plan Report be submitted to the City.

Analysis:

- **Importance of Monitoring.** Future monitoring of new development, site-specific TDM plan implementation, and new transportation improvements in the North Bayshore District will be critical to how the overall land use and transportation system will function in the area.

Given the uncertainty of future projects and their effects on actual “on-the-ground” results, the EPC could consider a Precise Plan “North Bayshore District Transportation Performance Monitoring” policy. A draft policy could state:

“North Bayshore District Transportation Performance Monitoring.

The City shall monitor the performance of the North Bayshore District with the objective to assess gateway vehicle operations and accommodate additional residential development. This information shall be added to the annual North Bayshore Trip Cap report. This report shall be provided to the City Council and will include, but is not limited to, the following: analysis of the area’s gateways and other area streets, including vehicle capacity; vehicle delays and congestion; analysis of the location and number of office and residential projects built or proposed in the area; a list of the area’s priority transportation improvements that have been built, or the timeline of when such construction will occur; a summary of the office and residential TDM plans implemented in the area; and a survey of North Bayshore residents, indicating their general travel behavior.”

EPC Comment:

- All supported including this in the Precise Plan as a policy and action item.

Council Question No. 7: Should the Precise Plan include a North Bayshore District Transportation Performance Monitoring policy and action item?

RECOMMENDATION

Staff recommends that the Council provide input on the questions listed in this report.

NEXT STEPS

Staff and the consultant team will take the Council input and incorporate it into a summary document. This summary document will then be presented to the EPC and City Council at the public hearings to consider adoption of the Public Draft and certification of the EIR in June 2017.

PUBLIC NOTICING

The Commission's agenda is advertised on Channel 26, and the agenda and this report appear on the City's Internet website at www.mountainview.gov. Notices were also sent to the North Bayshore Precise Plan interested parties list.

MA-RT/7/CAM

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Attachment: 1. Summary of EPC and City Council Meetings (September 2016)