North Bayshore Master Plan: Transportation Analysis for the Environmental Review

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City of Mountain View

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SJ21-2116

FEHR PEERS

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Executive Summary

This report presents the results of the transportation analysis (TA) conducted to evaluate the environmental effects of the proposed North Bayshore Master Plan (NBS Master Plan). This transportation analysis supplements the findings in the Final Subsequent Environmental Impact Report (EIR) for the North Bayshore Precise Plan (NBPP) that was certified in November 2017. The 2017 analysis disclosed the potential transportation effects of this project on the natural and human environment using vehicle level of service. Since then, the regulatory environment has changed by an update of the *California Environmental Quality Act Statutes and Guidelines* (December 2018) to require the use of vehicle miles traveled (VMT) for transportation impact assessment.[1] As has been the practice for many years, the NBPP already included VMT as an input into the air quality, greenhouse gas analysis, and energy sections of the NBPP EIR. However, VMT was not used as an impact metric for the NBPP transportation analysis. The City conducted a new VMT impact analysis for the proposed NBS Master Plan to disclose the potential direct, indirect, and cumulative effects of the project on the environment from a transportation perspective.

Except for the Amphitheatre District garage (SA-P-1), the NBS Master Plan area is within the North Bayshore District and the NBPP area, which is bounded by the Shoreline at Mountain View Regional Park in the north, US 101 to the south, Stevens Creek to the east, and San Antonio Road to the west.

Project Description

The NBS Master Plan includes a combination of land use, transportation infrastructure, district parking, and transportation demand management program improvements. To acknowledge the challenge of accessing North Bayshore by vehicle, and to be more in-line with the North Bayshore District Trip Cap Policy, the trip generation and vehicle miles traveled analysis presented in this report assumes the NBS Master Plan transportation demand management (TDM) measures achieve a 35% morning peak hour inbound single-occupancy vehicle (SOV) mode share at the driveways for non-residential development. **Figure ES-1** shows the Master Plan boundary and location within the NBPP as well as the surrounding transportation network.

[1] VMT refers to "vehicle miles traveled," a metric that accounts for the number of vehicle trips generated plus the length or distance of those trips. This report uses total VMT and boundary VMT metrics for specific geographic areas, which are defined in **Chapter 2**.

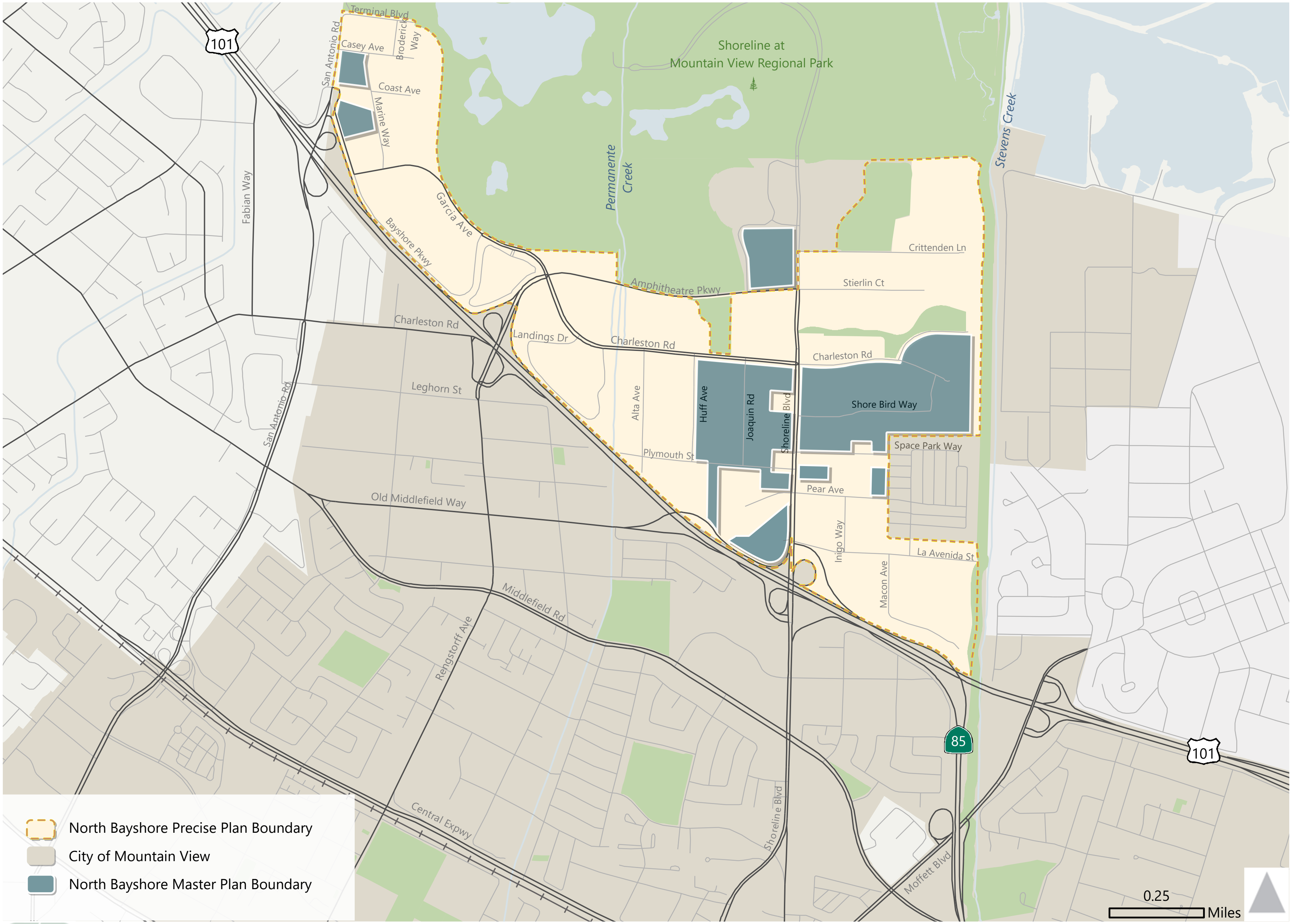

Figure ES-1

North Bayshore Master Plan Location

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Land Use Program

The total change in residential, office, retail, hotel, and community uses are shown in **Table ES-1**. The Project also includes 240 public parking spaces and 10 parking spaces for the police operations station that are added to the Amphitheater District Garage.

Table ES-1: North Bayshore Master Plan Land Use Program: Building Size

Land Use[1]	Units	Existing Conditions (2020)[2] [A]	Project Conditions (2030) [B]	Change [B-A=C]
Residential – Market Rate	Dwelling Units	0	5,600	5,600
Residential – Affordable	Dwelling Units	0	1,400	1,400
Office	Square Feet	8,653	3,145,897	3,137,244
Research & Development	Square Feet	1,642,061	0	-1,642,061
Industrial	Square Feet	92,497	0	-92,497
Retail/Commercial	Square Feet	0	240,000	240,000
Active Space Kiosks	Square Feet	0	4,000[3]	4,000
Hotel	Rooms	0	525	525
Community Uses	Square Feet	0	55,000[4]	55,000
Police Operations Station	Square Feet	0	2,000	2,000

Notes:

1. Because it is not a programmed land use, the 240 public parking spaces and 10 parking spaces for the police operations station that are added to Amphitheatre District Parking Garage is not included in this building summary.
2. Existing Conditions is relative to 2020. Vacant buildings for 2020 include the 91,392 square feet at 1400 North Shoreline Boulevard, and the 30,520 square feet at 1220-1230 Pear Avenue. These vacant buildings at 1400 North Shoreline Boulevard and 1220-1230 Pear Avenue were not included in the 2020 baseline and therefore, do not show up as a demolished building credit.
3. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate separate vehicle trips during a typical day, but rather attract walking and biking trips from the surrounding land uses.
4. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community uses would generate additional vehicle trips outside of the typical weekday.

Source: Fehr & Peers, 2022.

This project uses a combination of district parking and on-site parking for each land use. Each parking location will serve different land uses and thus affect how vehicles travel on the local streets. The land use program is described by parking location in **Table ES-2**, and the parking locations are shown in **Figure ES-2**.

Table ES-2: North Bayshore Master Plan Land Use Program: Building Size and Parking Location

Parking Location	Parking Spaces[1]	Residential: Market Rate (Dwelling Units)	Residential: Affordable (Dwelling Units)	Office (Square Feet)[2]	Retail/ Commercial Space (Square Feet)	Hotel (Rooms)
Joaquin Neighborhood						
1. District Garage (JN-P-1)[3,4,5]	500	0	0	0	35,000	0
2. North On-Site Parking	2,531	2,789	527	125,630	0	0
3. District Garage (JS-P-1)[4,5]	700	0	0	224,707	25,000	275
4. South On-Site Parking	746	720	294	25,000	0	0
Shorebird Neighborhood						
5. District Garage (SB-P-1)[3,4,5]	600	0	0	0	180,000	250
6. On-Site Parking	1,826	1,832	328	162,160	0	0
Pear Neighborhood						
7. On-Site Parking	331	259	251	0	0	0
Other Portions of the North Bayshore Master Plan						
8. Amphitheatre District Garage (SA-P-1)[6,7]	4,584	0	0	2,165,980	0	0
9. Marine Way District Garage (MW-P-1 and MW-P-2)	890	0	0	444,420	0	0
Total of North Bayshore Master Plan						
Total	**12,708**	**5,600**	**1,400**	**3,147,897**	**240,000**	**525**

Notes:
1. Parking spaces based on "Updated Car Parking" summary provided on October 19, 2022. Allocation of residential, office, and retail/commercial on-site parking spaces assumes that vehicles will park close to their desired destination; therefore, the on-site parking is distributed based on the land use allocation by neighborhood.
2. Assumes 90% of the office parking is assigned to the district garages (JN-P-1, JS-P-1, SA-P-1, MW-P-1, and MW-P-2) and 10% to the on-site parking locations in each neighborhood.
3. Also serves residential visitor parking.
4. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that would not generate vehicle trips during a typical day, but rather attract walking and biking trips from the surrounding land uses. Retail/commercial space parking when needed for events or specific active use programming would be provided in JN-P-1, JS-P-1, and/or SB-P-1.
5. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Community uses parking when needed for weekend events or specific active use programming would be provided in JN-P-1, JS-P-1, and/or SB-P-1.
6. The Amphitheatre District Parking Garage is the 4,334 parking spaces for the NBS Master Plan, 10 parking spaces for the police operations station, and 240 public parking spaces added to Amphitheatre District Parking Garage.
7. The office summary includes the 2,000 square foot police operations station.

Source: Fehr & Peers, 2022.

Transportation Infrastructure and District Parking Improvements

Per the March 2022 *North Bayshore Framework Master Plan* with September 2022 and December 2022 amendments, the project will also feature new streets and other transportation infrastructure (illustrated on **Figure ES-2**), and district parking (illustrated on **Figure ES-3**) including the following:

- New streets:
    - Monarch Street is a proposed two-lane east-west Neighborhood Street with bicycle facilities that extends from Huff Avenue to Shoreline Boulevard. Monarch Street continues east of Shoreline Boulevard from Grove Street (new street) to Black Street. It will have a separated/buffered one-way bike lanes on each side of the street.
    - C Street is a proposed two-lane north-south Neighborhood Street that extends south of Plymouth Street. It will have a separated/buffered one-way bike lanes on each side of the street.
    - Grove Street is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street.
    - Manzanita Street is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Charleston Road. It will have a separated/buffered one-way bike lanes on each side of the street.
    - Willow Street is a proposed two-lane north-south Neighborhood Street that extends from Monarch Street to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street.
    - Inigo Way is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Charleston Road. It will have a separated/buffered one-way bike lanes on each side of the street.
    - Shorebird Way is proposed to be extended to the east as a Neighborhood Street to Black Street (new street). It will have a protected bidirectional cycle track on the north side of the street and a multi-use path will on the south side of the street.
    - Black Street is a proposed two-way Access Street at the east terminus of Monarch Street extending north to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street. North of Shorebird Way, Black Street is proposed to be a one-way street with will have pedestrian access, bicycle access, and emergency vehicle access.
- Modified streets:
    - Huff Avenue between Plymouth Street and Charleston Road will be modified to a Neighborhood Street to include two travel lanes and a separated/buffered one-way bike lane on each side of the street.
    - Joaquin Road between Plymouth Street and Charleston Road will be modified to a Neighborhood Street to include two travel lanes and a separated/buffered one-way bike lane on each side of the street.

- Shoreline Boulevard will be modified to be a 5-lane transit boulevard. It will have a separated/buffered one-way bike lane on each side of the street north of Space Park Drive.

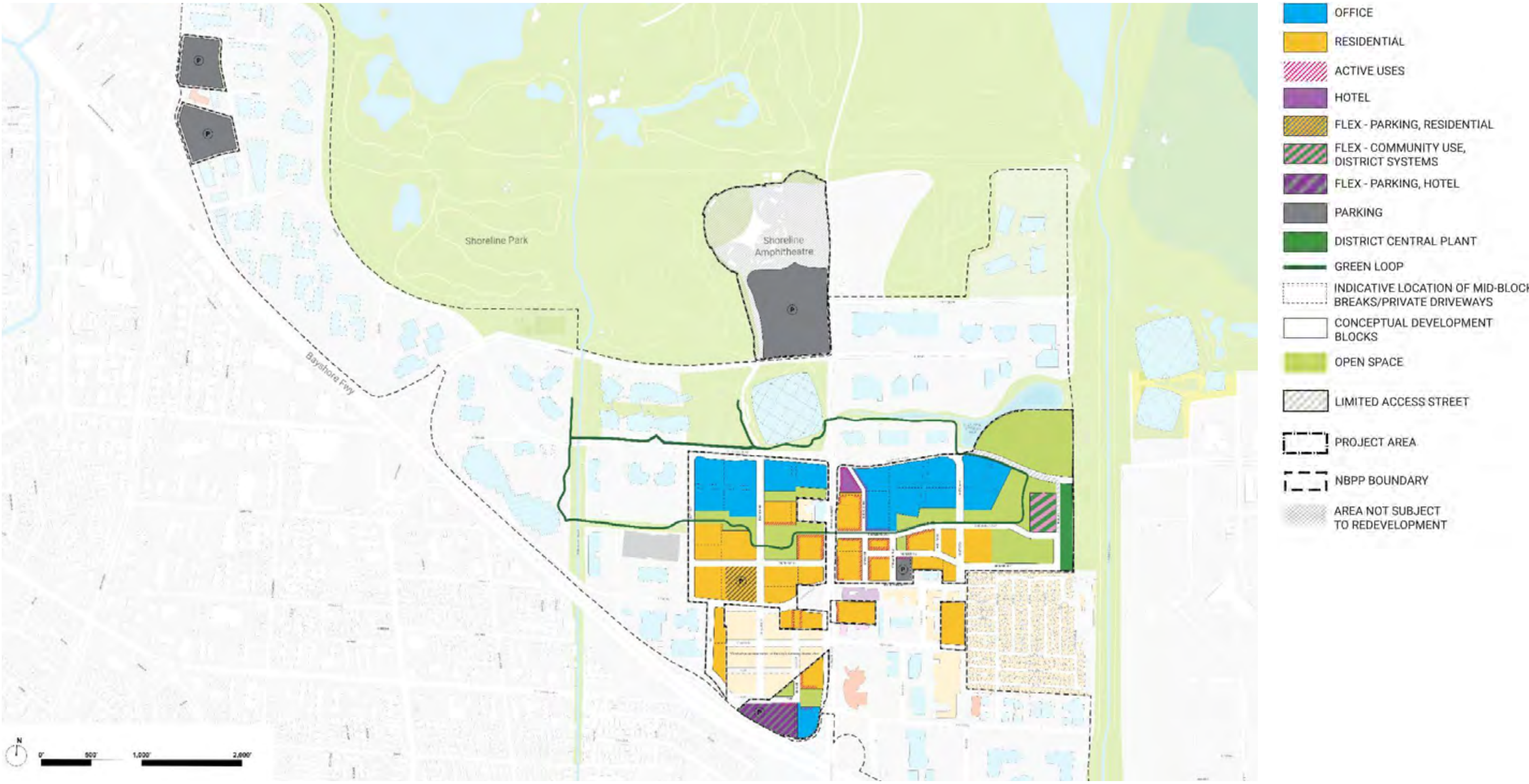
- Shorebird Way is proposed to be extended to the east as a Neighborhood Street to Monarch Street (new street). Shorebird Way has three Existing Street versions:
  - Shorebird Way 01 (Arrival) is a Neighborhood Street with one lane between Shoreline Boulevard and Manzanita Street. It will have the Green Loop, a bidirectional cycle track on one side of the street.
  - Shorebird Way 02 (Greenway) is a Neighborhood Street with one lane between Manzanita Street and Inigo Way. It will have a bidirectional cycle track on one side of the street.
  - Shorebird Way 03 (Wilds) is a 2-lane Neighborhood Street between Inigo Way and Black Street. It will have a protected bidirectional cycle track on the north side of the street and a multi-use path will on the south side of the street.
- Space Park Way will be modified to be a 2-lane Neighborhood Street. It will have a separated one-way bike lane on each side of the street.

- Parking will be composed of on-site parking and off-site District parking
  - Residents will use on-site parking, while residential visitors will use District parking garages.
  - 90% of office employees and visitors will use District parking garages, while 10% of office employees and visitors will use on-site parking.
- District parking at five locations within the Master Plan area include the following:
  - JN-P-1 (Joaquin North) is located at the southwest corner of Monarch Street and Joaquin Road within the Joaquin North neighborhood and contains approximately 500 parking spaces. JN-P-1 serves retail uses and hotel, neighborhood parks, open spaces, and residential visitor parking.
  - JS-P-1 (Joaquin South) is a 6-level parking garage location in the Joaquin South neighborhood that contains approximately 700 parking spaces. JS-P-1 serves office (450 parking spaces), and retail and hotel uses (250 parking spaces).
  - SB-P-1 (Shorebird) is located at the northeast corner of Space Park Way and Manzanita Street within the Shorebird neighborhood and contains approximately 600 spaces. SB-P-1 serves hotel, active uses, neighborhood parks, open spaces, and residential visitor parking.
  - SA-P-1 (Amphitheatre) is a 6-level parking garage located at the northwest corner of Shoreline Boulevard and Charleston Road that contains approximately 4,584 parking spaces for the NBS Master Plan (4,334 parking spaces), the police operations station (10 parking spaces), and the public parking spaces (240 parking spaces). SA-P-1 serves office employee parking.

- MW-P-1 & MW-P-2 (Marine Way) are 2- to 3-level parking garages along Marine Way that contain approximately 890 parking spaces. Both parking garages serve office uses.

- On-site parking within each neighborhood[2] includes the following:
    - Joaquin North neighborhood includes 2,531 on-site parking spaces for office, residential, retail, and active land uses.
    - Joaquin South neighborhood includes 746 on-site parking spaces for office, residential, retail and hotel land uses.
    - Shorebird neighborhood includes 1,826 on-site parking spaces for office, residential, retail, hotel, and active land uses.
    - Pear neighborhood includes 331 on-site parking spaces for residential, and retail land uses.

[2] Allocation of residential, office, and retail/commercial on-site parking spaces to each neighborhood assumes that vehicles will park close to their desired destination; therefore, the on-site parking is distributed based on the land use allocation by neighborhood.



Source: North Bayshore Framework Master Plan (December 2022)

Figure ES-2

North Bayshore Master Plan - Land Use and Streets

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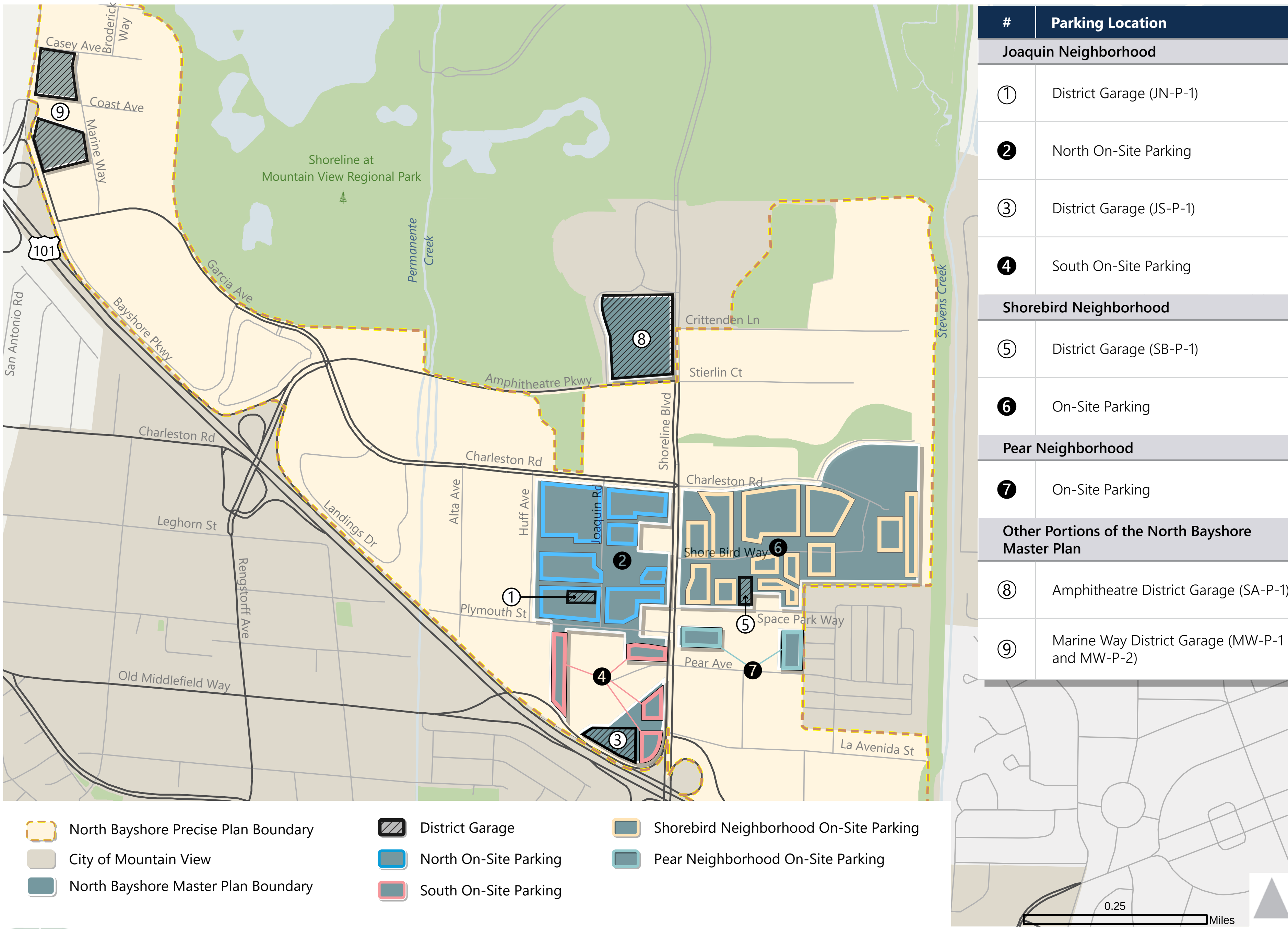

#	Parking Location
Joaquin Neighborhood	
1	District Garage (JN-P-1)
2	North On-Site Parking
3	District Garage (JS-P-1)
4	South On-Site Parking
Shorebird Neighborhood	
5	District Garage (SB-P-1)
6	On-Site Parking
Pear Neighborhood	
7	On-Site Parking
Other Portions of the North Bayshore Master Plan	
8	Amphitheatre District Garage (SA-P-1)
9	Marine Way District Garage (MW-P-1 and MW-P-2)

Figure ES-3

North Bayshore Master Plan – Parking Locations

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Transportation Demand Management Program Measures

The proposed project will implement a TDM program to achieve a 35% morning peak hour inbound single-occupancy vehicle mode share at the development driveways (or district parking structures) for employees and visitors commuting to the NBS Master Plan area. The project would implement various TDM measures consistent with the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines* (2015) for non-residential development and the *North Bayshore Residential Transportation Demand Management Guidelines* (2018) for residential development.

Project Traffic Volumes

The NBS Master Plan daily driveway trip generation is shown in **Table ES-3**. The project driveway vehicle trip generation is based on the following information:

- **New Residential Development**: The new residential units are assumed to be a mix of 5,600 market rate units with an average size of 1.80 persons per household and a reduced parking supply rate of 0.65 spaces per dwelling unit, and 1,400 affordable housing units with an average size of 1.90 persons per household and a parking supply rate of 0.69 spaces per dwelling unit. This results in an estimate of 10,080 residents in the market rate units, 2,660 residents in the affordable housing units, and a total of 12,740 residents for the NBS Master Plan. The proposed residential uses would have a combined effective daily trip generation rate of approximately 3.78 daily vehicle trips per dwelling unit.
- **New Office Development**: The proposed office space is assumed to be 93% occupied (based on historical vacancy rates) at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of 11,700 employees on site. The daily trip generation rate for new office uses in the NBS Master Plan area is 1.40 daily vehicle trips per employee.
- **New Retail and Entertainment Development**: The proposed retail space is assumed to be 93% occupied at a density of 2.67 employees per 1,000 square feet gross floor area. This results in an estimate of 600 employees on site. The daily trip generation rate for new retail/entertainment uses in the NBS Master Plan is 16.3 daily vehicle trips per employee.
- **New Hotel Development**: The proposed hotel space is assumed to have an employment density of 0.4 employees per room. This results in an estimate of 210 employees on site. The daily trip generation rates for new hotel uses in the NBS Master Plan are 4.79 daily vehicle trips per room.
- **New Police Operations Station Development**: The proposed Police Operations Station is assumed to be 93% occupied (based on historical vacancy rates) at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of 10 employees on site. The daily trip generation rate for new Police Operations Station land uses in the NBS Master Plan area is 1.40 daily vehicle trips per employee.
- **Public Parking at SA-P-1**: The 240 public parking spaces at SA-P-1 is assumed to have a daily trip generation similar to Existing Conditions (440 daily vehicle trips).

Table ES-3: Driveway Trip Generation with Project

Scenario	Building Size	Service Population[1]	Daily Trips[1]
North Bayshore Master Plan			
Residential – Market Rate	5,600 dwelling units	10,080	21,560
Residential – Affordable	1,400 dwelling units	2,660	4,930
North Bayshore Master Plan Residential Trips (A)		*12,740*	*26,490*
Office	3,145,897 square feet	11,700	16,360
Commercial/Retail Space	240,000 square feet	600	9,720
Active Space Kiosks[2]	4,000 square feet	0	0
Hotel	525 Rooms	210	2,520
Community Uses[3]	55,000 square feet	0	0
Police Operations Station	2,000 square feet	10	20
Public Parking at SA-P-1	240 spaces	0	440
North Bayshore Master Plan Non-Residential Trips (B)		*12,520*	*29,060*
North Bayshore Master Plan Trips (A + B = C)		**25,260**	**55,550**
Existing Building Credit			
Office	8,653 square feet	-30	-90
Research & Development	1,642,061 square feet	-5,720	-16,510
Industrial	92,497 square feet	-110	-410
Public Parking at SA-P-1	240 spaces	0	-440
Existing Building Credit (D)		*-5,860*	*-17,450*
Net Change			
Net Increase (C + D = E)		**19,400**	**38,100**

Notes:

1. Service population and daily trips rounded to the nearest 10.
2. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate vehicle trips.
3. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community uses would generate additional vehicle trips outside of the typical weekday.

Source: Fehr & Peers, 2022.

CEQA Impacts and Mitigation Measures

Senate Bill (SB) 743 changed how transportation impacts under the CEQA are analyzed. SB 743 removed the use of automobile delay or traffic congestion for determining transportation impacts in environmental review. The latest *CEQA Statute & Guidelines* now specify that VMT is the appropriate metric to evaluate transportation impacts. In short, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers to measuring the impact of driving.

This report conducts a plan conflict analysis of the project against the relevant regional, county and local plans and a VMT impact analysis. Project effects on the environment were evaluated following the CEQA guidelines in coordination with the City of Mountain View and guidance from Caltrans.

Plan Conflicts

The project's consistency was evaluated against the NBPP and the relevant circulation and transportation plans. Per the vision of the NBPP, the NBS Master Plan will construct a street system that supports travel by walking, bicycling, carpool, and transit. To get to and from the NBS Master Plan area, people can choose to walk, bike, take transit, carpool or drive in a single-occupancy vehicle. Person and vehicle arrival and departure will be managed using the North Bayshore Trip Cap Policy and NBS Master Plan Transportation Demand Management Plan. To enhance non-drive-alone choices, the NBS Master Plan TDM Plan will offer a variety of program measures such as transit passes, employee shuttles, active transportation (bicycling and walking) incentives, carpool/vanpool incentives, and other methods to reduce daily commute stress on their employees and visitors to reduce the number of single-occupant vehicle (SOV) trips. The majority (more than 40 percent daily and 50 percent during the peak hours) of the combined residential and non-residential person trips are by pedestrians, bicyclists, and transit riders. Further the single-occupancy vehicles and high-occupancy vehicles will park in six district parking garages, which then requires the ½ mile or so (between the garages and the final destinations) to be a pedestrian, bicyclist, or transit trip.

- **Existing or planned transit systems** will not be significantly impacted by the project. The project does not propose changes to the transit system that will impact the *Valley Transportation Plan (VTP) 2040* transit projects or the Santa Clara Valley Transportation Authority (VTA) transit services. North Bayshore Master Plan street modifications will support transit travel to/from and within North Bayshore.
- **Existing or planned roadway facilities** will not be significantly impacted by the project. The project proposes local street designs that are consistent with the NBPP and prioritize pedestrian, bicycle, and transit travel in the NBS Master Plan and the NBS District. The North Bayshore gateway volumes under Cumulative with Project Conditions are similar to the NBPP trip generation, and therefore the implementation of the project as proposed would not substantially increase the North Bayshore gateway volumes from what was studied before.
- **Existing or planned bicycle facilities** will not be significantly impacted by the project. The project will not conflict with existing or planned bicycle facilities. The project proposes to increase bicycle connections between the existing and planned facilities.
- **Existing or planned pedestrian facilities** will not be significantly impacted by the project. The project would enhance pedestrian circulation within the North Bayshore Master Plan and connections to adjacent land uses, a beneficial effect on pedestrian circulation and access. Therefore, the project would not interfere with existing or planned pedestrian facilities or conflict with applicable non-automotive transportation plans, guidelines, policies, or standards.

Vehicle Miles Traveled (VMT)

The VMT impact analysis presented in this report considers the project's direct impacts relative to project-generated VMT per service population, as well the project's long-term effect on VMT using boundary VMT per service population evaluated under Cumulative Conditions.

Project Generated VMT (Project Analysis)

The significance threshold for determining the project-generated VMT impact is a total VMT per service population rate of 25.46, which is 15 percent below the Existing Conditions VMT per service population for the region (defined as San Mateo County, Alameda County, and Santa Clara County) of 29.95. Under the Cumulative with Project Conditions, the NBS Master Plan total VMT per service population rate of 25.13 is below the applicable threshold of 25.46. Therefore, the NBS Master Plan total VMT per service population rate would not exceed the applicable thresholds under Cumulative with Project Conditions and the impact would be ***less-than-significant***.

Projects Effect on VMT (Cumulative Analysis)

This analysis evaluated whether the Project would result in an increase in the regionwide boundary VMT per service population from Cumulative Conditions to Cumulative with Project Conditions. The regional impact threshold for the Project's effect on VMT is the region (defined as San Mateo County, Alameda County, and Santa Clara County) Cumulative Conditions boundary VMT per service population of 17.22.

The Project's effect on VMT under Cumulative with Project Conditions of 17.22 is equal to the threshold of 17.22. Therefore, the Project would not exceed the applicable thresholds relative to the Project's effect on VMT under Cumulative with Project and the impact would be ***less-than-significant***.

Regional Transportation Plan/Sustainable Community Strategy Plan Consistency

California Environmental Quality Act, Section 15125(d), requires an EIR to discuss any inconsistencies between the proposed project and applicable general and regional plans. This analysis discusses the proposed project's consistency with the policies in the region's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as *Plan Bay Area 2050* (October 2021).[3] The Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are the designated metropolitan planning organizations and, as such, are mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.

The proposed project includes modifications to existing street facilities to create more pedestrian- and bicycle-oriented streets. The expected influence on existing and future traffic is likely to be minimal because no through-vehicle lanes are proposed to be removed within the proposed project. Further, the project includes a commitment to a 35% morning peak hour inbound single-occupancy vehicle mode share for

[3] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2040*. Available online at [Plan Bay Area 2050 | Plan Bay Area]().

non-residential development and to building housing in North Bayshore to increase the internalization of the non-residential trips. These commitments are supportive of transit and active transportation use.

The project does not propose changes to the transit system that would impact the *Plan Bay Area 2050 (*2021*)* goals of expanding the role transit plays in meeting the region's mobility needs such as investments in bus rapid transit, expansion of local services, and planned rail projects. Internal circulation changes would support core regional transit travel within the NBS Master Plan.

Overall, the proposed project would not conflict with existing or planned transportation facilities because the proposed street changes are additions of pedestrian and bicycle facilities with few, if any, reductions in vehicle lanes. The proposed project would not be expected to interfere with existing roadway facilities; conflict with planned roadway facilities; or conflict with adopted transportation plans, guidelines, policies, or standards. Therefore, the impact relative to disruption of existing or planned roadways or conflicts with program, plan, ordinance, or policy would be ***less-than-significant***.

1. Introduction and Project Description

This report presents the results of the transportation analysis (TA) conducted to evaluate the environmental effects of the proposed North Bayshore Master Plan (NBS Master Plan). This transportation analysis supplements the findings in the Final Subsequent Environmental Impact Report (EIR) for the North Bayshore Precise Plan (NBPP) that was certified in November 2017. The 2017 analysis disclosed the potential transportation effects of this project on the natural and human environment using vehicle level of service. Since then, the regulatory environment has changed by an update of the *California Environmental Quality Act Statutes and Guidelines* (December 2018) to require the use of vehicle miles traveled (VMT) for transportation impact assessment.[4] As has been the practice for many years, the NBPP already included VMT as an input into the air quality, greenhouse gas analysis, and energy sections of the NBPP EIR. However, VMT was not used as an impact metric for the NBPP transportation analysis. Because of the updated regulations, the City conducted a new VMT impact analysis for the proposed NBS Master Plan to disclose the potential direct, indirect, and cumulative effects of the project on the environment from a transportation perspective.

Except for the Amphitheatre District garage (SA-P-1), the NBS Master Plan area is within the North Bayshore District and the NBPP area, which is generally bounded by the Shoreline at Mountain View Regional Park in the north, US 101 to the south, Stevens Creek to the east, and San Antonio Road to the west.

The NBS Master Plan includes a combination of land use, transportation infrastructure, district parking, and transportation demand management program improvements.[5] The trip generation and vehicle miles traveled analysis presented in this report assumes the NBS Master Plan transportation demand management (TDM) measures achieve a 35% morning peak hour inbound single-occupancy vehicle (SOV) mode share at the driveways for non-residential development. **Figure 1** shows the Master Plan boundary and location within the NBPP as well as the surrounding transportation network.

This chapter outlines the report purpose, project description, recent changes in the California Environmental Quality Act (CEQA) regarding transportation analyses, the analysis scenarios, and report organization.

[4] VMT refers to "vehicle miles traveled," a metric that accounts for the number of vehicle trips generated plus the length or distance of those trips. This report uses total VMT and boundary VMT metrics for specific geographic areas, which are defined in **Chapter 2**.

[5] As allowed by the NBPP, the master planning process provides a coordinated and integrated approach to larger developments or areas under certain conditions. The process allows the City to achieve key Precise Plan objectives, while allowing projects flexibility and an administrative process focusing on key development objectives. The master planning process is outlined in section 3.5.2 of the NBPP.

1.1 Purpose

The primary purpose of this report is to present the transportation analysis for compliance with CEQA, including identification of potential significant impacts and applicable recommended mitigation for inclusion in the Environmental Impact Report (EIR). Specifically, this report conducts a plan conflict analysis of the project against the various regional, county, and local plans and a VMT impact analysis. Project effects on the environment were evaluated following the CEQA guidelines. Guidance from the City of Mountain View and Caltrans was also considered.

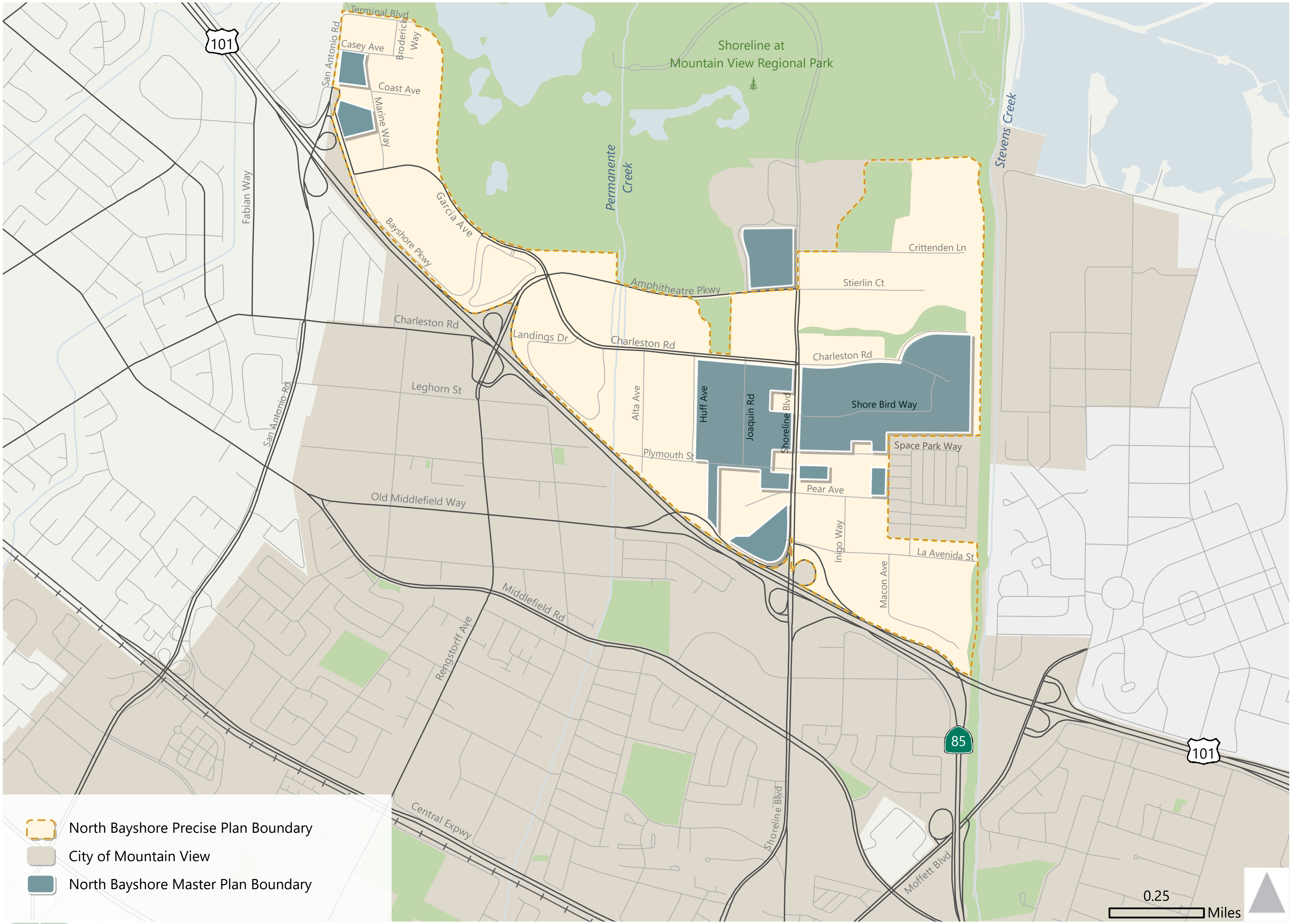

Figure 1

North Bayshore Master Plan Location

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1.2 Project Description

As described below, the NBS Master Plan includes a land use program, transportation infrastructure and district parking improvements, and transportation demand management program measures. The NBS Master Plan describes an area covering approximately 151-acres which represents the land to which the North Bayshore Framework Master Plan applies. This Master Plan and related documents reference the vision, guiding principles, and planning controls set by the North Bayshore Precise Plan (NBPP).

1.2.1 Land Use Program

The NBS Master Plan would allow for the following land use changes as compared to what was on the ground in 2020.

- 7,000 residential units
  - 5,600 market rate dwelling units with a mix of 60% studio and 1-bedroom, and 40% 2- and 3-bedrooms with a residential parking supply of 0.65 spaces per dwelling unit.
  - 1,400 affordable rate dwelling units with a mix of 25% each of studio, 1-bedroom, 2-bedrooms, and 3-bedrooms and a residential parking supply rate of 0.69 spaces per dwelling unit.
    - 1,050 affordable rate residential units will be facilitated via land dedication for stand-alone affordable housing.
    - 350 affordable rate residential units will be provided as inclusionary units within the market-rate residential buildings.
- 3,145,897 square feet of office space with a parking supply rate of 2.0 spaces per 1,000 square feet
  - 1,280,774 additional square feet of office building space
  - 8,653 square feet of existing office space to be retained
  - 1,642,061 square feet of research & development rebuilt as office space
  - 92,497 square feet of industrial rebuilt as office space
  - 121,912 square feet of vacant development rebuilt as office space[6]
- 240,000 square feet of retail/commercial space
- 4,000 square feet of active space kiosks[7]
- 525 hotel rooms

[6] Vacant buildings for 2020 include the 91,392 square feet at 1400 North Shoreline Boulevard and 30,520 square feet at 1220-1230 Pear Avenue.

[7] The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate vehicle trips.

- 55,000 square feet of community uses[8]
- 2,000 square foot police operations station with 10 parking spaces dedicated to the police department in the Amphitheatre parking garage (SA-P-1)

The total change in residential, office, retail, hotel, and community uses are shown in **Table 1**. The Project also includes 240 public parking spaces added to the Amphitheater District Garage.

Table 1: North Bayshore Master Plan Land Use Program: Building Size

Land Use[1]	Units	Existing Conditions (2020)[2] [A]	Project Conditions (2030) [B]	Change [B-A=C]
Residential – Market Rate	Dwelling Units	0	5,600	5,600
Residential – Affordable	Dwelling Units	0	1,400	1,400
Office	Square Feet	8,653	3,145,897	3,137,244
Research & Development	Square Feet	1,642,061	0	-1,642,061
Industrial	Square Feet	92,497	0	-92,497
Retail/Commercial	Square Feet	0	240,000	240,000
Active Space Kiosks	Square Feet	0	4,000[3]	4,000
Hotel	Rooms	0	525	525
Community Uses	Square Feet	0	55,000[4]	55,000
Police Operations Station	Square Feet	0	2,000	2,000

Notes:

1. Because it is not a programmed land use, the 240 public parking spaces and 10 parking spaces for the police operations station that are added to Amphitheatre District Parking Garage is not included in this building summary.
2. Existing Conditions is relative to 2020. Vacant buildings for 2020 include the 91,392 square feet at 1400 North Shoreline Boulevard, and the 30,520 square feet at 1220-1230 Pear Avenue. These vacant buildings at 1400 North Shoreline Boulevard and 1220-1230 Pear Avenue were not included in the 2020 baseline and therefore, do not show up as a demolished building credit.
3. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate separate vehicle trips during a typical day, but rather attract walking and biking trips from the surrounding land uses.
4. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community uses would generate additional vehicle trips outside of the typical weekday.

Source: Fehr & Peers, 2022.

[8] The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community uses would generate additional vehicle trips outside of the typical weekday.

This project uses a combination of district parking and on-site parking for each land use. Each parking location will serve different land uses and thus affect how vehicles travel on the local streets. The land use program is described by parking location in **Table 2**, and the parking locations are shown in **Figure 3**.

Table 2: North Bayshore Master Plan Land Use Program: Building Size and Parking Location

Parking Location	Parking Spaces[1]	Residential: Market Rate (Dwelling Units)	Residential: Affordable (Dwelling Units)	Office (Square Feet)[2]	Retail/ Commercial Space (Square Feet)	Hotel (Rooms)
Joaquin Neighborhood						
1. District Garage (JN-P-1)[3,4,5]	500	0	0	0	35,000	0
2. North On-Site Parking	2,531	2,789	527	125,630	0	0
3. District Garage (JS-P-1)[4,5]	700	0	0	224,707	25,000	275
4. South On-Site Parking	746	720	294	25,000	0	0
Shorebird Neighborhood						
5. District Garage (SB-P-1)[3,4,5]	600	0	0	0	180,000	250
6. On-Site Parking	1,826	1,832	328	162,160	0	0
Pear Neighborhood						
7. On-Site Parking	331	259	251	0	0	0
Other Portions of the North Bayshore Master Plan						
8. Amphitheatre District Garage (SA-P-1)[6,7]	4,584	0	0	2,165,980	0	0
9. Marine Way District Garage (MW-P-1 and MW-P-2)	890	0	0	444,420	0	0
Total of North Bayshore Master Plan						
Total	**12,708**	**5,600**	**1,400**	**3,147,897**	**240,000**	**525**

Notes:

1. Parking spaces based on "Updated Car Parking" summary provided on October 19, 2022. Allocation of residential, office, and retail/commercial on-site parking spaces assumes that vehicles will park close to their desired destination; therefore, the on-site parking is distributed based on the land use allocation by neighborhood.
2. Assumes 90% of the office parking is assigned to the district garages (JN-P-1, JS-P-1, SA-P-1, MW-P-1, and MW-P-2) and 10% to the on-site parking locations in each neighborhood.
3. Also serves residential visitor parking.
4. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that would not generate vehicle trips during a typical day, but rather attract walking and biking trips from the surrounding land uses. Retail/commercial space parking when needed for events or specific active use programming would be provided in JN-P-1, JS-P-1, and/or SB-P-1.
5. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Community uses parking when needed for weekend events or specific active use programming would be provided in JN-P-1, JS-P-1, and/or SB-P-1.
6. The Amphitheatre District Parking Garage is the 4,334 parking spaces for the NBS Master Plan, 10 parking spaces for the police operations station, and 240 public parking spaces added to Amphitheatre District Parking Garage.
7. The office summary includes the 2,000 square foot police operations station.

Source: Fehr & Peers, 2022.

1.2.2 Transportation Infrastructure and District Parking Improvements

Per the March 2022 *North Bayshore Framework Master Plan* with September 2022 and December 2022 amendments, the project will also feature new streets and other transportation infrastructure (illustrated on **Figure 2**), and district parking (illustrated on **Figure 3**) including the following:

- New streets:
  - Monarch Street is a proposed two-lane east-west Neighborhood Street with bicycle facilities that extends from Huff Avenue to Shoreline Boulevard. Monarch Street continues east of Shoreline Boulevard from Grove Street (new street) to Black Street. It will have a separated/buffered one-way bike lanes on each side of the street.
  - C Street is a proposed two-lane north-south Neighborhood Street that extends south of Plymouth Street. It will have a separated/buffered one-way bike lanes on each side of the street.
  - Grove Street is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street.
  - Manzanita Street is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Charleston Road. It will have a separated/buffered one-way bike lanes on each side of the street.
  - Willow Street is a proposed two-lane north-south Neighborhood Street that extends from Monarch Street to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street.
  - Inigo Way is a proposed two-lane north-south Neighborhood Street that extends from Space Park Way to Charleston Road. It will have a separated/buffered one-way bike lanes on each side of the street.
  - Shorebird Way is proposed to be extended to the east as a Neighborhood Street to Black Street (new street). It will have a protected bidirectional cycle track on the north side of the street and a multi-use path will on the south side of the street.
  - Black Street is a proposed two-way Access Street at the east terminus of Monarch Street extending north to Shorebird Way. It will have a separated/buffered one-way bike lanes on each side of the street. North of Shorebird Way, Black Street is proposed to be a one-way street with will have pedestrian access, bicycle access, and emergency vehicle access.
- Modified streets:
  - Huff Avenue between Plymouth Street and Charleston Road will be modified to a Neighborhood Street to include two travel lanes and a separated/buffered one-way bike lane on each side of the street.
  - Joaquin Road between Plymouth Street and Charleston Road will be modified to a Neighborhood Street to include two travel lanes and a separated/buffered one-way bike lane on each side of the street.

- Shoreline Boulevard will be modified to be a 5-lane transit boulevard. It will have a separated/buffered one-way bike lane on each side of the street north of Space Park Drive.

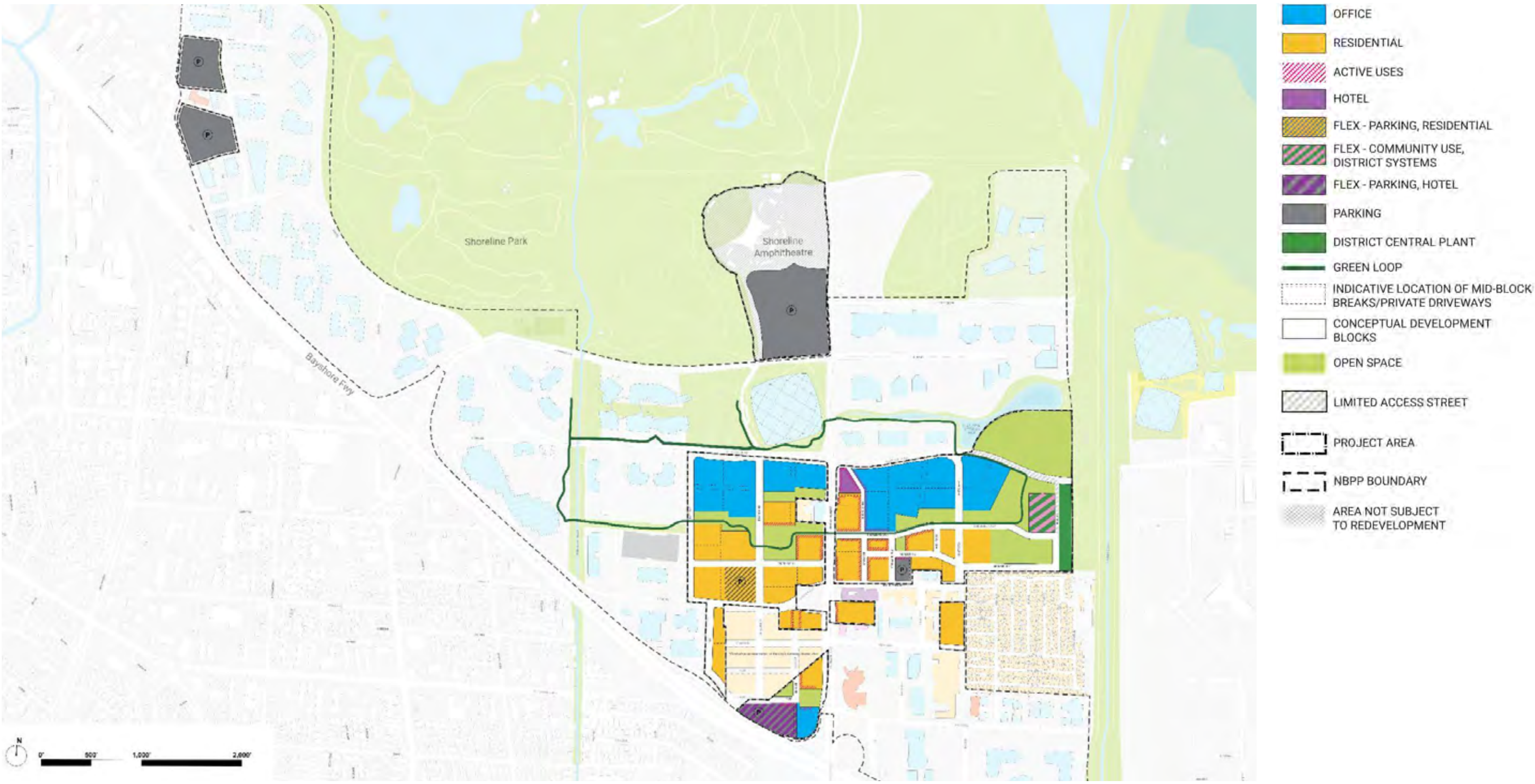
- Shorebird Way is proposed to be extended to the east as a Neighborhood Street to Monarch Street (new street). Shorebird Way has three Existing Street versions:
    - Shorebird Way 01 (Arrival) is a Neighborhood Street with one lane between Shoreline Boulevard and Manzanita Street. It will have the Green Loop, a bidirectional cycle track on one side of the street.
    - Shorebird Way 02 (Greenway) is a Neighborhood Street with one lane between Manzanita Street and Inigo Way. It will have a bidirectional cycle track on one side of the street.
    - Shorebird Way 03 (Wilds) is a 2-lane Neighborhood Street between Inigo Way and Black Street. It will have a protected bidirectional cycle track on the north side of the street and a multi-use path will on the south side of the street.
- Space Park Way will be modified to be a 2-lane Neighborhood Street. It will have a separated one-way bike lane on each side of the street.

- Parking will be composed of on-site parking and off-site District parking
    - Residents will use on-site parking, while residential visitors will use District parking garages.
    - 90% of office employees and visitors will use District parking garages, while 10% of office employees and visitors will use on-site parking.
- District parking at five locations within the Master Plan area include the following:
    - JN-P-1 (Joaquin North) is located at the southwest corner of Monarch Street and Joaquin Road within the Joaquin North neighborhood and contains approximately 500 parking spaces. JN-P-1 serves retail uses and hotel, neighborhood parks, open spaces, and residential visitor parking.
    - JS-P-1 (Joaquin South) is a 6-level parking garage location in the Joaquin South neighborhood that contains approximately 700 parking spaces. JS-P-1 serves office (450 parking spaces), and residential visitor parking, retail and hotel uses (250 parking spaces).
    - SB-P-1 (Shorebird) is located at the northeast corner of Space Park Way and Manzanita Street within the Shorebird neighborhood and contains approximately 600 spaces. SB-P-1 serves hotel, active uses, neighborhood parks, open spaces, and residential visitor parking.
    - SA-P-1 (Amphitheatre) is a 6-level parking garage located at the northwest corner of Shoreline Boulevard and Charleston Road that contains approximately 4,584 parking spaces for the NBS Master Plan (4,334 parking spaces), the police operations station (10 parking spaces), and the public parking spaces (240 parking spaces). SA-P-1 serves office employee parking.

    - MW-P-1 & MW-P-2 (Marine Way) are 2- to 3-level parking garages along Marine Way that contain approximately 890 parking spaces. Both parking garages serve office uses.

- On-site parking within each neighborhood[9] is include the following:
    - Joaquin North neighborhood includes 2,531 on-site parking spaces for office, residential, retail, and active land uses.
    - Joaquin South neighborhood includes 746 on-site parking spaces for office, residential, retail and hotel land uses.
    - Shorebird neighborhood includes 1,826 on-site parking spaces for office, residential, retail, hotel, and active land uses.
    - Pear neighborhood includes 331 on-site parking spaces for residential, and retail land uses.

[9] Allocation of residential, office, and retail/commercial on-site parking spaces to each neighborhood assumes that vehicles will park close to their desired destination; therefore, the on-site parking is distributed based on the land use allocation by neighborhood.



Source: North Bayshore Framework Master Plan (December 2022)

Figure 2

North Bayshore Master Plan - Land Use and Streets

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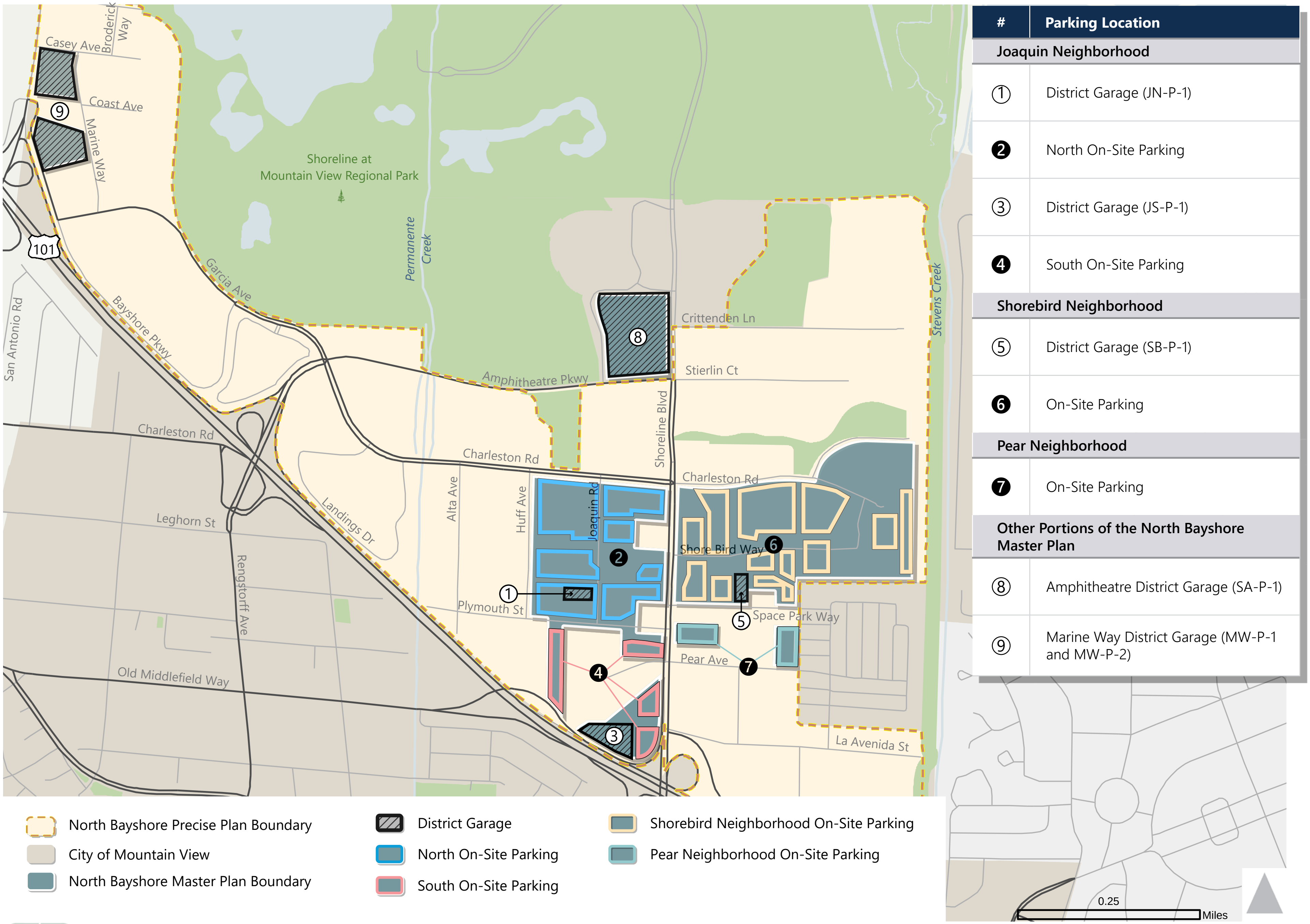

#	Parking Location
Joaquin Neighborhood	
1	District Garage (JN-P-1)
2	North On-Site Parking
3	District Garage (JS-P-1)
4	South On-Site Parking
Shorebird Neighborhood	
5	District Garage (SB-P-1)
6	On-Site Parking
Pear Neighborhood	
7	On-Site Parking
Other Portions of the North Bayshore Master Plan	
8	Amphitheatre District Garage (SA-P-1)
9	Marine Way District Garage (MW-P-1 and MW-P-2)

Figure 3

North Bayshore Master Plan – Parking Locations

1.2.3 Transportation Demand Management Program Measures

The proposed project will implement a TDM program to achieve a 35% morning peak hour inbound single-occupancy vehicle mode share at the development driveways (or district parking structures) for employees and visitors commuting to the NBS Master Plan area and driveway trip cap. The project would implement various TDM measures consistent with the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines* (2015) for non-residential development and the *North Bayshore Residential Transportation Demand Management Guidelines* (2018) for residential development.

At a minimum, the non-residential TDM plan includes the following existing measures:

- Priority parking for carpools and vanpools
- Pre-tax commuter benefits
- On-site employee transportation coordinator to serve as a liaison between the employer/property owner and the Transportation Management Association (TMA) and to oversee the TDM program
- Bicycle parking, showers, and changing facilities as defined in the bicycle parking and amenities and standards
- Short-term bicycle parking
- Shared bicycles, if a bikeshare service is not present in North Bayshore
- Telecommute/flexible work schedule program
- Guaranteed ride home program
- Membership in the TMA
- Carpool matching services
- Shuttle services to connect employees to local transit services
- Marketing of TDM programs to employees

Additional TDM measures are encouraged and may be necessary to achieve the project's mode share and vehicle trip target. The non-residential TDM program includes the following optional TDM measures:

- Parking cash-out
- Parking supply
- Subsidized or free vanpools or carpools
- Biking incentives
- On-site bike repair facilities
- Bike buddy program
- Bike loaner program
- Expanded carpool matching
- Commuter shuttle services
- Car sharing
- On-site amenities and services
- Funding district wide services

The residential development will also include the following TDM measures:

- Unbundled parking
- Membership in the TMA
- Short- and long-term secure bike parking
- Dedicated on-site car-share spaces
- On-site car-share vehicles (optional)
- Residential bikeshare (optional)
- Scooter-share program (optional)

1.3 Recent Changes to CEQA Transportation Analysis

Senate Bill (SB) 743 changed how transportation impacts under the CEQA are analyzed. SB 743 removed the use of automobile delay or traffic congestion for determining transportation impacts in environmental review. The latest *CEQA Statute & Guidelines* now specify that VMT is the appropriate metric to evaluate transportation impacts.[10] In short, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers to measuring the impact of driving.

In June 2020, the City of Mountain View adopted a set of VMT methods and procedures that apply to land use projects in the city in conformance with SB 743. The City's VMT methods and procedures are outlined in the *Multi-Modal Transportation Analysis Handbook ("Handbook")* (February 2021). The *Handbook* includes direction to use the Santa Clara Countywide VMT Evaluation Tool (SCC VMT Tool) web application when applicable, which allows an analyst to conduct baseline VMT screening and VMT reduction analysis for small- to medium-size land use projects.

The NBS Master Plan project is a large project that will modify and increase the office and residential land use supply in North Bayshore, implement an extensive transportation demand management (TDM) program, and would have a widespread effect on the total VMT within North Bayshore and the city of Mountain View. This type of project would not be an appropriate application for the SCC VMT Tool based on project size. Further, it is anticipated that the new residential and increased employee densities associated with the project will reduce the VMT rates in North Bayshore.

1.4 Analysis Scenarios

The VMT analysis includes the following three scenarios (refer to **Table 3** for a summary of the scenario inputs):

- **Scenario 1: Existing Conditions** – Existing gateway counts (February 2020) and travel characteristics from the *North Bayshore Transportation Monitoring Report and Near-Term Growth Assessment* (May 2020) report.
- **Scenario 2: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Standard Residential Parking Supply)[11] (Cumulative Conditions)** – Cumulative travel behavior based on the City of Mountain View travel model and the 2007 Association of Bay Area

[10] On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Following several years of draft proposals and related public comments, OPR settled upon VMT as the preferred metric for assessing passenger vehicle-related impacts and issued revised *CEQA Statute & Guidelines* in December 2018, along with a *Technical Advisory On Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the *CEQA Statute & Guidelines* revisions. Under the revised *CEQA Statute & Guidelines*, vehicle level of service (LOS) is no longer to be used as a determinant of significant environmental impacts, and analysis of a project's impacts will now be based on assessment of VMT. As of July 1, 2020, all transportation analysis performed under CEQA must be consistent with the revised *CEQA Statute & Guidelines*.

[11] This is similar to the trip generation scenario studied in detail in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* certified in November 2017.

Governments (ABAG) land use projections for adjacent jurisdictions and planned and funded transportation system improvement in the *Valley Transportation Plan (VTP) 2040*. In the NBPP boundary, this scenario includes the following:

- The NBPP land use program from Existing Conditions (2020):
  - 9,850 residential units
    - 7,880 market rate dwelling units
    - 1,970 affordable rate dwelling units
  - 5,069,866 square feet of office space
    - 3,474,060 additional square feet of office building space
    - 1,393,469 square feet of research & development rebuilt as office space
    - 202,337 square feet of industrial rebuilt as office space
  - 187,660 square feet of retail/commercial land uses (retail, restaurant, or service commercial)
  - 400 hotel rooms
  - 98,000 square foot athletic club
  - 88,500 square foot theater
  - Shoreline at Mountain View growth of approximately 2,800 daily trips
- The North Bayshore transportation improvements are presented in **Figure 4** and listed in **Table 4**.
- Market rate residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 1.2 spaces per dwelling unit.
- Affordable residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 1.2 spaces per dwelling unit.
- Non-residential development collectively achieving an approximately 32% morning peak hour inbound single-occupancy vehicle (SOV) mode share at the driveways for non-residential development.
- Non-residential development includes a mixed-use trip reduction applied to existing and future development to account for the additional residential opportunities in North Bayshore that allow some current workers to live nearby.

  - North Bayshore non-residential development occupancy that includes a 7% historical vacancy rate.[12]
- **Scenario 3: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal with a Historical Vacancy Rate (Cumulative with Project Conditions)** – Cumulative travel behavior outside of the NBPP boundary will be based on the same land use and transportation system assumptions as Scenario 2. Within the NBPP boundary, this scenario includes the following:
  - The NBPP growth with the NBS Master Plan from Existing Conditions (2020):
    - 9,098 residential units
      - 7,605 market rate dwelling units
      - 1,493 affordable rate dwelling units
    - 5,587,216 square feet of office space
      - 3,487,472 additional square feet of office building space
      - 1,900,011 square feet of research & development rebuilt as office space
      - 199,733 square feet of industrial rebuilt as office space
    - 343,496 square feet of retail/commercial land uses (retail, restaurant, or service commercial)
    - 725 hotel rooms
    - 98,000 square foot athletic club
    - 88,500 square foot theater
  - The North Bayshore transportation improvements are presented in **Figure 4** and listed in **Table 4**.
  - The locations of the development projects are presented in **Figure 5** and **Table 5** presents a summary of their associated land use assumptions (which in some cases involve demolition of existing buildings as well as construction of new buildings).
  - Non-NBS Master Plan market rate residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 0.6 spaces per dwelling unit.

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[12] A vacancy rate expresses the portion of building square footage that is unoccupied. A vacancy rate allows owners to offer non-residential development options to meet a tenant's needs at a market rate price without over supplying non-residential development. Based on conversations with local real estate brokers during the General Plan and Mountain View travel model update, City staff established a 7% historical vacancy rate. This vacancy rate has been used in previous versions of the North Bayshore Precise Plan transportation analysis and the City of Mountain View General Plan transportation analysis.

- NBS Master Plan market rate residential housing (mix of 60% studio and 1-bedroom apartments and 40% 2- and 3-bedroom dwelling units) with a reduced residential parking supply rate of 0.65 spaces per dwelling unit.
- NBS Master Plan affordable residential housing mix of 25% studio, 1-bedroom, 2-bedroom, and 3-bedroom dwelling units with a reduced parking supply rate of 0.69 spaces per dwelling unit.
- Existing non-Google development (6% of non-residential development) achieves 63%[13] morning peak hour inbound single-occupancy vehicle mode share.
- Existing Google, future Google, and future non-Google non-residential development achieving a 35% morning peak hour inbound single-occupancy vehicle mode share (94% of non-residential development).
- Non-residential development includes a mixed-use trip reduction applied to existing and future development to account for the additional residential opportunities in North Bayshore that allow some current workers to live nearby.
- North Bayshore non-residential development includes a 7% historical vacancy rate.[14]
- NBS Master Plan parking at a ratio of 2.0 parking spaces per 1,000 square feet of office space.
- On-site and District parking as shown in the NBS Master Plan (e.g., JS-P-1, JN-P-1, SA-P-1, SB-P-1, MW-P-1, and MW-P-2) (refer to **Figure 3**).

[13] The 63% morning peak hour inbound single-occupancy vehicle mode share is derived from the observed 74% mode share (*Intuit Building 20 Vehicle Trip Generation and Mode Share Monitoring* memorandum, Fehr & Peers, May 2019) with an adjustment for internalized trips of North Bayshore employees living and working in North Bayshore.

[14] A vacancy rate expresses the portion of building square footage that is unoccupied. A vacancy rate allows owners to offer non-residential development options to meet a tenant's needs at a market rate price without over supplying non-residential development. Based on conversations with local real estate brokers during the General Plan and City of Mountain View travel model update, City staff established a 7% historical vacancy rate. This vacancy rate has been used in previous versions of the North Bayshore Precise Plan transportation analysis and the City of Mountain View General Plan transportation analysis.

Table 3: Summary of Scenario Characteristics

Characteristic	Unit	Scenario 1: Existing Conditions	Scenario 2: Cumulative Conditions	Scenario 3: Cumulative with Project Conditions
North Bayshore Precise Plan Land Use Program				
Residential Units	Dwelling Units	Refer to **Table 13** for Total Building Area in North Bayshore	9,850	9,098
Market Rate	*Dwelling Units*		*7,880*	*7,605*
Affordable	*Dwelling Units*		*1,970*	*1,493*
Office	Square Feet		5,069,866	5,587,216
New Office	*Square Feet*		*3,577,573*	*3,590,985*
Rebuilt R&D or Industrial as New Office	*Square Feet*		*1,492,293*	*1,996,231*
Retail/Commercial[1]	Square Feet		187,660	343,496
Hotel Rooms	Rooms		400	725
Athletic Club	Square Feet		98,000	98,000
Theater	Square Feet		88,500	88,500
Shoreline at Mountain View Growth	Daily Trips		2,800	0
North Bayshore Transportation Improvements				
Transportation Improvements	Refer to **Table 4** for the Priority Transportation Improvements by Scenario			
Housing Characteristics				
Studio and 1-Bedroom Dwelling Units	Percent	N/A	70/70[2]	70/60/50[3]
2- and 3-Bedroom Dwelling Units	Percent		30/30[2]	30/40/50[3]
Residents Parking Supply Rate[4]	Spaces per Dwelling Unit		1.2/1.2[2]	0.60/0.65/0.69[3]
Morning Peak Hour Inbound Single Occupancy Mode Share for Non-Residential Development[6]				
Existing Non-Google Development	Percent	80[5]	32	69
Future Non-Google Development	Percent	N/A		35
Existing Google Development	Percent	50[6]		35
Future Google Development	Percent	N/A		35
Effective District-Wide	Percent	53[7]		37[8]
Historical Vacancy Rate				
Vacancy Rate[9]	Percent	0.5	7	7

Notes:
1. Retail/Commercial uses include retail, restaurant, and service commercial land use.
2. Market rate residential housing mix/affordable residential housing mix.
3. Non-NBS Master Plan market rate residential housing mix/NBS Master Plan market rate residential housing mix/NBS Master Plan market rate residential housing mix.
4. Residents parking supply rate does not include residential visitor parking supply.
5. Based on *Intuit Building 20 Vehicle Trip Generation and Mode Share Monitoring* memorandum, May 2019.

6. Based on Google employee mode share survey, adjusted to reflect mode share for all trips (in addition to employee trips) that occur at non-residential developments.
7. Effective district-wide morning peak hour single-occupancy vehicle rate derived from spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment (May 2020), North Bayshore Framework Master Plan Appendix C: TDM Plan (August 2021), and employment weightings of approximately 11% non-Google development and 89% Google development provided by City staff.
8. Effective district-wide morning peak hour single-occupancy vehicle rate for Scenario 3 is based on employment weightings of approximately 6% for existing non-Google development, 14% for future non-Google development, 52% for existing Google development, and 28% for future Google development.
9. A vacancy rate expresses the portion of building square footage that is unoccupied.

Source: City of Mountain View travel model and Fehr & Peers, 2022.

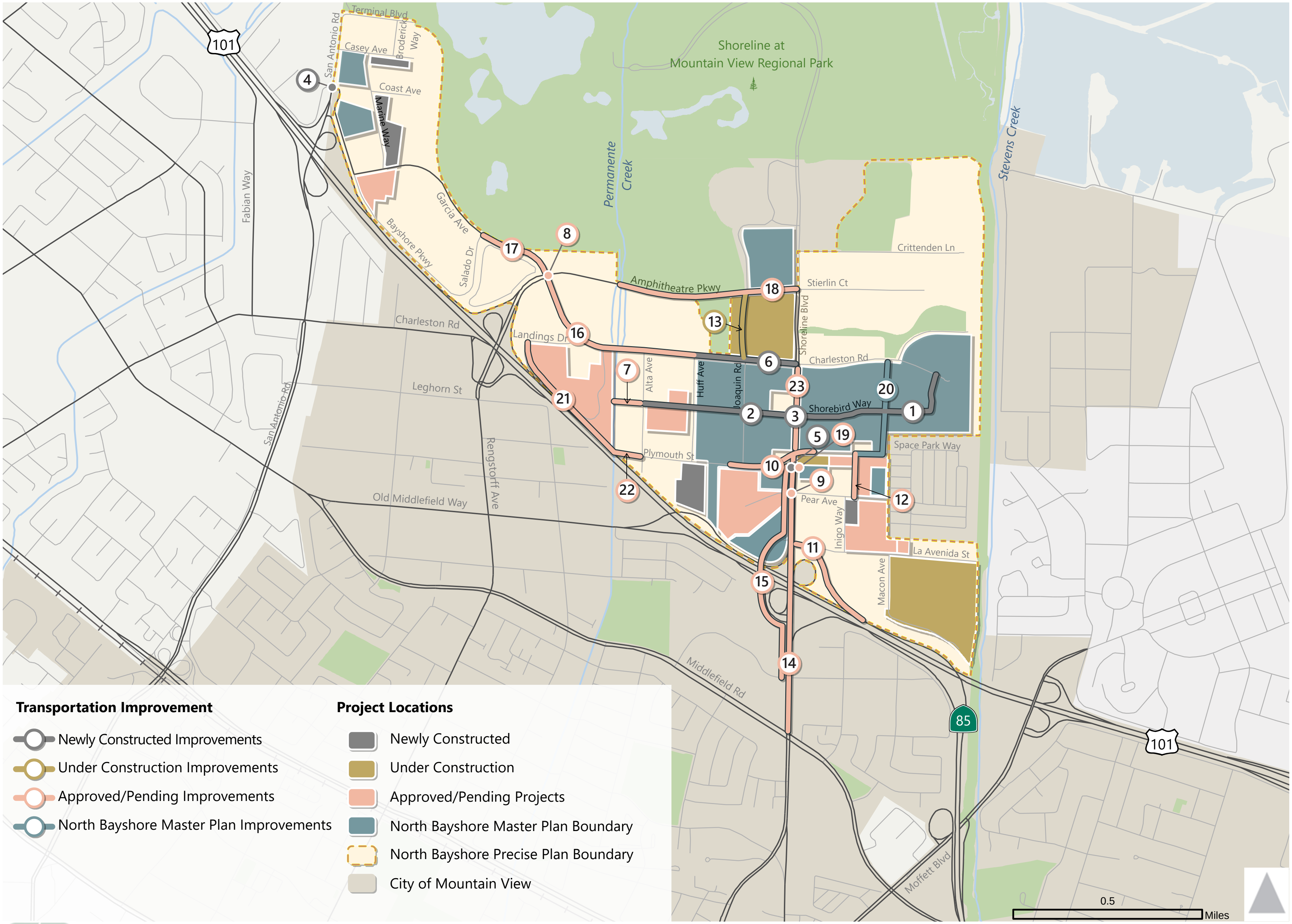

Figure 4

North Bayshore Precise Plan Transportation Improvement Projects

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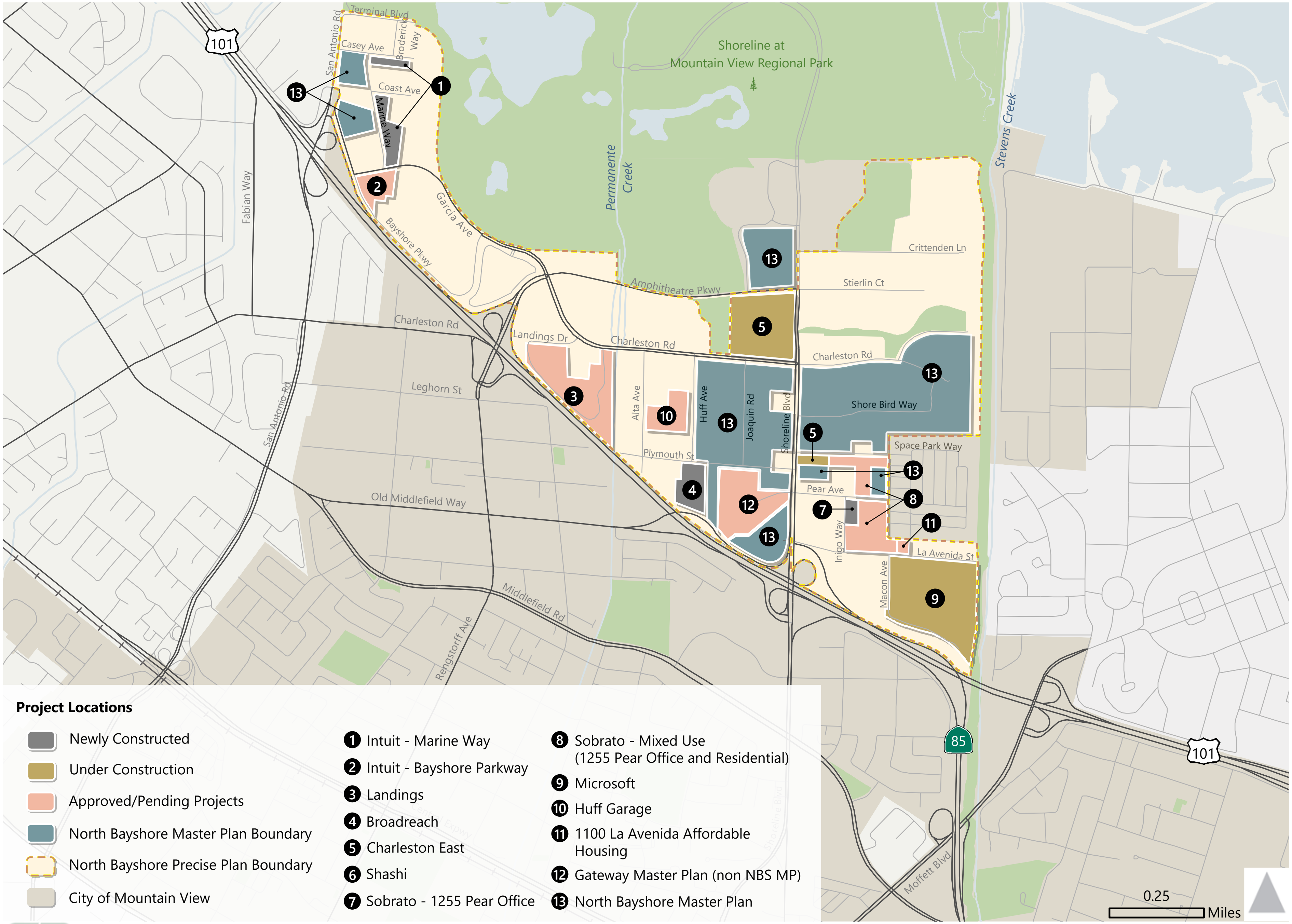

Figure 5

North Bayshore Precise Plan Growth Project Locations

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Table 4: North Bayshore Precise Plan Transportation Improvements

ID	Facility	Extent of Improvement	Description of Improvement	Source of Improvement[1]	Circulation Study[2]	Used in Scenario(s)
1	East-West Bicycle connection	Shoreline Blvd to Stevens Creek Trail (between Charleston Rd and Plymouth St)	Buffered bicycle lanes.	NBPP T-6		All Scenarios (1 to 3)
2	East-West Greenway Connection #1	Alta Ave and Shoreline Boulevard (between Charleston Rd and Plymouth St)	Multiuse path.	NBPP T-6		All Scenarios (1 to 3)
3	Shoreline Blvd Signalized Bicycle Crossing	East-West Greenway #2 at Shoreline Blvd	Signalized bicycle crossing at Shoreline Blvd.	NBPP T-9		All Scenarios (1 to 3)
4	San Antonio Rd and Bayshore Pkwy	At intersection	Provide additional northbound right-turn lane storage (240 feet) and eastbound left-turn lane storage (130 feet). Reconfigure the eastbound approach with a separate left-turn lane and a shared through-right-turn lane. (The City implemented a modified westbound approach with a left-turn lane, and a shared left-through-right lane)	NBPP EIR Mitigation		All Scenarios (1 to 3)
5	Shoreline Boulevard and Plymouth Street	At Intersection	Signalize intersection	Other City Improvement		Scenario 1
6	Charleston Road	Charleston Road between Huff Avenue and Shoreline Boulevard	Charleston Road Transit Corridor improvements	NBPP T-3	C-1	All Scenarios (1 to 3)
7	East-West Greenway Connection #1	Alta Avenue to Landings Office Development	Multiuse path	NBPP T-6 and Landings Development Improvement		Scenarios 2 and 3

ID	Facility	Extent of Improvement	Description of Improvement	Source of Improvement[1]	Circulation Study[2]	Used in Scenario(s)
8	Rengstorff Ave-Amphitheatre Pkwy and Garcia Ave-Charleston Rd	At Intersection	Signal timing modifications	Other City Improvement		Scenarios 2 and 3
9	Shoreline Blvd and Pear Ave	At intersection	Construct a separate northbound right-turn lane with 300-foot storage pocket. Modify the westbound approach as a left-turn lane and one shared through-right lane with east/west split phasing.	NBPP EIR Mitigation	C-5	Scenarios 2 to 3
10	Plymouth St Realignment	At the new intersection of Shoreline Blvd and Plymouth St-Space Park Way	Re-align Plymouth St with Space Park Way with signalization and protected phasing. (Eastbound and westbound left turn and shared through-right; Northbound approach with two left turns, one shared through-right; and southbound approach with left turn, one through, one shared through-right). The two northbound left-turn lanes should be 425 feet long to minimize queue spillback during the morning peak hour.	NBPP T-5	C-2	Scenarios 2 to 3
11	Shoreline Blvd / US 101 Northbound Off-Ramp	La Avenida to US 101 Mainline	Re-align US 101 off-ramp to Shoreline Blvd with removal of the east leg from US 101. Creation of a new intersection of La Avenida and US 101 northbound ramps east of Shoreline Boulevard with two northbound left-turn lanes and two northbound right-turn lanes.	NBPP T-16	C-4	Scenarios 2 and 3
12	Local north-south street	La Avenida and Space Park east of Shoreline Blvd	Two-lane street with bicycle lanes and sidewalks (with dog leg).	NBPP T-10 and Sobrato Development Improvement		Scenarios 2 and 3
13	Joaquin Rd	Charleston Rd to Amphitheatre Pkwy	Two-lane street with bicycle lanes and sidewalks.	Charleston East Development Improvement		Scenarios 2 and 3
14	Shoreline Boulevard Reversible Transit Lane	Pear Avenue to Middlefield Road	Center-running, reversible transit lane extending from Middlefield Avenue north to Pear Avenue. Remove signalized Shoreline Boulevard and Plymouth Street intersection (Project 5)	NBPP T-17 and T-18	C-5	Scenarios 2 and 3

ID	Facility	Extent of Improvement	Description of Improvement	Source of Improvement[1]	Circulation Study[2]	Used in Scenario(s)
15	US 101 Bicycle and Pedestrian Path	Terra Bella Ave to Plymouth St	Multiuse path	NBPP T-1 and T-8	C-3	Scenarios 2 and 3
16	Charleston Road	Huff Avenue to Amphitheatre Pkwy	Charleston Road Transit Corridor improvements	NBPP T-3	C-1	Scenarios 2 and 3
17	Charleston Road	Amphitheatre Pkwy to Salado Drive	Charleston Road Transit Corridor improvements	NBPP T-4	C-1	Scenarios 2 and 3
18	Amphitheatre	Permanente Creek Trail to Shoreline Boulevard	Amphitheatre Parkway widening from three-lane street (one eastbound lane and two westbound lanes) to a four-lane street (two lanes in each direction).	NBPP T-14	C-19	Scenarios 2 and 3
19	Shoreline Boulevard and Plymouth Street	At Intersection	Add a second northbound left-turn lane	NBPP EIR Mitigation		Scenarios 2 and 3
20	Inigo Way Extension	Space Park Way to Charleston Road	Two-lane Neighborhood Street with sidewalk and buffered bicycle lanes at the minimal	NBPP T-10		Scenarios 2 and 3
21	Frontage Road	Landings Drive to Permanente Creek	Two-lane Access Street with sidewalk and buffered bicycle lanes at the minimal	NBPP T-11	C-6	Scenarios 2 and 3
22	Frontage Road	Permanente Creek to Alta Avenue	Two-lane Access Street with sidewalk and buffered bicycle lanes at the minimal	NBPP T-11 and Landings Development Improvement	C-11	Scenarios 2 and 3
23	Shoreline Boulevard Reversible Transit Lane	Charleston Road to Plymouth Street-Space Park Way	Center-running, reversible transit lane extending from Charleston Road and Plymouth Street-Space Park Way.	Circulation Study	C-10	Scenarios 2 and 3

Notes:
1. From Figure 55: Priority Transportation Improvements and Table 27: Priority Transportation Improvements in the *North Bayshore Precise Plan* (2017), *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* (2017) or stated development improvement.
2. From Figure 5: North Bayshore Priority Transportation Improvement and Table 1: North Bayshore Priority Transportation Improvements – Approved 2021 Update in the *North Bayshore Circulation Study* (December 2021).

Source: Fehr & Peers, 2022.

Table 5: North Bayshore Building Size of New Projects and Demolition/Remodel of Existing Buildings (Changes from 2020)

Project	Industrial (s.f.)	Recreation (s.f.)	Multi-Family (Dwelling Units)	Hotel (Rooms)	Office (s.f.)	R&D (s.f.)	Restaurant (s.f.)	Retail (s.f.)	Service (s.f.)
Approved and Under Construction Projects									
Intuit (Bayshore Parkway)					+178,600				
Microsoft					+643,680				
Sobrato - 1255 Pear Ave. Mixed-Use Office and Residential			+223		+231,210				
Sashi Hotel				+200			+4,400	+4,000	
Charleston East					+595,000			+10,000	
1100 La Avenida Affordable Housing	-3,723		+93			-8,726			
Landings and Huff Garage			-4		+799,482	-249,224		+10,096	
Net Total Approved and Under Construction Projects	**-3,723**		**312**	**200**	**2,447,972**	**-257,950**	**4,400**	**24,096**	
Pending Projects									
Gateway Master Plan (Non-Google)		+100,000	+1,786				+75,000		
Net Total Pending Projects		**100,000**	**1,786**				**75,000**		
Project (North Bayshore Master Plan)									
North Bayshore Master Plan (Total Uses)		+55,000[2]	+7,000	+525	+3,147,897[3]			+240,000[4]	
North Bayshore Master Plan (Demolished Uses)	-92,497				-8,653	-1,642,061[5]			
North Bayshore Master Plan (Project) (Net New)	**-92,497**	**55,000**	**7,000**	**525**	**3,139,244**	**-1,642,061**	**0**	**240,000**	

Project	Industrial (s.f.)	Recreation (s.f.)	Multi-Family (Dwelling Units)	Hotel (Rooms)	Office (s.f.)	R&D (s.f.)	Restaurant (s.f.)	Retail (s.f.)	Service (s.f.)
Total Changes from 2020									
Total New Development		155,000	9,098	725	5,595,869		79,400	264,096	
Total Demolished Development	-96,220				-8,653	-1,900,011			
Total	**-96,220**	**155,000**	**9,098**	**725**	**5,587,216**	**-1,900,011**	**79,400**	**264,096**	

Notes:

1. This demolition is for the entire Sobrato site, which includes the 30,500 square feet of vacant industrial buildings at 1220 to 1230 Pear Avenue on the proposed NBS Master Plan site.
2. The 55,000 square feet of community uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community uses would generate additional vehicle trips outside of the typical weekday.
3. The 2,000 square foot police operations station is included in the NBS Master Plan office land use summary.
4. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate vehicle trips during a typical day, but rather attract walking and biking trips from the surrounding land uses and are not included in this summary.
5. Existing Conditions is relative to 2020. Vacant buildings for 2020 include the 91,392 square feet at 1400 North Shoreline Boulevard, and the 30,520 square feet at 1220-1230 Pear Avenue. These vacant buildings at 1400 North Shoreline Boulevard and 1220-1230 Pear Avenue were not included in the 2020 baseline and therefore, do not show up as a demolished building credit.

Source: Fehr & Peers, 2022.

1.5 Report Organization

This report is divided into six chapters:

- **Chapter 1 – Introduction and Project Description** includes the TA purpose, proposed project description, a description of recent changes to CEQA transportation analysis, a summary of the analysis scenarios, and report organization.
- **Chapter 2 – VMT Approach and Analysis Methods** discusses the approach for a comprehensive VMT assessment, and the forecasting methods used to estimate total VMT per service population rate and the project's effect on VMT using boundary VMT per service population.
- **Chapter 3 – Summary of Relevant Regional Circulation and Transportation Plans** provides background information to be used for the plan consistency evaluation.
- **Chapter 4 – Significance Criteria** lists the significance criteria used for the environmental impact analysis.
- **Chapter 5 – Vehicle Miles Traveled Forecasts** summarizes the VMT forecast methods including the driveway and North Bayshore gateway trip generation, service population, and City of Mountain View travel model overview.
- **Chapter 6 – Environmental Impacts and Mitigation Assessment** includes a plan conflict analysis and a VMT analysis.

2. VMT Approach and Analysis Methods

This chapter summarizes the use of CEQA prior to SB 743, an overview of SB 743 and legal framework, and VMT assessment approach decisions and VMT analysis methods.

2.1 Use of CEQA Prior to SB 743

CEQA was enacted in 1970 with the goal of providing a mechanism for disclosing to the public the environmental impacts of proposed actions. Before taking a discretionary action, lead agencies (such as the City of Mountain View) must determine if that action is subject to CEQA and conduct a review of the effects of that action on the physical environment. The State Office of Planning and Research (OPR) prepares and maintains guidelines to help agencies implement CEQA.

Under CEQA, lead agencies must determine whether a proposed project has the potential to cause significant environmental impacts. This determination must be based, to the extent possible, on factual data and scientific methods of analysis. The project's effect on transportation is one of the thirteen areas that must be analyzed. For many years, the City of Mountain View (like many lead agencies) has used vehicle Level of Service (LOS) as the primary measure to evaluate a project's effect and determine transportation impacts.

LOS is a qualitative description of vehicular traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, which reflects free-flow conditions where there is very little interaction between vehicles, to LOS F, where vehicle demand exceeds capacity and high levels of vehicle delay result. LOS E represents "at-capacity" operations.[15]

Mitigating a LOS impact typically involves making changes to the physical transportation system to accommodate additional vehicles and reduce delays. These mitigations may involve actions such as installing traffic signals, adding turn lanes, widening roads, or contributing to the construction of HOV/Express Lanes, among other options. The identification of necessary mitigations resulting from project impacts has historically led to project sponsors identifying and funding these changes to the transportation system (i.e., paying for or providing a "fair share" contribution toward funding a new traffic signal or widening an existing roadway).

[15] When traffic volumes exceed the capacity at an intersection, vehicles may wait through multiple signal cycles before traveling through the intersection; these operations are designated as LOS F. The calculation of vehicle LOS is done through the application of specialized software and is based on traffic counts, observations of vehicle interactions, and data about traffic signal operations (at those intersections that are signalized).

2.2 Overview of Senate Bill 743 and Legal Framework

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Specifically, the legislation directed the State of California's OPR to look at different metrics for identifying transportation impacts and make corresponding revisions to the *CEQA Statute & Guidelines*. The initial bill included two legislative intent statements (emphasis and bullets added):

- **New methodologies** under the California Environmental Quality Act are **needed for evaluating transportation impacts** that are better able to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.
- More appropriately balance the needs of congestion management with statewide goals related to **infill development**, promotion of public health through **active transportation**, and **reduction of greenhouse gas emissions**.

These statements provide direction to OPR and to lead agencies. For OPR, the direction is about what the new metrics should achieve. For lead agencies, the direction is about expected changes in transportation analysis (and related technical areas) and what factors to consider for significance thresholds.

To implement this intent, SB 743 contains amendments to current congestion management law that allow cities and counties to opt out of the LOS standards that would otherwise apply. SB 743 does not prevent a lead agency from continuing to analyze delay or LOS as part of other plans (e.g., the general plan), fee programs, or ongoing network monitoring. However, automobile delay as described by LOS is not considered a significant impact on the environment for purposes of CEQA. Lead agencies may still consider vehicle LOS outside of the CEQA process if they determine it is an important part of their transportation planning process. The most common applications will occur for jurisdictions wanting to use vehicle LOS to plan roadways in their General Plans or determine nexus relationships for their impact fee programs. Jurisdictions can also continue to condition projects to build transportation improvements through the entitlement process in a variety of ways.

Following several years of draft proposals and related public comments, OPR settled upon VMT as the preferred metric for assessing passenger vehicle-related impacts and issued revised *CEQA Statute & Guidelines* in December 2018, along with a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the *CEQA Statute & Guidelines* revisions. Under the revised *CEQA Statute & Guidelines*, vehicle LOS is no longer to be used as a determinant of significant environmental impacts under CEQA, and analysis of a project's impacts will now be based on assessment of VMT.

The OPR *Technical Advisory* provides guidance and recommendations for SB 743 implementation. However, lead agencies must still make their own specific decisions about metrics, methods, thresholds, and mitigation. Further, the OPR guidance is primarily tied to statewide goals for greenhouse gas (GHG) reduction and does not attempt to balance or resolve potential conflicts between state and lead agency goals, such as those expressed in local agency general plans and/or climate action plans.

The use of VMT as a metric focuses on the total *amount* of driving, rather than the driving *experience*. This new view presents an impact filter intended to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. VMT can help identify how projects (land development and infrastructure) influence accessibility (i.e., access to places and people), noise, and emissions; thus, its selection as a metric is aligned with the objectives of SB 743.

Many jurisdictions find it useful to express VMT as an efficiency metric (e.g., VMT per person or VMT per employee). This form of the metric is unrelated to the level of activity in a particular location and more about how efficiently the people at that location travel. A project that contributes to a more efficient use of the transportation system would reduce the total VMT per person as compared to a no-project scenario. A commonly used efficiency metric is "total VMT per service population," in which the denominator called "service population" includes all the variables that generate vehicle trips in the models that estimate VMT; in most instances this will be the total number of residents plus the number of employees in the analysis area or project; however, it may also include other categories of people, such as visitors or students, if those categories are used in the trip generation estimates in the model. Based on the background context outlined above, the remainder of this chapter provides information about key decisions the City made regarding VMT metrics, calculation methods, and impact thresholds.

2.3 Approach

Under CEQA, agencies must decide what constitutes a significant environmental impact. The *CEQA Statute & Guidelines* encourage local agencies to adopt thresholds of significance. The thresholds for VMT can be quantitative (i.e., a measured value such as the concentration of greenhouse gas emissions in the atmosphere) or qualitative performance standards (e.g., VMT on local streets) by which the agency can measure the relative magnitude of an impact caused by a project to determine if the project's impacts are significant. In fact, the new *CEQA Statute & Guidelines* Section 15064.3(b)(4) establishes that the lead agency has discretion to choose the most appropriate VMT methods for transportation impact analysis:

> *Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.*

After careful evaluation of the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) (OPR Technical Advisory) relative to the North Bayshore setting, and considering the information and options provided in **Appendix A**, City staff chose to prepare a comprehensive VMT assessment to evaluate the effect of this large land use project. The *North Bayshore Master Plan – VMT Assessment Approach* memorandum (October 19, 2021 and modified August 22, 2022) (refer to **Appendix A**). The comprehensive VMT assessment (i.e., VMT including all vehicle trips, vehicle types, and trip purposes without separation by land use) presented in this report considers the project's direct and indirect impacts under cumulative conditions that considers the project's long-term effect on VMT.[16] This VMT approach was prepared by transportation engineers and support staff with a strong understanding of CEQA practice and a focus on consistency and compliance with *CEQA Statute & Guidelines*.

The OPR Technical Advisory provides a blueprint for organizing key decisions regarding SB 743 methods: the decisions listed later in this section follow the basic structure of the OPR Technical Advisory. The OPR Technical Advisory recommends considering a project's short-term, long-term, and cumulative effects on VMT but provides limited recommendations on how to prepare a comprehensive VMT assessment for large land use projects.

The City of Mountain View considered the substantial evidence presented in the OPR Technical Advisory to make key decisions about the VMT forecasting model, VMT accounting methods, calculation of the baseline and cumulative regional VMT estimates, and VMT thresholds required for a comprehensive analysis. **Appendix A** includes substantial evidence examples with specific citations of:

- using total VMT and project's effect on VMT (refer to the **Retail Projects** quote in **Appendix A**),
- not truncating trip lengths based on model or political boundaries (refer to the **Consideration for All Projects** quote in **Appendix A**), and
- accounting for the cumulative effects of a project (refer to **Cumulative Impacts** quote in **Appendix A**) used to evaluate consistency with adopted plans.

The inclusion of project's effects on VMT for retail projects in the OPR Technical Advisory is one of the reasons that the analysis presented here includes all trip purposes and vehicle types without separation of VMT by land use, and an evaluation of project's effects on VMT (i.e., project-generated VMT per service population and boundary VMT).

[16] This is in contrast with the OPR Technical Advisory recommendation to use partial VMT for transportation impact analysis (Governor's Office of Planning and Research, *Technical Advisory: On Evaluating Transportation Impacts in CEQA*, pages 15 and 16). Using partial VMT for project-generated VMT screening may not tell the full story of the project's benefits. For example, mixed-use projects help reduce VMT by shortening vehicle trip lengths or reducing vehicle trips because of the convenience of walking, bicycling, or using transit between project destinations. A comprehensive VMT analysis is a more complete evaluation.

The expectations of a CEQA impact analysis to provide a complete picture of the VMT effects on the environment are highlighted within the CEQA Guidelines in the following sections.

- <u>**CEQA Guidelines – Expectations for Environmental Impact Analysis**</u>
    - § 15003 (F) = fullest possible protection of the environment…
    - § 15003 (I) = adequacy, completeness, and good-faith effort at full disclosure…
    - § 15125 (C) = EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated…
    - § 15144 = an agency must use its best efforts to find out and disclose…
    - § 15151 = sufficient analysis to allow a decision which intelligently takes account of environmental consequences…

All of these suggest completeness and accuracy is important when judging an adequate analysis. Furthermore, to understand the effects of a project, VMT inputs for air quality, GHG emissions, and energy consumption already require a comprehensive analysis of total "project-generated" VMT and "project's effect on VMT" using local or regional travel forecasting models:

- **Total (project-generated) VMT per service population (Direct Impacts)**: The sum of the "VMT from" and "VMT to" and within a specific geographic area are divided by the sum of the number of residents and employees in the same geographic area.
- **Project's effects on VMT per service population (Cumulative Impacts)**: An evaluation of the change in travel between Without and With Project conditions on all roadways within the local jurisdiction under Cumulative Conditions divided by the sum of the number of residents and employees in the local jurisdiction.

Both total VMT and the project's effects on VMT are needed to fully account for VMT effects that may include changes to VMT generation from neighboring land uses. The importance of a comprehensive analysis using all VMT per service population and that considers the project's effects on VMT is that land use projects can influence the routing of existing trips and the VMT generation of surrounding land uses.[17]

[17] Typical CEQA practice focuses on environmental effects that occur on a typical weekday, so all references to VMT in this document are intended to mean VMT that occurs on a typical weekday.

2.3.1 Summary of VMT Methods Decisions

Implementation of a comprehensive VMT assessment requires certain methodology decisions. The following steps were taken to establish SB 743 VMT thresholds:

- Select a VMT calculation tool
    - Use the City of Mountain View travel forecasting model (Mountain View Travel Model).
- Select the VMT accounting method(s)
    - **Total (project-generated) VMT per service population (Direct Impacts)**: The sum of the VMT within the specified geographic area (internal-internal trips), "VMT from" the specified geographic area (internal-external trips), and "VMT to" the specified geographic area (external-internal trips), divided by the sum of the number of residents and employees in the same geographic area.
    - **Project's effects on VMT per service population (Cumulative Impacts)**: An evaluation of the change in travel between Without and With Project conditions on all roadways within a geographic area under the Cumulative Conditions scenario, divided by the sum of the number of residents and employees in the same geographic area.
- Calculate the baseline and cumulative regional VMT estimates
    - The analysis presented here uses VMT from all trip purposes and vehicle types (i.e., there is no separation of VMT by land use) for the region (defined as San Mateo County, Alameda County, and Santa Clara County) with a baseline set as Existing Conditions VMT generated by the region and cumulative set as VMT on all roadways in the region under Cumulative Conditions (refer to the VMT Accounting Methods sections for detailed descriptions).
- Set the VMT threshold(s)
    - The threshold to be applied in assessing project-specific impacts is 15% below existing total VMT per service population rate for the region. (Refer to **Table 6** and **Table 7** in **Chapter 4** for additional details about this threshold.)
    - The threshold to be applied in assessing cumulative impacts (project's effect on VMT) is no change in the cumulative conditions (future) boundary VMT per service population for the region. (Refer to **Table 6** and **Table 8** in **Chapter 4** for additional details about this threshold.)

For direct impacts, total VMT per service population is the metric used to evaluate how the project VMT changes (increases or decreases) between the Without Project and With Project scenarios, considering both VMT increases due to growth and VMT reductions due to changes in travel behavior. Total VMT per service population is used to evaluate if the VMT rate due to the project (i.e., the direct impacts) is greater than a specified VMT threshold; however, it does not evaluate a project's effect on VMT on the entire roadway system,[18] which is evaluated as part of the cumulative analysis.[19]

Regarding the cumulative analysis, the NBS Master Plan land use changes are small in the context of the regional residential population and employment; therefore, it is to be expected that the project's effect on VMT (cumulative impact) would have localized VMT effects. Furthermore, the project is likely to cause existing traffic to shift to active and transit modes as more residential infrastructure is built in North Bayshore and transportation demand management programs become more effective. Therefore, the project's effect on VMT, as evaluated by the cumulative effects of the project's land use and transportation changes, compares the changes in boundary VMT per service population[20] between the Cumulative Condition and the Cumulative with Project Condition. Each scenario is described in **Chapter 1**.

For the reasons listed above, the analysis presented in this report focuses on the VMT for all trip purposes and vehicle types without separation of VMT by land use. For the project analysis, the project-generated VMT threshold was developed using the Existing Conditions total VMT for the region because a substantial majority of the residential population lives within these counties. As a result, most of the NBS Master Plan total VMT would be within the region and, therefore, impacts assessed against the regionwide baseline is the most appropriate assessment of a project's direct impact. Like the total VMT baseline rate, the boundary VMT baseline uses the regionwide boundary VMT to evaluate the project's effects on VMT because the project effects are likely to be localized near NBS Master Plan area and within the region.

2.4 VMT Accounting Methods

To understand the VMT forecasts and VMT impact analysis, this section defines important VMT terms and analysis methods. The Mountain View travel model was used to develop daily VMT forecasts for the following metrics:

- **Total VMT**: The sum of the VMT associated with travel from, to, and within a project site.
- **Project's Effect on VMT (within a selected geographic boundary)**: An evaluation of the change in total vehicle travel within a defined geographic area boundary, compared between the Without Project and With Project conditions. The boundary for a project's analysis will be selected based on project characteristics such as size and location.

Total VMT per service population is the metric used to evaluate how the project VMT changes (increases or decreases) between the Without Project and With Project scenarios, considering both VMT increases

[18] An often-cited example of how a project can affect VMT is the addition of a grocery store in a food desert. Residents of a neighborhood without a grocery store have to travel a great distance to an existing grocery store. Adding the grocery store to that neighborhood will shorten many of the grocery shopping trips and reduce the VMT to/from the neighborhood. This concept is likely to occur with the addition of housing and supporting retail uses in North Bayshore.

[19] For this analysis, service population is defined as the sum of all residents and employees.

[20] Boundary VMT captures all VMT on a roadway network within a specified geographic area, including local trips plus interregional travel, that does not have an origin or destination within the area.

due to growth and VMT reductions due to changes in travel behavior. As noted earlier, total VMT per service population is used to evaluate if the VMT rate due to the project is greater than a specified VMT threshold; however, it does not evaluate a project's effect on VMT across an entire roadway system. The project's effect on VMT compares the changes in boundary VMT per service population between the Cumulative Condition and Cumulative with Project Conditions. The analysis presented in this report focuses on the VMT for all trip purposes and vehicle types (i.e., there is no separation of VMT by land use).

2.4.1 Total VMT

The total VMT is the VMT from all vehicle trips for all trip purposes and types caused by the residential population and employment population in a specific area. It is calculated by summing the VMT within the specified geographic area (internal-internal trips), "VMT from" the geographic area (internal-external trips), and "VMT to" the geographic area (external-internal trips), as follows:

$$Total\ VMT = (II + IX) + (II + XI) = 2 * II + IX + XI$$

- **Internal-internal (II)**: The full length of all trips made entirely within the specified geographic study area limits.
- **Internal-external (IX)**: The full length of all trips with an origin within the specified geographic study area and destination outside of the area.
- **External-internal (XI)**: The full length of all trips with an origin outside of the specified geographic study area and destination within the area.

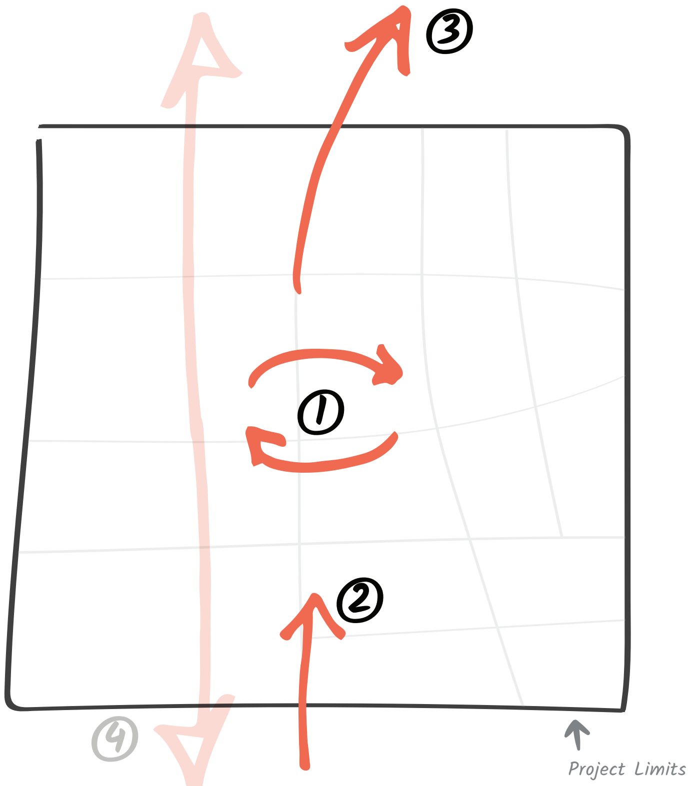
The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are in the specified geographic study area cause some double counting, which is an expected result when summing the trip end based VMT. To ensure a VMT rate is expressed properly (i.e., that the numerator and denominator include the generators of both trip ends of the VMT), the total VMT is divided by the service population (residential population and employment population)—the generator of both trip ends of the VMT. The VMT estimates are also presented on a per service population basis to account for both the effects of population and/or employment growth and the effects of changes in personal travel behavior. For example, population growth may cause an increase in overall VMT, while travelers changing their behavior by using different travel modes or decreasing their vehicle trip lengths (such as a higher percentage of employees living and working in North Bayshore) would cause decreases in the amount of VMT that each person generates.

2.4.2 Project's Effect on VMT (Using Boundary VMT)

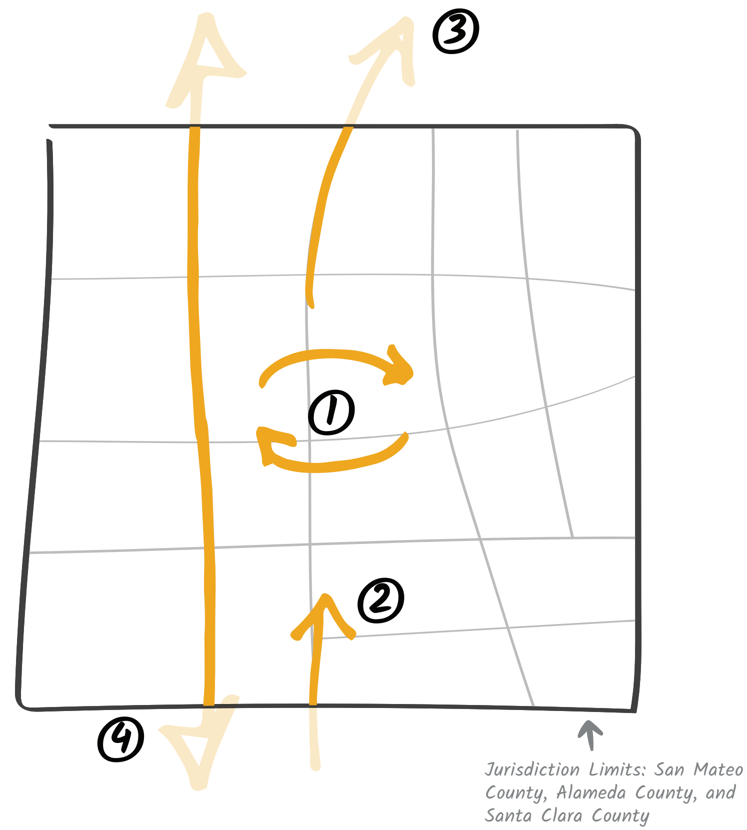
The project's effect on VMT is evaluated using the boundary VMT, which captures all VMT on the roadway network within a specified geographic area, including local trips plus interregional travel that does not have an origin or destination within the study area. The geographical boundary method only considers traffic within the physical limits of the selected study area and does not include the impact of vehicles once they travel outside the area limits. The use of boundary VMT is a more comprehensive evaluation of the potential effects of the project because it captures the combined effect of new VMT, shifts in existing VMT to/from other neighborhoods, and/or shifts in existing traffic to alternate travel routes or modes. The boundary VMT is also divided by the service population (sum of residents and employees) to account for the effects of population and/or employment growth and the effects of changes in personal travel behavior within the specified geographic area.

Figure 6 presents a representation of both total VMT and boundary VMT. Both metrics are needed for a comprehensive evaluation of a project's VMT effects.

Total VMT
(Project Generated VMT)



Project Effect on VMT
(Boundary VMT)



① 2x Internal to Internal (2xII) VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: External to External (XX) trips (shown as transparent arrow 4) are excluded from this VMT metric. Adjustments to total VMT made to include the full length of trips that leave the project limits to capture inter-jurisdiction travel.

① Internal to Internal VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: Boundary VMT is all the VMT on the streets within the Jurisdiction Limits: San Mateo County, Alameda County, and Santa Clara County. Transparent portions of arrows 2, 3 and 4 are not included in the VMT metric.

Figure 6

Measuring Vehicle Miles Traveled (VMT)

3. Summary of Relevant Regional Circulation and Transportation Plans

This chapter provides a summary of regional circulation and transportation plans that are relevant to this project. The *Metropolitan Transportation Commission's (MTC) Regional Transportation Plan* provides a roadmap for accommodating projected household and employment growth in the nine-county Bay Area by 2040 as well as a transportation investment strategy for the region. The *Santa Clara Valley Transportation Authority (VTA) VTP 2040 Plan* describes all major projects in Santa Clara Valley over the next 20 years. The *Santa Clara Countywide Bicycle Plan*'s primary goal was to make it easier and safer for people to bike when traveling from one city to the next in Santa Clara County. The *Congestion Management Program Monitoring and Conformance Report* sets state and federal funding priorities for transportation improvements affecting the Santa Clara County Congestion Management Program (CMP) transportation system.

The *City of Mountain View General Plan 2030* includes mobility goals aimed to enhance travel by all modes by encouraging use by non-auto modes and thus reduce vehicle trips. *AccessMV: Comprehensive Modal Plan* is a multimodal plan to provide a consistent vision for the city's multimodal transportation network. The *Mountain View Vision Zero Policy* is policy to eliminate fatal traffic collisions in Mountain View by 2030. The *North Bayshore Precise Plan* implements the General Plan's goals and policies for the North Bayshore Change Area and establishes the area's land use and development regulations. The *North Bayshore Circulation Study* is an advisory document the results in recommendations for the Priority Transportation Improvements, single-occupancy vehicle trip rate for non-residential development, and a modified North Bayshore Trip Cap Policy definition.

3.1 Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (Plan Bay Area)

Plan Bay Area 2050[21] is a joint regional planning document overseen by the MTC and the Association of Bay Area Governments (ABAG). It serves as the region's Sustainable Communities Strategy (SCS) pursuant to SB 375 and the 2050 RTP (preceded by Plan Bay Area 2040) and integrates four elements (Housing, Economy, Transportation, and Environment) and five guiding principles (affordable, connected, diverse, healthy, and vibrant) to manage GHG emissions and plan for future population growth. Most of the investments are directed toward residents of Equity Priority Communities or other systematically underserved communities. The plan envisions investment in affordable housing production and

[21] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2050*. Available online at Plan Bay Area 2050 | Plan Bay Areahttp://2040.planbayarea.org/.

preservation, a universal basic income to support residents' essential needs, investments in means-based transit fare discounts, and subsidies to protect homes and businesses from natural hazards. The following strategies are included:

- Housing Strategies
  - Protect and Preserve Affordable Housing
    - H1. Further strengthen renter protections beyond state law
    - H2. Preserve existing affordable housing
  - Spur Housing Production for Residents of All Income Levels
    - H3. Allow a greater mix of housing densities and types in Growth Geographies
    - H4. Build adequate affordable housing to ensure homes for all
    - H5. Integrate affordable housing into all major housing projects
    - H6. Transform aging malls and office parks into neighborhoods
  - Create Inclusive Communities
    - H7. Provide targeted mortgage, rental, and small business assistance to Equity Priority Communities
    - H8. Accelerate reuse of public and community-owned land for mixed-income housing and essential services
- Economic Strategies
  - Improve Economic Mobility
    - EC1. Implement a statewide universal basic income
    - EC2. Expand job training and incubator programs
    - EC3. Invest in high-speed internet in underserved low-income communities
  - Shift the Location of Jobs
    - EC4. Allow greater commercial densities in Growth Geographies
    - EC5. Provide incentives to employers to shift jobs to housing-rich areas well served by transit
    - EC6. Retain and invest in key industrial lands
- Transportation Strategies
  - Maintain and Optimize the Existing System
    - T1. Restore, operate, and maintain the existing system
    - T2. Support community-led transportation enhancements in Equity Priority Communities

        - T3. Enable a seamless mobility experience
        - T4. Reform regional transit fare policy
        - T5. Implement per-mile tolling on congested freeways with transit alternatives
        - T6. Improve interchanges and address highway bottlenecks
        - T7. Advance other regional programs and local priorities
    - Create Healthy and Safe Streets
        - T8. Build a Complete Streets network
        - T9. Advance regional Vision Zero policy through street design and reduced speeds
    - Build a Next-Generation Transit Network
        - T10. Enhance local transit frequency, capacity, and reliability
        - T11. Expand and modernize the regional rail network
        - T12. Build an integrated regional express lanes and express bus network
- Environmental Strategies
    - Reduce Risk from Hazards
        - EN1. Adapt to a sea level rise
        - EN2. Provide means-based financial support to retrofit existing residential buildings
        - EN3. Fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings
    - Expand Access to Parks and Open Space
        - EN4. Maintain urban growth boundaries
        - EN5. Protect and manage high-value conservation lands
        - EN6. Modernize and expand parks, trails, and recreation facilities
    - Reduce Climate Emissions
        - EN7. Expand commute trip reduction programs at major employers
        - EN8. Expand clean vehicle initiatives
        - EN9. Expand transportation demand management incentives

Major transit projects included in *Plan Bay Area 2050* include a BART extension to San José/Santa Clara, Caltrain electrification, enhanced service along the Amtrak Capitol Corridor, and improvements to local and express bus services.

3.2 Santa Clara Valley Transportation Authority VTP 2040 Plan

Santa Clara Valley Transportation Authority (VTA), the countywide transportation authority, has adopted the *Valley Transportation Plan (VTP) 2040* (adopted in October 2014) that describes all major projects and initiatives expected to occur in the next 20 years. It prioritizes complete streets, express lanes, light rail effectiveness upgrades, bus rapid transit, and bicycle/pedestrian improvements.

Most recently, the Phase 3 of the US 101 and State Route (SR) 85 Express Lanes Project converted the existing single carpool lanes to express lanes on US 101 from near SR 237 to SR 85 in Mountain View and SR 85 from SR 237/Grant Road to the US 101/SR 85 interchange. Also, the existing double carpool lane on US 101 between the San Mateo County line to the US 101/SR 85 interchange was converted to double express lanes. The *VTA 2040 Plan* also includes a package of projects in the North Bayshore Precise Plan area including the electrification of Caltrain, express lane projects along US 101, SR 237 and SR 85, US 101 southbound improvements from San Antonio Road to Rengstorff Avenue, and Permanente Creek Trail grade separation at Charleston Road and extensions of Permanente Creek Trail to Middlefield Road.

3.3 Santa Clara Countywide Bike Plan

The *Santa Clara Countywide Bicycle Plan*'s primary goal was to make it easier and safer for people to bike when traveling from one city to the next in Santa Clara County. The plan establishes a network of Cross County Bikeway Corridors that will provide continuous, complete bike connections across the county. The plan also identifies locations where new and improved bicycle connections are needed across freeways, rail lines, and creeks. Lastly, the plan identifies ways to make it easier for people to use their bicycle with transit, including bicycle access to major transit stops, bicycle parking at stops, and bicycle accommodations on board.

3.4 Congestion Management Program Monitoring and Conformance Report

As the county's Congestion Management Agency (CMA), VTA is responsible for managing the county's blueprint to reduce congestion and improve air quality. VTA is authorized to set state and federal funding priorities for transportation improvements affecting the Santa Clara County CMP transportation system. CMP-designated transportation system components in Mountain View include a regional roadway network, a transit network, and a bicycle network. The CMP regional roadway network in Mountain View includes all state highways, county expressways, and some principal arterials, while the transit network includes rail service and selected bus service. The bicycle network focuses on the Cross County Bicycle Corridors, which is a network of 57 routes that are identified in the *Santa Clara Countywide Bicycle Plan* (summer 2018). The long-range countywide transportation plan and how projects compete for funding and prioritization are documented in the *Valley Transportation Plan (VTP) 2040* (adopted in October 2015).

The *Citywide Multimodal Improvement Plan (MIP),* also referred to as the Deficiency Plan per state's CMP legislation, is a planning document that identifies measures to improve transportation conditions on the

CMP network instead of making physical traffic capacity expansions such as widening an intersection or roadway. The MIP is based on the VTA Deficiency Plan Requirements, which describe the required content, actions, and implementation standards to assist member agencies with deficiency plan preparation and responsibilities.

3.5 City of Mountain View General Plan 2030

The *City of Mountain View General Plan 2030* includes mobility goals aimed to enhance travel by all modes by encouraging use by non-auto modes and thus reduce vehicle trips. The goals and policies include topics of complete streets, accessibility, walkability, bikeability, public transit, safe routes to school, vehicle parking, performance measurements, GHG emissions and air quality, and vehicles and roadway stye efficiency. The goal and policies for the North Bayshore Change Area are listed below:

- ***Goal LUD-16:*** *A diverse area of complementary land uses and open space resources.*
    - *LUD 16.1: Protected open space. Protect and enhance open space and habitat in North Bayshore.*
    - *LUD 16.2: Mix of uses. Promote the North Bayshore Area as a vibrant mix of residential, commercial, service, and entertainment uses through the North Bayshore Precise Plan.*
    - *LUD 16.3: Business-class hotel. Encourage the development of a business-class hotel and conference center.*
    - *LUD 16.4: Innovative corporate campuses. Encourage innovative corporate campus designs.*
    - *LUD 16.5: Protected views. Protect views by including open areas between tall buildings.*
    - *LUD 16.6: Open space amenities. Encourage development to include open space amenities, plazas, and parks that are accessible to the surrounding transit, bicycle, and pedestrian network.*
    - *LUD 16.7: Gateway development. Support the creation of a gateway development with a diverse mix of uses near Highway 101 and North Shoreline Boulevard.*
- ***Goal LUD-17:*** *A sustainable and efficient multimodal transportation system.*
    - *LUD 17.1: Connectivity. Improve connectivity and integrate transportation services between North Bayshore, downtown, NASA Ames, and other parts of the city.*
    - *LUD 17.2: Transportation Demand Management strategies. Require development to include and implement Transportation Demand Management strategies.*
    - *LUD 17.3: Bicycle and pedestrian focus. Support bicycle and pedestrian improvements and connections to and throughout North Bayshore.*
    - *LUD 17.4: North Shoreline Boulevard and Rengstorff Avenue enhancements. Encourage the enhancement of North Shoreline Boulevard, Rengstorff Avenue, and other key streets in North Bayshore through new development and street design standards.*

3.6 AccessMV: Comprehensive Modal Plan

AccessMV is a modal plan to provide a consistent vision for the city's multimodal transportation network. This plan aims to identify the city's primary transportation network for all modes and prioritizes previously identified transportation improvement projects. The City has analyzed bicycle level of traffic stress, pedestrian quality of service, and potential transit demand.

3.7 Mountain View Vision Zero Policy

On December 10, 2019, Mountain View City Council unanimously adopted a Vision Zero Policy to eliminate fatal traffic collisions in Mountain View by 2030. Vision Zero is an integrated set of policies, plans, and programs based on the philosophy that fatal collisions are unacceptable and often preventable.

Mountain View's Vision Zero approach is to eliminate fatal and severe injury traffic collisions among all road users, including those walking, biking, and driving. This approach is working to eliminate fatal traffic collisions by 2030, working to decrease traffic collisions involving fatalities or severe injuries by 50% by 2030 from a 2016 baseline of 15 collisions; and working to decrease the three-year annual average number of people killed or severely injured (KSI) in collisions by 15% every three years from a current three-year annual average baseline of 19 people.

3.8 North Bayshore Precise Plan

The NBPP implements the General Plan's goals, policies, and design directions for the North Bayshore Change Area and establishes standards, guidelines, and decision-making processes for the area's land use and development. All applications for new construction, substantial modifications or improvements to existing buildings, and changes in land use shall be reviewed for conformance with the NBPP. The NBPP is adopted under the authority of the City's Zoning Ordinance, which establishes precise plans as a tool to regulate land use and development where certain properties or conditions require specialized attention. The NBPP includes the following chapters:

- Introduction
- Vision and Guiding Principles
- Land Use and Design
- Green Building and Site Design
- Habitat and Biological Resources
- Mobility
- Infrastructure
- Implementation

The Mobility chapter and section 8.3 of the Implementation chapter are described below. The Mobility chapter specifies the design of the street system, parking approach, transportation demand management approach, and the role of the Mountain View Transportation Management Association (TMA). As noted at the start of the Mobility chapter the key transportation policies and metrics include the following:

- *Setting a district wide single occupancy vehicle mode share target of 45%*
- *Establishing a district-wide vehicle trip cap*
- *Implementation of Transportation Management Association programs*
- *Eliminating minimum parking requirements and setting parking maximums*
- *Development of new street typologies and design guidelines for each typology*
- *Identification of key transportation infrastructure improvements to support SOV target and mode shift*
- *Development of a complete bicycle network*

The NBPP standards and guidelines result in the construction and management of a street system that supports travel by walking, bicycling, carpool, and transit. These mode priorities are emphasized by the first section of the Mobility chapter, Street Typologies, which defines the vehicle priority for six street types and references standards and guidelines discussed in other sections of the chapter. Specifically, the street typologies balance context and mode priority for:

- <u>Gateway Boulevard</u> – Shoreline Boulevard, Amphitheatre Parkway, Garcia Avenue, and Rengstorff Avenue are identified as Gateway Boulevards with vehicle traffic being a high priority. Design standards are described in Table 14 of the NBPP.
- <u>Transit Boulevard</u> – This is an overlay on all of Garcia Avenue and on portions of San Antonio Road, Charleston Road, and Shoreline Boulevard with frequent transit service. Design standards are described in Table 15 of the NBPP.
- <u>Access Street</u> – Access streets distribute vehicle traffic from Gateway Boulevards to adjacent land uses with parking access. Access streets include Terminal Way, Casey Avenue, Marine Way, Salado Drive, Landings Drive, Alta Avenue, US 101 frontage Road, Stierlin Court, Crittenden Lane, and portions of San Antonio Road, Charleston Road, Plymouth Street, and Joaquin Road. Design standards are described in Table 16 of the NBPP.
- <u>Neighborhood Streets</u> – These streets provide access to/from Shoreline Boulevard and are meant to circulate vehicles without providing access to park entrances or refuse pick-up since those services are provided on Service Streets. These streets provide bicycle lanes and a curbside zone for transit stops, street trees, stormwater treatment, and other active uses. Neighborhood streets include Huff Avenue, Pear Avenue, Shorebird Way, Space Park Way, La Avenida, and portions of Joaquin Road, Charleston Road, and Plymouth Street. Design standards are described in Table 17 of the NBPP.
- <u>Service Streets</u> – These streets are residential or service oriented and they can accommodate refuse pick-up, deliveries, emergency access, loading zones, and parking entrances. Many of these streets will be new streets. Design standards are described in Table 18 of the NBPP.

- Green Way – These pathways serve pedestrians and bicyclists and incorporate high-quality crossings of streets. Greenways can accommodate emergency vehicles. Design standards are described in Table 19 of the NBPP.

The next eleven sections of the Mobility chapter provide standards and guidelines for the streets by mode, a list of transportation improvements, and parking requirements. A summary of each section is listed below:

- Public Frontages – This section addresses the area between the street curb and the back of the sidewalk.
- Streetscape Design – This section addresses standards for street tree plantings, sidewalk continuity, sidewalk furniture, pedestrian scale lighting, and stormwater features.
- Priority Transportation Improvements – This section lists and prioritizes the priority transportation improvements for the NBPP in Table 20. Several follow-up studies are identified that would refine the priority transportation improvement list.
- Bicycle Network – This section defines the bicycle facilities, presents a complete bicycle network as shown in Figure 48 of the NBPP, and provides specific design standards and guidance for each bicycle facility.
- Bike Parking and Commuter Amenities – This section provides bike parking and amenity standards and guidance.
- Pedestrian Network – This section defines the pedestrian facilities for each street typology and provides specific design standards and guidance for each bicycle facility.
- Transit Network – This section identifies the importance of public transit service, employer sponsored shuttles, advanced technologies and the Charleston bridge, Figure 48 shows the transit network and 5- to 10-minute walk sheds and provides specific design standards and guidance for transit facilities.
- Shared, Unbundled, and Manage Parking – This section defines shared parking, unbundled parking, managed parking, and standards and guidelines.
- Off-Street Parking Requirements – This section describes the parking approach for commercial and residential parking, garage adaptation (a parking garage being converted to other uses over time), maximum parking requirements for office/R&D and residential land uses, and other standards and guidelines for parking.
- Carsharing – This section provides standards and guidelines for carsharing.
- Parking for Carpools, Vanpools, and Electric Vehicles – This section provides standards and guidelines for carpools, vanpools, and electric vehicles.

The final two sections of the Mobility chapter discuss the transportation demand management program and the role of the transportation management association to reduce congestion and improve person connectivity.

- Transportation Demand Management – This section includes a description of the employer TDM approach, the use of project-level TDM plans, the residential vehicle trip performance standard, the North Bayshore trip cap (specified in Chapter 8 Section 8.3 of the NBPP and discussed further in the following section), congestion pricing, and commercial and residential TDM standards and guidelines.
- Transportation Management Association – The Mountain View TMA includes companies and property owners in the North Bayshore and East Whisman area. The purpose of the TMA is to reduce congestion and improve person connectivity. This section provides a description of some of the TMA functions and standards.

3.8.1 North Bayshore District Trip Cap Policy

The 2017 NBPP established a North Bayshore District Trip Cap Policy (Chapter 6 Section 6.14 and Chapter 8 Section 8.3). The North Bayshore District Trip Cap Policy is expressed as an absolute number of vehicle standard (Chapter 8 Section 8.3, page 244) in the District Vehicle Trip Cap and Monitoring Program Section 8.3 of the NBPP:

- ***North Bayshore Gateway Peak Hour Vehicle Trip Cap.*** *The District Vehicle Trip Cap is established as the maximum allowed number of trips at the three North Bayshore gateways during the following peak hour periods: 8,290 trips (AM) and 8,030 (PM).*

The North Bayshore District Trip Cap Policy quantifies the physical vehicle capacity of the three main gateways (San Antonio Road, Rengstorff Avenue, and Shoreline Boulevard) and represents the number of vehicles that can be served during the peak morning and evening periods, while maintaining reasonable freedom of vehicular movement (i.e., avoiding gridlock conditions on the local streets, at the gateway interchanges, and on the freeway system). The implementation of the District Vehicle Trip Cap Policy at the three gateways is defined as follows:

- ***Vehicle Trip Cap Monitoring.*** *The City shall monitor the number of vehicle trips at each of the three major entry points to North Bayshore: San Antonio Road; Rengstorff Avenue; and Shoreline Boulevard. Monitoring shall occur at least twice a year during periods determined by the City.*
- ***District Vehicle Trip Cap.*** *If monitoring shows that the trip cap is reached at any of the three gateway locations after two consecutive data reporting periods, the City will not grant any new building permits for net new square footage in the North Bayshore Precise Plan area until the number of peak hour vehicle trips is reduced below the trip cap, except as described in the next paragraph.*

  An application for new development may propose strategies, including but not limited to, physical improvements to the transportation network and additional Transportation Demand Management measures, along with traffic analysis demonstrating the proposed strategies and/or improvements will comply with the district vehicle trip cap prior to project occupancy. Proposed strategies and/or improvements shall be implemented prior to building occupancy, unless deemed otherwise by the City Council. The City Council will consider applications proposing improvements to the *transportation network and/or additional Transportation Demand Management measures according to the review process established by City Council policy.*

The adopted North Bayshore District Trip Cap Policy is a target trip generation for the North Bayshore District, and can be defined in different ways. In this case, the adopted North Bayshore District Trip Cap Policy is based on the individual gateway capacity estimates from a traffic operations analysis (Fehr & Peers, *North Bayshore Precise Plan EIR - Vehicle Gateway Capacity with Residential*, December 2016) included in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* that was certified in November 2017. The 2017 NBPP adds nearly 10,000 residential dwelling units, which has the effect of creating a more balanced directional traffic flow, increasing the amount of outbound traffic in the morning and inbound traffic in the evening.

3.8.2 Site-Specific TDM Plan Policy

Separate from the North Bayshore District Trip Cap Policy, the NBPP also includes a Site-Specific TDM Plan Policy that is referenced in sections 6.14 and 8.3 of the NBPP and a precise definition is presented in the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines*. The Site-Specific TDM Plan Policy applies a 45% morning peak hour inbound single-occupancy vehicle mode share at each development's driveways (or at a District parking structure with specified vehicle trip targets) for future employees (and associated visitors) commuting to North Bayshore.

4. Significance Criteria

The detailed impact criteria for VMT and other transportation-related items are described below. The project's potential impacts are presented in **Chapter 6**.

4.1 Significance Criteria

The significance thresholds described in the following sections address:

- Plan Conflicts (i.e., impacts to transit, roadways, bicycle, and pedestrian systems)
- VMT Impacts

Hazardous conditions and emergency access were previously evaluated in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* certified in November 2017. The Plan Conflict and VMT impact criteria are discussed further below.

4.1.1 Plan Conflicts

To determine the project's consistency with relevant transportation programs, plans, ordinances, or policies (refer to **Chapter 3** for a summary of the relevant circulation and transportation plans), the following significance thresholds were applied to each respective mode of travel – transit and carpool system, roadway system, bicycle system, and pedestrian system.

- **Transit and Carpool System** – Analysis of transit-related impacts encompasses the proposed project's consistency with local transit plans. To determine the proposed project's consistency with local transit plans, significant impacts would occur if any part of the proposed project directly or indirectly:
    - Disrupts existing transit services or facilities;[22]
    - Interferes with the implementation of a planned transit facility; or
    - Creates physical or operational transportation outcomes that conflict with desired conditions expressed in transit policies adopted by Mountain View, Santa Clara County, or VTA for their respective facilities in the study area.
- **Roadway System** – To determine the proposed project's consistency with local roadway plans, significant impacts would occur if any part of the proposed project directly or indirectly:
    - Disrupts existing facilities;
    - Interferes with the implementation of a planned vehicle facility; or

[22] This includes disruptions caused by the project relative to transit street operations and transit stops/shelters.

- Creates physical or operational transportation outcomes that conflicts with applicable program, plan, ordinance, or policy.

- **Bicycle System** – The project would create a significant impact related to the bicycle system if the any part of the proposed project directly or indirectly:
  - Disrupts existing bicycle programs or facilities;
  - Interferes with planned bicycle facilities; or
  - Creates physical or operational transportation outcomes that conflict with applicable bicycle system plans, guidelines, policies, or standards.
- **Pedestrian System** – The project would create a significant impact related to the pedestrian system if any part of the proposed project directly or indirectly:
  - Disrupts existing pedestrian facilities;
  - Interferes with implementation of a planned pedestrian facility; or
  - Creates physical or operational transportation outcomes that conflict with applicable pedestrian system plans, guidelines, policies, or standards.

4.1.2 VMT Impacts

The VMT impact analysis presented in this report considers the project's direct impacts relative to total VMT per service population as well the project's long-term effect on VMT using boundary VMT per service population evaluated under Cumulative Conditions. The project would result in a VMT-related impact as described below in **Table 6**.

Table 6: VMT Significance Thresholds

Impact Category	Significance Threshold	Calculated Numeric Threshold for Project
Project Impact	The threshold to be applied in assessing project-specific impacts is 15% below existing total VMT per service population rate for the region.[1]	The project would result in a significant project-specific impact if the NBS Master Plan total VMT per service population under Cumulative with Project Conditions is greater than 25.46 miles.
Cumulative Impact	The threshold to be applied in assessing cumulative impacts (project's effect on VMT) is no change in the cumulative conditions (future) boundary VMT per service population for the region.[1]	The project would result in a significant cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 17.22 miles.

Note:
1. The region is defined as San Mateo County, Alameda County, and Santa Clara County.

Source: Fehr & Peers, 2022.

4.1.2.1 Project-Generated VMT Impact Thresholds and Impact Criteria

As discussed in the VMT Approach and Analysis Methods chapter (**Chapter 2**), the significance threshold for determining the project's direct impact is a total VMT per service population rate that is 15% below the Existing Conditions total VMT per service population for the region (San Mateo County, Alameda County, and Santa Clara County). The threshold applied in this analysis is 15% below the existing total VMT per service population of 29.95, which, as shown in **Table 7**, is the existing total VMT of 199,496,820 divided by the service population of 6,660,380. This results in a total VMT per service population threshold of 25.67 miles (29.95 miles * 85% = 25.46 miles).

Table 7: Project-Generated VMT Threshold

Item	Amount
Total Vehicle Miles Traveled (A)[1]	199,496,820
Service Population (B)[1,2]	6,660,380
Total VMT per Service Population (A/B = C)	29.95
Total VMT per Service Population Threshold (C*85% = D)	**25.46**

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2022.

Therefore, the project would cause a significant project-generated VMT impact if the NBS Master Plan total VMT per service population under Cumulative with Project Conditions is greater than 25.46 miles.

4.1.2.2 Project's Effect on VMT Thresholds and Impact Criteria

The impact threshold for the project's effect on VMT, or the project's cumulative impact, is the regional[23] boundary VMT per service population, or 17.22 miles (refer to **Table 8** for illustration of how the 18.14 miles are calculated). Like the project-generated VMT discussed above, the boundary VMT baseline uses the regionwide boundary VMT to evaluate the project's effects on VMT.

Table 8: Project's Effect on VMT (Boundary VMT) Cumulative Threshold

Item	Amount
Boundary Vehicle Miles Traveled (A)[1]	129,777,430
Service Population (B)[1,2]	7,535,570
Boundary VMT per Service Population (A/B = C)	17.22
Boundary VMT per Service Population Threshold (C)	**17.22**

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2022.

[23] The region is defined as San Mateo County, Alameda County, and Santa Clara County.

Therefore, the project’s effect on VMT would result in a significant cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 17.22 miles.

4.1.3 Plan Consistency

CEQA, Section 15125(d), also requires an EIR to discuss any inconsistencies between the proposed project and applicable general and regional plans; therefore, a significant impact would occur if the project were inconsistent with the Regional Transportation Plan/Sustainable Community Strategy Plan (Plan Bay Area).

5. Vehicle Miles Traveled Forecasts

Vehicle miles traveled forecasts depend on factors such as demographic change, household preferences for housing types and locations, the cost of fuel, and the competitiveness of regional transit relative to driving, which relates to congestion along vehicular commute routes that are not under the City's jurisdiction, as well as transit provided by agencies other than the City. This VMT forecast does not account for any future increases in the use of TNCs (such as Uber and Lyft) or commercial delivery services, nor does it envision the potential for development of autonomous vehicles or any other emerging transportation innovations. These emerging transportation innovations will alter the effectiveness of VMT mitigation action, some increasing VMT reduction effectiveness while others decreasing VMT reduction effectiveness.

Further there is evidence related to VMT trends in California that overall VMT rates are increasing; specifically, CARB's *2017 Climate Change Scoping Plan Update*[24] and *Draft 2022 Scoping Plan Update,*[25] which assumes that all of the regions in the state will meet the GHG reduction targets set in their Regional Transportation Plans and Sustainable Communities Strategies (RTP/SCS). Thus far, there is indication that not all regions are meeting those targets, and vehicular travel in California (at least prior to the COVID-19 pandemic) has been increasing rather than decreasing over the past several years (see CARB's *Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals*, February 2021, and CARB's *2018 Progress Report: California's Sustainable Community and Climate Protection Act*, November 2018). The *2020 Mobile Source Strategy* (California Air Resources Board 2021) also acknowledges the challenge of VMT reduction and states, "Without additional policy intervention, VMT may continue to rise."

The Scoping Plan reviews California's progress for meeting GHG reduction goals and sets forth strategies to achieve those goals based on past performance. The plan acknowledges that the state is not meeting its VMT reduction objectives and that VMT growth is returning after COVID-19 pandemic effects diminish.

> *After a significant pandemic-induced reduction in VMT during 2020, passenger VMT has steadily climbed back up and is now closing in on pre-pandemic levels. Driving alone with no passengers remains the primary mode of travel in California, amounting to 75 percent of the mode share for daily commute trips. Conversely, transit ridership, which was also heavily affected during the lockdown months, has not recovered at the same pace as VMT, and roughly averages two-thirds of pre-pandemic levels of ridership.*[26]

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[24] California Air Resources Board's *2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (January 2019)

[25] California Air Resources Board's *Draft 2022 Scoping Plan Update* (May 2022)

[26] https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf (page 155)

This evidence demonstrates the challenge of reducing VMT when background macro-level conditions are contributing to higher VMT generation rates.

Additionally, declining transit ridership trends[27] in Santa Clara County (at least prior to the COVID-19 pandemic) suggest that the supportive polices at all levels may not be effective at increasing transit ridership and decreasing VMT. This is because limited facilities exist that prioritize travel by high occupancy vehicles and many of the vehicles (i.e., private vehicles and public transit) on the regional streets in Santa Clara County have limited capacity because streets are routinely filled up during peak periods by vehicles with poor seat utilization. Therefore, public transit in Santa Clara County often experiences inefficiencies or deficiencies, which contributes to lower transit demand and higher demand for vehicle use contributing to higher VMT.

The City of Mountain View travel model was used to develop daily VMT and traffic forecasts for the NBS Master Plan and the project study area. The City's travel model contains the most detailed roadway network, smallest units of geographic analysis, and is sensitive to the built environment and transportation policies used in Mountain View. Refer to the *North Bayshore Master Plan – VMT Assessment Approach* (August 2022) memorandum for more details on the travel model comparison and selection process (refer to **Appendix A**). VMT forecasts were prepared for the SB 743 VMT assessment, as well as for use as inputs for the GHG analysis.

5.1 Summary of VMT Forecasts Methods

The VMT assessment calculates VMT using the following steps and methods consistent with the NBPP transportation analysis completed in 2017 (refer to the technical documents referenced below for additional details on the analysis methods):

- **Daily Trip Generation**: Daily project driveway and North Bayshore Gateway volume estimates were developed using the trip generation methods from the *North Bayshore Precise Plan with Residential – Project Trip Generation Estimates* (February 2017), memorandum in Appendix G of the *North Bayshore Precise Plan Transportation Impact Analysis* (July 2017), and the *North Bayshore Master Plan – Morning Peak Hour Inbound Single-Occupancy Vehicle Mode Share for Non-Residential Development in the North Bayshore District and Trip Generation Summary Tables* memorandum (December 19, 2022) (Refer to **Appendix B** and **Appendix C**). The daily project driveway trip generation is used for the project site, while the North Bayshore Gateway volume is used for the North Bayshore area.
- **Service Population**: The residential and employee populations were estimated using employee densities from the Mountain View travel model.

[27] Santa Clara Valley Transportation Authority. Annual Report 2019. Available online at https://www.vta.org/sites/default/files/2020-04/AnnualReport2019_Accessible.pdf

- **Vehicle Miles Traveled**: The total VMT and boundary VMT were developed using the City of Mountain View travel model. The VMT estimates are also presented on a per service population basis to distinguish the effects of population and/or employment growth from the effects of changes in personal travel behavior.[28] (The total VMT metric and calculation methods and the project's effect on VMT using boundary VMT are described in **Chapter 3** and illustrated in **Figure 6**.)

5.2 Driveway Trip Generation

This section summarizes the trip generation for the proposed land uses and those being demolished as part of the proposed project.

5.2.1 Existing NBS Master Plan Land Use and Trip Generation

The existing building demolition credit trip generation is shown in **Table 9**. The project driveway vehicle trip generation is based on the occupied buildings described in **Table 1**. The existing daily trip generation rate by land use is:

- 3.00 total vehicle trips per employee for office uses[29]
- 2.89 total vehicle trips per employee for research & development uses[29]
- 3.73 total vehicle trips per employee for industrial uses[30].

Table 9: Driveway Trip Generation for Existing Buildings to be Demolished

Land Use	Building Size	Service Population[1]	Daily Trips[1]
North Bayshore Master Plan Trips			
Office	8,653 square feet	30	90
Research & Development	1,642,061 square feet	5,720	16,510
Industrial	92,497 square feet	110	410
Public Parking at SA-P-1	240 spaces	0	440
	Total	***5,860***	***17,450***

[28] For example, population growth may cause an increase in total VMT, but if travelers change their behavior by using different travel modes or decreasing their trip lengths, then the VMT per service population metric could decrease.
[29] Based on Google employee mode share survey (Spring 2020) and *Spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment* (May 2020).
[30] Based on ITE *Trip Generation Manual* 11th Edition (September 2021) and *Spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment* (May 2020).

Note:

1. Service population and daily trips rounded to the nearest 10.

Source: Fehr & Peers, 2022.

5.2.2 Proposed NBS Master Plan Land Use and Trip Generation

The NBS Master Plan daily driveway trip generation is show in **Table 10**. The project driveway vehicle trip generation is based on the following information:

- **New Residential Development**: The new residential units are assumed to be a mix of 5,600 market rate units with an average size of 1.80 persons per household and a reduced parking supply rate of 0.65 spaces per dwelling unit, and 1,400 affordable housing units with an average size of 1.90 persons per household and a parking supply rate of 0.69 spaces per dwelling unit. This results in an estimate of 10,080 residents in the market rate units, 2,660 residents in the affordable housing units, and a total of 12,740 residents for the NBS Master Plan. The proposed residential uses would have a combined effective daily trip generation rate of approximately 3.78 daily vehicle trips per dwelling unit.
- **New Office Development**: The proposed office space is assumed to be 93% occupied (based on historical vacancy rates) at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of 11,700 employees on site. The daily trip generation rate for new office uses in the NBS Master Plan area is 1.40 daily vehicle trips per employee.
- **New Retail and Entertainment Development**: The proposed retail space is assumed to be 93% occupied at a density of 2.67 employees per 1,000 square feet gross floor area. This results in an estimate of 600 employees on site. The daily trip generation rate for new retail/entertainment uses in the NBS Master Plan is 16.3 daily vehicle trips per employee.
- **New Hotel Development**: The proposed hotel space is assumed to have an employment density of 0.4 employees per room. This results in an estimate of 210 employees on site. The daily trip generation rates for new hotel uses in the NBS Master Plan are 4.79 daily vehicle trips per room.
- **New Police Operations Station Development**: The proposed Police Operations Station is assumed to be 93% occupied (based on historical vacancy rates) at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of 10 employees on site. The daily trip generation rate for new Police Operations Station land uses in the NBS Master Plan area is 1.40 daily vehicle trips per employee.
- **Public Parking at SA-P-1**: The 240 public parking spaces at SA-P-1 is assumed to have a daily trip generation similar to Existing Conditions (440 daily vehicle trips).

Table 10: Driveway Trip Generation with Project

Scenario	Building Size	Service Population[1]	Daily Trips[1]
North Bayshore Master Plan			
Residential – Market Rate	5,600 dwelling units	10,080	21,560
Residential – Affordable	1,400 dwelling units	2,660	4,930
North Bayshore Master Plan Residential Trips (A)		*12,740*	*26,490*
Office	3,145,897 square feet	11,700	16,360
Retail/Commercial Space	240,000 square feet	600	9,720
Active Space Kiosks[2]	4,000 square feet	0	0
Hotel	525 Rooms	210	2,520
Community Uses[3]	55,000	0	0
Police Operations Station	2,000 square feet	10	20
Public Parking at SA-P-1	240 spaces	0	440
North Bayshore Master Plan Non-Residential Trips (B)		*12,520*	*29,060*
North Bayshore Master Plan Trips (A + B = C)		**25,260**	**55,550**
Existing Building Credit			
Office	8,653 square feet	-30	-90
Research & Development	1,642,061 square feet	-5,720	-16,510
Industrial	92,497 square feet	-110	-410
Public Parking at SA-P-1	240 spaces	0	-440
Existing Building Credit (D)		*-5,860*	*-17,450*
Net Change			
Net Increase (C + D = E)		**19,400**	**38,100**

Notes:

1. Service population and daily trips rounded to the nearest 10.
2. The 4,000 square feet of active space kiosks identified in the Greenway Park West, Greenway Park East, and The Portal is a local serving use that is assumed not to generate vehicle trips.
3. The 55,000 square feet of community Uses is a local serving use that is assumed not to generate separate vehicle trips during a typical weekday, but rather attract walking and biking trips from the surrounding land uses. Weekend programming of the community Uses would generate additional vehicle trips outside of the typical weekday.

Source: Fehr & Peers, 2022.

5.3 North Bayshore Gateway Volumes

The daily North Bayshore Gateway volumes are shown in **Table 11**. The North Bayshore Gateway vehicle volumes are based on the following assumptions.

- **Existing Gateway Volumes**: This represents existing gateway volumes calculated from the counts conducted at the North Bayshore gateways during the spring 2020 traffic monitoring (counts were collected in February 2020 prior to the COVID pandemic altering travel patterns), with an estimated 24,779 employees (assuming a ½ percent vacancy rate) and 762 residents. Expressed as a rate, this equates to a daily rate of 3.16 vehicle trips per employee.
- **New Project Traffic**: This represents new daily vehicle trips generated by the project.
- **Existing Building Demolition Credit**: This represents daily vehicle trips generated by existing buildings on the project site. These trips will be removed with the demolition of the existing buildings.
- **Mixed-Use Vehicle Trip Reduction**: For the NBS Master Plan, the "mixed-use trip reduction share" occurs because the additional residential opportunities in North Bayshore allows some current workers to live nearby. The addition of residential infrastructure in North Bayshore creates a mode shift by allowing people who currently drive into North Bayshore to now walk, bike, or use a local shuttle. Housing increases the diversity of the land use mix and therefore reduces existing gateway vehicle trips. This mixed-use vehicle trip reduction of 15.7 percent is needed to help accommodate additional development in North Bayshore.
- **Gateway Total Volume**: This is the total number of vehicle trips at the gateways, combining all the factors listed above.

Table 11: North Bayshore Gateway Volume with Project

Scenario	Daily Trips[1]
Existing Gateway Volumes (A)	78,370
New Project Traffic (B)	94,620
Existing Building Demolition Credit (C)	-20,070
Mixed-Use Trip Reduction (D)	-24,210
Gateway Total Volume (A+B+C+D=E)	*128,710*
Net New Gateway Traffic (E-A=F)	**50,340**

Note:
1. Daily trips rounded to the nearest 10.

Source: Fehr & Peers, 2022.

5.4 Service Population

Service population is the sum of the number of employees plus residents. **Table 12** shows the service population for the project site, North Bayshore area, and the region[31] for each project scenario.

Table 12: Service Populations

Population Type	Scenario 1: Existing Conditions[3]	Scenario 2: Cumulative Conditions[4]	Scenario 3: Cumulative with Project Conditions[5]
Project Site			
Employees[1] (A)	4,070	3,940	12,520
Residents[1] (B)	0	10,620	12,740
Service Population[1,2] (A + B = C)	4,070	14,560	25,260
North Bayshore			
Employees[1] (A)	24,780	38,910	39,700
Residents[1] (B)	760	18,000	17,030
Service Population[1,2] (A + B = C)	25,540	56,910	56,730
Regionwide			
Employees[1] (A)	2,342,060	2,779,600	2,780,390
Residents[1] (B)	4,318,320	4,755,970	4,755,000
Service Population[1,2] (A + B = C)	6,660,380	7,535,570	7,535,390

Notes:
1. Rounded employees, residents, and service population to nearest 10.
2. Service population is defined as the sum of all residents and employees.
3. Scenario 1 is Existing Conditions in 2020.
4. Scenario 2 is the Cumulative Condition: Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply.
5. Scenario 3 is the Cumulative with Project Condition: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate.

Source: Fehr & Peers, 2022.

[31] The region is defined as San Mateo County, Alameda County, and Santa Clara County.

5.5 City of Mountain View Travel Model

The Mountain View Travel Model was used to develop the VMT forecasts for this study. A description of the City of Mountain View travel model, land use inputs, transportation network inputs, and transportation demand management are discussed in the following sections.

5.5.1 City of Mountain View Travel Model Documentation

The Mountain View Travel Model was comprehensively updated in 2011 as part of continued planning efforts to address transportation infrastructure needs and to assist in the City's North Bayshore Precise Plan. Minor updates were completed for the East Whisman Precise Plan in 2017. The intent of the City's travel model update was to improve the accuracy of the model for local application while maintaining consistency with the structure of the Santa Clara Valley Transportation Authority (VTA)-City/County Association of Governments of San Mateo County (C/CAG) Bi-County Model (VTA Travel Model).

For the NBS Master Plan, the land use and roadway network inputs were updated in the Mountain View Travel Model to represent a base year 2020 and a future year 2030. The updates accounted for the changes in existing land uses and the NBS Master Plan roadway network and district parking locations.

The Mountain View Travel Model is sensitive to two factors that are key elements of the NBPP with Residential:

- Land Use Characteristics
- Transportation Demand Management (TDM) Strategies

Both are important components of the NBS Master Plan, and the Mountain View Travel Model has been updated to more completely account for the effects of both elements on vehicle trip generation.

5.5.2 Land Use Inputs

Urban development patterns directly influence vehicle travel demand. The City of Mountain View is employing a variety of compact growth measures, plans, and techniques to encourage walking, biking, and transit use, and to reduce demand for vehicle travel, as areas of the city are redeveloped or experience infill development.

The Mountain View Travel Model does capture the effects of land use characteristics such as density, diversity, design, and destinations in the model's trip generation estimates. By quantifying changes in these characteristics, the model process adjusts the number of vehicle trips based on a set of elasticities (or variables) that relate changes in vehicle trips to changes in the inputs related to the built environment.

5.5.2.1 North Bayshore Area Land Use

As described as a part of the scenarios in **Chapter 1**, the following eight constructed or planned developments are anticipated to add vehicle trips to the North Bayshore gateway after 2020 (the year of the North Bayshore gateway counts):

- Intuit – Bayshore Parkway
- Microsoft
- Sobrato – 1255 Pear Avenue Mixed-Use Office and Residential
- Shashi Hotel
- Charleston East
- 1100 La Avenida Affordable Housing
- Landings and Huff Garage
- Gateway Master Plan (non-Google)

The locations of these development projects are presented in **Figure 5**, and **Table 5** in **Chapter 1** presents a summary of their associated land use assumptions (which in some cases involve demolition of existing buildings as well as construction of new buildings). For reference, **Figure 5** also shows the location of the remaining known and pending projects in the North Bayshore District.

Altogether, the eight developments will involve the following net increases in land use:

- 2,186,299 square feet of office, research & development, and industrial building space
- 200 hotel rooms
- 99,536 square feet of restaurant, retail, and service building space
- 100,000 square feet of recreational building space
- 2,098 multi-family dwelling units

Table 13 and **Table 14** show the land use totals by category for each scenario: Existing Conditions (Scenario 1); what is expected under Cumulative Conditions (Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply) (Scenario 2); and the Cumulative with Project Conditions (Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate) (Scenario 3).

Table 13: Land Use in North Bayshore Area: Total Building Area

Land Use[1]	Units	Scenario 1: Existing Conditions[2]	Scenario 2: Cumulative Conditions[3]	Scenario 3: Cumulative with Project Conditions[4]
Single Family	Dwelling Units	1	1	1
Multi-Family	Dwelling Units	362	10,212	9,460
Subtotal (Residential) [A]	**Dwelling Units**	**363**	**10,213**	**9,461**
Office	Square Feet	878,930	5,948,796	6,466,146
Research & Development	Square Feet	5,938,153	4,544,684	4,038,142
Industrial	Square Feet	246,857	148,033	150,637
Subtotal (Office, R&D and Industrial) [B]	**Square Feet**	**7,063,940**	**10,641,513**	**10,654,925**
Retail and Restaurant	Square Feet	10,878	198,538	354,374
Service Commercial	Square Feet	26,138	26,138	26,138
Subtotal (Retail/Commercial) [C]	**Square Feet**	**37,016**	**224,676**	**380,512**
Motel	Rooms	0	400	725
Church	Building	1	1	1
Institutional/Recreation	Trips	4,142	10,469	7,673
Subtotal (Other Uses)	**(Various)**	**4,143**	**10,870**	**8,399**
Total Residential [A]	**Dwelling Units**	**363**	**10,213**	**9,461**
Total Employment Uses [B+C]	**Square Feet**	**7,100,956**	**10,866,189**	**11,035,437**

Notes:

1. Land use summarized from the City of Mountain View travel model traffic analysis zones.
2. Scenario 1 is Existing Conditions in 2020. Under Scenario 1, 2020 vacant buildings include: 91,392 s.f. of R&D buildings are vacant at the Shoreline Commons site.
3. Scenario 2 is the Cumulative Condition: Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply.
4. Scenario 3 is the Cumulative with Project Condition: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate.

Source: City of Mountain View travel model and Fehr & Peers, 2022.

Table 14: Land Use in North Bayshore Area: Total Employee and Population Estimates

Land Use[1]	Units	Scenario 1: Existing Conditions[2]	Scenario 2: Cumulative Conditions[3]	Scenario 3: Cumulative with Project Conditions[4]
Single Family	Population	2	2	2
Multi-Family	Population	760	17,998	17,028
Subtotal (Residential) [A]	**Population**	**762**	**18,000**	**17,030**
Office	Employees	3,516	23,795	25,865
Research & Development	Employees	20,784	15,906	14,133
Industrial	Employees	296	178	181
Subtotal (Office, R&D and Industrial) [B]	**Employees**	**24,596**	**39,879**	**40,179**
Retail and Restaurant	Employees	60	547	1,285
Service Commercial	Employees	78	78	78
Subtotal (Retail/Commercial) [C]	**Employees**	**138**	**625**	**1,363**
Motel	Employees	0	160	290
Church	Employees	10	10	10
Institutional/Recreation	Employees	414	1,047	767
Subtotal (Other Uses) [D]	**Employees**	**424**	**1,217**	**1,067**
Total Residential [A]	**Population**	**762**	**18,000**	**17,030**
Total Employment Uses [B+C+D]	**Employees**	**25,158**	**41,721**	**42,609**

Notes:

1. Land use summarized from the City of Mountain View travel model traffic analysis zones.
2. Scenario 1 is Existing Conditions in 2020. Under Scenario 1, 2020 vacant buildings include: 91,392 s.f. of R&D buildings are vacant at the Shoreline Commons site.
3. Scenario 2 is the Cumulative Condition: Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply.
4. Scenario 3 is the Cumulative with Project Condition: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate.

Source: City of Mountain View travel model and Fehr & Peers, 2022.

Table 15 and **Table 16** show the occupied land use totals by category, both for what exists today and for what is expected once the Near-Term Growth developments are constructed.

Table 15: Land Use in North Bayshore Area: Occupied Building Area

Land Use[1]	Units	Scenario 1: Existing Conditions[2,3]	Scenario 2: Cumulative Conditions[4,6]	Scenario 3: Cumulative with Project Conditions[5,6]
Single Family	Dwelling Units	1	1	1
Multi-Family	Dwelling Units	362	10,212	9,460
Subtotal (Residential) [A]	**Dwelling Units**	**363**	**10,213**	**9,461**
Office	Square Feet	810,657	5,875,378	6,013,515
Research & Development	Square Feet	5,908,463	3,834,661	3,755,472
Industrial	Square Feet	245,623	137,671	140,092
Subtotal (Office, R&D and Industrial) [B]	**Square Feet**	**6,964,743**	**9,847,710**	**9,909,079**
Retail and Restaurant	Square Feet	10,824	192,931	329,569
Service Commercial	Square Feet	26,008	24,308	24,308
Subtotal (Retail/Commercial) [C]	**Square Feet**	**36,832**	**217,239**	**353,877**
Motel	Rooms	0	400	725
Church	Building	1	1	1
Institutional/Recreation	Trips	4,142	10,469	7,673
Subtotal (Other Uses)	**(Various)**	**4,143**	**10,870**	**8,399**
Total Residential [A]	**Dwelling Units**	**363**	**10,213**	**9,461**
Total Employment Uses [B+C]	**Square Feet**	**7,001,575**	**10,064,949**	**10,262,956**

Notes:

1. Land use summarized from the City of Mountain View travel model traffic analysis zones.
2. Scenario 1 is Existing Conditions in 2020. Under Scenario 1, 2020 vacant buildings include: 91,392 s.f. of R&D buildings are vacant at the Shoreline Commons site.
3. Under Scenario 1, the remainder of the office, R&D, industrial, retail, restaurant, and service commercial buildings are assumed to be "Occupied" with a ½% vacancy rate of the total existing building square footage.
4. Scenario 2 is the Cumulative Condition: Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply.
5. Scenario 3 is the Cumulative with Project Condition: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate.
6. "Occupied" building square footage accounts for a 7% vacancy rate off the total building square footage under Scenarios 2 and 3 for the office, R&D, industrial, retail, restaurant, and service commercial buildings.

Source: City of Mountain View travel model, and Fehr & Peers, 2022.

Table 16: Land Use in North Bayshore Area: Occupied Employee and Population Estimates

Land Use[1]	Units	Scenario 1: Existing Conditions[2,3]	Scenario 2: Cumulative Conditions[4,6]	Scenario 3: Cumulative with Project Conditions[5,6]
Single Family	Population	2	2	2
Multi-Family	Population	760	17,998	17,028
Subtotal (Residential) [A]	**Population**	**762**	**18,000**	**17,030**
Office	Employees	3,243	23,502	24,054
Research & Development	Employees	20,680	13,421	13,144
Industrial	Employees	295	165	168
Subtotal (Office, R&D and Industrial) [B]	**Employees**	**24,218**	**37,088**	**37,366**
Retail and Restaurant	Employees	59	532	1,195
Service Commercial	Employees	78	73	73
Subtotal (Retail/Commercial) [C]	**Employees**	**137**	**605**	**1,268**
Motel	Employees	0	160	290
Church	Employees	10	10	10
Institutional/Recreation	Employees	414	1,047	767
Subtotal (Other Uses) [D]	**Employees**	**424**	**1,217**	**1,067**
Total Residential [A]	**Population**	**762**	**18,000**	**17,030**
Total Employment Uses [B+C+D]	**Employees**	**24,779**	**38,910**	**39,701**

Notes:

1. Land use summarized from the City of Mountain View travel model traffic analysis zones.
2. Scenario 1 is Existing Conditions in 2020. Under Scenario 1, 2020 vacant buildings include: 91,392 s.f. of R&D buildings are vacant at the Shoreline Commons site.
3. Under Scenario 1, the remainder of the office, R&D, industrial, retail, restaurant, and service commercial buildings are assumed to be "Occupied" with a ½% vacancy rate of the total existing building square footage.
4. Scenario 2 is the Cumulative Condition: Cumulative Conditions with Adopted NBPP with Smaller Residential Units and Standard Residential Parking Supply.
5. Scenario 3 is the Cumulative with Project Condition: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate.
6. "Occupied" building square footage accounts for a 7% vacancy rate off the total building square footage under Scenarios 2 and 3 for the office, R&D, industrial, retail, restaurant, and service commercial buildings.

Source: City of Mountain View travel model, and Fehr & Peers, 2022.

5.5.3 Transportation Network Inputs

Fehr & Peers added detail to the Mountain View Travel Model traffic analysis zone (TAZ) structure to account for the district parking structures and project boundaries, and to account for the refined street network in the NBS Master Plan area. The NBPP land area is divided into more than 60 TAZs to add detail to the model structure and land use allocations and the NBS Master Plan is separated into its own TAZs. The street network accommodates these TAZs, such that the model network better represents the public streets anticipated to be constructed to support the NBS Master Plan development. By refining the travel model in this way, the model results can be used to evaluate the distribution of vehicle traffic at each gateway that is attributable to the various development areas of the NBS Master Plan.

NBS Master Plan land use was allocated to TAZs based on parking location as shown in **Table 2**. This allocation method ensured that vehicle traffic was distributed accurately to where the traffic occurs. This is specifically important for the district parking structures, where the vehicle traffic does not occur where the land use is physically located.

The future roadway network was developed based on planned and funded improvements identified in the financially constrained roadway improvement project list from the Valley Transportation Plan (VTP) 2040 published by the VTA (October 2014), and the City's 2030 General Plan Circulation Chapter. This roadway network used the Future Year (2030) scenario and the regional roadway improvements within Mountain View are summarized below (with VTP 2040 project numbers in parentheses).

- SR 237 HOV/express lanes: Mathilda Ave to SR 85 (H5)*
- SR 85 northbound to eastbound SR 237 connector ramp and northbound SR 85 auxiliary lane including braided SR 237 eastbound off-ramp between SR 85 and Dana Street (H21)*
- SR 237 westbound on-ramp at Middlefield Road (H32)*
- US 101 southbound improvements from San Antonio Road to Charleston/Rengstorff Avenue (H42)*
- SR 237 eastbound auxiliary lanes: Mathilda Avenue to Fair Oaks Avenue (H47)*
- Southbound US 101 auxiliary lanes between Ellis Street and SR 237 (H49)*

  * Denotes Congestion Management Program (CMP) facility.

The transportation improvements within North Bayshore are presented in **Figure 4** and **Table 4** in **Chapter 1**.

5.5.4 Transportation Demand Management

In addition to a land use plan, the NBPP contains several transportation policies, programs, and initiatives intended to help reduce per service population vehicle trips, strengthen Mountain View's alternative transportation network, and encourage travelers to shift to other travel modes. This TDM requirement has been further enhanced in the NBS Master Plan to better accommodate the future growth.

Typically, travel demand models do not directly capture the effects of TDM strategies. However, daily and peak hour TDM adjustments for commute and non-commute trip purposes are applied with the Mountain View Travel Model per the methods described in the *4D Enhancement User's Guide* (Fehr & Peers, 2011). The outcome of applying the daily and peak hour TDM adjustments and a Fratar distribution process to modify the trip generation of NBS Master Plan transportation analysis zones to generate 55,110 daily vehicle trips (refer to **Table 10)** and the North Bayshore District transportation analysis zones to generate 128,450 daily vehicle trips (refer to **Table 11**).[32]

[32] Fratar, T. J. *Vehicular Trip Distribution by Successive Approximations*. Traffic Quarterly, Vol. 8, No. 1, 1954, pp. 53–65.

6. Environmental Impacts and Mitigation Assessment

This chapter discusses potential project impacts per the significance criteria described in **Chapter 4**. Each analysis is separately addressed below.

6.1 Plan Conflict Analysis

This section provides the transit, roadway, bicycle, and pedestrian evaluations. Per the vision of the NBPP, the NBS Master Plan will construct a street system that supports travel by walking, bicycling, carpool, and transit. To get to and from the NBS Master Plan area, people can choose to walk, bike, take transit, carpool or drive in a single-occupancy vehicle. Person and vehicle arrival and departure will be managed using the North Bayshore Trip Cap Policy and NBS Master Plan Transportation Demand Management Plan. To enhance non-drive-alone choices, the NBS Master Plan TDM Plan will offer a variety of program measures such as transit passes, employee shuttles, active transportation (bicycling and walking) incentives, carpool/vanpool incentives, and other methods to reduce daily commute stress on their employees and visitors to reduce the number of single-occupant vehicle (SOV) trips. To provide additional context, the person travel and vehicle travel are shared below.

The NBS Master Plan person travel is summarized in **Table 17**. This summary shows the majority (more than 40 percent daily and 50 percent during the peak hours) of the combined residential and non-residential person trips are by pedestrians, bicyclists, and transit riders. Further the single-occupancy vehicles and high-occupancy vehicles will park in six district parking garages, which then requires the ½ mile or so (between the garages and the final destinations) to be a pedestrian, bicyclist, or transit trip.

Table 17: North Bayshore Master Plan Person Trip Generation by Mode of Travel

Mode of Travel	Daily Person Trips[1]	AM Peak Hour Person Trips[1]			PM Peak Hour Person Trips[1]		
		In	Out	Total	In	Out	Total
Pedestrian	19,060 (19.5%)	1,210 (19.3%)	1,360 (37.0%)	2,570 (25.9%)	1,120 (30.2%)	1,240 (19.8%)	2,360 (23.6%)
Bicycle	4,760 (4.9%)	300 (4.8%)	340 (9.2%)	640 (6.4%)	280 (7.5%)	310 (4.9%)	590 (5.9%)
Transit	15,360 (15.7%)	1,950 (31.2%)	430 (11.7%)	2,380 (23.9%)	430 (11.6%)	1,680 (26.8%)	2,110 (21.1%)
Subtotal (Pedestrian+Bicycle+Transit)	*39,180 (40.1%)*	*3,460 (55.3%)*	*2,130 (57.9%)*	*5,590 (56.2%)*	*1,830 (49.3%)*	*3,230 (51.5%)*	*5,060 (50.6%)*
High-Occupancy Vehicle (HOV)	9,620 (9.9%)	540 (8.6%)	300 (8.2%)	840 (8.5%)	450 (12.1%)	610 (9.7%)	1,060 (10.6%)
Single-Occupancy Vehicle (SOV)	48,730 (50.0%)	2,260 (36.1%)	1,250 (33.9%)	3,510 (35.3%)	1,430 (38.6%)	2,430 (38.8%)	3,860 (38.8%)
Subtotal (SOV+HOV)	*58,350 (59.9%)*	*2,800 (44.7%)*	*1,550 (42.1%)*	*4,350 (43.8%)*	*1,880 (50.7%)*	*3,040 (48.5%)*	*4,920 (49.4%)*
Total	**97,530 (100.0%)**	**6,260 (100.0%)**	**3,680 (100.0%)**	**9,940 (100.0%)**	**3,710 (100.0%)**	**6,270 (100.0%)**	**9,980 (100.0%)**

Notes:
1. Person trips rounded to the nearest 10. Each table cell expresses: person trips (mode share percentage).
Source: Fehr & Peers, 2022.

Similar to the North Bayshore District Monitoring report specifications, the person trips can be expressed as vehicle trips (where pedestrians, bicycles, and SOVs person trips equal one vehicle trip; and multiple HOV and transit person trips are included in each vehicle trip). As shown in **Table 18**, most of the vehicles (61.8 percent) to the NBS Master Plan are SOVs; these vehicles transport 50.0 percent of the daily person travel. Pedestrian travel is the next largest vehicle mode of travel with 24.1 percent of the daily vehicle travel; pedestrian travel is 19.5 percent of daily person travel. While transit vehicles are smaller than other vehicle modes (2.2 percent of daily vehicle travel), transit vehicles carry 15.7 percent of the daily person travel. Transit is forecasted to carry more people than carpooling and bicycling combined (11.9 percent of vehicles; 14.8 percent of the daily person travel).

Table 18: North Bayshore Master Plan Vehicle Trip Generation by Mode of Travel

Mode of Travel	Daily Trips[1]	AM Peak Hour Trips[1]			PM Peak Hour Trips[1]		
		In	Out	Total	In	Out	Total
Pedestrian[2]	19,060 (24.1%)	1,210 (29.4%)	1,360 (42.4%)	2,570 (35.1%)	1,120 (35.3%)	1,240 (28.6%)	2,360 (31.4%)
Bicycle[2]	4,760 (6.0%)	300 (7.3%)	340 (10.6%)	640 (8.7%)	280 (8.8%)	310 (7.1%)	590 (7.9%)
Transit	1,720 (2.2%)	110 (2.7%)	140 (4.4%)	250 (3.4%)	140 (4.4%)	100 (2.3%)	240 (3.2%)
Subtotal (Pedestrian+Bicycle+Transit)	*25,540 (32.3%)*	*1,620 (39.4%)*	*1,840 (57.4%)*	*3,460 (47.2%)*	*1,540 (48.5%)*	*1,650 (38.0%)*	*3,190 (42.5%)*
High-Occupancy Vehicle (HOV)	4,660 (5.9%)	240 (5.8%)	120 (3.7%)	360 (4.9%)	200 (6.3%)	260 (6.0%)	460 (6.1%)
Single-Occupancy Vehicle (SOV)	48,730 (61.8%)	2,260 (54.8%)	1,250 (38.9%)	3,510 (47.9%)	1,430 (45.2%)	2,430 (56.0%)	3,860 (51.4%)
Subtotal (SOV+HOV)	*53,390 (67.7%)*	*2,500 (60.6%)*	*1,370 (42.6%)*	*3,870 (52.8%)*	*1,630 (51.5%)*	*2,690 (62.0%)*	*4,320 (57.5%)*
Total	**78,930 (100.0%)**	**4,120 (100.0%)**	**3,210 (100.0%)**	**7,330 (100.0%)**	**3,170 (100.0%)**	**4,340 (100.0%)**	**7,510 (100.0%)**

Notes:

1. Vehicle trips rounded to the nearest 10. Each table cell expresses: vehicle trips (mode share percentage).
2. Pedestrian and bicycle vehicle trip equals one person trip.

Source: Fehr & Peers, 2022.

6.1.1 Transit Evaluation

Implementation of the proposed project will not result in modifications to the transit network that would disrupt existing facilities or services, nor would it interfere with the implementation of planned facilities/services contained in adopted programs, plans, policies, or ordinances. The proposed project includes modified and new streets that will include widened sidewalks and transit stop enhancements to accommodate increased transit riders to/from North Bayshore (transit riders: 2,380 AM peak hour and 2,110 PM peak hour, which is 250 AM peak hour and 240 PM peak hour transit vehicles). Further, the proposed project accommodates the construction of the Charleston Road transit corridor improvements and planned Shoreline Boulevard reversible transit lane, which are intended to support the shift to transit use.

The VTA operates the bus system in North Bayshore and, in partnership with Mountain View and other member agencies, will make service changes over time based on the equitable distribution of the following performance measures (VTA's Title VI: System-Wide Service Standards and Policies, OPS-PL-0059; November 2013):

- Vehicle Load
- Vehicle Headways
- On-Time Performance
- Service Availability
- Ridership Productivity

Consistent with the *VTP 2040 (2014)*, the existing transit circulation would be modified in the future and adjusted periodically based on VTA's latest transit service plan. The changes to the vehicle circulation system as part of the proposed project would not be expected to interfere with existing transit facilities. The proposed changes would not conflict with planned transit facilities and services or conflict with adopted transit plans, guidelines, policies, or standards. Additionally, the proposed project is supportive of the transit use and standards and guidelines in the Mobility chapter of the NBPP. Therefore, the impact relative to disruption of existing or planned transit facilities or conflicts with transit program, plan, ordinance, or policy would be ***less-than-significant***.

6.1.2 Roadway Evaluation

The project is expected to generate vehicle demand to/from the NBS Master Plan area (SOV: 3,510 AM peak hour and 3,860 PM peak hour and HOV: 360 AM peak hour and 460 PM peak hour; Total: 3,870 AM peak hour and 4,320 PM peak hour). Many of these vehicles (2,520 AM peak hour and 2,400 PM peak hour) will park in District parking garages and the occupants will become pedestrians, bicyclists, or transit riders (2,820 AM peak hour and 2,690 PM peak hour) as they travel from the garages to their destination. The NBS Master Plan streets are designed to accommodate these North Bayshore travel characteristics by prioritizing pedestrians, bicyclists, and/or transit riders.

Per the NBPP, none of the streets within the NBS Master Plan should exceed two lanes of travel in each direction. At intersections, there are vehicle turn lanes with storage pockets long enough to minimize spill-back out of the turn lanes that would block through traffic. The NBS Master Plan local streets are designed for slow vehicle speeds. The project's street improvements address operational conditions for vehicles, improve local circulation, and/or enhance active transportation. The improvements include:

- Operational vehicle improvements (such as a vehicle turn lane or increased storage pocket length) improve vehicle flow.
- Transit-focused improvements that facilitate access to transit stops.
- Local street circulation improvements that provide vehicle access to parking lots or other services (e.g., refuse pick-up, deliveries, emergency access, loading zones, and parking entrances).
- Active transportation improvements that enhance active travel but do not directly allow additional vehicle travel.

Overall, the project's street system is consistent with and connects to existing and planned streets that align with the overall goals and policies of the NBPP and the *AccessMV*. The project's street system supports travel by walking, bicycling, carpool, and transit.

In addition to specifying the street design standards and guidelines, the roadway plan conflict analysis includes an evaluation that compares the North Bayshore gateway volumes under Cumulative with Project Conditions to the North Bayshore District Trip Cap Policy trip target and the NBPP trip generation.

6.1.2.1 North Bayshore Trip Cap Policy Comparison

The 2017 NBPP established a North Bayshore District Trip Cap Policy (Chapter 6 Section 6.14 and Chapter 8 Section 8.3). The North Bayshore District Trip Cap Policy is expressed as an absolute number of vehicle standard (Chapter 8 Section 8.3, page 244) in the District Vehicle Trip Cap and Monitoring Program Section 8.3 of the NBPP (refer to **Appendix D** for the 2017 NBPP trip cap analysis):

- ***North Bayshore Gateway Peak Hour Vehicle Trip Cap.*** *The District Vehicle Trip Cap is established as the maximum allowed number of trips at the three North Bayshore gateways during the following peak hour periods: 8,290 trips (AM) and 8,030 (PM).*

The North Bayshore District Trip Cap Policy quantifies the physical vehicle capacity of the three main gateways (San Antonio Road, Rengstorff Avenue, and Shoreline Boulevard) and represents the number of vehicles that can be served during the peak morning and evening periods while maintaining reasonable freedom of vehicular movement (i.e., avoiding gridlock conditions on the local streets, gateway interchanges, and freeway system). The calculated numeric policy targets are presented in **Table 19**.

Table 19: North Bayshore District Trip Cap Policy Targets

Gateway	Morning Two-Way Total	Evening Two-Way Total
San Antonio Road	1,890	1,830
Rengstorff Avenue	3,290	2,440
Shoreline Boulevard	3,110	3,760
Total	**8,290**	**8,030**

Note: Vehicle volumes rounded to nearest 10.
Source: Fehr & Peers, *North Bayshore Precise Plan EIR - Vehicle Gateway Capacity with Residential*, December 2016.

Table 20 presents the results of the vehicle trip generation under Cumulative with Project Conditions to the North Bayshore Gateway Trip Cap Policy during the morning and evening peak hours for each gateway and the three gateways combined. The North Bayshore gateway volumes exceed the North Bayshore Trip Cap Policy targets for the Rengstorff Avenue and Shoreline Boulevard in addition to the total gateways during the morning and evening peak hours. The *North Bayshore Circulation Study* recommends a modified North Bayshore Trip Cap Policy definition that changes: 1) the time period (peak hour to peak period), 2) the direction (two-way to peak direction inbound in the morning and outbound in the evening), 3) the location (from each gateway to the Rengstorff and Shoreline gateways combined), and 4) the target values.

Table 20: North Bayshore Gateway Trip Cap Policy Evaluation: 2017 NBPP Trip Targets

Gateway	Two-Way Morning Peak Hour				Two-Way Evening Peak Hour			
	Volume[1,2]	Trip Target[1,3]	Remaining Trip Target	Percent of Trip Target Remaining	Volume[1,2]	Trip Target[1,3]	Remaining Trip Target	Percent of Trip Target Remaining
San Antonio Road	1,490	1,890	400	21%	1,080	1,830	750	41%
Rengstorff Avenue	4,280	3,290	-990	-30%	4,350	2,440	-1,910	-78%
Shoreline Boulevard	5,040	3,110	-1,930	-62%	5,650	3,760	-1,890	-50%
Total	**10,810**	**8,290**	**-2,520**	**-30%**	**11,080**	**8,030**	**-3,050**	**-38%**

Notes:
1. Volumes rounded to nearest 10.
2. Volume = The North Bayshore gateway volumes under Cumulative with Project Conditions (Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Policy Goal with a Historical Vacancy Rate).
3. Target = 2017 NBPP vehicle trip target = two-way peak hour.

Source: Fehr & Peers, 2022.

This is a similar finding to the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* (2017), which disclosed that the NBPP trip generation would exceed the North Bayshore District Trip Cap Policy. A 30% (or lower) morning peak hour inbound single-occupancy vehicle mode share for non-residential development and a 21% internalization of the non-residential trips during the morning peak hour (along with a 41% internalization of the residential trips in the morning peak hour) is needed to meet the North Bayshore District Trip Cap Policy.

6.1.2.2 North Bayshore Precise Plan Trip Generation Comparison

The *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* studied the impacts of the trips generated by the whole project. This section evaluates if the Cumulative with Project Conditions trip generation would exceed the *Final Subsequent Environmental Impact Report (Final SEIR) for the North Bayshore Precise Plan* trip generation at the North Bayshore gateways. The Cumulative with Project Conditions trip generation is compared to the two NBPP project descriptions summarized in **Table 21**: 1) the NBPP gateway trip generation used to identify the transportation impacts in the *Final*

SEIR, and 2) the NBPP gateway trip generation associated with the approved NBPP land use and transportation network.

- **Comparison 1 – Comparing to the NBPP Gateway Trip Generation used to Identify the Transportation Impacts**: The transportation analysis that was prepared for the *Final SEIR for the North Bayshore Precise Plan* included the NBS Master Plan and identified impacts using a trip generation of 132,820 daily vehicle trips, 10,530 morning peak hour trips (7,230 inbound and 3,310 outbound) and 11,380 evening peak hour trips (4,040 inbound and 7,340 outbound) for the project alternative that included the smaller residential unit size and standard parking supply. The North Bayshore gateway volumes under Cumulative with Project Conditions are similar to the NBPP trip generation. The AM two-way peak hour trip generation is within the 5% day-to-day variation observed at the North Bayshore gateways, and thus is a similar value as the NBPP trip generation.
- **Comparison 2 – Comparing to the NBPP Gateway Trip Generation Associated with the Adopted NBPP**: The adopted NBPP project description also includes smaller residential unit size, but includes a reduced residential parking supply (the residential parking supply for NBS Master Plan is consistent with those from the adopted NBPP). The adopted NBPP had a trip generation of 119,940 daily vehicle trips, 9,140 morning peak hour trips (6,670 inbound and 2,470 outbound) and 10,120 evening peak hour trips (3,290 inbound and 6,830 outbound). The North Bayshore gateway volumes under Cumulative with Project Conditions exceed the morning and evening peak hour trip generation in the NBPP.

Per comparison 1, the traffic-related Cumulative with Project Conditions (including the NBS Master Plan) would be similar to the impact conditions identified in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan*. For several years, the North Bayshore District monitoring has conducted multiday vehicle observations twice a year. The volumes reported in the monitoring report are an average of these multiday observations with two-way peak hour and peak period day-to-day variation of +/- 5 percent. To put these observations in context, a general rule-of-thumb is that a street volume can vary by +/- 10 percent from one day to the next. The fact that the observed variation for all gateways is lower than this rule of thumb is some indication that the vehicle volumes may be close to capacity. While the difference in the Cumulative with Project Conditions trip generation to the adopted NBPP is greater, the *Final SEIR for the North Bayshore Precise Plan* are based on the trip generation in comparison 1.

Table 21: North Bayshore Master Plan Vehicle Trip Generation Comparison

Trip Generation Estimates	Daily Vehicle Trips[1]	AM Peak Hour[1]			PM Peak Hour[1]		
		In	Out	Total	In	Out	Total
Comparison 1 – Comparing to the NBPP Gateway Trip Generation use to Identify the Transportation Impacts							
NBPP Smaller Household Size and Standard Residential Parking Rates (A)[2]	132,820	7,230	3,310	10,540	4,040	7,340	11,380
Cumulative with Project Conditions (B)[3]	128,710	7,960	2,850	10,810	3,460	7,620	11,080
Net Difference (C = B – A)	*-4,110*	*730*	*-460*	*270*	*-580*	*280*	*-300*
Comparison 2 – Comparing to the NBPP Gateway Trip Generation Associated with the Adopted NBPP							
NBPP Smaller Household Size and Reduced Residential Parking Rates (D)[2]	119,940	6,670	2,470	9,140	3,290	6,830	10,120
Cumulative with Project Conditions (B)[3]	128,710	7,960	2,850	10,810	3,460	7,620	11,080
Net Difference (E = D – B)	*8,770*	*1,290*	*380*	*1,670*	*170*	*790*	*960*

Note:
1. Volumes rounded to nearest 10.
2. NBPP trip generation from *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan*.
3. The North Bayshore gateway volumes under Cumulative with Project Conditions.

Source: Fehr & Peers, 2022.

Based on an examination of the analysis, findings, and conclusions of the *Final SEIR for the North Bayshore Precise Plan*, implementation of the project as proposed would not substantially increase the North Bayshore gateway volumes from what was studied before. Nor would the project improvements disrupt or conflict with the intent of planned street facilities consistent with relevant plan goals and policies, and would not conflict with applicable programs, plans, ordinances, or policies related to street facilities. Therefore, the roadway-related impact would be ***less-than-significant***.

6.1.3 Bicycle Evaluation

The project is expected to generate bicycle demand (640 AM peak hour and 590 PM peak hour) and additional bicycle travel will occur to/from the district garages and transit stops. The project proposes to provide approximately 3.7 miles of on-street and off-street network for bicyclists of all ages and abilities. Bike share will be provided near transit stations and as a part of multimodal hubs (if built). Bicycle paths and streets that prioritize bicyclists will aid bicycle circulation. These internal bicycle facilities are proposed near housing and employment buildings that would connect to the proposed bicycle facilities on roadways described above, and to existing and planned facilities and trails, including the bicycle network inside and outside of the North Bayshore District.

Overall, the project's off-street and on-street bicycle improvements are consistent with and connect to existing and planned bicycle facilities that align with the overall goals and policies of the plans in the *AccessMV*, and the NBPP. Further, the project's bicycle facilities improve bicycle connectivity by eliminating gaps, improving the quality of the bicycle network, and supporting complete streets for all users, including bicyclists. The project improvements would not disrupt or conflict with the intent of planned bicycle facilities consistent with relevant plan goals and policies, and would not conflict with applicable programs, plans, ordinances, or policies related to bicycle facilities. Therefore, the bicycle-related impact would be ***less-than-significant***.

6.1.4 Pedestrian Evaluation

The project is expected to generate pedestrian demand (2,570 AM peak hour and 2,360 PM peak hour) and additional pedestrian travel will occur to/from the district garages and transit stops. The NBS Master Plan includes on-street and off-street pedestrian facilities to circulate pedestrians between complementary land uses such as residential and office, District parking structures and near-by land uses, and transit stops. The project proposes to expand and improve the quality of the pedestrian network with wider sidewalks, street amenities, and a pedestrian-only street (Social Spine) from Charleston Road to Shorebird Way east of Shoreline Boulevard.

The pedestrian facilities on the project's local streets include design features that support pedestrian movements and waiting areas, improving pedestrian safety, and removing gaps in the pedestrian network. The project improvements, such as increased off-street trail connections to existing and planned trails, expanding multi-use greenways and pathways, reducing vehicle circulation through the neighborhoods, and closing gaps in the pedestrian network, align with the NBPP standards and guidelines. The project would not interfere with existing or planned pedestrian facilities nor conflict with applicable non-vehicle transportation plans, guidelines, policies, or standards and, instead, would enhance pedestrian circulation within the NBS Master Plan area and connections to adjacent land uses, which is a beneficial effect on the pedestrian circulation and access. Therefore, the project would not conflict with pedestrian-related plans and any impact would be ***less-than-significant***.

6.2 VMT Analysis

This section presents an analysis of the project's impacts relative to VMT. Both direct (project-generated) and cumulative (project's effect) VMT impacts were evaluated. Direct VMT impacts were evaluated using total VMT per service population rate of the NBS Master Plan under Cumulative with Project Conditions. Cumulative VMT impacts were evaluated using boundary VMT per service population under Cumulative with Project Conditions. The results of the project-generated VMT and project's effect on VMT analyses are presented in **Table 22** and **Table 23**, respectively.

6.2.1 Project-Generated VMT Impact Analysis

As shown in **Table 22**, the NBS Master Plan would generate 634,710 daily total VMT, or 25.13 miles on a per service population basis. This value would be approximately 1% less than the VMT threshold (25.46

total VMT per service population). The total project-generated VMT evaluates project effects with a 35% morning peak hour inbound single-occupancy vehicle mode share for non-residential development and a 21% internalization of the non-residential trips during the morning peak hour (along with a 41% internalization of the residential trips in the morning peak hour).

The *North Bayshore Master Plan: Transportation Management (TDM) Plan* indicates that the predominant travel mode of Google employees traveling by single-occupancy vehicle or carpool vehicle is between 5 and 15 miles (Figure 3.1.1; North Bayshore Framework Master Plan: TDM Plan, August 2021). This analysis derives a similar conclusion, with the remaining non-residential vehicles projected to travel, on average, 14.4 miles to their destination. This is partially a result of building more non-residential development in North Bayshore. The average trip length reflects:

1. The separation of the office and residential uses in Santa Clara County (most of the jobs in Santa Clara County are in the upper third of the county while most of the homes are in the lower two-thirds of the county);
2. Santa Clara County's need to import workers from adjacent counties because of the housing shortage; and
3. The geography of the San Francisco Bay, which adds separation between the jobs and housing.

However, implementation of the NBS Master Plan would result in a total project-generated VMT per service population under Cumulative with Project Conditions that is less than the applicable threshold. Therefore, the impact of the NBS Master Plan total VMT rate would be **less-than-significant**.

Table 22: Total Project-Generated VMT Assessment

	Total Project Generated VMT
Project Site	
Total Project Generated Vehicle Miles Traveled (A)[1]	634,710
Service Population (B)[1,2]	25,260
Total Project Generated VMT per Service Population (A/B = C)	25.13
Initial Impact Assessment	
Total VMT per Service Population Threshold	25.46
(Initial Impact Conclusion)	Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents, and employees.

Source: Fehr & Peers, 2022.

6.2.2 Total Project-Generated VMT Discussion

This analysis concludes that the total project-generated VMT rate will be less than the applicable threshold. The NBS Master Plan total project-generated VMT rate is the result of the overall land use growth and increased destination choices throughout the Bay Area region, Santa Clara County, and within the NBS Master Plan area. One major goal of the NBS Master Plan (as informed by the NBPP) is to accommodate employees, residents, and visitors by providing transportation options that minimize the increase in vehicle trips and vehicle miles traveled. The project sponsor is taking actions to reduce daily trips and vehicle miles traveled by increasing the housing goal and/or implementing a transportation demand management (TDM) with a parking management plan. Potential actions the project sponsor is taking include:

- District Parking Locations – To minimize vehicle travel, a shift in the district parking locations closer to US 101 would reduce total project-generated VMT (for example the Amphitheatre District Garage is 0.85 miles for US 101 while the Marine Way and Joaquin South district parking structures are 0.25 miles from US 101).
- Implement NBS Master Plan TDM Plan – The proposed project will implement a TDM program to achieve a 35% morning peak hour inbound single-occupancy vehicle mode share at the development driveways (or district parking structures) for employees and visitors commuting to the NBS Master Plan area and driveway trip cap. The project would implement various TDM measures consistent with the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines* (2015) for non-residential development and the *North Bayshore Residential Transportation Demand Management Guidelines* (2018) for residential development.
- Parking Management – The NBS Master Plan includes reduced parking supply, which makes it particularly important to manage parking and pick-up/drop-off. The project sponsor will manage future parking supply by implementing policies that focus on reducing non-residential and residential parking demand. Several parking pricing and management strategies that may reduce vehicle trip generation and VMT include:
  - Adjusting the Cost of Parking – This strategy could include a non-residential parking permit system with tiered parking pricing based on the distance to the NBS Master Plan area and/or a tiered pricing from limited days (1-day, 2 days, etc.) These parking strategies would reduce the non-residential parking demand.
  - Establishing Designated Parking Locations by Building – This parking management strategy would help manage the non-residential parking demand.
  - Pick-Up/Drop-Off Charges – Solely relying on the number of parking spaces to manage vehicle trip generation does not account for emerging forms of transportation, such as transportation network companies (TNCs) (e.g., Uber and Lyft) supporting delivery trips and visitors. Minimizing increased trips by these emerging transportation modes could be accomplished by developing a parking district that charges for pick-up and drop-off in North Bayshore.

While there are many VMT reduction actions that can influence VMT and emissions, the VMT reduction action's effectiveness depends on its scale (how much VMT the reduction acts on) and its ability to reduce VMT in different VMT reduction programs. Individual site level VMT mitigation actions typically have the smallest effect on VMT reductions because they are applied to new VMT generated by new buildings, while regionwide levels have the greatest effect on VMT reduction. The biggest effects of VMT reduction actions (and resultant emissions reductions) derive from citywide, statewide, or regionwide policies that increase the cost, or reduce the convenience, of using vehicles.

The NBPP transportation policy framework relies on increasing the TDM effectiveness and internalization of residential trips throughout North Bayshore. If additional programs are needed to achieve the NBS Master Plan 35% morning peak hour inbound single-occupancy vehicle mode share at the development driveways (or district parking structures) for employees and visitors commuting to the NBS Master Plan area and the driveway trip cap, the NBS Master Plan may participate in North Bayshore VMT mitigation program options that could further reduce the vehicle demand and vehicle trip lengths, such as:

- Implement a Gateway Vehicle Trip Credit System – A vehicle trip credit system could be developed to monetize the value of each gateway vehicle trip. Existing developments would receive an allotment of vehicle trips and new developments could purchase a portion of the existing vehicle trips to offset their new trips.
- Pricing Strategies – The amount of vehicle demand at the gateway depends in part on the cost and convenience of travel, so pricing strategies could be used to influence travel demand. Examples of this would include pricing of parking spaces within the North Bayshore area (described earlier) or congestion pricing at the entrances to North Bayshore.
- Increase Transit Service Frequency/Speed Provided by the VTA and the Mountain View TMA – This strategy focuses on improving transit service convenience, access, and travel time competitiveness with driving. The benefits of TMA membership may see existing transit service provided by MVgo and the Mountain View Community Shuttle (MVCS) augmented in support of increasing access to individual development projects. Given existing land use density in Mountain View, this strategy may be limited to traditional commuter transit where trips can be pooled at the start and end locations, or it may require new forms of demand-responsive transit service. Note that implementation of this strategy would require regional or local agency implementation, substantial changes to current transit practices, and would not likely be applicable for individual development projects.

Though not directly under Mountain View's control, the NBS Master Plan TDM program could be integrated into a regional VMT mitigation program. The project could participate in a VMT Cap, VMT Based Impact Fee Program, VMT Mitigation Bank, VMT Mitigation Exchange, in-lieu fee programs, and other land use project conditions to reduce VMT. The City of Mountain View has yet to implement a VMT mitigation program nor does a regional VMT mitigation program currently exist.

In summary, The NBS Master Plan's vision, policies, land use forecasts, and targeted areas for growth are informed by the NBPP which is the result of an extensive outreach process among staff, policymakers, and the public to arrive at a solution that balances competing concerns about accommodating housing growth, jobs growth, and quality of life. Specifically, the NBS Master Plan includes a commitment to a 35% morning peak hour inbound single-occupancy vehicle mode share for non-residential development and building housing in North Bayshore to increase the internalization of the non-residential trips. These contributions are designed to reduce VMT and would help to reduce NBS Master Plan's project generated

VMT rate to the greatest extent feasible. In other words, the Project contributes to the basic objectives of SB 743 for local land projects such as adding development in a planned mixed-use growth area where shorter trip lengths to destinations allows more multimodal choices.

6.3 Project's Effect on VMT Impact Analysis

To evaluate the project's effect on VMT between the Cumulative Condition and Cumulative with Project Condition, the boundary VMT for the region (i.e., San Mateo County, Alameda County, and Santa Clara County) is divided by the service population (sum of residential population and employment population). The change in boundary VMT captures the combined effect of:

- shifts in existing VMT due to land use and transportation network changes in the region,
- shifts in existing traffic to alternate travel routes or modes, and
- new VMT from additional land use development in the region.

Further the Cumulative Condition is the entire NBPP; whereas, the Cumulative with Project Condition is the NBPP land use growth with the NBS Master Plan. As shown in **Table 23**, this analysis evaluated whether the project would result in a decrease in the regionwide boundary VMT from Cumulative Conditions to Cumulative with Project Conditions. The boundary VMT per service population would be similar under Cumulative Conditions and Cumulative with Project Conditions. The regional impact threshold for the project's effect on VMT is the regionwide Cumulative Conditions boundary VMT per service population of 17.22 miles per service population.

Under Cumulative with Project Conditions the region boundary VMT per service population is 17.22 is equal to the applicable threshold of 17.22. Therefore, the impact of the Project's effect on VMT under Cumulative with Project Conditions would be ***less-than-significant***.

Table 23: Project's Effect (Boundary) VMT Assessment

	Cumulative Conditions	Cumulative with Project Conditions
Region (San Mateo County, Alameda County, and Santa Clara County)		
Boundary Vehicle Miles Traveled (A)[1]	129,777,430	129,755,020
Service Population (B)[1,2]	7,535,570	7,535,390
Boundary VMT per Service Population (A/B = C)	17.22	17.22
Boundary VMT per Service Population Threshold		17.22
(Initial Impact Conclusion)		Less Than Significant

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2022.

6.4 Regional Transportation Plan/Sustainable Community Strategy Plan Consistency

The purpose of this section is to discuss the proposed project's consistency with the policies in the region's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as *Plan Bay Area 2040* (July 2017),[33] and to provide an analysis of the proposed project's impacts on transportation policies for the region. The Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are the designated metropolitan planning organizations, and as such, are mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality. This analysis considers each Plan Bay Area strategy (i.e., Housing, Economic, Transportation, and Environmental) listed in **Chapter 3** (Summary of Relevant Regional Circulation and Transportation Plans) section 3.1.

The proposed project includes modifications to existing street facilities to create more pedestrian- and bicycle-oriented streets. The expected influence on existing and future traffic is likely to be minimal because no through-vehicle lanes are proposed to be removed within the proposed project. Further, the project includes a commitment to a 35% morning peak hour inbound single-occupancy vehicle mode share for non-residential development and to building housing in North Bayshore to increase the internalization of the non-residential trips. These commitments are supportive of transit and active transportation use.

The project does not propose changes to the transit system that would impact the *Plan Bay Area 2050 (*2021*)* goals of expanding the role transit plays in meeting the region's mobility needs such as investments in bus rapid transit, expansion of local services, and planned rail projects. Internal circulation changes would support core regional transit travel within the NBS Master Plan.

Overall, the proposed project would not conflict with existing or planned transportation facilities because the proposed street changes are additions of pedestrian and bicycle facilities with few, if any, reductions in vehicle lanes. The proposed project would not be expected to interfere with existing roadway facilities; conflict with planned roadway facilities; or conflict with adopted transportation plans, guidelines, policies, or standards. Therefore, the impact relative to disruption of existing or planned roadways or conflicts with program, plan, ordinance, or policy would be ***less-than-significant***.

[33] Metropolitan Transportation Commission, 2021. *Plan Bay Area 2040*. Available online at Plan Bay Area 2050 | Plan Bay Area.

Appendix A:
VMT Assessment Approach

FEHR & PEERS

Memorandum

Date: October 19, 2021 Modified August 22, 2022

To: Kristy Weis and Tyler Rogers, David J. Powers
Diana Pancholi, City of Mountain View

From: Daniel Rubins, Mackenzie Watten, and Franziska Church, Fehr & Peers

Subject: North Bayshore Master Plan – VMT Assessment Approach

SJ21-2116

This memorandum presents the vehicle miles traveled (VMT) metrics, modeling tools, and thresholds we propose to apply in the evaluation of the North Bayshore Master Plan. This memorandum contains a summary of the information and options considered, and documents the final VMT assessment approach. Our goal is to finalize this VMT assessment approach by the end of October 2021 (this requirement must be met to achieve our March 2022 delivery) with a minimum need for follow-up later in the project.

Background Discussion

Senate Bill (SB) 743 changed how transportation impacts are analyzed under the California Environmental Quality Act (CEQA). The latest *CEQA Statute & Guidelines* specify that VMT is the appropriate metric to evaluate transportation impacts and delay and congestion are no longer applicable under CEQA. In short, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving.

To comply with these new rules, the City of Mountain View adopted a set of VMT methods and procedures to apply to land use projects in the City (June 2020), and includes additional direction in the *Multi-Modal Transportation Analysis Handbook* (February 2021) to use the Santa Clara Countywide VMT Evaluation Tool (SCC VMT Tool) web application, which allows an analyst to conduct baseline VMT screening and VMT reduction analysis for small- to medium-size land use projects.

The North Bayshore Master Plan project is a large project that will modify and increase the office and residential land use supply in North Bayshore, implement an extensive transportation demand management (TDM) program, and would likely have a relatively widespread effect on the total VMT within North Bayshore and the City of Mountain View. This type of project would not be an appropriate application for the SCC VMT Tool.

Overall Approach

Fehr & Peers will conduct a VMT assessment to evaluate the effects of the North Bayshore Master Plan project on the environment with a focus on the cumulative condition. The State of California's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) recommends considering a project's short-term, long-term, and cumulative effects on VMT. The first reference on page 5 is related to retail projects, and the references on page 6 are for all projects (see excerpts below with most relevant portions highlighted).

> ***Retail Projects****. Generally, lead agencies should analyze the effects of a retail project by assessing the change in total VMT*[11] *because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns. (*Quote from page 5 of the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018; footnote 11 in this quote is a reference to see Appendix 1 of the OPR Technical Advisory, which discusses evaluation of Total VMT.)

> ***Considerations for All Projects****. Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." (CEQA Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project's short-term and long-term effects on VMT.* (Quote from page 6 of the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018).

> ***Cumulative Impacts****. A project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (Pub. Resources Code, § 21083, subd. (b)(2); see CEQA Guidelines, § 15064, subd. (h)(1).)* (Quote from page 6 of the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018).

The importance of a complete analysis that considers the project's effect on total VMT reflects the fact that certain types of land use projects can influence the routing of existing trips and the VMT generation of surrounding land uses. We expect the proposed North Bayshore Master Plan to have an effect on overall total VMT for the Project site, and within North Bayshore and the City.

This analysis will quantify the order of magnitude and direction of these potential changes to determine if there is an adverse (or beneficial) environmental effect due to the project.

Because VMT analysis is relatively new, and because this project is somewhat unusual with district parking and trip cap policies, it will be important to move carefully through the steps needed to establish the methods and metrics for VMT evaluation. The options and limitations for VMT metrics, modeling tools, and significance thresholds are described below from a technical transportation planning and engineering perspective with a particular emphasis on addressing the *CEQA Statute & Guidelines* expectations for an environmental impact analysis.[1]

VMT Metrics

VMT can be measured in multiple ways. Thus, the first decision for the City, is deciding which VMT *metrics* to use to express the project's transportation effects.

Table 1 summarizes the common VMT metrics available to the City, which are discussed in more detail below. As will be shown in the **VMT Modeling Tools** section, home-based VMT per resident and home-based work VMT per employee metrics cannot be generated using the Mountain View Travel Model without updated information from the VTA Travel Model.

Absolute VMT or per Capita VMT

VMT metrics fall into two general categories: absolute VMT and per capita VMT. Per capita VMT is also referred to as an efficiency metric, as it does not vary proportional to project size and can be readily compared across projects of varying sizes. For example, if a project generates 100 daily trips at an average of five miles per trip, the *absolute* project generated VMT is 500 vehicle miles per day. If that project is a small office employing 25 people, the per capita VMT is 20 vehicle miles per employee.

[1] Typical CEQA practice focuses on environmental effects that occur on a typical weekday, so all references to VMT in this document are intended to mean VMT that occurs on a typical weekday.

Table 1: Summary of Common VMT Metrics

VMT Metric[1]	Definition	Recommended by OPR[2]	VMT used for other CEQA Sections?
Total VMT	Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, presented as a total VMT.	Yes, for land use plans, and discussed in Appendix 1 of the OPR *Technical Advisory*.	Yes
Total VMT per Service Population[3,4] (also "Total VMT Rate")	Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, divided by the sum of residents plus employees in the analysis area generating the VMT.	No, although may be helpful for mixed-use projects and comparing land use scenarios, particularly when using a travel forecasting model.	Yes
Home-Based VMT per Resident (also "Home-Based VMT Rate")	VMT generated by light-duty vehicles (i.e., private cars and trucks) for all trips that begin or end at a residential land use, divided by residents.	Yes, for residential projects on page 5 and Appendix 1 of OPR *Technical Advisory*.	No
Home-Based Work VMT per Employee (also "Home-Based Work VMT Rate")	VMT by light-duty vehicles only for work trips (that is, trips that have one end at a workplace and one end at a residence), divided by number of employees.	Yes, for office projects on page 6 and Appendix 1 of OPR *Technical Advisory*.	No
Project's Effect on VMT within the Boundary of a Specific Area (also "Boundary VMT")	VMT that occurs within a selected geographic boundary (e.g., City, County, or region) by any type of vehicle. This captures all vehicle travel on a roadway network for any purpose and includes local trips as well as trips that pass through the area without stopping.	Yes, for retail projects and transportation projects on pages 5, 6 and 23 and Appendix 1 of the OPR *Technical Advisory*.	Yes

1. Each VMT metric is an option for baseline and/or cumulative impact analysis.
2. With the exception of Total VMT per Service Population, each VMT metric listed in this table is described in the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018). See pages 5, 6, and 23, and Appendix 1 of the OPR *Technical Advisory*.
3. Total VMT is derived from this VMT rate.
4. The total VMT accounting is similar to an origin-destination accounting used for many Climate Action Plans.

Source: Fehr & Peers, 2021.

Total VMT or Partial VMT

Total VMT metrics include all types of VMT, regardless of the type of vehicle or the trip's purpose. Partial VMT refers to the use of only particular trip purposes and/or vehicle types. The efficiency metrics recommended by OPR for use in analyzing office and residential projects are partial VMT metrics, because they include only light-duty passenger vehicles and only trips for a specific purpose or made by a specific population.

For some, the benefit of partial VMT metrics is that they are relatively easy to understand and visualize, and can be particularly useful when evaluating a project that is similar to existing development patterns nearby. Where current conditions lead to VMT-efficient residential or workplace activity, it can be relatively straightforward to conclude that adding similar land uses to those areas would create similar levels of VMT efficiency. One risk of using a partial VMT metric is that one could argue that it is not complete analysis of a project's VMT.

Project Generated VMT or Project's Effect on VMT

VMT metrics can differentiate between project generated VMT and a project's effect on VMT.

- **Project Generated VMT:** The sum of the VMT associated with travel from, to, and within a project site.
- **Project's Effect on VMT (within a selected geographic boundary):** The total vehicle travel within a geographic area boundary, compared between the no project and with project scenarios. The boundary should be selected based on project characteristics such as size and location; this analysis might be done at a citywide, countywide, or regional scale.

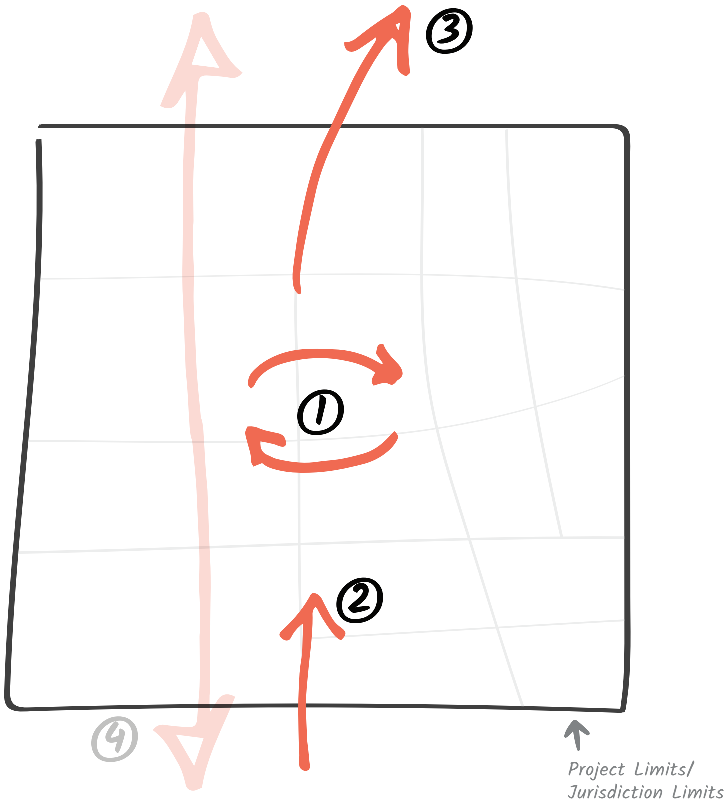
To estimate the daily project generated VMT, the project's daily trips are multiplied by the average distance traveled by each vehicle trip. By contrast, the project's effect on VMT evaluates the change in total travel within a defined geographic area boundary before and after the project is built (referred to as boundary VMT in this document).

An often-cited example of how a project can affect boundary VMT is the addition of a grocery store in a food desert. Residents of a neighborhood without a grocery store have to travel some distance to do their grocery shopping. Adding a grocery store to the neighborhood will shorten many of those grocery shopping trips and reduce the total VMT to/from the neighborhood. While the new store itself will "generate" many daily trips, in that there will be many cars coming in and out of the store's driveway, it will generally attract those trips *away* from other grocery stores located farther away. Thus, if the boundary VMT in the area served by all the local grocery stores were to be assessed, it is likely that the total amount of driving in that area will decrease after completion of the new grocery store project.

Figure 1 presents a generic representation of both project generated VMT[2] and boundary VMT. Both metrics are needed for a comprehensive view of a project's VMT effects.

[2] In this instance, project generated VMT refers to total VMT, home-based VMT, and home-based work VMT as a group of VMT metrics.

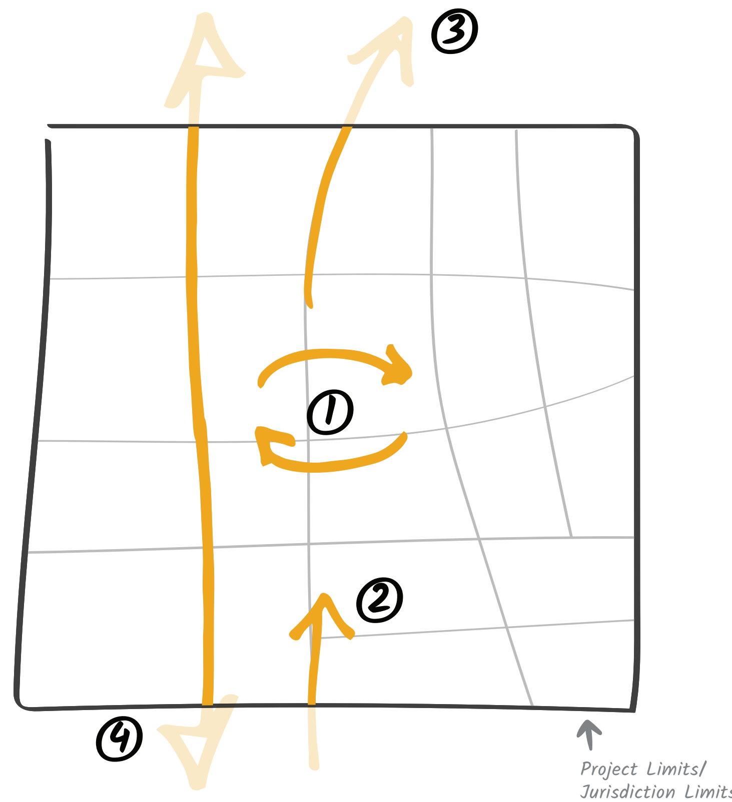
Total VMT
(Project Generated VMT)



1. 2x Internal to Internal (2xII) VMT
2. External to Internal (XI) VMT
3. Internal to External (IX) VMT
4. External to External (XX) VMT

Notes: External to External (XX) trips (shown as transparent arrow 4) are excluded from this VMT metric. Adjustments to total VMT made to include the full length of trips that leave the jurisdiction to capture inter-jurisdiction travel.

Project Effect on VMT
(Boundary VMT)



1. Internal to Internal VMT
2. External to Internal (XI) VMT
3. Internal to External (IX) VMT
4. External to External (XX) VMT

Notes: Boundary VMT is all the VMT on the streets within the Project Limits / Jurisdiction Limits. Transparent portions of arrows 2, 3 and 4 are not included in the VMT metric.

Figure 1

Measuring Vehicle Miles Traveled (VMT)

NBMP VMT Metrics Selection

The VMT analysis will evaluate the following metrics:

- Total VMT
- Total VMT per service population
- Boundary VMT for an appropriate area affected by the project (this information will also be used in the air quality, greenhouse gas (GHG), and energy analysis)

VMT Modeling Tools

VMT can be calculated using travel forecasting models, GIS tools, spreadsheet tools, or other sketch planning tools. The most common method of calculating the VMT metrics listed in **Table 1** is through a travel forecasting model. A travel forecasting model uses specialized software and is designed to reflect the interactions between different land use and roadway elements in a large area. Using a travel forecasting model has some advantages over other methods because a travel model is able to account for both project generated VMT and the project's effect on total area-wide VMT; spreadsheet tools and most sketch planning tools cannot evaluate the project's effect on VMT. The two travel forecasting models most commonly used to evaluate projects in Mountain View are the following:

- City of Mountain View travel forecasting model (Mountain View Travel Model)
- Santa Clara Valley Transportation Authority (VTA)-City/County Association of Governments of San Mateo County (C/CAG) Bi-County Model (VTA Travel Model)[3]

There are other possible tools available, such as the regional Metropolitan Transportation Commission (MTC) travel demand model, a statewide model developed by Caltrans, and several sketch planning tools or spreadsheets. The MTC and Caltrans models are intended for very large-scale applications, with the statewide model having a specific focus on the evaluation of interregional travel and freight movements, and thus neither model is appropriate for a local land use project like the North Bayshore Master Plan.

Sketch planning tools and spreadsheets have limitations due to their limited geographic coverage and inability to capture the effects of a project on the VMT in its surrounding area. Thus, we focus on the VTA Travel Model and the Mountain View Travel Model, and compare the strengths and limitations of each as it relates to the North Bayshore Master Plan project.

[3] The VTA requires a model user agreement between Mountain View and the VTA, and a fee to use the travel model. We have assumed that the $17,000 to acquire the model will be paid by the City separate from this scope and fee.

An ideal tool for a CEQA VMT analysis is a travel forecasting model that has been appropriately calibrated and validated for local project size and scale, and has trip length data that accounts for trips that extend beyond the model boundary.[4] In Mountain View it is also important for a travel forecasting model to account for travel patterns due to congestion, public transit, non-motorized transit (walking and biking), and transportation demand management policies in different parts of the City.

Comparison of Available Travel Forecasting Models for the City of Mountain View

Fehr & Peers conducted a review of the VTA Travel Model and Mountain View Travel Model to provide the City with a qualitative assessment of the strengths and limitations of the two models as it relates to producing VMT estimates for a local land use project. In the discussion below, we specifically focused on the portions of the model that have the greatest influence on the VMT estimates including the following:

- geographic coverage of the travel model,
- consistency of the land use inputs and the planned transportation network assumptions with the Plan Bay Area regional transportation plan and local general plans,
- detail of the roadways and transportation analysis zones in Mountain View, and
- sensitivity of the model to the built environment and transportation policies in Mountain View.

The discussion of each travel mode below is supplemented by **Table A-1**, which is a side-by-side comparison of the VTA and Mountain View travel models. During preliminary scoping discussions, **Table A-1** helped City staff see the differences in the two models' ability to conduct a VMT assessment for the North Bayshore Master Plan. Both models would need some updating to meet the City's specifications (to include total and partial VMT metrics, a 2040 horizon year, and be sensitive to City of Mountain View VMT land use and TDM policies). While the Mountain View Travel Model is generally consistent with the VTA Travel Model, several inputs in the City travel model (e.g., the geographic coverage, TAZ and roadway network detail in Mountain View, land use input types and years, trip generation and mode choice, and sensitivity to land use and transportation policies in Mountain View) are different, and result in different VMT estimates compared to the VTA Travel Model.

[4] The National Cooperative Highway Research Program *(NCHRP) Report 765, Analytical Travel Forecasting Approaches for Project-Level Planning and Design*, Transportation Research Board (TRB) (2014) is a detailed resource with many applicable sections.

VTA Travel Model

The VTA Travel Model includes the regional roadways and major arterials of the nine-county Bay Area, the AMBAG region (Santa Cruz County, Monterey County and San Benito County), and portions of the San Joaquin (Central) Valley. The model contains additional transportation network detail and refined transportation analysis zones (TAZs) in San Mateo County and Santa Clara County. The VTA Travel Model land use inputs are based on Association of Bay Area Governments (ABAG) 2017 land use projections (*Plan Bay Area 2040* land use projections), 2010 census socio-economic data (with some additional refinements in 2019), and a future regional transportation infrastructure consistent with *Plan Bay Area 2040* (July 2017). The VTA Travel Model has a 2040 horizon year. Of the two models, the VTA Travel Model has the most consistent land use and transportation network assumptions relevant to *Plan Bay Area*.

The TAZ size influences the types of streets vehicle traffic is assigned to. For the VTA Travel Model, an arterial or minor arterial is the lowest street level typology that traffic is assigned to because the TAZ structure in Mountain View has moderate detail. The VTA Travel Model has a mode share model that can be used to express changes in mode share; however, the VTA Travel Model would need refinement to fully capture the land use and TDM policies in Mountain View.

Finally, the VTA Travel Model has four time periods to address travel during congested morning and evening peak periods, and uncongested mid-day and midnight time periods. During congested times the average trip length and speed of travel change.

Mountain View Travel Model

The Mountain View Travel Model includes regional roadways and major arterials of the nine-county Bay Area. The model contains additional transportation network detail and refined TAZs in Santa Clara County, similar to the VTA Travel Model. There is additional detail in Mountain View compared to the VTA Travel Model. The Mountain View Travel Model land use inputs are based on Association of Bay Area Governments (ABAG) 2007 land use projections (an older version of regional land use projections than is used in the VTA Travel Model) with adjustments for the City of Mountain View General Plan and other land use plans completed as of 2019, year 2000 census socio-economic data, and future regional transportation infrastructure consistent with the *Valley Transportation Plan* 2040 within Mountain View and older planned network assumptions outside of Mountain View. The Mountain View Travel Model has a 2030 horizon year. The more refined TAZ structure allows VMT to be calculated on regional roadways, arterials, minor arterials, and some collectors in Mountain View.

The Mountain View Model is generally consistent with the VTA Travel Model but it does not have a functioning mode choice model; this circumstance has required substantial off-model trip generation calculations for North Bayshore and other parts of the City to fully capture the mode shift effects of various Mountain View land use and transportation network polices. When updating the Mountain View Travel Model, land use, transportation network, and mode choice information must be extracted from the VTA Travel Model and incorporated into the Mountain View Travel Model. Having a functioning mode choice model would reduce the need for this post processing and increase the types of performance metrics the Mountain View Travel Model could generate, similar to the VTA Travel Model.

The Mountain View Travel Model includes a 24-hour daily assignment and both an AM and PM peak hour assignment. This type of assignment is less sensitive to the effects of congested travel conditions than the multi-hour assignment time periods used in the VTA Travel Model.

Discussion

It is important to note that the City of Mountain View is actively using both the VTA Travel Model and the Mountain View Travel Model for VMT assessments. Currently, the City's practice for most individual land use projects is to use the SCC VMT Tool to conduct baseline VMT screening; this tool uses VMT data from the VTA Travel Model. For recent land use plans like the General Plan, the East Whisman Precise Plan, and the North Bayshore Precise Plan, VMT analysis has been conducted using the Mountain View Travel Model. While the Mountain View Travel Model is generally consistent with the VTA Travel Model, the geographic coverage, key model inputs, roadway network, TAZ detail, and sensitivity to land use and transportation policies in Mountain View are different, and result in different VMT estimates. Both models are trip-based, which means it is difficult to separately measure the VMT generated by residents and workers.

We understand the City's preference to use the Mountain View Travel Model: in **Table A-1** we note the need for the VTA Travel Model data to develop a 2040 cumulative year, prepare regional VMT metrics, and prepare home-based work VMT and home-based VMT metrics. All VMT forecasts using the Mountain View Travel Model to date have had a 2030 cumulative year and summarized project area, city or county total VMT, and boundary VMT metrics. We have not prepared regional VMT metrics, home-based work VMT, or home-based VMT metrics because of the need for additional data needed from the VTA Travel Model to make those forecasts possible.

The selection of an appropriate travel forecasting model is an important step. <u>It is important for consistency because the travel model used to develop VMT thresholds should also be used to evaluate a project's direct and cumulative VMT impacts against those thresholds.</u> The OPR *Technical Advisory* emphasizes this point (*Technical Advisory: On Evaluating Transportation Impacts in CEQA*, page 6).

> *"It is critical, however, that the agency be consistent in its VMT measurement approach throughout the analysis to maintain an "apples-to-apples" comparison. For example, if the agency uses a home-based VMT for the threshold, it should also be [sic] use home-based VMT for calculating project VMT and VMT reduction due to mitigation measures."*

Using a travel forecasting model allows the City to evaluate both 'project generated VMT' and the 'project's effect on VMT.' Further, if VMT thresholds are tied to citywide or regionwide averages, then a travel forecasting model creates a strong consistency between the threshold setting and project analysis.

The use of a travel forecasting model requires special skills, maintenance time, software, and hardware resources. Depending on the VMT metrics and thresholds selected it is possible that a travel forecasting model can be used selectively to limit the impact to staff resources.

VMT Modeling Tool Selection

Practically speaking, the use of a travel model is desirable for projects large enough to be accurately represented in that travel model. Given the characteristics of the North Bayshore Master Plan project, and to be fully sensitive to the land use and transportation demand management policies in Mountain View, the City selected the Mountain View Travel Model. By selecting the City of Mountain View model, only total VMT and boundary VMT for Existing Conditions and 2030 Cumulative Conditions will be studied. City staff selected the Mountain View Travel Model.

VMT Impact Significance Thresholds

Baseline VMT Screening Thresholds

In June of 2020, the City of Mountain View adopted screening criteria and a baseline VMT screening process for small- to medium size land use projects. The idea behind project screening is that some projects have characteristics that readily lead to the conclusion they would not cause a VMT impact. The *Multi-Modal Transportation Handbook* summarizes the screening criteria for the following:

- **Small Project Screening**: Small developments of 12 single-family residential developments or fewer, 20 multi-family residential developments or fewer, or office developments of 10,000 square feet or less. These small developments sizes generate fewer than 110 daily trips.
- **Map-Based Screening**: Map-based screening of residential or office developments in low VMT generating areas.
- **Transit Screening**: Projects in proximity of major transit stops or high-quality transit corridor, and meeting several other project characteristics.

- **Affordable Housing Screening**: Projects with 100 percent affordable housing.

As described earlier in this memorandum, the City also adopted Baseline VMT screening criteria for small- to medium-size land use projects using the SCC VMT Tool. For projects meeting the baseline VMT screening criteria, no additional VMT analysis is needed.

Cumulative VMT Thresholds

An impact under CEQA begins with a change to the existing environment, and, therefore, Existing (or Baseline) Conditions must be evaluated. Because VMT will fluctuate with population and employment growth, changes in economic activity, and changes in travel modes including the expansion of new vehicle travel choices (i.e., the emergence of transportation network companies such as Uber and Lyft, autonomous vehicles, etc.), an impact analysis must also take into account the cumulative effects of the proposed project, these changes, and all other projects. Therefore, evaluations of Cumulative Conditions and Cumulative with Project Conditions are needed to identify potential cumulative impacts.

A Cumulative VMT threshold should be able to evaluate both the direct, indirect, and cumulative effects of a project on VMT and consider uncertainty of new travel trends. Below is a brief summary of three possible cumulative VMT threshold options:

- **Fair share of Regional VMT Allocation:** Use a regional model to analyze the "project's effect on VMT" based on RTP/SCS consistency and set threshold that the project should not increase the total project generated regional VMT forecast used to support the RTP/SCS air quality conformity and SB 375 GHG targets.
- **Baseline and Cumulative VMT Thresholds**: A lead agency can use the same threshold for Baseline and Cumulative conditions if there is evidence that the VMT efficiency metric is trending downward over time. While it is difficult for a lead agency to determine what level of VMT change is unacceptable when viewed solely through a transportation lens, there are several possible options, depending upon if the City chooses to set a threshold based on local or state policies. Options include the following:
    - Set thresholds based on state goals
        - Rely on the OPR Technical Advisory suggestion to set thresholds consistent with state goals for air quality, greenhouse gas and energy conservation
            - OPR 15% below baseline average of a city or region (light-duty vehicles only)
    - Use a threshold adopted or recommended by another public agency consistent with lead agency air quality, GHG reduction, and energy conservation goals

    - CARB 14.3% below baseline (2018) average of jurisdiction (all vehicles, presuming that MPOs meet SB 375 targets)
    - CARB 16.8% below baseline (2018) average of jurisdiction (light-duty vehicles only, presuming that MPOs meet SB 375 targets)
    - CARB: 25% below baseline (2018) average of jurisdiction (all vehicles, presuming that MPOs do not meet SB 375 targets)
    - Net zero VMT[5]
  - Set jurisdiction-specific threshold consistent with existing General Plan
    - Set jurisdiction-specific VMT threshold based on substantial evidence
    - Set thresholds based on baseline VMT performance
- **Long-Term Air-Quality and GHG Expectations**: Establish a VMT reduction threshold for Cumulative Conditions consistent with long-term air pollution and GHG reduction expectations.

Discussion

In describing a threshold, the City is making several methodological decisions:

- **VMT Metric**: Defining the VMT metric(s) to be used in expressing a project's impacts (VMT metrics were described in detail earlier in this memo).
- **Selecting the VMT Reduction to Apply to the VMT Metric**: Once the VMT metric is selected, the next decision is to define a percent reduction in the VMT metric that will be required to avoid triggering a significant impact. As discussed above, the percent reduction could be based on state or City General Plan long-term expectations for greenhouse gas, air quality, and energy conservation.
- **Selecting the Geographic Area of the VMT Metric**: The final decision is determining what geographic area (e.g., City-level, County-level, or region-level) will be used to define the average value a project should be compared to.

The Mountain View Travel Model will be used to prepare baseline and cumulative VMT estimates. Specifically, the total VMT metric will be evaluated at the project-level, plan-level, City-level, County-level and region-level under Existing with Project Conditions, and project-level and plan-level under the four Cumulative Conditions scenarios. In all cases, and consistent with the recommendations in the OPR *Technical Advisory*, adjustments will be applied to account for the

[5] Caltrans has released guidance on "Transportation Analysis under CEQA (First Edition): Evaluating Transportation Impacts of State Highway System Projects" (September 2020) that recommends that any increase in VMT would constitute a significant impact. This has been referred to as the "Net Zero VMT threshold". Caltrans has thus far signaled that this threshold would be applied only to transportation projects.

distance of travel outside of the model area. The boundary VMT will be reported for the City-level, County-level, and region-level for each of the five study scenarios.

- **Total VMT**: Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, presented as a total VMT.
- **Total VMT per Service Population**: Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses, divided by the sum of residents plus employees in the analysis area generating the VMT.
- **Project's Effect on VMT within the Boundary of a Specific Area (Boundary VMT)**: VMT that occurs within a selected geographic boundary (e.g., city, county, or region) by any type of vehicle. This captures all on-road vehicle travel on a roadway network for any purpose and includes local trips as well as trips that pass through the area without stopping.

Overall, the evaluation of the project's effect on land use and VMT should use the most appropriate forecasting model and consider all substantial evidence including the California Air Resources Board *2017 Scoping Plan-Identified VMT Reductions and Relationships to State Climate Goals*, CARB, and current research on the long-term effects of transportation network companies (TNCs), new mobility options, and autonomous vehicles (AVs). Any cumulative VMT forecasting should acknowledge that land use projects and plans typically do not influence regional land use control totals and that modeling scenarios should carefully consider the land use allocation between scenarios and/or the VMT metric used to establish the cumulative VMT threshold.

Preliminary Recommendation

Analyze the project's effect on land supply and VMT using the Mountain View Travel Model. The actual thresholds will be selected after reviewing the baseline and cumulative (no project) VMT estimates listed in the discussion section.

Potential cumulative thresholds could include the following:

- Project Impact: A significant impact would occur if the total VMT per service population would exceed a level of 14.3%, 25%, or X% below the citywide/countywide/regionwide baseline VMT rate.[6]
- Project Effect: A significant impact would occur if growth in the plan area increases total (boundary) citywide/countywide/regionwide VMT per service population compared to cumulative no project conditions.[7]

[6] The baseline VMT rate would likely come from the Existing Conditions VMT rate at the city-level, County-level or region-level.

[7] This threshold is designed to address the different land use totals between the Cumulative without Project Conditions and the Cumulative with project conditions.

- A significant impact would occur if the project is inconsistent with the Regional Transportation Plan/Sustainable Community Strategy Plan (Plan Bay Area).

VMT Modeling Tool Selection

Potential cumulative thresholds could include the following:

- Project Impact: The project would result in a significant project-specific impact if the NBS Master Plan total VMT per service population under Cumulative Conditions is greater than 24.62 miles.
- Project Effect: The project would result in a significant cumulative impact if it causes the cumulative regionwide daily boundary VMT per service population to be greater than 18.14 miles.
- A significant impact would occur if the project is inconsistent with the Regional Transportation Plan/Sustainable Community Strategy Plan (Plan Bay Area).

Attachment

Table A-1: VTA and Mountain View Travel Model Comparisons

Attachment A

Side-by-Side VTA and Mountain View Travel Model Comparison

Table A-1: VTA and Mountain View Travel Model Comparisons

Criteria	VTA Travel Model	Mountain View Travel Model
Model Type	4-Step trip-based model with four peak period assignments to create daily assignment. The peak period assignments are better at capturing the effects of congestion on vehicle trip length.	3-step trip-based model with a 24-hour daily assignment.
	With a 2040 horizon year, the VTA travel model is most consistent with Plan Bay Area future year land use and transportation assumptions. The mode choice component of the model makes it possible to extract home-based work VMT and home-based VMT.	As the local travel model, the Mountain View travel model is most sensitive to the built environment and TDM polices and provides additional forecasting capabilities on local streets because of the detailed TAZ and roadway network in Mountain View. This model requires land use, and mode share data from the VTA travel model to forecast regional VMT metrics, and home-based work VMT and home-based VMT metrics.
Recent Applications	The City's practice for most individual land use projects is to use the SCC VMT Tool to conduct baseline VMT screening; this tool uses VMT data from the VTA Travel Model.	For recent land use plans like the General Plan, the East Whisman Precise Plan, and the North Bayshore Precise Plan, VMT analysis has been conducted using the Mountain View Travel Model.
Geographic Coverage	Nine-county Bay Area, AMBAG (3 counties), and portions of Central Valley.	Nine-county Bay Area, and Santa Cruz County and Monterey County (i.e., does not include San Benito and portions of Central Valley)
TAZ and Roadway Network Detail	TAZ structure and roadway network (including some local streets and minor collectors) in Santa Clara and San Mateo counties appropriate for regional applications.	Smaller TAZ structure and more detailed roadway network than the VTA travel model in Mountain View. Similar TAZ coverage detail in Santa Clara County. More general in other counties in the model.
	Three TAZs cover North Bayshore.	Sixty-one TAZs cover North Bayshore.
Land Use Input Type and Years	Model utilizes separate year-specific land use input files for each scenario that include year-specific socio-economic data.	Outside Mountain View, production and attractions from the VTA travel model are hard coded into the trip generation. These need to be updated using data from the VTA travel model. In Mountain View an off-model trip generation process is used to calculate the production and attractions by Mountain View TAZ.
	Base Year of 2015, and 2025 (an intermediate scenario) and 2040 future years.	Base Year of 2017, and 2030 future year.
	The VTA travel model use land use projections (ABAG 2017 projections) and transportation network assumptions that are consistent with *Plan Bay Area 2040* under 2040 conditions.	The Mountain View travel model land use projects (ABAG 2007) and transportation network assumptions for 2030 conditions. Updated land use projections from the VTA model are needed to be consistent with the *Plan Bay Area 2040*.

Attachment A

Table A-1: VTA and Mountain View Travel Model Comparisons

Criteria	VTA Travel Model	Mountain View Travel Model
Mode Choice	The VTA travel model has a mode choice model that makes it possible to extract home-based work and home-based VMT from the travel model.	The Mountain View travel model does not have a functioning mode choice model; this circumstance has required substantial off-model trip generation calculations for North Bayshore and other parts of the City to fully capture the mode shift effects of various Mountain View land use and transportation network polices. Extracting home-based work and home-based VMT from the travel model requires the VTA travel model and/or off-model trip generation analysis.
Sensitivity to Land Use and TDM Polices	VTA travel model is sensitive to some built environment characteristics like regional destinations but does not model TDM policies.	The Mountain View was tested and updated to be sensitive to built environment changes and TDM policies in Mountain View.
VMT Metric Calculation	Total VMT – Yes	Total VMT – Yes
	Total VMT per Service Population – Yes	Total VMT per Service Population – Yes
	Home-Based Work VMT per Employee – Yes	Home-Based Work VMT per Employee – Not without the VTA travel model and/or off-model trip generation analysis.
	Home-Based VMT per Resident – Yes	Home-Based VMT per Resident – Not without the VTA travel model and/or off-model trip generation analysis.
	Boundary VMT – Yes	Boundary VMT – Yes
Capable of Producing Regional, County, Jurisdiction, and Project-scale VMT Estimates	Regional – Yes	Regional – not without VTA updated travel model data
	County – Yes	County – Yes
	Jurisdiction – Yes	Jurisdiction – Yes
	Project-scale – Yes	Project-scale – Yes

Source: VTA and Mountain View Travel Models, Fehr & Peers, 2021.

Appendix B:
North Bayshore Precise Plan with Residential – Project Trip Generation Estimates

FEHR & PEERS

MEMORANDUM

Date: February 8, 2017

To: Judy Fenerty and Judy Shanley, David J. Powers
Martin Alkire, City of Mountain View

From: Daniel Rubins, Mackenzie Watten, Sebastian Arias, and Julie Morgan, Fehr & Peers

Subject: North Bayshore Precise Plan with Residential – Project Trip Generation Estimates

SJ13-1450.02

The addition of residential uses into the North Bayshore Precise Plan (NBPP) area has the potential to change vehicle demand and vehicle miles traveled compared to the land uses envisioned in the adopted NBPP (2014). The addition of residential uses in North Bayshore would have an effect on several important transportation characteristics, such as:

- Total vehicle trip generation
- Likelihood of trips staying internal to the project area
- Likelihood of trips shifting to other modes (walking, bicycling, and transit)
- Trip lengths and vehicle miles traveled (analysis presented in a separate memo)

This memorandum presents the trip generation estimates for the draft project description that includes 9,850 residential dwelling units within the North Bayshore Precise Plan, which incorporates the following approved and potential projects (~3.6 million square feet total):

- Approved development: the Sobrato development at 1255 Pear Avenue, and the Intuit Marine Way and Bayshore buildings;
- Potential development: Broadreach (1625 Plymouth), Microsoft, Sobrato Mixed-Use, Shashi Hotel, Charleston East, Shoreline Commons, Landings, Huff rebuild, and Rees.

The North Bayshore Precise Plan with Residential would allow the following net changes in land uses as compared to what was on the ground in 2015.

- 9,850 new residential units
- 5,534,950 additional square feet of office building space
- 400 hotel rooms
- 1,964,860 fewer square feet of research & development and industrial building space
- 129,240 square feet of additional restaurant and retail building space
- 65,050 fewer square feet of service commercial building space
- 98,000 square foot athletic club
- 88,500 square foot theater

The proposed residential development will include the following mix of residential unit sizes:

- Micro/Studio – 40%
- 1-Bedroom – 30%
- 2-Bedroom – 20%
- 3-Bedroom – 10%

In this analysis, this scenario is referred to as "North Bayshore Precise Plan with Smaller Residential Units". As a point of comparison, a second scenario has been developed that has a higher proportion of larger (2-bedroom and 3-bedroom) units, which is more similar to nearby residential areas. This scenario is referred to as "North Bayshore Precise Plan with Standard Residential Units".

It should be noted that the addition of residential uses to the NBPP may be accompanied by the addition of a new Precise Plan policy that would establish preferential occupancy of North Bayshore dwelling units by local employees. While such a policy could have an effect on the amount of traffic generated by the NBPP residential areas, the magnitude of that effect would depend on the specific policy requirements, which are not defined at this time. Therefore, this analysis does not estimate the effects of a preferential occupancy policy.

This analysis does account for the effects of residential parking supply on vehicle trip generation. The analysis compares estimated trip generation for residential units with a "standard" parking ratio, approximately 1.20 spaces per unit, and a "reduced" parking ratio, approximately 0.60 spaces per unit. The standard parking ratio is similar to ratios found in typical multi-family housing complexes in nearby residential areas. The reduced parking ratio may be adopted as a Precise Plan policy. These ratios are explored in greater detail in *Trip and Parking Reduction Potential from the Proposed Residential Transportation Demand Management Program for North Bayshore (*Nelson Nygaard, February 2016*).*

ACCOMMODATING FUTURE GROWTH

Historically, whenever new developments were constructed, the nearby street system would often be expanded to accommodate the increase in vehicle traffic associated with the increased land use density and intensity. In this case, the City Council policy direction has been that no substantial new transportation infrastructure should be constructed to increase the physical capacity for automobiles in and around the North Bayshore area. Instead, the NBPP accommodates the growth by developing a land use and transportation policy framework to:

- More effectively use the existing physical capacity at the gateways;
- Achieve a targeted mode shift (i.e., a goal of no more than 45 percent single-occupancy vehicles from non-residential development) through application of extensive TDM programs; and,
- Manage the timing of arrivals and departures by imposing a trip cap on the number of vehicle trips that occur during the AM peak period.

The adopted NBPP (2014) includes a combination of land use, transportation infrastructure, and transportation demand management program improvements. To accommodate further growth in the North Bayshore area, such as the addition of residential units, more TDM programs and policy requirements might be needed in order to manage the additional travel demand. Potential options might be preferential housing policies or other methods to encourage local workers to live in the new housing units. Before considering the nature or magnitude of such policy options, it is useful to understand the transportation implications of the various scenarios being investigated.

TECHNICAL METHODS

The trip generation effects of each scenario have been estimated using a combination of: 1) trip generation rates observed from existing non-residential developments in the North Bayshore area; 2) the assumed achievement of the NBPP trip cap, which imposes a limit of 45% SOV mode share on non-residential developments; 3) trip generation rates and travel behavior observed from similar residential sites elsewhere in Silicon Valley and the San Francisco Bay Area; and 4) the potential for trip reductions as a result of the mixture of land uses (i.e., person trips shifting to transit and active modes) that could occur with the addition of residential units in a jobs-rich area. These are described in more detail in the rest of this memo and attachments.

LOCAL NORTH BAYSHORE NON-RESIDENTIAL TRIP GENERATION SURVEYS

Based on recent gateway counts, trip generation rates have been directly observed for the existing non-residential developments within North Bayshore. This local empirical data represents the most accurate forecast of likely trip-making behavior for new developments in North Bayshore that would be similar to the current mix of high technology firms that sponsor extensive TDM programs. The trip surveys were collected over the past two years via counts taken at each gateway. As compared with conventional office buildings, the observations indicate that these employers tend to have lower vehicle trip generation during the AM and PM peak hours, but similar total vehicle trip generation over the entire day (see **Table 1**). These results are likely due to several factors:

- **Employee density:** Large technology companies tend to have higher employee densities than are typical for non-technology office uses, with up to five employees per thousand square feet of gross floor area as compared to more typical densities of about three employees per thousand square feet.
- **Flexible working hours:** Technology companies tend to have later start and end times and greater flexibility in arrival and departure times than traditional office space, partly in response to congestion on nearby roadways and also in response to employee expectations.
- **Travel Demand Management:** Many technology companies in Silicon Valley have extensive TDM programs that provide employees with alternatives to solo driving, including carpooling, vanpooling and long-distance private commute shuttles.

The local vehicle trip generation rates for office employees during the AM and PM peak hours is approximately 30 to 35 percent less than average office vehicle trip rates from the standard ITE *Trip Generation Manual* (expressed as vehicle trips per employee). On a daily basis, the local vehicle trip generation rates are approximately the same as average ITE rates.

While local surveys are extremely useful in estimating the trip-making characteristics of new development that would be similar to existing uses in that same area, they are less useful when estimating trip generation for new development that is substantively different. In the case of the scenarios investigated here, the addition of a significant number of residential units would be a major change for the North Bayshore area, so different techniques are needed to estimate the resulting travel effects. This is discussed later in the memo.

NON-RESIDENTIAL TRAVEL BEHAVIOR CHARACTERISTICS

The *Mountain View 2030 General Plan* (July 2012) includes policies to develop, adopt and monitor TDM strategies for land development projects in North Bayshore area. These polices include:

- POLICY LUD 17.2: Transportation Demand Management strategies. Require developments to include and implement Transportation Demand Management (TDM) strategies.
- POLICY MOB 10.2: Reduced travel demand. Promote effective TDM programs for existing and new development.

Upon completion of the *Mountain View 2030 General Plan*, City staff initiated the *Shoreline Regional Park Community Transportation Study* (2013) to identify:

- long-term transportation infrastructure (local streets, freeway interchange improvements, transit lanes, dedicated bicycle facilities);
- transportation demand management (employer incentive programs);
- parking management and supply strategies; and
- implementation of a transportation management association (TMA) responsible for implementing a shuttle program.

A 45 percent single occupancy (drive-alone) mode choice goal was identified as a potential North Bayshore performance measure. As described in the *North Bayshore Precise Plan EIR – Establishing Travel Characteristics for North Bayshore* (Fehr & Peers, April 2014) the percentage of people who drive alone currently ranges between 50 percent and 63 percent, depending on the time period; the lowest drive-alone rate occurs during the morning peak hour. The on-going morning peak period gateway monitoring by City staff shows similar vehicle and person mix at the gateway.

This analysis assumes that the NBPP policy of a 45 percent SOV rate for non-residential developments is achieved in all future scenarios.

LOCAL RESIDENTIAL TRIP GENERATION SURVEYS

To develop a more refined understanding of residential trip generation in Silicon Valley, local trip generation surveys were conducted at two sites: 1) The Oaks (South) at North Park Apartments Community in north San José, and 2) Stanford West on the Stanford University campus. The Oaks (South) is a community with high technology employees living near high technology firms, and served by employer shuttles. The Stanford West site is an example of housing where preference is given to Stanford students, staff and employees. The surveys were conducted on March 8, 2016.

In addition, Fehr & Peers summarized trip generation data from the California Household Travel Survey (CHTS) for households that fit the profile of the proposed North Bayshore residential units. Survey records were filtered to match the household size, household income, residential type, and potential parking supply expected in North Bayshore, and were restricted geographically to similar nearby jurisdictions (Cities along the San Francisco Peninsula: Foster City, Redwood City, Menlo Park, Palo Alto, Mountain View, San José, Santa Clara, and Cupertino.

The data sets described above were combined to estimate trip rates for residential units with different household sizes, parking supplies, and combinations of the two. **Attachment A** summarizes the trip generation surveys, the CHTS data, and the final residential unit trip rates that were calculated based on those sources and used in the subsequent analyses described below. Please refer to that attachment for a more detailed discussion on how the final residential unit rates were calculated. As noted in that attachment, the estimates vary in their reliability depending on the sources of data available.

This summary process calculates person trip generation rates that are approximately 20-50 percent less than average ITE person trip rates for typical apartments, depending on the household size and parking supply. As shown in the later analysis, this process resulted in vehicle trip generation rates approximately 30-50 percent less than average ITE apartment unit vehicle trip rates. The household characteristics sensitivity testing scenarios include trip rates up to 70% lower than ITE trip rates.

MIXED-USE TRIP REDUCTION

With the addition of residential units and more retail opportunities, the North Bayshore area would have a more diverse mix of land uses and therefore a greater potential to reduce vehicle trips due to internalized person trips (meaning that some people could accomplish many or all of their daily needs by remaining within North Bayshore and traveling using transit and/or active modes). Fehr & Peers used the MainStreet[1] web-based transportation analysis tool for this analysis. MainStreet

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[1] Mixed-use developments (MXDs) generate fewer vehicle trips than similarly-sized developments where the land uses are segregated. There has been a lot of research in recent years by the Institute of Transportation Engineers, the Urban Land Institute, the Environmental Protection Agency, the San Diego Association of Governments and others to quantify these reductions. Fehr & Peers has developed the MainStreet web app to conduct an MXD analysis at any location in the United States. MainStreet allows for more accurate estimates of a site's trip generation characteristics than traditional industry standards.

addresses concerns with typical trip generation rates, such as those published in the ITE *Trip Generation Manual* and *Handbook*, which are based on single-use sites and have been shown to overestimate peak traffic generation for mixed-use developments (MXDs) by an average of 35 percent. This empirical evidence is based on similar mixed-use developments throughout the United States. Unlike the ITE method, MainStreet takes into account development density, scale, design, accessibility, transit proximity, demographics and mix of uses, all of which affect traffic generation. MainStreet applies a mixed-use reduction to other trip generation rates, such as those from the ITE *Trip Generation Manual*, based on these site characteristics.

MainStreet Input Variables

The MainStreet model begins with a basic trip generation rate and then requires a series of input parameters that are specific to the location of the project to estimate how the basic trip rate would change for that particular project. For the purposes of this analysis, the basic trip generation rate used as a starting point is the residential unit person trip rate calculated from local observations; as described in the section above, this locally-based rate is roughly 20 percent lower than the standard ITE trip rate for typical apartments. The MainStreet inputs have been drawn from the North Bayshore gateway monitoring, the California Household Travel Survey (CHTS), and the local travel demand model, as well as national research values for those situations where local data is not available. These input variables include attributes of the surrounding area (e.g., employment within 1 mile, average household size, intersection density, etc.), as well as demographic characteristics of the project site itself (e.g., household size and vehicle ownership). These parameters are summarized in **Attachment B**. A summary of the building sizes and occupied building area are provided in **Table 2** and **Table 3**, respectively, while **Tables 4** and **5** show the estimated numbers of employees and residents, both for the total building size (i.e., at full occupancy with no vacancies) and for the estimated occupied building areas. Additional land use scenarios are presented in **Attachment C**.

RESULTS

STUDY SCENARIOS

The trip generation analysis was completed for the following base land use scenarios:

- Existing Conditions – Existing volumes at the North Bayshore Gateway.
- 2014 North Bayshore Precise Plan – Adopted 2014 North Bayshore Precise Plan, which includes the approved projects and pipeline projects except the Sobrato Mixed-Use development.
- North Bayshore Precise Plan with Standard Residential Units and Standard Parking – NBPP with 9,850 standard residential units and standard residential parking supply (1.2 spaces per unit).
- North Bayshore Precise Plan with Standard Residential Units and Reduced Parking – NBPP with 9,850 standard residential units and reduced residential parking supply (0.6 spaces per unit).
- North Bayshore Precise Plan with Smaller Residential Units and Standard Parking – NBPP with 9,850 smaller residential units and standard residential parking supply. (Scenario studied in the transportation impact analysis)
- North Bayshore Precise Plan with Smaller Residential Units and Reduced Parking – NBPP with 9,850 standard residential units and reduced residential parking supply.

Sensitivity Test Scenarios

In addition to the scenarios described above, several sensitivity tests were conducted to estimate how variations in the number of residential units, the size of those units, or even lower parking supply ratios would affect the trip generation results.

The first set of sensitivity test scenarios, called Land Use tests, involved adjusting the number of residential units such that the resulting trip generation would remain within the gateway capacity adopted in the 2014 NBPP. It was found that the following four scenarios had trip generation results that remained within the established gateway capacity. In particular, these scenarios had numbers of trips in the peak direction (inbound in the morning and outbound in the evening) that were very close to the established capacity for that movement

1. North Bayshore Precise Plan with Standard Residential Units and Standard Parking, within Gateway Capacity – NBPP plus 500 residential units.

2. North Bayshore Precise Plan with Standard Residential Units and Reduced Parking, within Gateway Capacity – NBPP plus 2,000 residential units.
3. North Bayshore Precise Plan with Smaller Residential Units and Standard Parking, within Gateway Capacity – NBPP plus 1,500 residential units.
4. North Bayshore Precise Plan with Smaller Residential Units and Reduced Parking, within Gateway Capacity – NBPP plus 3,000 residential units.

The next set of sensitivity test scenarios, called Household Characteristic tests, involved assuming the full 9,850 residential units, and adjusting household size and parking supply characteristics to more extreme levels than have been used in other scenarios. These tests involved things like limiting the unit size only to studio (i.e., one-person) apartments, or significantly restricting parking to only one space per three or four units. It is very important to note that these particular sensitivity tests involve characteristics that are not found elsewhere in the Bay Area; therefore, there is essentially no data available on which to base an estimate of how these characteristics would affect trip generation rates. These Household Characteristic sensitivity test scenarios are presented for informational purposes, but caution should be applied when considering the reliability of these results:

1. North Bayshore Precise Plan with 9,850 Studio Residential Units and Reduced Parking (0.60 spaces per unit)
2. North Bayshore Precise Plan with 9,850 Smaller Residential Units (average of 1.75 persons per unit) and 0.33 Parking Spaces Per Unit
3. North Bayshore Precise Plan with 9,850 Smaller Residential Units (average of 1.75 persons per unit) and 0.25 Parking Spaces Per Unit
4. North Bayshore Precise Plan with 9,850 Studio Residential Units and 0.33 Parking Spaces Per Unit
5. North Bayshore Precise Plan with 9,850 Studio Residential Units and 0.25 Parking Spaces Per Unit

GATEWAY TRIP GENERATION COMPARISON

The trip generation results for the Base and Land Use scenarios are presented in **Table 6-A**, and **Table 7-A** provides context for the change in trips compared to the growth anticipated in the future scenarios. As shown in these tables, the future scenarios would result in growth in service population (the sum of residents and employees) of approximately 120% to 140%; that is, the number of people in the North Bayshore area would more than double as compared to Existing Conditions. In the Smaller Residential Units scenarios, total vehicle trips would increase by about 40% to 60% in the AM peak and about 60% to 70% in the PM peak. This growth in vehicle trips is substantially lower than the 120% growth in service population that would occur under this scenario; this is due to the trip-reducing benefits of having housing and jobs in close proximity, the small size of the residential units, and the likelihood of reduced vehicle ownership as a result of transit availability and proximity to goods and services. The results for the Standard Residential Units scenario are somewhat higher, reflecting the effects of more typical housing unit sizes and vehicle ownership levels. However, even in the Standard Residential Units scenario, the growth in vehicle trips is much less than the growth in service population, due to the effects of locating housing close to jobs and services. It should also be noted that, under either scenario, the peak hour trip generation is estimated to exceed the gateway capacity.

The results for the land use sensitivity tests show that restricting the number of residential units in the land use program can result in scenarios that fit within the gateway capacity.

Tables 6-B and **7-B** present the same results for the Household Characteristic sensitivity tests. As described above, these particular sensitivity tests are being presented for informational purposes, but the reliability of these results is affected by the lack of data available to support these estimates. Based on these figures, the proposed land use program of 9,850 dwelling units could fit within the established gateway capacity if all of the households were one-person households and the parking ratio was in the range of 0.25-0.33 spaces per unit.

Detailed trip generation results for each alternative can be found in **Attachment D**

AFFILIATION AND MIXED-USE REDUCTION

One of the primary effects of the addition of housing to the North Bayshore area is to reduce 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 rather than crossing one of the external gateways. **Tables 8-A and 8-B** show the mixed-use reduction results. Under the adopted 2014 North Bayshore Precise Plan, which contained a modest mixture of retail, entertainment, and office uses, a 9% reduction (or about 1,680 trips) of the morning peak hour person trips generated within North Bayshore were estimated to remain internal to the site and shift to transit and active modes. Under the various scenarios, the mixed-use reduction is estimated to increase substantially, both in raw numbers and in percentage, due to the addition of residential uses to a jobs-rich environment. In the Smaller Residential Units scenarios, the mixed-use reduction percentage doubles or triples to between 18% and 25%; more importantly, because the total number of person trips increases, the number of person trips reduced almost quadruples, from 1,680 to 6,160. The results in the Standard Residential Units scenarios are less dramatic, but still the number of person trips reduced doubles or triples. Note that the numbers presented above relate to the total trips generated in North Bayshore, from all land use types. If we were to focus solely on trips generated by residential uses, the mixed-use reduction would be substantially higher, ranging between 20% and 40%.

These results support the concept that providing housing near jobs increases the likelihood that trips can remain within a local area, thus shortening travel distances and increasing residents' ability to accomplish some travel needs by walking, cycling, or using short-distance transit. It would be unrealistic to expect that all person trips would remain internal to a particular site; one reason is that many households, particularly in high-cost locations such as Silicon Valley, have more than one worker, so while one of them may work in the North Bayshore area it is likely that the other(s) may work elsewhere. Similarly, people travel for many purposes; commuting to and from work typically represents no more than about one-third of a household's total travel, with the rest being trips to schools, shopping, recreational activities, personal business appointments, and many other activities.

OVERALL SUMMARY

As an overall summary, **Tables 9-A and 9-B** summarize the number of external vehicle trips for each scenario, and separate those trips into those associated with residential uses and with employment uses. These results show how the reduction in trips caused by the mixture of land uses within North Bayshore can influence external trips by land use type. An interesting finding of looking at the data this way is that the growth in vehicle trips associated with the new employment uses is quite limited considering the substantial amount of employment growth (i.e., an additional 3.6 million square feet of office and research and development (R&D) building space). This is indicative of the efficiency of the land use program in linking residential and employment uses within North Bayshore.

ATTACHMENTS

Tables

Table 1:	Comparison of Trip Generation Rates
Table 2:	Land Use in the North Bayshore Area: Total Building Size
Table 3:	Land Use in the North Bayshore Area: Occupied Building Area
Table 4:	Land Use in the North Bayshore Area: Maximum Number of Employees and Residents
Table 5:	Land Use in the North Bayshore Area: Estimated Number of Employees and Residents
Table 6-A:	Trip Generation Estimates and Gateway Capacity: Base and Land Use Sensitivity Tests

Attachments

TABLES

TABLE 1
COMPARISON OF TRIP GENERATION RATES

Source	Daily	AM Peak Hour	PM Peak Hour
Vehicle Trip Rates per Employee			
ITE: Single Tenant Office[1]	3.70	0.53	0.51
ITE: General Office[2]	3.32	0.48	0.46
North Bayshore[3]	2.96	0.26	0.25

Notes:

1. Average trip rates of Institute of Transportation Engineers (ITE) single tenant office building (ITE land use code 715) during the morning and evening peak hours.
2. Average trip rates of Institute of Transportation Engineers (ITE) general office building (ITE land use code 710) during the morning and evening peak hours.
3. Average trip rates for North Bayshore based on gateway counts conducted in 2015 divided by the number of existing employees (24,843).

Source: Fehr & Peers, February 2017.

TABLE 2
LAND USE IN THE NORTH BAYSHORE AREA: TOTAL BUILDING SIZE

Land Use	Units	Existing (2015)[1]	North Bayshore Precise Plan (2030)	North Bayshore Precise Plan with Smaller Unit Residential (2030)	North Bayshore Precise Plan with Standard Unit Residential (2030)
Single Family	Dwelling Units	1	1	1	1
Multi-Family	Dwelling Units	362	362	10,212	10,212
Subtotal (Residential) [A]	**Dwelling Units**	**363**	**363**	**10,213**	**10,213**
Office	Square Feet	413,849	4,857,703	5,948,796	5,948,796
Research & Development	Square Feet	6,406,798	5,481,311	4,544,684	4,544,684
Industrial	Square Feet	250,774	238,599	148,033	148,033
Subtotal (Office, Industrial and R&D) [B]	**Square Feet**	**7,071,421**	**10,577,613**	**10,641,513**	**10,641,513**
Retail and Restaurant	Square Feet	69,300	133,538	198,538	198,538
Service Commercial	Square Feet	91,188	42,938	26,138	26,138
Subtotal (Supporting Uses) [C]	**Square Feet**	**160,488**	**176,476**	**224,676**	**224,676**
Motel	Rooms	0	400	400	400
Church	Building	1	1	1	1
Institutional/Recreation	Trips	8,135	10,469	10,469	10,469
Subtotal (Other Uses)	***(Various)***	***(Various)***	**(Various)**	**(Various)**	**(Various)**
Total Residential [A]	**Dwelling Units**	**363**	**363**	**10,213**	**10,213**
Total Employment Uses [B+C]	**Square Feet**	**7,231,909**	**10,754,089**	**10,866,189**	**10,866,189**

Notes:

1. Land use summarized from the City of Mountain View VISUM model traffic analysis zones.

Source: City of Mountain View VISUM model. November 2016.

TABLE 3
LAND USE IN THE NORTH BAYSHORE AREA: OCCUPIED[3] BUILDING AREA

Land Use	Units	Existing (2015)[1,2]	North Bayshore Precise Plan (2030)	North Bayshore Precise Plan with Smaller Unit Residential (2030)	North Bayshore Precise Plan with Standard Unit Residential (2030)
Single Family	Dwelling Units	1	1	1	1
Multi-Family	Dwelling Units	362	362	10,212	10,212
Subtotal (Residential) [A]	**Dwelling Units**	**363**	**363**	**10,213**	**10,213**
Office	Square Feet	412,910	4,844,563	5,875,378	5,875,378
Research & Development	Square Feet	6,374,650	4,724,329	3,834,661	3,834,661
Industrial	Square Feet	249,521	221,897	137,671	137,671
Subtotal (Office, Industrial and R&D) [B]	**Square Feet**	**7,037,081**	**9,790,789**	**9,847,710**	**9,847,710**
Retail and Restaurant	Square Feet	68,954	132,481	192,931	192,931
Service Commercial	Square Feet	90,732	39,932	24,308	24,308
Subtotal (Supporting Uses) [C]	**Square Feet**	**159,686**	**172,413**	**217,239**	**217,239**
Motel	Rooms	0	400	400	400
Church	Building	1	1	1	1
Institutional/Recreation	Trips	8,135	10,469	10,469	10,469
Subtotal (Other Uses)	***(Various)***	***(Various)***	**(Various)**	**(Various)**	**(Various)**
Total Residential [A]	**Dwelling Units**	**363**	**363**	**10,213**	**10,213**
Total Employment Uses [B+C]	**Square Feet**	**7,196,767**	**9,963,202**	**10,064,949**	**10,064,949**

Notes:

1. Land use summarized from the City of Mountain View VISUM model traffic analysis zones.
2. "Occupied" existing (2015) building square footage accounts for a ½ percent vacancy rate of the total building square footage, without approved development.
3. "Occupied" building square footage accounts for a 7 percent vacancy rate off the total building square footage under North Bayshore Precise Plan, North Bayshore Precise Plan with Smaller Unit Residential and Standard Unit Residential. New office development is fully occupied while existing R&D space is about 14 percent vacant. The total building square footage is: Existing Conditions = 7,231,909 square feet, North Bayshore Precise Plan = 10,754,089 square feet, and North Bayshore Precise Plan with Smaller Unit Residential and Standard Unit Residential = 10,866,189 square feet.

Source: City of Mountain View VISUM model. November 2016.

TABLE 4
LAND USE IN THE NORTH BAYSHORE AREA:
MAXIMUM NUMBER OF EMPLOYEES AND RESIDENTS

Land Use	Units	Existing (2015)	North Bayshore Precise Plan (2030)	North Bayshore Precise Plan with Smaller Unit Residential (2030)	North Bayshore Precise Plan with Unit Standard Residential (2030)
Single Family	Residents	2	2	2	2
Multi-Family[2]	Residents	760	760	17,998	21,445
Subtotal (Residential) [A]	**Residents**	**762**	**762**	**18,000**	**21,447**
Office[3]	Employees	1,031	19,431	23,795	23,795
Research & Development[3]	Employees	22,307	19,185	15,906	15,906
Industrial	Employees	301	286	178	178
Subtotal (Office, R&D and Industrial) [B]	**Employees**	**23,639**	**38,902**	**39,879**	**39,879**
Retail and Restaurant	Employees	228	374	547	547
Service Commercial	Employees	274	129	78	78
Subtotal (Supporting Uses) [C]	**Employees**	**502**	**503**	**625**	**625**
Motel	Employees	0	160	160	160
Church	Employees	10	10	10	10
Institutional/Recreation	Employees	814	1,047	1,047	1,047
Subtotal (Other Uses) [D]	**Employees**	**824**	**1,217**	**1,217**	**1,217**
Total Residential [A]	**Residents**	**762**	**762**	**18,000**	**21,447**
Total Employment Uses [B+C+D]	**Employees**	**24,965**	**40,622**	**41,721**	**41,721**
Service Population [A+B+C+D][4]		**25,727**	**41,384**	**59,721**	**63,168**

Notes:

1. Land use summarized from the City of Mountain View VISUM model traffic analysis zones. "Maximum" number is calculated based on total building size, assuming no vacancy.
2. For Existing and the North Bayshore Precise Plan, the density for existing multi-family land use is 2.10 people per household. For 2030 North Bayshore Precise Plan with Smaller Unit Residential, the density for new multi-family land uses is based on 1.75 people per household. For 2030 North Bayshore Precise Plan with Standard Unit Residential, the density for new multi-family land uses is based on 2.10 people per household.
3. For Existing, and the 2030 North Bayshore Precise Plan with Residential, the densities for Office and R&D land uses are 4.00 and 3.5 employees per 1,000 square feet, respectively.
4. Service population is defined as the sum of all residents and employees.

Source: City of Mountain View VISUM model. November 2016.

TABLE 5
LAND USE IN THE NORTH BAYSHORE AREA:
ESTIMATED NUMBER OF EMPLOYEES AND RESIDENTS[1]

Land Use	Units	Existing (2015)	North Bayshore Precise Plan (2030)	North Bayshore Precise Plan with Smaller Unit Residential (2030)	North Bayshore Precise Plan with Standard Unit Residential (2030)
Single Family	Residents	2	2	2	2
Multi-Family[2]	Residents	760	760	17,998	21,445
Subtotal (Residential) [A]	**Residents**	**762**	**762**	**18,000**	**21,447**
Office[3]	Employees	1,027	19,378	23,502	23,502
Research & Development[3]	Employees	22,194	16,535	13,421	13,421
Industrial	Employees	299	266	165	165
Subtotal (Office, R&D and Industrial) [B]	**Employees**	**23,520**	**36,179**	**37,088**	**37,088**
Retail and Restaurant	Employees	227	371	532	532
Service Commercial	Employees	272	120	73	73
Subtotal (Supporting Uses) [C]	**Employees**	**499**	**491**	**605**	**605**
Motel	Employees	0	160	160	160
Church	Employees	10	10	10	10
Institutional/Recreation	Employees	814	1,047	1,047	1,047
Subtotal (Other Uses) [D]	**Employees**	**824**	**1,217**	**1,217**	**1,217**
Total Residential [A]	**Residents**	**762**	**762**	**18,000**	**21,447**
Total Employment Uses [B+C+D]	**Employees**	**24,843**	**37,887**	**38,910**	**38,910**
Service Population [A+B+C+D][4]		**25,605**	**38,649**	**56,910**	**60,357**

Notes:

1. Land use summarized from the City of Mountain View VISUM model traffic analysis zones.
2. For Existing and the North Bayshore Precise Plan, the density for existing multi-family land use is 2.10 people per household. For 2030 North Bayshore Precise Plan with Smaller Unit Residential, the density for new multi-family land uses is based on 1.75 people per household. For 2030 North Bayshore Precise Plan with Typical Residential, the density for new multi-family land uses is based on 2.10 people per household.
3. For Existing, and the 2030 North Bayshore Precise Plan with Residential, the densities for Office and R&D land uses are 4.00 and 3.5 employees per 1,000 square feet, respectively.
4. Service population is defined as the sum of all residents and employees.

Source: City of Mountain View VISUM model. November 2016.

TABLE 6-A
TRIP GENERATION ESTIMATES:
BASE SCENARIOS AND LAND USE SENSITIVITY TESTS

Scenario	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Base Scenarios							
Existing Conditions	73,450	5,380	1,120	6,500	1,350	4,960	6,310
2014 North Bayshore Precise Plan	92,210	6,980	1,120	8,100	1,780	6,160	7,940
North Bayshore Precise Plan with Standard Residential Units, Standard Parking	147,640	7,680	3,930	11,610	4,550	7,860	12,410
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking	133,090	7,140	2,900	10,040	3,720	7,320	11,040
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking	132,820	7,230	3,310	10,540	4,040	7,340	11,380
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking	119,940	6,670	2,470	9,140	3,290	6,830	10,120
Land Use Sensitivity Tests							
North Bayshore Precise Plan with 500 Standard Residential Units, Standard Parking, within Gateway Capacity	95,160	7,020	1,230	8,250	1,900	6,230	8,130
North Bayshore Precise Plan with 2,000 Standard Residential Units, Reduced Parking, within Gateway Capacity	96,710	6,660	1,290	7,950	2,030	6,100	8,130
North Bayshore Precise Plan with 1,500 Smaller Residential Units, Standard Parking, within Gateway Capacity	96,230	6,760	1,330	8,090	2,020	6,190	8,210
North Bayshore Precise Plan with 3,000 Smaller Residential Units, Reduced Parking, within Gateway Capacity	95,970	6,390	1,270	7,660	1,980	5,980	7,960
Adopted Gateway Capacity	-	6,980	1,120	8,100	1,780	6,160	7,940
Mixed-Use Gateway Capacity	-	6,300	1,990	8,290	2,310	5,720	8,030

Note:

1. Existing Conditions is based on the most recent daily count collected in February 2014 and peak hour counts from June 2015.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 6-B
TRIP GENERATION ESTIMATES:
HOUSEHOLD CHARACTERISTICS SENSITIVITY TESTS

Scenario	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Base Scenarios							
Existing Conditions	73,450	5,380	1,120	6,500	1,350	4,960	6,310
2014 North Bayshore Precise Plan	92,210	6,980	1,120	8,100	1,780	6,160	7,940
Household Characteristic Sensitivity Tests							
North Bayshore Precise Plan with Studio Residential Units, Reduced Parking	101,620	6,240	1,580	7,820	2,430	6,250	8,680
North Bayshore Precise Plan with Smaller Residential Units, 0.33 Parking Spaces Per Unit	112,270	6,280	1,870	8,150	2,940	6,570	9,510
North Bayshore Precise Plan with Smaller Residential Units, 0.25 Parking Spaces Per Unit	106,480	6,030	1,510	7,540	2,600	6,270	8,870
North Bayshore Precise Plan with Studio Residential Units, 0.33 Parking Spaces Per Unit	95,570	5,940	1,320	7,260	2,200	5,810	8,010
North Bayshore Precise Plan with Studio Residential Units, 0.25 Parking Spaces Per Unit	91,140	5,590	1,090	6,680	2,010	5,620	7,630
Adopted Gateway Capacity	-	6,980	1,120	8,100	1,780	6,160	7,940
Mixed-Use Gateway Capacity	-	6,300	1,990	8,290	2,310	5,720	8,030

Note:

1. Existing Conditions is based on the most recent daily count collected in February 2014 and peak hour counts from June 2015.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 7-A
PERCENTAGE CHANGE COMPARED TO EXISTING CONDITIONS[1]:
BASE SCENARIOS AND LAND USE SENSITIVITY TESTS

Scenario	Service Population	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Base Scenarios				
2014 North Bayshore Precise Plan	50.9%	25.5%	24.6%	25.8%
North Bayshore Precise Plan with Standard Residential Units, Standard Parking	135.5%	101.0%	78.6%	96.7%
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking	135.5%	81.2%	54.5%	75.0%
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking	122.3%	80.8%	62.2%	80.3%
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking	122.3%	63.3%	40.6%	60.4%
Land Use Sensitivity Tests				
North Bayshore Precise Plan with Standard Residential Units, Standard Parking, within Gateway Capacity	59.0%	29.6%	26.9%	28.8%
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking, within Gateway Capacity	71.5%	31.7%	22.3%	28.8%
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking, within Gateway Capacity	65.2%	31.0%	24.5%	30.1%
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking, within Gateway Capacity	75.4%	30.7%	17.8%	26.1%

Note:

1. Existing Conditions is based on the most recent daily count collected in February 2014 and peak hour counts from June 2015.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 7-B
PERCENTAGE CHANGE COMPARED TO EXISTING CONDITIONS[1]:
HOUSEHOLD CHARACTERISTICS SENSITIVITY TESTS

Scenario	Service Population	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Base Scenario				
2014 North Bayshore Precise Plan	50.9%	25.5%	24.6%	25.8%
Household Characteristic Sensitivity Tests				
North Bayshore Precise Plan with Studio Residential Units, Reduced Parking	93.4%	38.4%	20.3%	37.6%
North Bayshore Precise Plan with Smaller Residential Units, 0.33 Parking Spaces Per Unit	122.3%	52.9%	25.4%	50.7%
North Bayshore Precise Plan with Smaller Residential Units, 0.25 Parking Spaces Per Unit	122.3%	45.0%	16.0%	40.6%
North Bayshore Precise Plan with Studio Residential Units, 0.33 Parking Spaces Per Unit	93.4%	30.1%	11.7%	26.9%
North Bayshore Precise Plan with Studio Residential Units, 0.25 Parking Spaces Per Unit	93.4%	24.1%	2.8%	20.9%

Note:

1. Existing Conditions is based on the most recent daily count collected in February 2014 and peak hour counts from June 2015.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 8-A
MIXED-USE REDUCTION OF PERSON TRIPS[1]:
BASE SCENARIOS AND LAND USE SENSITIVITY TESTS

Scenario	Daily	AM Peak Hour Total	PM Peak Hour Total
Base Scenarios			
2014 North Bayshore Precise Plan	5.4% (8,360)	8.7% (1,680)	8.9% (1,460)
North Bayshore Precise Plan with Standard Residential Units, Standard Parking	10.1% (23,520)	13.7% (3,440)	12.9% (2,980)
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking	15.4% (35,860)	20.7% (5,200)	18.6% (4,290)
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking	13.3% (29,490)	18.0% (4,440)	16.5% (3,730)
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking	18.6% (41,240)	25.0% (6,160)	22.2% (5,020)
Land Use Sensitivity Tests			
North Bayshore Precise Plan with 500 Standard Residential Units, Standard Parking, within Gateway Capacity	7.8% (12,690)	11.3% (2,270)	11.6% (1,980)
North Bayshore Precise Plan with 2,000 Standard Residential Units, Reduced Parking, within Gateway Capacity	13.1% (22,780)	18.3% (3,820)	17.3% (3,120)
North Bayshore Precise Plan with 1,500 Smaller Residential Units, Standard Parking, within Gateway Capacity	10.8% (18,190)	15.8% (3,250)	14.5% (2,560)
North Bayshore Precise Plan with 3,000 Smaller Residential Units, Reduced Parking, within Gateway Capacity	15.8% (28,130)	22.8% (4,850)	20.9% (3,880)

Note:

1. Table shows the mixed-use reduction of person trips, both as a percentage of total person trips and as the number of trips reduced. Because the total number of person trips for each alternative differs, there will be cases where the percentages are similar, but the absolute number of trips reduced may vary greatly.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 8-B
MIXED-USE REDUCTION OF PERSON TRIPS[1]:
HOUSEHOLD CHARACTERISTICS SENSITIVITY TESTS

Scenario	Daily	AM Peak Hour Total	PM Peak Hour Total
Base Scenarios			
2014 North Bayshore Precise Plan	5.4% (8,360)	8.7% (1,680)	8.9% (1,460)
Household Characteristic Sensitivity Tests			
North Bayshore Precise Plan with Studio Residential Units, Reduced Parking	19.1% (37,290)	26.8% (6,050)	21.9% (4,410)
North Bayshore Precise Plan with Smaller Residential Units, 0.33 Parking Spaces Per Unit	23.1% (51,310)	31.3% (7,710)	25.8% (5,820)
North Bayshore Precise Plan with Smaller Residential Units, 0.25 Parking Spaces Per Unit	26.0% (57,710)	35.1% (8,660)	29.4% (6,630)
North Bayshore Precise Plan with Studio Residential Units, 0.33 Parking Spaces Per Unit	24.2% (47,090)	31.5% (7,110)	27.9% (5,600)
North Bayshore Precise Plan with Studio Residential Units, 0.25 Parking Spaces Per Unit	27.0% (52,530)	36.2% (8,180)	30.4% (6,120)

Note:

1. Table shows the mixed-use reduction of person trips, both as a percentage of total person trips and as the number of trips reduced. Because the total number of person trips for each alternative differs, there will be cases where the percentages are similar, but the absolute number of trips reduced may vary greatly.

Source: MainStreet, Fehr & Peers, February 2017.

TABLE 9-A
CHANGE IN EXTERNAL VEHICLE TRIPS COMPARED TO EXISTING CONDITIONS: BASE SCENARIOS AND LAND USE SENSITIVITY TESTS

Alternative	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
2014 North Bayshore Precise Plan							
Residential [A]	-120	0	-10	-10	-10	0	-10
Employment[1] [B]	18,880	1,600	10	1,610	440	1,200	1,640
Total [A+B]	18,760	1,600	0	1,600	430	1,200	1,630
NBPP with Standard Residential Units, Standard Parking							
Residential [A]	56,780	810	2,770	3,580	2,730	1,780	4,510
Employment[1] [B]	17,400	1,490	40	1,530	470	1,120	1,590
Total [A+B]	74,180	2,300	2,810	5,110	3,200	2,900	6,100
NBPP with Standard Residential Units, Reduced Parking							
Residential [A]	45,970	630	1,770	2,400	1,940	1,510	3,450
Employment[1] [B]	13,670	1,130	10	1,140	430	850	1,280
Total [A+B]	59,640	1,760	1,780	3,540	2,370	2,360	4,730
NBPP with Smaller Residential Units, Standard Parking							
Residential [A]	44,750	640	2,200	2,840	2,270	1,400	3,670
Employment[1] [B]	14,620	1,210	-10	1,200	420	980	1,400
Total [A+B]	59,370	1,850	2,190	4,040	2,690	2,380	5,070
NBPP with Smaller Residential Units, Reduced Parking							
Residential [A]	35,660	500	1,400	1,900	1,560	1,160	2,720
Employment[1] [B]	10,830	790	-50	740	380	720	1,100
Total [A+B]	46,490	1,290	1,350	2,640	1,940	1,880	3,820
NBPP with 500 Standard Residential Units, Reduced Parking, within Gateway Capacity							
Residential [A]	2,500	30	90	120	110	70	180
Employment[1] [B]	19,210	1,610	10	1,620	440	1,200	1,640
Total [A+B]	21,710	1,640	100	1,740	550	1,270	1,820
NBPP with 2,000 Standard Residential Units, Reduced Parking, within Gateway Capacity							
Residential [A]	8,220	80	220	300	310	250	560
Employment[1] [B]	15,030	1,200	-40	1,160	370	890	1,260
Total [A+B]	23,250	1,280	180	1,460	680	1,140	1,820
NBPP with 1,500 Smaller Residential Units, Reduced Parking, within Gateway Capacity							
Residential [A]	6,060	70	250	320	260	160	420
Employment[1] [B]	16,730	1,310	-30	1,280	410	1,070	1,480
Total [A+B]	22,790	1,380	220	1,600	670	1,230	1,900

TABLE 9-A
CHANGE IN EXTERNAL VEHICLE TRIPS COMPARED TO EXISTING CONDITIONS: BASE SCENARIOS AND LAND USE SENSITIVITY TESTS

Alternative	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
NBPP with 3,000 Smaller Residential Units, Reduced Parking, within Gateway Capacity							
Residential [A]	9,440	90	240	330	290	220	510
Employment[1] [B]	13,080	920	-80	840	340	800	1,140
Total [A+B]	22,520	1,010	160	1,170	630	1,020	1,650

Note:

1. Includes transit/commuter shuttles.

Source: Fehr & Peers, February 2017.

TABLE 9-B
CHANGE IN EXTERNAL VEHICLE TRIPS COMPARED TO EXISTING CONDITIONS: HOUSEHOLD CHARACTERISTICS SENSITIVITY TESTS

Alternative	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
2014 North Bayshore Precise Plan							
Residential [A]	-120	0	-10	-10	-10	0	-10
Employment[1] [B]	18,880	1,600	10	1,610	440	1,200	1,640
Total [A+B]	18,760	1,600	0	1,600	430	1,200	1,630
NBPP with Studio Residential Units, Reduced Parking							
Residential [A]	18,360	220	560	780	730	610	1,340
Employment[1] [B]	9,810	640	-100	540	350	680	1,030
Total [A+B]	28,170	860	460	1,320	1,080	1,290	2,370
NBPP with Smaller Residential Units, 0.33 Parking Spaces Per Unit							
Residential [A]	30,940	320	850	1,170	1,230	970	2,200
Employment[1] [B]	7,870	580	-90	490	360	640	1,000
Total [A+B]	38,810	900	760	1,660	1,590	1,610	3,200
NBPP with Smaller Residential Units, 0.25 Parking Spaces Per Unit							
Residential [A]	27,090	220	520	740	930	810	1,740
Employment[1] [B]	5,940	430	-120	310	330	500	830
Total [A+B]	33,030	650	400	1,050	1,260	1,310	2,570
NBPP with Studio Residential Units, 0.33 Parking Spaces Per Unit							
Residential [A]	16,300	130	350	480	610	480	1,090
Employment[1] [B]	5,830	430	-150	280	250	360	610
Total [A+B]	22,130	560	200	760	860	840	1,700
NBPP with Studio Residential Units, 0.25 Parking Spaces Per Unit							
Residential [A]	13,810	80	170	250	440	390	830
Employment[1] [B]	3,880	130	-200	-70	220	270	490
Total [A+B]	17,690	210	-30	180	660	660	1,320

Note:
1. Includes transit/commuter shuttles.
Source: Fehr & Peers, February 2017.

ATTACHMENT A

To develop a more refined understanding of residential trip generation in Silicon Valley, local trip generation surveys were conducted at two residential sites: 1) The Oaks (South) at North Park Apartments Community in north San José, and 2) Stanford West on the Stanford University campus. The North Park Apartments is a community located near high technology firms that houses many high technology employees and which is served by several employer shuttles. The Stanford West site is an example of preferential housing for Stanford students, staff and employees. These sites were selected as examples of residential trip generation with a similar household mix as the proposed North Bayshore area.

From our experience and shown in the tables below, the trip generation results are mixed depending on the type and size of housing provided and the occupancy of the units. Person trip surveys were conducted on March 8, 2016 to determine the number of persons and vehicles entering and exiting each site during a selected time period; this captures all travel associated with the site, whether made by residents or visitors. We collected data during a 24-hour daily period, morning peak period (7:00 AM to 10:00 AM), and evening peak period (4:00 to 7:00 PM).

THE OAKS (SOUTH)

Fehr & Peers conducted a person trip generation survey at The Oaks (South) at the North Park Community in San José, California on March 8, 2016. The existing residential building of Oaks (south) at North Park Community in San José has 261 dwelling units with a clubhouse (965 square feet), an outdoor pool, and a fitness center (665 square feet). The residential units are divided into the sub-categories described in **Table A-1**. Additional information is summarized below for parking supply rates and policies, residential TDM program, and transit access.

The monthly rental cost for the 261 dwelling units ranges from $2,337 for a studio to $4,347 for a three bedroom. Of the 261 dwelling units, 223 are market rate, and 38 are below market rate. Eight of the apartments are leased by a corporation.

There are a total of 345 parking spaces, with 226 single parking spaces, 75 tandem parking spaces (parked back to back), 35 visitor spaces, and 9 accessible spaces. As shown in **Table A-1**, studio, one-bedroom and two-bedroom apartments receive one parking space with the base rent, and a three bedroom receives two parking spaces. There are a total of 30 spaces that are available for $75 per month. On-street parking is allowed adjacent to the building.

TABLE A-1:
THE OAKS (SOUTH): SITE SUMMARY

	Studios	1-Bedroom	2-Bedroom	3-Bedroom
Residential Unit Type				
Market	21	103	86	13
Below Market: Moderate Income	5	12	5	1
Below Market: Very Low Income	4	4	6	1
Total[1]	**30**	**119**	**97**	**15**
Parking Supply and Rental Cost				
Assigned Parking Spaces[2]	1	1	1	2
Monthly Rent	$2,337	$2,659	$3,111	$4,347

Notes:

1. Of the 261 dwelling units, 223 are market rate, and 38 are below market rate (both moderate and very low income). Eight of the apartments are leased by a corporation.
2. There are a total of 345 parking spaces, with 226 single parking spaces, 75 tandem parking spaces (parked back to back), 35 visitor spaces, and 9 accessible spaces. There are a total of 30 spaces that are available for $75 per month. On-street parking is allowed adjacent to the building.

Source: Irvine Company, December 2016.

The residential trip generation survey site is within 1,400 feet walking distance of the nearest Valley Transportation Authority (VTA) light rail station. A Zip Car is parked within 1,800 feet of the site. The Irvine Company also provides information to its residents about the Zip Car program (including available promotions) and VTA FLEX services (a dynamic transit service with on-demand service at transit stops in North San José). This community is also served by several employer shuttles.

STANFORD WEST

Stanford provided a summary of the residential building type, building amenities, parking policies, TDM programs and demographic data. Stanford West Apartments caters primarily to three types of tenants: short-term visiting scholars who stay for three months to two years, tenants who sign a short-term lease while house-hunting, and longer-term tenants with five to seven year residencies. The 628-unit community has high-end amenities such as a business center, fitness center, an outdoor pool, walking and bicycling trails, mini-parks with playgrounds, clubhouse, and corner store. The residential units are divided into the sub-categories described in **Table A-2**.

TABLE A-2:
STANFORD WEST: SITE SUMMARY

	1-Bedroom	2-Bedroom	3-Bedroom
Residential Unit Type			
Total[1]	273	293	62
Parking Supply and Rental Cost			
Assigned Parking Spaces[2]	1 covered	1 covered 1 uncovered	1 covered 1 uncovered
Monthly Rent	$2,226 to $2,871	$3,289 to $3,932	$3,804 to $4,257

Notes:
1. Of the 628 dwelling units, twenty-five percent of the units are below market rate.
2. A limited number of additional uncovered and covered parking spaces are available for rent.

Source: Stanford, December 2016.

Stanford has implemented a rental eligibility priority system for the Stanford West site. This system ranks in order of priority:

- Faculty and eligible staff
- Employees and staff of Stanford Hospital and Clinic, visiting fellows, and employees on Stanford lands (e.g., Stanford Shopping Center, Welch Road and Research Park)
- Employees within Palo Alto or Menlo Park, or individuals age 62 and older living in either city.
- All other household types.

The monthly rental cost for the 628 dwelling units ranges from approximately $2,230 for a one-bedroom to $4,260 for a three-bedroom. Of the 628 dwelling units, twenty-five percent are below market rate.

As shown in **Table A-2**, a one-bedroom unit is assigned one covered parking space with the base rent, while two- and three-bedroom dwelling units are assigned a covered space and one uncovered space. There are a limited number of additional parking spaces available for rent.

Given that the residential units are located adjacent to the Stanford campus and Medical Center, there is not a TDM program specific to this site; however, Marguerite, Stanford's free shuttle, provides transit service to campus and to the Palo Alto Caltrain station.

SURVEY RESULTS

The residential trip generation rates of the Oaks (South) and the Stanford West sites are presented below and compared to the average ITE trip generation rates for land uses with similar characteristics – apartments (ITE land use code 220), and residential condominium/townhome (ITE land use code 230). These ITE land use categories are most frequently approved by Mountain View staff for transportation impact studies. The apartment category includes rental dwelling units in low-rise, mid-rise, or high-rise buildings. The residential condominium/townhome category includes ownership units with more than one unit within the same building. As described in the ITE *Trip Generation Manual* 9th Edition (2012), the sources of data for that manual were surveys collected at suburban locations having little or no transit service, nearby pedestrian amenities, or transportation demand management (TDM) programs. When possible, the national database should be supplemented with local empirical surveys.

The surveys collected both vehicle trip data and person trip data. A vehicle trip is counted each time a vehicle enters or exits the site, whereas a person trip is counted each time a person enters or exits the site (regardless of whether they are in a vehicle, walking, or bicycling). Thus, the total number of person trips is always larger than the number of vehicle trips, and the person trip rate is higher than the vehicle trip rate. Because person trips must be observed and recorded manually, that data collection was done only during the morning and evening peak periods. Vehicle trip counts can be collected by machine, so that data was collected for a full 24-hour period. To allow for more direct comparisons with ITE rates, we have calculated peak hour trip rates both for the peak hour of the adjacent streets and for the peak hour of the building itself. This comparison of the peak hour of the adjacent street and peak hour of the building was developed to see how different (if at all) these rates were and assess the potential change to the local street peak hour.

VEHICLE TRIP RATES

Table A-3 below summarizes the number of inbound and outbound vehicle trips, and divides the results by the number of residential dwelling units to develop trip generation rates per unit.

TABLE A-3 TRIP GENERATION SUMMARY: VEHICLES

Location	Trip Information	Daily	Peak Hour of Adjacent Street[1]		Peak Hour of Generator[2]	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Oaks (South)	Total Trips	752	66	63	74	85
	Trip Rate per Unit	2.88	0.25	0.24	0.28	0.33
	% Inbound	49%	14%	74%	14%	73%
	% Outbound	51%	86%	26%	86%	27%
Stanford West	Total Trips	4,282	505	419	535	420
	Trip Rate per Unit	6.82	0.80	0.67	0.85	0.67
	% Inbound	49%	38%	65%	35%	68%
	% Outbound	51%	62%	35%	65%	32%

Notes:

1. Peak hour of adjacent roadways based on local vehicle counts of adjacent streets. For the Oaks (South), the morning peak hour was found to be 7:45 to 8:45 AM and the evening peak hour was 4:45 to 5:45 PM. For Stanford West, the morning peak hour was found to be 8:00 to 9:00 AM and the evening peak hour was 5:00 to 6:00 PM.
2. Peak hour of generator is the single hour when that particular site generated the most trips. For the Oaks (South), the morning peak hour was found to be 8:15 to 9:15 AM and the evening peak hour was 7:00 to 8:00 PM, while for Stanford West, the morning peak hour was found to be 7:45 to 8:45 AM and the evening peak hour was 5:15 to 6:15 PM.

Source: Fehr & Peers, December 2016.

The most significant difference in this data is that the vehicle trip rates for Stanford West are much higher than the rates from the Oaks (South). Stanford West also has a more balanced directional split, with about two-thirds of traffic moving in the peak direction (outbound in the morning and inbound in the evening) and the other one-third in the off-peak direction, while the Oaks (South) has more skewed directional splits.

PERSON TRIP RATES

Table A-4 shows the person trip survey results for the two sites. As a reminder, the person trip data was only collected during the peak periods, so it is not possible to calculate a daily trip rate. The patterns are similar to that found from the vehicle trip results shown above, with Stanford West having higher trip rates and a more balanced directional split than the Oaks (South). Of particular interest is the fact that the Stanford West person trip generation rates are very high – approximately two to three times higher than Oaks (South).

TABLE A-4 TRIP GENERATION SUMMARY: PERSONS

Location	Trip Information	Peak Hour of Adjacent Street[1]		Peak Hour of Generator[2]	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Oaks (South)	Total Trips	115	130	117	N/A[3]
	Trip Rate per Unit	0.44	0.50	0.45	N/A[3]
	% Inbound	19%	67%	17%	N/A[3]
	% Outbound	81%	33%	83%	N/A[3]
Stanford West	Total Trips	875	729	891	737
	Trip Rate per Unit	1.39	1.16	1.42	1.17
	% Inbound	31%	71%	31%	73%
	% Outbound	69%	29%	69%	27%

Notes:

1. Peak hour of adjacent roadways based on local vehicle counts of adjacent streets. For the Oaks (South), the morning peak hour was found to be 7:45 to 8:45 AM and the evening peak hour was 4:45 to 5:45 PM, while for Stanford West, the morning peak hour was found to be 8:00 to 9:00 AM and the evening peak hour was 5:00 to 6:00 PM.
2. Peak hour of generator is the single hour when that particular site generated the most trips. For the Oaks (south), the morning peak hour was found to be 8:15 to 9:15 AM and the evening peak hour was 7:00 to 8:00 PM, while for Stanford West, the morning peak hour was found to be 7:45 to 8:45 AM and the evening peak hour was 5:15 to 6:15 PM.
3. Based on the vehicle trip surveys described in Table A-3, the evening peak hour for the Oaks (south) was 7:00 to 8:00 PM. However, person trip data was only collected for the peak period of 4:00 to 7:00 PM, so in this instance we do not have person trip data for the PM peak hour of the generator. However, all indications are that the results for the peak hour of the generator would be very similar to the results for the peak hour of the adjacent streets.

Source: Fehr & Peers, December 2016.

COMPARISON TO ITE RATES

Table A-5 provides a summary of the trip generation rates available from the ITE Trip Generation Manual for two relevant land use categories: apartments and residential condominiums/townhomes. The comparison of the local surveys to the ITE rates indicates very different results. Stanford West has vehicle trip rates that are similar to or higher than ITE rates for either of the land use categories selected as reasonable comparisons. By contrast, The Oaks (South) has trip rates that are much lower than the ITE rates. As indicated above, the Stanford West person trip rates were observed to be very high compared to the Oaks (south) rates and published residential rates from ITE.

Each site has its own unique context, reflecting the demographic and socioeconomic characteristics of its residents, the nature of its nearby land uses, the types of transportation options available, etc. There are many potential reasons why the results from these two sites differ substantially. For example, the average unit size at Stanford West is somewhat higher than at The Oaks (South), and given its proximity to the university campus and relatively high rental prices, it could be that the number of people living in each unit at Stanford West is higher than at The Oaks. That being said the observation that Stanford West's person trip generation rates are nearly two to three times higher than Oaks (South) is not easily explained. These are simply two different sites with a wide range in the person trip rates.

Overall, these widely varying results underscore the challenges of estimating the trip generation of any individual project, particularly in a complex and dynamic setting such as Silicon Valley. To try to shed more light on this question and enhance our understanding of the Silicon Valley travel behavior, we also investigated the data available from the California Household Travel Survey, as described below.

TABLE A-5 VEHICLE TRIP GENERATION RATE COMPARISON

	Daily	AM Peak Hour	PM Peak Hour
Peak Hour of Adjacent Street			
ITE: Apartments[1]	6.65	0.51	0.62
ITE: Residential Condominium/Townhouse[1]	5.81	0.44	0.52
Oaks (South)	2.88	0.25	0.24
Stanford West	6.82	0.80	0.67
Peak Hour of Generator			
ITE: Apartments[2]	N/A	0.55	0.67
ITE: Residential Condominium/Townhouse[2]	N/A	0.44	0.52
Oaks (South)	N/A	0.28	0.33
Stanford West	N/A	0.85	0.67

Notes:

1. Average trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual 9th Edition, based on the peak hour of the adjacent street. Apartment based on over 78 surveys, Residential Condominium/Townhouse based on over 59 studies. All surveys conducted between 1960s and 2000s throughout the United States.
2. Average trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual 9th Edition, based on the peak hour of the generator. Apartment based on over 83 surveys, Residential Condominium/Townhouse based on over 52 studies. All surveys conducted between 1960s and 2000s throughout the United States.

Source: Fehr & Peers, December 2016.

CALIFORNIA HOUSEHOLD TRAVEL SURVEY (CHTS) SUMMARIES

To supplement the locally observed data, Fehr & Peers summarized trip generation data from the California Household Travel Survey (CHTS) for households that fit the profile of the proposed residential units for various combinations of household characteristics including household size, household income, and vehicle ownership. These summaries were compared with the observed travel behavior as described above and used together to create residential trip generation rates for North Bayshore. The observed trip generation counts (with caveats noted below) were given the highest weight in determining the North Bayshore residential trip generation rates, followed by CHTS summaries with large sample sizes. Where CHTS summaries with small sample sizes were necessary to determine a trip generation count it is clearly defined and disclaimed. See discussion below for additional details.

SMALLER RESIDENTIAL CHTS SUMMARIES

To supplement the locally observed data, Fehr & Peers summarized trip generation data from the California Household Travel Survey (CHTS) for households that fit the profile of the proposed residential units. Survey records were filtered to match the household size, household income, and residential type of the survey sites, and were restricted geographically to similar nearby jurisdictions. **Table A-6** details the filters applied to the CHTS. Two data queries were conducted, one in which the household size could be 1 or 2 persons, and the other where it was limited to only single-person households. Note that the CHTS data reports person trips rather than vehicle trips, so the CHTS data will be compared to the person trip rates calculated as shown above in **Table A-4**.

TABLE A-6
CHTS FILTERS

Variable	Filter A	Filter B
Household Size	<= 2 Persons	1 Person
Household Income	>= $75,000	>= $75,000
Residential Type	Multi-Family	Multi-Family
Geography	Foster City, Redwood City, Menlo Park, Palo Alto, Mountain View, San José, Santa Clara, and Cupertino	

Source: Fehr & Peers, December 2016.

Table A-7 arrays the person trip generation rates from the locally observed sites and from the CHTS data queries. The CHTS data does indicate that local multi-family development generates person trips at lower rates than ITE, and the peak hour rates calculated from the CHTS data are similar to the peak hour rates observed at The Oaks (South). Note that Stanford West's observed person trip rates appear to be an outlier compared to the other person trip rates in **Table A-7;** again, it may be that there are more people living in each unit at Stanford West than there are at The Oaks (South), though we do not have the data necessary to confirm that.

TABLE A-7
PERSON TRIP GENERATION RATE COMPARISON

Source	Daily	AM Peak Hour	PM Peak Hour
ITE (Apartment)	7.98	0.61	0.73
Stanford West	N/A	1.39	1.16
Oaks (South)	N/A	0.44	0.50
CHTS Filter A (<=2 Persons)	6.38	0.51	0.57
CHTS Filter B (1 Person)	5.36	0.43	0.48

Source: Fehr & Peers, December 2016.

Smaller Residential Trip Rate Calculation

The proposed residential areas of the NBPP will include the following mix of residential units:

- Micro/Studio – 40%
- 1-Bedroom – 30%
- 2-Bedroom – 20%
- 3-Bedroom – 10%

The North Bayshore Precise Plan residential person trip rate is a combination of two person trip rates based on the mix of the residential units (70% for the micro/studio and 1-bedroom units and 30% for 2- and 3-bedroom units). The micro/studio and 1-bedroom units uses a person trip generation rate that is 20 percent[1] lower than the ITE (Apartment) person trip rate in **Table A-7**. While the 2-bedroom and 3-bedroom units uses the ITE (Apartment) person trip rate in **Table A-7**.

This person trip rate was used as the base rate for the subsequent analysis that included internalization, mode choice, and conversion to vehicle trips, which is further described in the main technical memo. The final residential vehicle trip rate is approximately 40% less than ITE.

Table A-8 presents the person and vehicle trip rates used for NBPP, and compares those to the sources described in this memo.

[1] Several combinations of the Oaks South, CHTS Filter A, and CHTS Filter B were tested for the micro/studio and 1-bedroom units, which produced a combined person trip rate 10 to 25 percent lower than the ITE (Apartment) person trip rate.

TABLE A-8
TRIP GENERATION COMPARISON (TRIP RATES PER DWELLING UNIT)

Source	Daily		AM Peak Hour		PM Peak Hour	
	Vehicle	Person	Vehicle	Person	Vehicle	Person
ITE (Apartment)	6.65	7.98	0.51	0.61	0.61	0.73
Stanford West	6.82	N/A	0.80	1.39	0.67	1.16
Oaks (South)	2.88	N/A	0.25	0.44	0.24	0.50
CHTS Filter A (<=2 Persons)	4.61	6.38	0.37	0.51	0.41	0.57
CHTS Filter B (1 Persons)	4.04	5.36	0.32	0.43	0.36	0.48
NBPP - Smaller Residential Units	*4.57*	*6.38*	*0.29*	*0.49*	*0.37*	*0.59*

Note: *Italicized* text indicates the trip rates used in the trip generation analysis.
Source: Fehr & Peers, December 2016.

Household Size Observations

The NBPP analysis includes use of service population, the sum of population and employment, for certain metrics. **Table A-9** displays the household sizes for existing residential in North Bayshore, the City of Mountain View, and with the two filters described above. These household sizes were used for the various scenarios to develop population and therefore service population.

TABLE A-9
HOUSESOLD SIZE COMPARISON

Variable	Filter A	Filter B	North Bayshore	City of Mountain View
Average Household Size	1.75	1	2.10	2.31
Geography	Foster City, Redwood City, Menlo Park, Palo Alto, Mountain View, San José, Santa Clara, and Cupertino		North Bayshore	Mountain View

Source: Fehr & Peers, December 2016.

REDUCED PARKING AND HOUSEHOLD SIZE RESIDENTIAL CHTS SUMMARIES

To supplement the locally observed data, Fehr & Peers summarized trip generation data from the California Household Travel Survey (CHTS) for households that fit the profile of the proposed residential units with reduced parking. Survey records were filtered to match the household size, household income, residential type, and parking profiles of the proposed residential, and were restricted geographically to similar nearby jurisdictions. Due to lack of available records for these types of residential units, the geography surveyed was expanded to include a larger portion of the southern Bay Area, as well as filters with the entire Bay Area. Even with the expanded geography, not all filters had a large enough sample size to be statistically significant. These issues are described further below. **Table A-10** details the filters applied to the CHTS. Four data queries were conducted that matched household size with 1 or less and 1 or less vehicles.

TABLE A-10
CHTS FILTERS

Variable	Filter C	Filter D	Filter E	Filter F
Household Size	<= 2 Persons	1 Person	<= 2 Persons	1 Person
Household Income	>= $75,000	>= $75,000	>= $75,000	>= $75,000
Residential Type	Multi-Family	Multi-Family	Multi-Family	Multi-Family
Vehicle Ownership	<= 1 Vehicle	0 Vehicles	<= 1 Vehicle	0 Vehicles
Geography	San Mateo County; Santa Clara County; Southern Alameda County (Union City, Fremont, Hayward, Newark)		Entire Bay Area	

Source: Fehr & Peers, December 2016.

Table A-11 arrays the person trip generation rates from the locally observed sites and from the CHTS data queries. The CHTS data does indicate that local multi-family development generates person trips at lower rates than ITE.

TABLE A-11
PERSON TRIP GENERATION RATE COMPARISON

Source	Daily	AM Peak Hour	PM Peak Hour
ITE (Apartment)	7.98	0.61	0.73
Stanford West	N/A	1.39	1.16
Oaks (South)	N/A	0.44	0.50
CHTS Filter A (<=2 Persons)	6.38	0.51	0.57
CHTS Filter B (1 Person)	5.36	0.43	0.48
CHTS Filter C (<=2 Persons, <=1 Veh, South Bay)	7.63	0.58	0.69
CHTS Filter D (1 Person, 0 Veh, South Bay)	4.22	0.32	0.38
CHTS Filter E (<=2 Persons, <=1 Veh, Bay Area)	7.66	0.59	0.71
CHTS Filter F (1 Person, 0 Veh, Bay Area)	5.28	0.40	0.48

Source: Fehr & Peers, December 2016.

Reduced Parking and Household Size Residential Trip Rate Calculation

The proposed reduced parking scenarios analyzed do not neatly follow any of the survey results. The scenarios include effective parking ratios of approximately 1.20 (standard parking rates), 0.60 (reduced parking rates), 0.33 (parking sensitivity test A), and 0.25 (parking sensitivity test B) spaces per unit. Similarly, the scenarios include smaller households at household size 1.75 and single person households. Based on the surveys summarized above, Fehr & Peers interpolated vehicle and person trip generation for these residential types based on the data available.

It is extremely important to recognize that the sensitivity tests involving very small household sizes and very low parking ratios (such as 0.33 or 0.25 spaces per unit) are quite difficult to analyze because there is essentially no applicable survey data available. The CHTS dataset does not contain examples of residential areas that exhibit the very low parking ratios that are defined in some of the sensitivity tests, nor are there many examples of residential areas with extremely small household sizes. Therefore, the trip rate estimates for those sensitivity tests should be treated with caution; these estimates are less reliable than the estimates for other scenarios that are based on data actually present in the CHTS dataset.

Table A-12 presents the person and vehicle trip rates used for NBPP base and land use sensitivity test scenarios, and compares those to the sources described in this memo.

TABLE A-12
TRIP GENERATION COMPARISON (TRIP RATES PER DWELLING UNIT)
BASE AND LAND USE SENSITIVITY TEST SCENARIOS

Source	Daily		AM Peak Hour		PM Peak Hour	
	Vehicle	Person	Vehicle	Person	Vehicle	Person
ITE (Apartment)	6.65	7.98	0.51	0.61	0.61	0.73
Stanford West	6.82	N/A	0.80	1.39	0.67	1.16
Oaks (South)	2.88	N/A	0.25	0.44	0.24	0.50
CHTS Filter A (<=2 Persons, Any Veh)	4.61	6.38	0.37	0.51	0.41	0.57
CHTS Filter B (1 Persons, Any Veh)	4.04	5.36	0.32	0.43	0.36	0.48
CHTS Filter C (<=2 Persons, <=1 Veh, South Bay)	3.24	7.63	0.25	0.58	0.30	0.69
CHTS Filter D (1 Person, 0 Veh, South Bay)	0.60	4.22	0.05	0.32	0.06	0.38

TABLE A-12
TRIP GENERATION COMPARISON (TRIP RATES PER DWELLING UNIT)
BASE AND LAND USE SENSITIVITY TEST SCENARIOS

Source	Daily		AM Peak Hour		PM Peak Hour	
	Vehicle	Person	Vehicle	Person	Vehicle	Person
CHTS Filter E (<=2 Persons, <=1 Veh, Bay Area)	1.70	7.66	0.13	0.59	0.16	0.71
CHTS Filter F (1 Person, 0 Veh, Bay Area)	0.30	5.28	0.02	0.40	0.02	0.48
NBPP - Smaller Residential Units (1.75 Persons), Standard Parking	*4.57*	*6.38*	*0.29*	*0.49*	*0.37*	*0.59*
NBPP - Smaller Residential Units (1.75 Persons), Reduced Parking	*3.68*	*6.38*	*0.19*	*0.49*	*0.28*	*0.59*

Note: *Italicized* text indicates the trip rates used in the trip generation analysis.
Source: Fehr & Peers, December 2016.

Table A-13 presents the person and vehicle trip rates used for NBPP household characteristic sensitivity test scenarios, and compares those to the sources described in this memo. **As a reminder, the CHTS dataset does not contain examples of residential areas that exhibit the very low parking ratios that are defined in the household characteristics sensitivity tests, nor are there many examples of residential areas with extremely small household sizes. Therefore, the trip rate estimates for the household characteristic sensitivity tests should be treated with caution; these estimates are less reliable than the estimates for other scenarios that are based on data actually present in the CHTS dataset.**

TABLE A-13
TRIP GENERATION COMPARISON (TRIP RATES PER DWELLING UNIT)
HOUSEHOLD CHARACTERISTIC SENSITIVITY TEST SCENARIOS

Source	Daily		AM Peak Hour		PM Peak Hour	
	Vehicle	Person	Vehicle	Person	Vehicle	Person
ITE (Apartment)	6.65	7.98	0.51	0.61	0.61	0.73
Stanford West	6.82	N/A	0.80	1.39	0.67	1.16
Oaks (South)	2.88	N/A	0.25	0.44	0.24	0.50
CHTS Filter A (<=2 Persons, Any Veh)	4.61	6.38	0.37	0.51	0.41	0.57

TABLE A-13
TRIP GENERATION COMPARISON (TRIP RATES PER DWELLING UNIT)
HOUSEHOLD CHARACTERISTIC SENSITIVITY TEST SCENARIOS

Source	Daily		AM Peak Hour		PM Peak Hour	
	Vehicle	Person	Vehicle	Person	Vehicle	Person
CHTS Filter B (1 Persons, Any Veh)	4.04	5.36	0.32	0.43	0.36	0.48
CHTS Filter C (<=2 Persons, <=1 Veh, South Bay)	3.24	7.63	0.25	0.58	0.30	0.69
CHTS Filter D (1 Person, 0 Veh, South Bay)	0.60	4.22	0.05	0.32	0.06	0.38
CHTS Filter E (<=2 Persons, <=1 Veh, Bay Area)	1.70	7.66	0.13	0.59	0.16	0.71
CHTS Filter F (1 Person, 0 Veh, Bay Area)	0.30	5.28	0.02	0.40	0.02	0.48
NBPP – 1 Person Residential Units, Reduced Parking	**1.98**	**3.65**	**0.09**	**0.28**	**0.14**	**0.34**
NBPP - Smaller Residential Units (1.75 Persons), 0.33 Parking Spaces Per Unit	**3.21**	**6.38**	**0.12**	**0.49**	**0.23**	**0.59**
NBPP Smaller Residential Units (1.75 Persons), 0.25 Parking Spaces Per Unit	**2.84**	**6.38**	**0.08**	**0.49**	**0.18**	**0.59**
NBPP – 1 Person Residential Units, 0.33 Parking Spaces Per Unit	**1.78**	**3.65**	**0.06**	**0.28**	**0.12**	**0.34**
NBPP – 1 Person Residential Units, 0.25 Parking Spaces Per Unit	**1.54**	**3.65**	**0.03**	**0.28**	**0.09**	**0.34**

Note: **Bold** text indicates the trip rates used in the trip generation analysis that were generated with a small sample of supporting data. Results using this data are less reliable than other results presented.
Source: Fehr & Peers, December 2016.

THE OAKS (SOUTH) RESIDENTIAL TRIP GENERATION SURVEY SUMMARY

SURVEYED ON 03/08/2016

Vehicles (SOV & HOV) (Vehicles)			
	Trip Rate (Vehicle Trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator (8:15-9:15)	0.28	14%	86%
PM PH of Generator (7:00-8:00)	0.33	73%	27%
AM PH of Adjacent Streets (7:45-8:45)	0.25	14%	86%
PM PH of Adjacent Streets (4:45-5:45)	0.24	74%	26%
Daily	2.88	49%	51%

All Modes (Persons)			
	Trip Rate (Person trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator (8:15-9:15)	0.45	17%	83%
PM PH of Generator (7:00-8:00)	N/A	N/A	N/A
AM PH of Adjacent Streets (7:45-8:45)	0.44	19%	81%
PM PH of Adjacent Streets (4:45-5:45)	0.50	67%	33%
Daily	N/A	N/A	N/A
ITE average Vehicle Rates (Land Use: Apartments, 220)			
	Trip Rate (Vehicle Trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator	0.55	29%	71%
PM PH of Generator	0.67	61%	39%
AM PH of Adjacent Streets	0.51	20%	80%
PM PH of Adjacent Streets	0.62	65%	35%
Daily	6.65	50%	50%


1: The Oaks (South)
1 Tube
7 Non-Vehicluar
8 Non-Vehicular
9 Non-Vehicular
10 Non-Vehicular
11 Non-Vehicular
32 TMC
Moitozo Park
The Oaks
Mirada Dr
Descanso Dr
8 Non-Vehicular
9 Non-Vehicular
1 Tube
11 Non-Vehicular
N 1st St
7 Non-Vehicluar
10 Non-Vehicular
Skytop St

Traffic Data Service
Vehicle Counts

Datasets:

Site: **[1] DW W OF MIRADA DR**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: East (bound)
Separation: All - (Headway)
Name: Mountain View
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=384, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**0**	**0**	**1**	**4**	**17**	**38**	**57**	**51**	**28**	**25**	**16**	**21**	**11**	**19**	**10**	**13**	**17**	**23**	**14**	**7**	**7**	**4**	
0	1	0	0	0	2	5	5	14	**17**	6	4	6	2	**4**	3	5	4	2	7	7	4	1	0	0
0	0	0	0	1	0	3	9	**15**	9	7	5	4	**4**	2	6	1	1	9	5	4	0	3	3	1
0	0	0	0	0	0	6	14	**14**	11	11	10	1	**8**	4	8	1	7	2	7	1	2	1	1	0
0	0	0	0	0	2	3	10	**14**	14	4	6	5	**7**	1	2	3	1	4	4	2	1	2	0	0

AM Peak 0815 - 0915 (60), AM PHF=0.88 PM Peak 1315 - 1415 (23), PM PHF=0.72

Traffic Data Service
Vehicle Counts

Datasets:

Site: **[1] DW W OF MIRADA DR**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: West (bound)
Separation: All - (Headway)
Name: Mountain View
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=368, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	**1**	**0**	**0**	**0**	**0**	**1**	**5**	**9**	**11**	**5**	**13**	**21**	**13**	**13**	**23**	**27**	**41**	**36**	**62**	**33**	**24**	**16**	**11**	
1	0	0	0	0	0	1	1	1	2	1	3	**6**	5	5	5	6	7	13	**16**	14	12	5	3	1
1	0	0	0	0	0	0	0	3	2	1	3	**5**	2	2	9	8	10	10	**11**	9	5	3	3	4
1	1	0	0	0	0	0	1	2	4	1	**4**	4	3	4	3	7	18	8	**24**	6	1	4	1	1
0	0	0	0	0	0	0	3	3	3	2	**3**	6	3	2	6	6	6	5	**11**	4	6	4	4	0

AM Peak 1130 - 1230 (18), AM PHF=0.75 PM Peak 1900 - 2000 (62), PM PHF=0.65

Study Name	32 Mirada Dr
Start Date	03/08/2016
Start Time	7:00 AM
Site Code	32

Vehicle SOV/HOV Parking Garage Count

Direction	Westbound	Westbound	Eastbound	Eastbound
	1	2+	1	2+
7:00 AM	1	0	4	1
7:15 AM	0	0	7	2
7:30 AM	0	1	13	2
7:45 AM	2	0	8	2
8:00 AM	1	0	12	3
8:15 AM	2	1	13	3
8:30 AM	1	1	9	4
8:45 AM	3	0	14	1
9:00 AM	2	0	16	1
9:15 AM	2	0	8	1
9:30 AM	3	0	11	1
9:45 AM	2	0	12	3
4:00 PM	7	1	3	1
4:15 PM	6	1	1	0
4:30 PM	7	0	1	0
4:45 PM	5	1	3	0
5:00 PM	7	0	4	0
5:15 PM	11	0	1	0
5:30 PM	13	6	5	1
5:45 PM	4	2	1	0
6:00 PM	12	1	1	2
6:15 PM	10	1	6	2
6:30 PM	8	0	2	0
6:45 PM	6	0	4	0
	115	16	159	30

Study Name 1st St
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 7
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	2	1
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	1	1
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	2	2
9:00 AM	1	0
9:15 AM	1	0
9:30 AM	0	0
9:45 AM	1	0
4:00 PM	0	2
4:15 PM	0	0
4:30 PM	0	1
4:45 PM	2	1
5:00 PM	4	2
5:15 PM	0	1
5:30 PM	2	1
5:45 PM	0	1
6:00 PM	0	0
6:15 PM	0	2
6:30 PM	1	1
6:45 PM	0	2

Study Name 1st St
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 7
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name Descanso Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 8
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	2	6
7:15 AM	3	0
7:30 AM	1	0
7:45 AM	2	4
8:00 AM	2	1
8:15 AM	0	2
8:30 AM	1	1
8:45 AM	0	2
9:00 AM	0	1
9:15 AM	2	2
9:30 AM	0	2
9:45 AM	2	2
4:00 PM	2	1
4:15 PM	1	0
4:30 PM	3	2
4:45 PM	2	0
5:00 PM	4	2
5:15 PM	0	3
5:30 PM	8	0
5:45 PM	3	3
6:00 PM	4	1
6:15 PM	5	2
6:30 PM	5	0
6:45 PM	4	1

Study Name Descanso Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 8
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name Mirada Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 9
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	1	2
7:15 AM	0	1
7:30 AM	0	3
7:45 AM	0	3
8:00 AM	1	1
8:15 AM	1	4
8:30 AM	1	2
8:45 AM	1	2
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	2
4:15 PM	3	2
4:30 PM	4	0
4:45 PM	2	3
5:00 PM	3	3
5:15 PM	3	2
5:30 PM	7	3
5:45 PM	2	4
6:00 PM	3	3
6:15 PM	4	4
6:30 PM	2	1
6:45 PM	9	0

Study Name Mirada Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 9
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name Pedestrian & Bicycle Pathv
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 10
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	1
7:15 AM	1	0
7:30 AM	0	0
7:45 AM	1	1
8:00 AM	1	0
8:15 AM	3	1
8:30 AM	1	0
8:45 AM	2	0
9:00 AM	3	0
9:15 AM	1	1
9:30 AM	1	0
9:45 AM	4	2
4:00 PM	2	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	2	1
5:00 PM	0	0
5:15 PM	1	1
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	2	0
6:15 PM	2	1
6:30 PM	0	1
6:45 PM	1	1

Study Name Pedestrian & Bicycle Pathv
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 10
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name Mirada Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 11
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name Mirada Dr
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 11
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

STANFORD WEST RESIDENTIAL TRIP GENERATION SURVEY SUMMARY

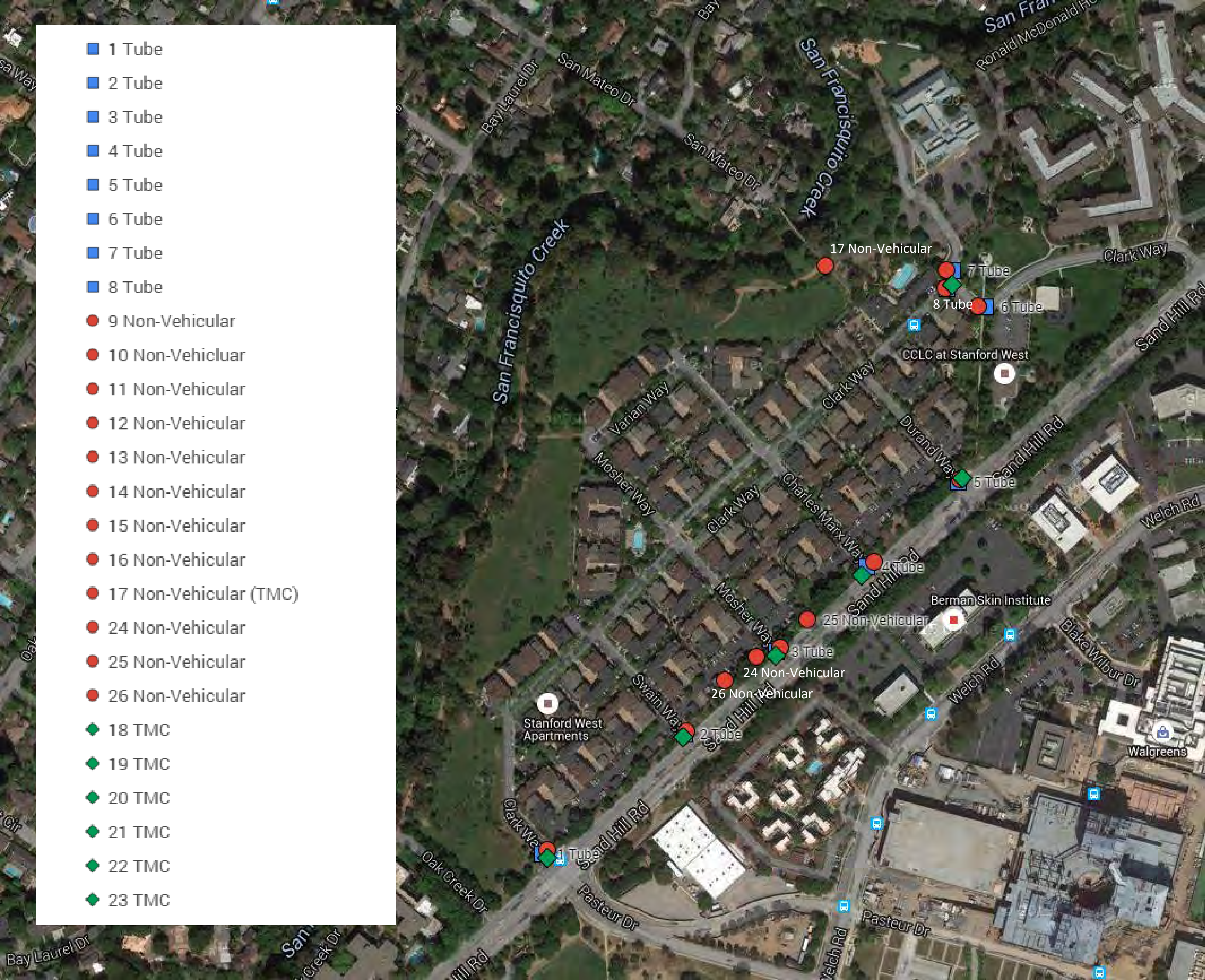
SURVEYED ON 03/08/2016

Vehicles (SOV&HOV)			
	Trip Rate (Vehicle Trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator (7:45-8:45)	0.85	35%	65%
PM PH of Generator (5:15-6:15)	0.67	68%	32%
AM PH of Adjacent Streets (8:00-9:00)	0.80	38%	62%
PM PH of Adjacent Streets (5:00-6:00)	0.67	65%	35%
Daily	6.82	49%	51%

All Modes (Persons)			
	Trip Rate (Person trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator (7:45-8:45)	1.42	31%	69%
PM PH of Generator (5:15-6:15)	1.17	73%	27%
AM PH of Adjacent Streets (8:00-9:00)	1.39	31%	69%
PM PH of Adjacent Streets (5:00-6:00)	1.16	71%	29%
Daily	N/A	N/A	N/A

ITE average Vehicle Rates (Land Use: Apartments, 220)			
	Trip Rate (Vehicle Trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator	0.55	29%	71%
PM PH of Generator	0.67	61%	39%
AM PH of Adjacent Streets	0.51	20%	80%
PM PH of Adjacent Streets	0.62	65%	35%
Daily	6.65	50%	50%

ITE average Vehicle Rates (Land Use: Residential Condominium/Townhouse, 230)			
	Trip Rate (Vehicle Trips/Dwelling Unit)	Inbound Split	Outbound Split
AM PH of Generator	0.44	19%	81%
PM PH of Generator	0.52	64%	36%
AM PH of Adjacent Streets	0.44	17%	83%
PM PH of Adjacent Streets	0.52	67%	33%
Daily	5.81	50%	50%


1 Tube
2 Tube
3 Tube
4 Tube
5 Tube
6 Tube
7 Tube
8 Tube
9 Non-Vehicular
10 Non-Vehicluar
11 Non-Vehicular
12 Non-Vehicular
13 Non-Vehicular
14 Non-Vehicular
15 Non-Vehicular
16 Non-Vehicular
17 Non-Vehicular (TMC)
24 Non-Vehicular
25 Non-Vehicular
26 Non-Vehicular
18 TMC
19 TMC
20 TMC
21 TMC
22 TMC
23 TMC
17 Non-Vehicular
7 Tube
8 Tube
6 Tube
5 Tube
4 Tube
25 Non-Vehicular
3 Tube
24 Non-Vehicular
26 Non-Vehicular
2 Tube
1 Tube
CCLC at Stanford West
Berman Skin Institute
Stanford West Apartments
Walgreens
San Francisquito Creek
San Mateo Dr
Bay Laurel Dr
Clark Way
Sand Hill Rd
Varian Way
Mosher Way
Durand Way
Charles Marx Way
Swain Way
Welch Rd
Blake Wilbur Dr
Oak Creek Dr
Pasteur Dr
Ronald McDonald Ho

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10440 -- English (ENU)

Datasets:

Site: **[2] SWAIN WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=106, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**0**	**2**	**4**	**17**	**10**	**8**	**6**	**3**	**1**	**8**	**5**	**6**	**7**	**5**	**4**	**10**	**4**	**0**	**4**	**1**	
1	0	0	0	0	0	2	1	**4**	3	0	1	0	2	1	1	3	1	1	**2**	0	0	4	1	0
0	0	0	0	0	1	1	0	**1**	1	4	1	0	1	2	1	2	1	2	**3**	2	0	0	0	0
0	0	0	0	0	0	0	**7**	2	3	1	0	0	2	2	2	2	2	1	**4**	1	0	0	0	0
0	0	0	0	0	1	1	**9**	3	1	1	1	1	3	0	2	0	1	0	**1**	1	0	0	0	0

AM Peak 0730 - 0830 (21), AM PHF=0.58 PM Peak 1900 - 2000 (10), PM PHF=0.63

*** Wednesday, March 09, 2016 - Total=121, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**0**	**2**	**5**	**17**	**16**	**8**	**8**	**4**	**11**	**4**	**9**	**3**	**1**	**6**	**6**	**6**	**9**	**2**	**4**	**0**	
0	0	0	0	0	0	1	2	**6**	2	3	0	**4**	1	1	1	0	2	2	2	3	1	0	0	0
0	0	0	0	0	0	2	2	**3**	2	2	1	**0**	3	1	1	1	3	0	2	4	0	3	0	0
0	0	0	0	0	1	0	**7**	2	2	1	2	**2**	0	5	1	0	1	2	1	2	1	0	0	0
0	0	0	0	0	1	2	**6**	5	2	2	1	**5**	0	2	0	0	0	2	1	0	0	1	0	0

AM Peak 0730 - 0830 (22), AM PHF=0.79 PM Peak 1200 - 1300 (11), PM PHF=0.55

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10437 -- English (ENU)

Datasets:

Site: **[2] SWAIN WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=141, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**7**	**10**	**7**	**7**	**5**	**4**	**8**	**5**	**9**	**17**	**19**	**12**	**14**	**8**	**1**	**2**	
0	0	0	0	0	0	0	0	0	**4**	0	1	0	1	2	0	3	3	**4**	3	1	2	0	2	0
1	0	0	0	0	1	0	2	2	**3**	3	1	0	3	1	4	3	3	**6**	2	2	3	1	0	0
0	0	0	0	0	0	0	2	1	**2**	3	1	1	0	4	0	2	**7**	6	5	6	1	0	0	0
0	0	0	0	0	0	0	0	**4**	1	1	4	4	0	1	1	1	**4**	3	2	5	2	0	0	1

AM Peak 0845 - 0945 (13), AM PHF=0.81 PM Peak 1730 - 1830 (21), PM PHF=0.75

*** Wednesday, March 09, 2016 - Total=157, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**1**	**0**	**0**	**0**	**2**	**2**	**4**	**7**	**8**	**5**	**9**	**8**	**5**	**12**	**12**	**9**	**19**	**9**	**23**	**5**	**8**	**6**	**2**	
0	1	0	0	0	0	1	1	1	**5**	1	2	4	1	5	3	1	4	5	**6**	1	3	1	1	0
0	0	0	0	0	1	0	0	**2**	0	1	0	0	1	2	3	1	6	1	**3**	2	2	4	1	0
0	0	0	0	0	0	1	1	**0**	1	1	5	1	0	5	4	2	4	2	**9**	2	2	0	0	0
1	0	0	0	0	1	0	2	**4**	2	2	2	3	3	0	2	5	5	1	**5**	0	1	1	0	0

AM Peak 0815 - 0915 (11), AM PHF=0.55 PM Peak 1900 - 2000 (23), PM PHF=0.64

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10451 -- English (ENU)

Datasets:

Site: **[3] MOSHER WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=116, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**0**	**0**	**6**	**20**	**10**	**6**	**5**	**3**	**7**	**5**	**7**	**6**	**11**	**10**	**4**	**7**	**3**	**6**	**0**	**0**	
0	0	0	0	0	0	2	2	**5**	3	0	0	2	1	2	0	**3**	2	1	3	1	0	0	0	0
0	0	0	0	0	0	1	**5**	4	1	1	0	3	2	1	1	**2**	1	1	1	1	3	0	0	0
0	0	0	0	0	0	0	**8**	0	2	3	1	0	1	3	2	**5**	3	2	1	1	2	0	0	1
0	0	0	0	0	0	3	**5**	1	0	1	2	2	1	1	**3**	1	4	0	2	0	1	0	0	0

AM Peak 0715 - 0815 (23), AM PHF=0.72 PM Peak 1545 - 1645 (13), PM PHF=0.65

* Wednesday, March 09, 2016 - Total=126, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**1**	**0**	**1**	**2**	**8**	**23**	**14**	**5**	**3**	**6**	**9**	**5**	**8**	**3**	**6**	**3**	**12**	**8**	**2**	**4**	**1**	**1**	
0	0	1	0	0	0	0	1	**5**	2	0	1	3	1	1	0	0	0	**6**	2	0	1	0	0	0
0	0	0	0	1	0	1	**7**	3	2	2	0	1	2	0	0	3	1	**3**	2	0	1	0	1	0
1	0	0	0	0	1	2	**7**	2	1	0	3	2	1	3	1	1	1	**3**	4	1	1	1	0	0
0	0	0	0	0	1	5	**8**	4	0	1	2	3	1	4	2	2	**1**	0	0	1	1	0	0	0

AM Peak 0715 - 0815 (27), AM PHF=0.84 PM Peak 1745 - 1845 (13), PM PHF=0.54

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10448 -- English (ENU)

Datasets:

Site: **[3] MOSHER WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=181, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**0**	**0**	**0**	**0**	**4**	**3**	**10**	**12**	**3**	**6**	**12**	**10**	**9**	**7**	**14**	**26**	**16**	**21**	**15**	**7**	**2**	**3**	
0	0	0	0	0	0	2	0	0	**1**	1	1	5	3	1	2	2	**6**	6	9	5	1	0	1	1
0	1	0	0	0	0	1	2	2	**2**	0	0	2	4	1	2	4	**5**	4	7	4	3	1	0	0
0	0	0	0	0	0	1	0	2	**6**	1	0	3	1	4	1	4	**11**	5	5	2	2	1	2	0
0	0	0	0	0	0	0	1	**6**	3	1	5	2	2	3	2	**4**	4	1	0	4	1	0	0	0

AM Peak 0845 - 0945 (15), AM PHF=0.63 PM Peak 1645 - 1745 (26), PM PHF=0.59

* Wednesday, March 09, 2016 - Total=163, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**0**	**1**	**0**	**10**	**9**	**9**	**3**	**13**	**8**	**3**	**11**	**5**	**7**	**12**	**20**	**21**	**16**	**9**	**4**	**1**	
1	0	0	0	0	0	0	3	2	3	0	**7**	2	1	2	1	1	1	6	**8**	4	4	1	0	0
0	0	0	0	0	0	0	0	2	2	1	**0**	2	2	3	0	3	4	3	**4**	4	2	2	1	0
0	0	0	0	0	0	0	6	5	2	1	**5**	2	0	3	2	1	5	**8**	8	1	2	1	0	1
0	0	0	0	0	1	0	1	0	2	**1**	1	2	0	3	2	2	2	**3**	1	7	1	0	0	0

AM Peak 1045 - 1145 (13), AM PHF=0.46 PM Peak 1830 - 1930 (23), PM PHF=0.72

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10461 -- English (ENU)

Datasets:

Site: **[5] DURAND WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=577, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**1**	**0**	**0**	**0**	**9**	**21**	**49**	**77**	**41**	**24**	**28**	**21**	**21**	**61**	**50**	**36**	**40**	**39**	**31**	**14**	**6**	**7**	**0**	
1	0	0	0	0	0	4	5	**29**	13	5	9	5	5	7	**12**	7	13	10	7	4	1	2	0	0
0	0	0	0	0	2	2	6	**21**	6	5	5	4	3	**16**	14	9	8	6	6	6	1	1	0	0
0	1	0	0	0	2	3	**16**	16	8	6	11	7	3	**25**	17	9	12	16	10	1	2	4	0	0
0	0	0	0	0	5	12	**22**	11	14	8	3	5	10	**13**	7	11	7	7	8	3	2	0	0	2

AM Peak 0730 - 0830 (88), AM PHF=0.76 PM Peak 1415 - 1515 (66), PM PHF=0.66

* Wednesday, March 09, 2016 - Total=567, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
2	**0**	**0**	**0**	**1**	**7**	**21**	**53**	**78**	**38**	**27**	**31**	**62**	**28**	**29**	**42**	**30**	**33**	**40**	**19**	**15**	**7**	**4**	**0**	
0	0	0	0	0	1	7	5	**28**	9	7	6	7	**9**	9	9	11	5	17	3	4	3	0	0	1
0	0	0	0	0	0	3	3	**22**	12	5	14	**34**	9	6	11	3	8	8	7	4	1	2	0	0
0	0	0	0	0	3	6	**18**	14	7	9	5	**10**	5	9	10	9	10	8	6	6	2	2	0	0
2	0	0	0	1	3	5	**27**	14	10	6	6	**11**	5	5	12	7	10	7	3	1	1	0	0	0

AM Peak 0730 - 0830 (95), AM PHF=0.85 PM Peak 1215 - 1315 (64), PM PHF=0.47

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10457 -- English (ENU)

Datasets:
Site: **[5] DURAND WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=378, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**0**	**1**	**0**	**1**	**11**	**23**	**44**	**16**	**15**	**15**	**17**	**15**	**42**	**29**	**26**	**46**	**19**	**30**	**13**	**9**	**2**	**3**	
0	0	0	0	0	0	2	1	**17**	7	5	1	5	3	7	7	5	**8**	5	8	3	3	1	2	0
0	0	0	1	0	0	2	7	**12**	4	4	8	7	5	11	7	6	**9**	3	8	3	3	0	1	0
0	1	0	0	0	1	4	3	**10**	2	3	3	4	2	14	6	5	**10**	10	6	3	2	1	0	0
0	0	0	0	0	0	3	**12**	5	3	3	3	1	5	10	9	10	**19**	1	8	4	1	0	0	1

AM Peak 0745 - 0845 (51), AM PHF=0.75 PM Peak 1700 - 1800 (46), PM PHF=0.61

* Wednesday, March 09, 2016 - Total=409, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**1**	**0**	**0**	**0**	**1**	**9**	**36**	**57**	**17**	**24**	**23**	**34**	**17**	**15**	**20**	**30**	**35**	**27**	**27**	**15**	**14**	**4**	**2**	
0	1	0	0	0	0	1	6	**22**	6	6	2	12	3	6	3	7	5	**10**	6	5	4	0	1	1
0	0	0	0	0	0	2	10	**20**	6	6	12	11	4	4	11	6	**9**	6	9	4	4	2	0	0
0	0	0	0	0	1	5	8	**9**	2	7	5	6	4	4	1	8	**11**	6	4	3	6	0	0	0
1	0	0	0	0	0	1	**12**	6	3	5	4	5	6	1	5	9	**10**	5	8	3	0	2	1	1

AM Peak 0745 - 0845 (63), AM PHF=0.72 PM Peak 1715 - 1815 (40), PM PHF=0.91

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10470 -- English (ENU)

Datasets:

Site: **[8] CLARK WAY W OF CLARK WAY**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: West (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=449, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**1**	**3**	**5**	**8**	**52**	**18**	**17**	**16**	**18**	**25**	**61**	**52**	**37**	**46**	**39**	**24**	**13**	**5**	**6**	**2**	
1	0	0	0	0	1	2	2	**22**	6	3	4	7	8	3	**12**	13	8	14	7	2	2	4	0	1
0	0	0	0	0	1	1	2	**16**	1	5	2	4	5	14	**18**	8	15	12	6	4	1	1	1	1
0	0	0	0	1	0	1	2	**7**	5	5	6	4	5	**23**	16	8	15	7	7	4	1	0	0	1
0	0	0	0	0	1	1	2	**7**	6	4	4	3	7	**21**	6	8	8	6	4	3	1	1	1	0

AM Peak 0800 - 0900 (52), AM PHF=0.59 PM Peak 1430 - 1530 (74), PM PHF=0.80

* Wednesday, March 09, 2016 - Total=459, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	**0**	**0**	**0**	**1**	**5**	**3**	**8**	**49**	**19**	**18**	**16**	**73**	**26**	**26**	**38**	**32**	**47**	**34**	**21**	**17**	**8**	**13**	**2**	
1	0	0	0	0	2	0	1	21	5	3	5	**7**	**8**	7	12	13	17	19	3	3	2	4	1	0
1	0	0	0	0	0	0	3	19	4	7	6	**50**	6	6	8	2	12	7	6	3	2	4	0	0
1	0	0	0	0	0	2	0	5	5	4	2	**7**	3	8	7	8	8	4	7	4	3	3	0	1
0	0	0	0	1	3	1	4	4	5	4	**3**	**9**	9	5	11	9	10	4	5	7	1	2	1	1

AM Peak 1145 - 1245 (67), AM PHF=0.34 PM Peak 1215 - 1315 (74), PM PHF=0.37

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10472 -- English (ENU)

Datasets:
Site: **[8] CLARK WAY W OF CLARK WAY**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: East (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=525, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**1**	**3**	**4**	**18**	**53**	**82**	**35**	**30**	**26**	**21**	**30**	**46**	**35**	**32**	**42**	**25**	**19**	**11**	**5**	**4**	**3**	
0	0	0	0	0	1	2	8	**29**	8	7	6	7	5	**10**	8	10	12	5	5	3	2	2	0	1
0	0	0	1	0	1	4	10	**26**	10	9	5	5	7	**13**	5	5	17	10	6	3	2	1	3	0
0	0	0	0	3	0	4	4	**11**	5	6	7	6	9	**14**	5	6	6	7	3	4	0	1	0	0
0	0	0	0	0	2	8	**31**	16	12	8	8	3	**9**	9	17	11	7	3	5	1	1	0	0	0

AM Peak 0745 - 0845 (97), AM PHF=0.78 PM Peak 1345 - 1445 (46), PM PHF=0.82

* Wednesday, March 09, 2016 - Total=521, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**1**	**4**	**10**	**45**	**94**	**35**	**31**	**22**	**52**	**21**	**27**	**32**	**32**	**42**	**35**	**12**	**13**	**7**	**4**	**1**	
1	0	0	0	0	0	2	3	**33**	6	10	4	**15**	1	4	4	12	6	10	3	4	0	1	1	0
0	0	0	0	1	1	4	8	**33**	16	10	5	**21**	10	7	10	5	14	12	4	3	2	1	0	0
0	0	0	0	0	2	3	11	**15**	8	4	5	**8**	1	6	9	8	14	8	2	3	2	0	0	0
0	0	0	0	0	1	1	**23**	13	5	7	8	**8**	9	10	9	7	8	5	3	3	3	2	0	1

AM Peak 0745 - 0845 (104), AM PHF=0.79 PM Peak 1200 - 1300 (52), PM PHF=0.62

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10464 -- English (ENU)

Datasets:

Site: **[6] CLARK WAY SE OF CLARK WAY**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=726, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**1**	**4**	**18**	**49**	**125**	**50**	**43**	**42**	**33**	**44**	**58**	**68**	**58**	**58**	**29**	**21**	**13**	**6**	**4**	**2**	
0	0	0	0	0	1	1	7	**56**	14	12	9	9	11	8	15	**21**	16	8	6	4	2	2	0	0
0	0	0	0	0	1	3	13	**24**	16	9	5	6	8	10	**13**	9	20	11	9	3	2	1	2	0
0	0	0	0	1	0	4	7	**20**	5	7	16	13	12	22	**16**	11	12	8	2	4	1	1	0	0
0	0	0	0	0	2	10	22	**25**	15	15	12	5	13	18	**24**	17	10	2	4	2	1	0	0	0

AM Peak 0800 - 0900 (125), AM PHF=0.56 PM Peak 1515 - 1615 (74), PM PHF=0.77

*** Wednesday, March 09, 2016 - Total=726, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**2**	**6**	**11**	**45**	**115**	**48**	**44**	**34**	**77**	**34**	**49**	**55**	**56**	**48**	**42**	**18**	**30**	**9**	**3**	**0**	
0	0	0	0	0	0	2	2	**49**	9	17	11	**11**	9	6	14	18	9	13	5	9	1	1	0	0
0	0	0	0	1	2	4	10	**32**	16	11	9	**40**	12	12	16	15	15	10	6	7	2	0	0	0
0	0	0	0	1	2	2	13	**18**	17	6	7	**10**	4	13	16	8	16	11	2	11	4	0	0	0
0	0	0	0	0	2	3	**20**	16	6	10	7	**16**	9	18	9	15	8	8	5	3	2	2	0	0

AM Peak 0745 - 0845 (119), AM PHF=0.61 PM Peak 1200 - 1300 (77), PM PHF=0.48

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10462 -- English (ENU)

Datasets:

Site: **[6] CLARK WAY SE OF CLARK WAY**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=632, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**1**	**0**	**0**	**1**	**7**	**10**	**63**	**71**	**27**	**34**	**32**	**38**	**47**	**58**	**42**	**44**	**60**	**38**	**27**	**15**	**7**	**8**	**1**	
1	1	0	0	0	1	1	8	**34**	10	11	7	10	11	10	9	13	**13**	8	9	4	2	4	0	0
0	0	0	0	0	1	3	14	**17**	3	14	6	12	11	16	16	10	**19**	16	7	4	2	2	0	1
0	0	0	0	1	1	4	**17**	17	7	2	9	11	13	13	10	9	**17**	6	7	2	2	1	0	2
0	0	0	0	0	4	2	**24**	3	7	7	10	5	12	19	7	**12**	11	8	4	5	1	1	1	0

AM Peak 0730 - 0830 (92), AM PHF=0.68 PM Peak 1645 - 1745 (61), PM PHF=0.80

* Wednesday, March 09, 2016 - Total=657, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	**0**	**0**	**0**	**2**	**6**	**9**	**52**	**71**	**38**	**35**	**50**	**59**	**32**	**30**	**35**	**38**	**58**	**60**	**33**	**21**	**10**	**14**	**1**	
0	0	0	0	0	2	1	5	**33**	17	9	9	24	8	7	7	11	17	**23**	5	4	2	4	0	1
1	0	0	0	0	0	1	**20**	16	7	9	11	20	9	12	10	9	16	**14**	8	5	4	3	0	0
2	0	0	0	1	1	3	**14**	9	7	10	11	5	3	6	7	8	13	**17**	11	5	3	5	0	1
0	0	0	0	1	3	4	**13**	13	7	7	19	10	12	5	11	10	**12**	6	9	7	1	2	1	0

AM Peak 0715 - 0815 (80), AM PHF=0.61 PM Peak 1745 - 1845 (66), PM PHF=0.72

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10446 -- English (ENU)

Datasets:

Site: **[1] CLARK WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=685, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**2**	**3**	**16**	**64**	**101**	**96**	**67**	**54**	**34**	**26**	**34**	**41**	**41**	**37**	**30**	**16**	**10**	**6**	**4**	**3**	
0	0	0	0	1	0	2	2	22	**25**	23	16	11	7	10	7	7	**13**	9	6	3	0	3	3	0
0	0	0	0	0	2	2	11	**23**	21	21	13	9	7	9	14	**14**	11	6	2	6	1	0	0	1
0	0	0	0	0	0	2	28	**24**	24	11	13	6	6	8	9	**14**	5	6	8	0	4	0	0	0
0	0	0	0	1	1	10	23	**32**	26	12	12	8	6	7	11	**6**	8	9	0	1	1	1	0	1

AM Peak 0815 - 0915 (104), AM PHF=0.81 PM Peak 1615 - 1715 (47), PM PHF=0.84

* Wednesday, March 09, 2016 - Total=647, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
2	**2**	**0**	**0**	**2**	**5**	**15**	**67**	**68**	**99**	**52**	**42**	**33**	**25**	**40**	**33**	**26**	**34**	**38**	**38**	**10**	**8**	**7**	**1**	
0	1	0	0	1	1	3	6	11	**23**	12	14	9	10	15	12	9	5	**11**	14	3	3	3	1	1
1	1	0	0	0	2	2	12	18	**25**	13	10	9	5	6	3	4	6	**12**	10	6	1	2	0	0
0	0	0	0	1	1	5	29	15	**22**	13	11	6	5	10	8	5	**10**	10	9	1	2	1	0	0
1	0	0	0	0	1	5	20	24	**29**	14	7	9	5	9	10	8	**13**	5	5	0	2	1	0	0

AM Peak 0900 - 1000 (99), AM PHF=0.85 PM Peak 1730 - 1830 (46), PM PHF=0.88

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10447 -- English (ENU)

Datasets:

Site: **[1] CLARK WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=804, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
6	**2**	**0**	**0**	**3**	**2**	**19**	**30**	**69**	**22**	**36**	**20**	**43**	**28**	**43**	**52**	**67**	**122**	**100**	**48**	**31**	**35**	**18**	**8**	
3	0	0	0	0	1	3	3	**24**	8	12	2	13	6	10	9	16	31	**35**	19	16	8	6	3	3
0	1	0	0	0	0	4	7	**24**	5	8	4	12	8	11	13	12	**28**	28	12	3	12	3	2	1
3	0	0	0	0	0	7	7	**12**	6	9	6	3	9	10	16	19	**26**	17	7	3	9	6	3	1
0	1	0	0	3	1	5	**13**	9	3	7	8	15	5	12	14	20	**37**	20	10	9	6	3	0	1

AM Peak 0745 - 0845 (73), AM PHF=0.76 PM Peak 1715 - 1815 (126), PM PHF=0.85

* Wednesday, March 09, 2016 - Total=804, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
6	**4**	**1**	**2**	**1**	**1**	**12**	**21**	**61**	**26**	**20**	**25**	**47**	**39**	**48**	**40**	**66**	**129**	**93**	**66**	**36**	**36**	**18**	**6**	
3	2	1	1	0	1	1	3	**17**	5	5	5	9	5	13	10	13	**25**	20	19	12	9	4	1	1
1	0	0	0	0	0	4	8	**23**	11	6	5	10	7	10	12	11	**33**	29	17	10	10	1	2	1
1	0	0	0	0	0	6	2	**12**	6	6	8	19	16	11	11	16	**31**	23	12	5	10	5	2	0
1	2	0	1	1	0	1	8	**9**	4	3	7	9	11	14	7	26	**40**	21	18	9	7	8	1	0

AM Peak 0800 - 0900 (61), AM PHF=0.66 PM Peak 1700 - 1800 (129), PM PHF=0.81

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10468 -- English (ENU)

Datasets:

Site: **[7] CLARK WAY N OF CLARK WAY**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=492, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**0**	**0**	**3**	**12**	**115**	**20**	**28**	**21**	**15**	**22**	**88**	**73**	**43**	**25**	**16**	**8**	**1**	**2**	**0**	**0**	
0	0	0	0	0	0	0	1	**65**	8	12	4	5	7	3	**20**	20	6	11	1	0	1	0	0	0
0	0	0	0	0	0	1	3	**26**	4	3	1	2	3	**19**	19	11	6	3	5	0	0	0	0	0
0	0	0	0	0	0	1	3	**14**	3	5	12	6	4	**39**	21	5	9	2	2	1	1	0	0	0
0	0	0	0	0	0	1	5	**10**	5	8	4	2	8	**27**	13	7	4	0	0	0	0	0	0	0

AM Peak 0800 - 0900 (115), AM PHF=0.44 PM Peak 1415 - 1515 (105), PM PHF=0.67

* Wednesday, March 09, 2016 - Total=464, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**1**	**1**	**0**	**5**	**90**	**18**	**24**	**19**	**99**	**22**	**35**	**49**	**37**	**20**	**14**	**3**	**22**	**4**	**1**	**0**	
0	0	0	0	0	0	0	1	53	1	6	4	**8**	**9**	3	16	12	5	8	0	5	1	0	0	0
0	0	0	0	0	1	0	1	24	5	6	6	**71**	6	8	13	11	4	1	2	4	0	1	0	0
0	0	0	0	1	0	0	2	7	10	5	5	**8**	3	13	11	6	7	3	1	10	3	0	0	0
0	0	0	0	0	0	0	1	6	2	7	**4**	**12**	4	11	9	8	4	2	0	3	0	0	0	0

AM Peak 1145 - 1245 (91), AM PHF=0.32 PM Peak 1215 - 1315 (100), PM PHF=0.35

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10469 -- English (ENU)

Datasets:

Site: **[7] CLARK WAY N OF CLARK WAY**

Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Speed range: 0 - 100 mph.

Direction: North (bound)

Name: TDS

Scheme: Vehicle classification (Scheme F)

Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=460, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**0**	**1**	**11**	**77**	**97**	**18**	**27**	**21**	**20**	**30**	**66**	**32**	**21**	**24**	**7**	**4**	**1**	**2**	**1**	**0**	
0	0	0	0	0	0	1	5	**53**	8	8	4	3	6	**15**	11	7	8	1	1	0	0	0	0	0
0	0	0	0	0	0	3	16	**27**	2	10	6	6	7	**21**	11	7	6	4	2	1	1	0	0	0
0	0	0	0	0	0	4	**19**	14	4	4	6	7	7	**17**	5	3	5	1	1	0	1	1	0	0
0	0	0	0	0	1	3	**37**	3	4	5	5	4	10	**13**	5	4	5	1	0	0	0	0	0	0

AM Peak 0730 - 0830 (136), AM PHF=0.64 PM Peak 1400 - 1500 (66), PM PHF=0.79

* Wednesday, March 09, 2016 - Total=468, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**1**	**2**	**7**	**61**	**95**	**26**	**28**	**44**	**62**	**17**	**13**	**24**	**20**	**21**	**26**	**6**	**6**	**5**	**2**	**2**	
0	0	0	0	0	0	0	5	**51**	10	5	5	**25**	3	3	5	6	4	6	0	1	0	0	1	1
0	0	0	0	0	0	2	19	**26**	9	8	6	**25**	6	5	8	7	6	4	2	1	1	0	1	0
0	0	0	0	1	1	2	**16**	8	3	11	13	**7**	1	2	2	5	4	13	2	1	1	2	0	0
0	0	0	0	0	1	3	**21**	10	4	4	20	**5**	7	3	9	2	7	3	2	3	3	0	0	0

AM Peak 0730 - 0830 (114), AM PHF=0.56 PM Peak 1200 - 1300 (62), PM PHF=0.62

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10456 -- English (ENU)

Datasets:
Site: **[4] CHARLES MARX WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: South (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

* Tuesday, March 08, 2016 - Total=175, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**1**	**0**	**11**	**30**	**26**	**9**	**7**	**4**	**12**	**5**	**21**	**11**	**6**	**9**	**8**	**5**	**3**	**6**	**1**	**0**	
0	0	0	0	1	0	3	1	**11**	1	0	1	0	1	**5**	4	2	1	4	0	2	0	1	0	0
0	0	0	0	0	0	3	6	**7**	1	4	0	6	2	**3**	2	2	4	1	3	1	2	0	0	0
0	0	0	0	0	0	1	**13**	5	5	2	2	3	0	**7**	1	1	3	2	1	0	2	0	0	0
0	0	0	0	0	0	4	**10**	3	2	1	1	3	2	**6**	4	1	1	1	1	0	2	0	0	0

AM Peak 0730 - 0830 (41), AM PHF=0.79 PM Peak 1400 - 1500 (21), PM PHF=0.75

* Wednesday, March 09, 2016 - Total=165, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**0**	**0**	**0**	**3**	**8**	**31**	**18**	**9**	**10**	**12**	**12**	**5**	**8**	**6**	**3**	**11**	**11**	**8**	**2**	**2**	**5**	**0**	
0	1	0	0	0	1	0	2	**6**	2	2	2	0	**1**	1	2	2	4	2	2	0	1	2	0	0
0	0	0	0	0	0	3	**5**	4	4	2	3	**4**	0	1	2	0	1	4	3	1	0	0	0	0
0	0	0	0	0	0	2	**13**	6	2	5	6	**3**	1	1	1	0	4	4	2	1	1	3	0	0
0	0	0	0	0	2	3	**11**	2	1	1	1	**5**	3	5	1	1	2	1	1	0	0	0	0	1

AM Peak 0715 - 0815 (35), AM PHF=0.67 PM Peak 1215 - 1315 (13), PM PHF=0.65

Traffic Data Service -- San Jose, CA
Vehicle Counts

VehicleCount-10452 -- English (ENU)

Datasets:
Site: **[4] CHARLES MARX WAY N OF SAND HILL RD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: North (bound)
Name: TDS
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Tuesday, March 08, 2016 - Total=145, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**1**	**1**	**1**	**0**	**0**	**2**	**3**	**8**	**4**	**5**	**6**	**7**	**5**	**13**	**11**	**10**	**11**	**19**	**12**	**15**	**5**	**3**	**2**	
0	0	0	0	0	0	0	1	1	1	0	2	**0**	2	4	3	1	2	**7**	2	2	0	1	1	0
1	1	1	0	0	0	1	1	5	1	3	0	**2**	1	1	3	4	5	**4**	4	5	2	1	1	0
0	0	0	0	0	0	0	0	1	1	1	1	**4**	2	5	4	1	2	**5**	4	5	0	0	0	0
0	0	0	1	0	0	1	1	1	1	1	**3**	1	0	3	1	4	2	**3**	2	3	3	1	0	0

AM Peak 1145 - 1245 (9), AM PHF=0.56 PM Peak 1800 - 1900 (19), PM PHF=0.68

*** Wednesday, March 09, 2016 - Total=131, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**1**	**0**	**1**	**0**	**1**	**7**	**5**	**9**	**4**	**6**	**6**	**6**	**8**	**5**	**8**	**19**	**12**	**14**	**8**	**5**	**4**	**1**	
0	1	0	0	0	0	0	2	0	**2**	2	0	0	1	1	1	5	5	**3**	4	1	2	1	0	0
0	0	0	0	0	0	0	2	2	**3**	0	3	3	1	2	0	1	1	**6**	5	2	1	1	0	0
0	0	1	0	1	0	0	0	2	**2**	1	2	1	0	2	2	0	**6**	1	2	3	1	2	1	0
0	0	0	0	0	0	1	3	1	**2**	1	1	2	4	3	2	2	**7**	2	3	2	1	0	0	0

AM Peak 0900 - 1000 (9), AM PHF=0.75 PM Peak 1730 - 1830 (22), PM PHF=0.79

Study Name 9 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 9
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	5	1
7:15 AM	7	0
7:30 AM	10	0
7:45 AM	7	0
8:00 AM	4	1
8:15 AM	4	2
8:30 AM	8	4
8:45 AM	12	2
9:00 AM	0	1
9:15 AM	3	2
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	1	5
4:15 PM	2	3
4:30 PM	1	6
4:45 PM	0	13
5:00 PM	0	12
5:15 PM	0	6
5:30 PM	2	4
5:45 PM	1	17
6:00 PM	0	7
6:15 PM	0	11
6:30 PM	0	5
6:45 PM	0	6

Study Name 9 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 9
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	4	2
7:15 AM	6	3
7:30 AM	18	2
7:45 AM	26	5
8:00 AM	25	0
8:15 AM	32	2
8:30 AM	25	2
8:45 AM	43	1
9:00 AM	25	2
9:15 AM	24	3
9:30 AM	23	2
9:45 AM	26	2
4:00 PM	1	10
4:15 PM	2	14
4:30 PM	3	12
4:45 PM	1	14
5:00 PM	0	29
5:15 PM	1	26
5:30 PM	4	19
5:45 PM	1	29
6:00 PM	3	32
6:15 PM	0	28
6:30 PM	1	15
6:45 PM	0	17

Study Name 10 Swain Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 10
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	0	1
7:30 AM	2	1
7:45 AM	0	0
8:00 AM	1	0
8:15 AM	3	0
8:30 AM	6	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	1	0
9:30 AM	1	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	1	0
4:30 PM	0	1
4:45 PM	0	0
5:00 PM	0	2
5:15 PM	0	0
5:30 PM	4	1
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	2
6:45 PM	0	0

Study Name 10 Swain Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 10
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	1	0
7:30 AM	1	0
7:45 AM	3	0
8:00 AM	0	0
8:15 AM	1	0
8:30 AM	0	0
8:45 AM	1	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	2	2
4:45 PM	0	0
5:00 PM	0	1
5:15 PM	0	1
5:30 PM	0	2
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 11 Mosher Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 11
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	1
7:15 AM	0	0
7:30 AM	4	0
7:45 AM	1	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	1	1
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	2	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	1	0
4:15 PM	0	0
4:30 PM	1	0
4:45 PM	2	0
5:00 PM	1	1
5:15 PM	0	0
5:30 PM	0	4
5:45 PM	1	1
6:00 PM	0	2
6:15 PM	0	1
6:30 PM	0	0
6:45 PM	0	0

Study Name 11 Mosher Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 11
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	1	1
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	1	3
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 12 Charles Marx Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 12
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	0	1
7:30 AM	1	1
7:45 AM	1	0
8:00 AM	1	0
8:15 AM	2	0
8:30 AM	1	0
8:45 AM	0	0
9:00 AM	2	0
9:15 AM	0	1
9:30 AM	2	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	1	0
6:00 PM	0	0
6:15 PM	1	0
6:30 PM	1	1
6:45 PM	0	0

Study Name 12 Charles Marx Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 12
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	1	0
8:00 AM	0	0
8:15 AM	1	0
8:30 AM	2	0
8:45 AM	0	0
9:00 AM	1	0
9:15 AM	0	0
9:30 AM	1	0
9:45 AM	1	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 13 Durand Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 13
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	2	0
7:30 AM	3	0
7:45 AM	1	2
8:00 AM	2	0
8:15 AM	3	0
8:30 AM	4	0
8:45 AM	0	0
9:00 AM	1	0
9:15 AM	2	0
9:30 AM	0	0
9:45 AM	1	0
4:00 PM	0	1
4:15 PM	2	2
4:30 PM	1	3
4:45 PM	0	4
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	3
6:15 PM	0	1
6:30 PM	1	3
6:45 PM	0	0

Study Name 13 Durand Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 13
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	0	0
7:30 AM	2	1
7:45 AM	2	0
8:00 AM	2	0
8:15 AM	0	0
8:30 AM	4	1
8:45 AM	1	0
9:00 AM	3	0
9:15 AM	2	1
9:30 AM	1	0
9:45 AM	5	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	1	1
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 14 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 14
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	1
7:15 AM	2	1
7:30 AM	0	4
7:45 AM	5	3
8:00 AM	3	5
8:15 AM	4	3
8:30 AM	1	3
8:45 AM	2	3
9:00 AM	0	4
9:15 AM	1	1
9:30 AM	2	5
9:45 AM	6	4
4:00 PM	11	3
4:15 PM	1	5
4:30 PM	4	5
4:45 PM	2	5
5:00 PM	1	10
5:15 PM	3	3
5:30 PM	0	5
5:45 PM	6	4
6:00 PM	1	0
6:15 PM	3	2
6:30 PM	0	2
6:45 PM	0	1

Study Name 14 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 14
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	4	0
7:15 AM	5	0
7:30 AM	5	0
7:45 AM	12	0
8:00 AM	5	0
8:15 AM	7	0
8:30 AM	8	2
8:45 AM	12	1
9:00 AM	9	4
9:15 AM	8	1
9:30 AM	6	1
9:45 AM	6	0
4:00 PM	2	2
4:15 PM	1	2
4:30 PM	0	9
4:45 PM	2	8
5:00 PM	2	8
5:15 PM	1	6
5:30 PM	0	11
5:45 PM	0	7
6:00 PM	0	4
6:15 PM	0	12
6:30 PM	0	11
6:45 PM	0	4

Study Name 15 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 15
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	3
7:15 AM	0	0
7:30 AM	1	3
7:45 AM	1	2
8:00 AM	2	3
8:15 AM	1	3
8:30 AM	1	1
8:45 AM	2	4
9:00 AM	1	2
9:15 AM	2	4
9:30 AM	5	3
9:45 AM	2	5
4:00 PM	3	2
4:15 PM	1	1
4:30 PM	3	3
4:45 PM	3	2
5:00 PM	3	2
5:15 PM	1	2
5:30 PM	1	7
5:45 PM	3	4
6:00 PM	1	1
6:15 PM	2	1
6:30 PM	0	0
6:45 PM	0	0

Study Name 15 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 15
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	1	0
7:15 AM	5	0
7:30 AM	4	0
7:45 AM	9	0
8:00 AM	6	0
8:15 AM	5	1
8:30 AM	8	0
8:45 AM	12	1
9:00 AM	8	3
9:15 AM	6	1
9:30 AM	5	1
9:45 AM	2	0
4:00 PM	0	1
4:15 PM	1	3
4:30 PM	0	4
4:45 PM	1	7
5:00 PM	1	8
5:15 PM	1	5
5:30 PM	0	8
5:45 PM	0	6
6:00 PM	0	3
6:15 PM	1	7
6:30 PM	1	8
6:45 PM	0	6

Study Name 16 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 16
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	1	3
7:15 AM	2	1
7:30 AM	5	2
7:45 AM	4	2
8:00 AM	2	1
8:15 AM	3	5
8:30 AM	1	1
8:45 AM	5	5
9:00 AM	2	0
9:15 AM	3	0
9:30 AM	6	2
9:45 AM	2	6
4:00 PM	4	8
4:15 PM	5	1
4:30 PM	4	1
4:45 PM	5	2
5:00 PM	3	0
5:15 PM	2	1
5:30 PM	4	5
5:45 PM	4	1
6:00 PM	2	3
6:15 PM	3	1
6:30 PM	2	0
6:45 PM	0	0

Study Name 16 Clark Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 16
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Westbound	Eastbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	1	0
8:15 AM	0	3
8:30 AM	1	1
8:45 AM	1	1
9:00 AM	1	0
9:15 AM	0	2
9:30 AM	0	0
9:45 AM	0	3
4:00 PM	0	0
4:15 PM	0	1
4:30 PM	3	1
4:45 PM	3	2
5:00 PM	0	0
5:15 PM	1	0
5:30 PM	2	0
5:45 PM	1	0
6:00 PM	2	0
6:15 PM	2	0
6:30 PM	3	0
6:45 PM	1	0

Study Name	24 Sand Hill Rd - Pathway between Swain Way & Mosher Way
Start Date	03/08/2016
Start Time	7:00 AM
Site Code	24
Pedestrian Count	

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	1	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	1	1
8:45 AM	1	0
9:00 AM	0	0
9:15 AM	1	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	1
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name	24 Sand Hill Rd - Pathway between Swain Way & Mosher Way
Start Date	03/08/2016
Start Time	7:00 AM
Site Code	24
Bicycle Count	

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 25 Sand Hill Rd - Pathway West of Mosher
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 25
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	1	0
7:45 AM	0	0
8:00 AM	1	0
8:15 AM	0	0
8:30 AM	1	0
8:45 AM	1	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	1
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	2	0
5:15 PM	0	1
5:30 PM	0	1
5:45 PM	0	0
6:00 PM	0	1
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 25 Sand Hill Rd - Pathway West of Mosher Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 25
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	1	0
8:30 AM	0	0
8:45 AM	0	1
9:00 AM	1	0
9:15 AM	0	0
9:30 AM	1	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	1
4:45 PM	0	2
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	1	1
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	1
6:45 PM	0	0

Study Name 26 Sand Hill Rd - Pathway East of Mosher Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 26
Pedestrian Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	1	0
7:30 AM	2	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	1	0
9:00 AM	1	0
9:15 AM	1	1
9:30 AM	0	1
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	1
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

Study Name 26 Sand Hill Rd - Pathway East of Mosher Way
Start Date 03/08/2016
Start Time 7:00 AM
Site Code 26
Bicycle Count

Channel	Pathway 1	Pathway 1
Direction	Southbound	Northbound
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	0
9:30 AM	0	0
9:45 AM	0	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	0	0
4:45 PM	0	0
5:00 PM	0	0
5:15 PM	0	0
5:30 PM	0	0
5:45 PM	0	0
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\17AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000017
Comment 1: **Pedestrian Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BICYCLE PATH Southbound				BICYCLE PATH Westbound				BICYCLE PATH Northbound				BICYCLE PATH Eastbound			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn
07:00 AM	0	5	0	0	1	0	1	0	0	3	0	0	0	0	5	0
07:15 AM	1	3	1	0	3	0	0	0	0	1	0	0	2	0	0	0
07:30 AM	0	3	0	0	2	1	1	0	0	1	0	0	0	0	0	1
07:45 AM	0	4	5	0	0	0	0	0	0	2	0	0	2	1	3	0
08:00 AM	3	3	1	0	2	0	0	0	2	2	0	0	0	0	2	0
08:15 AM	1	5	1	0	1	1	1	0	0	2	0	0	0	2	0	0
08:30 AM	7	9	1	0	2	0	0	0	0	2	1	0	2	0	4	0
08:45 AM	5	5	2	0	0	1	0	0	0	2	0	0	0	2	3	0
09:00 AM	5	3	4	0	2	1	0	0	0	3	1	0	0	0	0	1
09:15 AM	3	4	1	0	1	0	0	0	0	2	0	0	0	1	7	0
09:30 AM	3	6	0	0	3	0	0	0	0	5	1	0	1	0	3	0
09:45 AM	1	12	3	0	4	0	1	0	0	0	1	0	1	0	1	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\17AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000017
Comment 1: **Bicycle turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BICYCLE PATH Southbound				BICYCLE PATH Westbound				BICYCLE PATH Northbound				BICYCLE PATH Eastbound			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn
07:00 AM	0	4	2	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	9	5	0	0	0	0	0	0	3	0	0	0	0	0	0
07:30 AM	1	13	4	0	0	0	0	0	0	2	0	0	0	0	0	0
07:45 AM	1	16	11	0	0	0	0	0	0	2	0	0	0	0	0	0
08:00 AM	0	15	7	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	22	5	0	0	0	0	0	0	1	0	0	0	0	0	0
08:30 AM	2	20	9	0	0	0	0	0	0	1	1	0	0	0	0	0
08:45 AM	1	27	13	0	1	0	0	0	0	3	0	0	0	0	0	0
09:00 AM	1	21	7	0	2	0	0	0	0	2	0	0	0	0	0	0
09:15 AM	0	17	6	0	2	0	0	0	0	1	1	0	0	0	0	0
09:30 AM	0	20	5	0	1	0	0	0	0	2	0	0	0	0	0	0
09:45 AM	0	25	3	0	1	0	0	0	0	0	0	0	1	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\17PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000017
Comment 1: **Pedestrian Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BICYCLE PATH Southbound				BICYCLE PATH Westbound				BICYCLE PATH Northbound				BICYCLE PATH Eastbound			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn
04:00 PM	3	1	2	0	7	1	0	0	0	2	0	0	0	2	1	0
04:15 PM	5	4	1	1	0	1	0	0	1	1	1	0	1	1	2	1
04:30 PM	4	3	0	0	1	5	0	0	0	2	0	0	0	1	0	1
04:45 PM	5	0	3	0	2	0	0	0	0	6	2	0	0	1	4	0
05:00 PM	4	0	0	0	0	0	0	0	1	1	0	0	0	0	13	0
05:15 PM	4	2	0	0	2	2	0	0	0	1	0	0	0	0	3	0
05:30 PM	3	5	0	0	0	0	0	0	1	3	0	0	0	0	2	0
05:45 PM	2	0	1	0	2	0	0	0	0	5	0	0	1	0	5	0
06:00 PM	3	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0
06:15 PM	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0
06:30 PM	0	0	3	0	2	0	0	0	0	1	0	0	0	0	0	0
06:45 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\17PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000017
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BICYCLE PATH Southbound				BICYCLE PATH Westbound				BICYCLE PATH Northbound				BICYCLE PATH Eastbound			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn
04:00 PM	0	1	0	0	2	0	0	0	0	9	0	0	0	1	0	0
04:15 PM	0	0	1	0	3	0	0	0	0	7	0	0	0	0	0	0
04:30 PM	0	2	0	0	4	0	0	0	0	12	0	0	0	0	0	0
04:45 PM	0	2	3	0	8	0	0	0	0	9	0	0	0	0	0	0
05:00 PM	0	0	2	0	9	0	0	0	0	19	0	0	0	0	0	0
05:15 PM	0	3	0	0	3	0	0	0	0	17	0	0	0	0	0	0
05:30 PM	0	3	0	0	8	0	0	0	0	15	0	0	0	0	0	0
05:45 PM	0	2	0	0	7	0	0	0	0	19	0	0	0	0	0	0
06:00 PM	0	3	1	0	7	0	0	0	0	19	0	0	0	0	0	0
06:15 PM	0	1	0	0	9	0	0	0	0	20	0	0	0	0	0	0
06:30 PM	0	3	0	0	6	0	0	0	0	14	0	0	0	0	0	0
06:45 PM	0	0	0	0	7	0	0	0	0	14	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\18AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: Vehicular Turning Movement Count
Comment 1: **0**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				SAND HILL RD Westbound				PASTEUR DR Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	1	1	7	0	84	25	1	12	0	12	0	60	177	3	7
07:15 AM	4	1	3	8	1	99	21	1	28	0	39	1	68	232	5	11
07:30 AM	11	5	0	7	1	135	29	3	34	2	58	0	58	233	4	16
07:45 AM	7	4	4	7	0	121	26	0	23	4	33	2	57	285	9	16
08:00 AM	4	1	3	5	0	169	24	2	18	3	17	2	62	299	20	9
08:15 AM	5	1	3	6	2	160	21	0	16	1	20	0	56	323	19	14
08:30 AM	5	2	3	4	2	128	33	2	17	1	14	1	72	297	7	26
08:45 AM	6	2	2	14	0	132	24	0	23	2	20	1	69	263	5	33
09:00 AM	6	0	5	7	0	128	31	1	15	3	21	1	68	299	5	14
09:15 AM	5	2	0	11	1	110	28	4	23	2	20	1	74	284	4	18
09:30 AM	1	1	5	4	1	135	40	0	27	0	30	0	69	289	5	11
09:45 AM	4	0	1	3	1	120	47	0	22	2	34	1	65	253	2	12

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\18AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000018
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				SAND HILL RD Westbound				PASTEUR DR Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	3	0	0	0	1	1	0	0	1	0	0	1	0	0	0
07:15 AM	0	7	1	0	1	3	1	0	0	0	0	0	1	9	0	0
07:30 AM	0	10	0	0	0	2	1	0	0	2	0	0	2	4	0	0
07:45 AM	0	34	1	0	2	2	1	0	0	1	0	0	0	9	0	0
08:00 AM	2	23	0	0	1	1	1	0	1	0	0	0	0	5	0	0
08:15 AM	0	33	0	0	0	1	0	0	0	1	0	0	0	6	1	0
08:30 AM	0	28	0	0	0	0	0	0	1	2	0	0	1	1	0	0
08:45 AM	1	47	1	0	0	1	2	0	0	1	0	0	1	5	0	0
09:00 AM	1	25	0	0	0	1	1	0	0	1	0	0	0	7	1	0
09:15 AM	0	30	0	0	2	2	2	0	0	1	0	0	0	2	0	0
09:30 AM	1	25	0	0	0	1	2	0	0	1	0	0	1	1	0	0
09:45 AM	0	34	0	0	1	6	2	0	0	1	1	0	0	3	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\18PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000018
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				SAND HILL RD Westbound				PASTEUR DR Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	5	1	2	6	0	223	16	1	39	2	90	2	20	178	9	5
04:15 PM	7	1	2	4	1	279	18	4	47	1	80	0	19	187	3	8
04:30 PM	5	0	3	6	2	263	14	3	39	2	79	1	14	176	11	6
04:45 PM	4	1	1	2	0	236	17	3	43	3	92	3	22	214	10	14
05:00 PM	4	2	5	6	1	231	8	9	38	1	72	3	17	183	11	9
05:15 PM	3	3	2	3	1	235	14	6	37	3	76	6	16	204	12	8
05:30 PM	1	2	0	6	3	280	13	8	32	2	46	6	12	188	9	12
05:45 PM	5	2	1	11	2	237	14	7	31	4	42	3	21	187	15	13
06:00 PM	5	2	0	5	1	288	13	3	12	7	42	1	34	169	13	11
06:15 PM	2	2	0	8	5	261	22	5	28	5	52	1	59	187	10	11
06:30 PM	1	2	1	3	2	220	12	5	20	2	45	2	54	172	9	6
06:45 PM	4	1	1	1	1	215	11	2	22	3	39	1	29	153	10	4

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\18PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000018
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				SAND HILL RD Westbound				PASTEUR DR Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	1	0	0	1	10	0	0	0	0	0	0
04:15 PM	0	1	0	0	0	2	0	0	5	12	0	0	0	1	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	11	1	0	2	1	0	0
04:45 PM	0	0	0	0	0	2	0	0	0	9	0	0	0	2	0	0
05:00 PM	0	0	0	0	0	0	0	0	1	30	2	0	1	3	0	0
05:15 PM	0	0	0	0	0	1	0	0	2	22	0	0	0	9	0	0
05:30 PM	0	0	0	0	0	0	0	0	4	17	0	0	0	3	0	0
05:45 PM	0	0	0	0	0	1	0	0	5	21	0	0	0	0	0	0
06:00 PM	0	2	0	0	0	0	0	0	8	29	1	0	0	2	0	0
06:15 PM	0	0	0	0	0	4	0	0	1	25	0	0	0	5	0	0
06:30 PM	0	0	0	0	0	0	0	0	3	15	2	0	0	2	0	0
06:45 PM	0	1	0	0	0	0	0	0	0	17	1	0	0	0	1	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\19AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000019
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	SWAIN WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	1	0	0	4	0	114	0	0	0	0	0	0	0	184	0	0
07:15 AM	0	0	0	4	2	122	0	0	0	0	0	0	0	257	0	0
07:30 AM	7	0	0	13	1	175	0	0	0	0	0	0	0	261	0	0
07:45 AM	8	0	0	6	0	149	0	0	0	0	0	0	0	308	0	0
08:00 AM	4	0	0	8	0	197	0	0	0	0	0	0	0	314	0	0
08:15 AM	2	0	0	8	3	168	0	0	0	0	0	0	0	337	0	3
08:30 AM	1	0	0	10	1	168	0	0	0	0	0	0	0	311	0	0
08:45 AM	2	0	0	7	3	160	0	0	0	0	0	0	0	280	0	0
09:00 AM	3	0	0	4	3	143	0	0	0	0	0	0	0	312	0	0
09:15 AM	1	0	0	8	2	148	0	0	0	0	0	0	0	314	0	0
09:30 AM	3	0	0	4	1	164	0	0	0	0	0	0	0	317	0	0
09:45 AM	1	0	0	3	1	151	0	0	0	0	0	0	0	289	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\19AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000019
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	SWAIN WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	9	0	0
09:15 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0
09:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	18	0	0	0	0	0	0	0	4	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\19PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000019
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	SWAIN WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	2	0	0	6	3	263	0	0	0	0	0	0	0	219	0	0
04:15 PM	1	0	0	5	3	281	0	0	0	0	0	0	0	227	0	0
04:30 PM	2	0	0	9	2	270	0	0	0	0	0	0	0	210	0	0
04:45 PM	0	0	0	5	1	237	0	0	0	0	0	0	0	250	0	0
05:00 PM	1	0	0	3	5	279	0	0	0	0	0	0	0	235	0	0
05:15 PM	1	0	0	5	3	238	0	0	0	0	0	0	0	236	0	0
05:30 PM	2	0	0	8	6	285	0	0	0	0	0	0	0	215	0	0
05:45 PM	0	0	0	8	4	265	0	0	0	0	0	0	0	212	0	0
06:00 PM	1	0	0	4	6	313	0	0	0	0	0	0	0	190	0	0
06:15 PM	1	0	0	5	5	267	0	0	0	0	0	0	0	209	0	0
06:30 PM	1	0	0	4	7	230	0	0	0	0	0	0	0	187	0	0
06:45 PM	0	0	0	3	3	224	0	0	0	0	0	0	0	170	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\19PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000019
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	SWAIN WAY				SAND HILL RD								SAND HILL RD			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
04:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	5	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
04:45 PM	0	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
05:15 PM	0	0	0	0	1	3	0	0	0	0	0	0	0	8	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0
05:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	0
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0
06:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\20AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000020
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	MOSHER WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	3	0	0	3	0	117	0	0	0	0	0	0	0	176	0	0
07:15 AM	4	0	0	3	2	121	0	0	0	0	0	0	0	254	0	0
07:30 AM	8	0	0	12	0	170	0	0	0	0	0	0	0	253	0	0
07:45 AM	6	0	0	9	1	132	0	0	0	0	0	0	0	305	0	0
08:00 AM	4	0	0	3	0	182	0	0	0	0	0	0	0	309	0	0
08:15 AM	4	0	0	3	2	157	0	0	0	0	0	0	0	331	0	0
08:30 AM	0	0	0	3	3	165	0	0	0	0	0	0	0	309	0	0
08:45 AM	1	0	1	2	5	162	0	0	0	0	0	0	0	277	0	0
09:00 AM	3	0	0	4	1	139	0	0	0	0	0	0	0	306	0	0
09:15 AM	1	0	0	4	2	149	0	0	0	0	0	0	0	311	0	0
09:30 AM	0	0	0	3	6	172	0	0	0	0	0	0	0	309	0	0
09:45 AM	0	0	0	2	4	154	0	0	0	0	0	0	0	285	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\20AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000020
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	MOSHER WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	0	1	0
09:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\20PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000020
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	MOSHER WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	3	0	0	6	2	264	0	0	0	0	0	0	0	211	0	0
04:15 PM	2	0	0	9	4	269	0	0	0	0	0	0	0	220	0	0
04:30 PM	5	0	0	6	4	260	0	0	0	0	0	0	0	208	0	0
04:45 PM	1	0	0	3	4	242	0	0	0	0	0	0	0	243	0	0
05:00 PM	2	0	0	5	5	280	0	0	0	0	0	0	0	227	0	1
05:15 PM	1	0	0	2	6	234	0	0	0	0	0	0	0	228	0	0
05:30 PM	3	0	0	6	10	287	0	0	0	0	0	0	0	209	0	0
05:45 PM	3	0	0	7	4	259	0	0	0	0	0	0	0	206	0	0
06:00 PM	1	0	0	4	6	312	0	0	0	0	0	0	0	181	0	0
06:15 PM	2	0	0	4	4	268	0	0	0	0	0	0	0	205	0	0
06:30 PM	1	0	0	3	5	247	0	0	0	0	0	0	0	192	0	0
06:45 PM	0	0	0	1	4	228	0	0	0	0	0	0	0	174	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\20PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000020
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	MOSHER WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0
04:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0
06:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\21AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000021
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CHARLES MARX WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	1	0	0	3	1	114	0	0	0	0	0	0	0	182	0	0
07:15 AM	5	0	0	1	1	111	0	0	0	0	0	0	0	243	0	0
07:30 AM	14	0	0	6	0	149	0	0	0	0	0	0	0	258	0	0
07:45 AM	10	0	0	5	1	138	0	0	0	0	0	0	0	311	0	0
08:00 AM	9	0	0	3	1	169	0	0	0	0	0	0	0	299	0	0
08:15 AM	6	0	0	2	5	170	0	0	0	0	0	0	0	326	0	0
08:30 AM	3	0	0	5	1	149	0	0	0	0	0	0	0	303	0	0
08:45 AM	4	0	0	0	1	159	0	0	0	0	0	0	0	273	0	0
09:00 AM	0	0	0	3	1	149	0	0	0	0	0	0	0	303	0	2
09:15 AM	1	0	0	3	1	147	0	0	0	0	0	0	0	305	0	0
09:30 AM	4	0	0	4	1	177	0	0	0	0	0	0	0	306	0	0
09:45 AM	1	0	0	2	1	167	0	0	0	0	0	0	0	280	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\21AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000021
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CHARLES MARX WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	3	0	0
07:30 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	1	0	0
07:45 AM	1	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0
08:00 AM	1	0	0	0	0	5	0	0	0	0	0	0	0	4	0	0
08:15 AM	1	0	0	0	0	8	0	0	0	0	0	0	0	1	0	0
08:30 AM	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
08:45 AM	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0
09:00 AM	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
09:30 AM	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
09:45 AM	1	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\21PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000021
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CHARLES MARX WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	2	0	0	5	1	262	0	0	0	0	0	0	0	229	0	0
04:15 PM	2	0	0	4	4	272	0	0	0	0	0	0	0	210	0	0
04:30 PM	1	0	0	7	1	277	0	0	0	0	0	0	0	212	0	0
04:45 PM	1	0	0	5	3	248	0	0	0	0	0	0	0	258	0	0
05:00 PM	1	0	0	4	3	275	0	0	0	0	0	0	0	228	0	0
05:15 PM	3	0	0	2	5	232	0	0	0	0	0	0	0	243	0	0
05:30 PM	4	0	0	3	2	309	0	0	0	0	0	0	0	211	0	0
05:45 PM	1	0	0	4	2	272	0	0	0	0	0	0	0	208	0	0
06:00 PM	4	0	0	1	5	318	0	0	0	0	0	0	0	188	0	0
06:15 PM	2	0	0	1	5	283	0	0	0	0	0	0	0	181	0	0
06:30 PM	2	0	0	1	6	247	0	0	0	0	0	0	0	170	0	1
06:45 PM	1	0	0	2	3	215	0	0	0	0	0	0	0	173	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\21PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000021
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CHARLES MARX WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
04:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0
04:45 PM	0	0	0	0	0	8	0	0	0	0	0	0	0	3	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
05:15 PM	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0
05:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	10	0	0
06:15 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\22AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000022
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	DURAND WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	3	0	2	1	0	115	0	0	0	0	0	0	0	192	1	0
07:15 AM	2	0	4	2	2	111	0	1	0	0	0	0	0	252	5	0
07:30 AM	5	0	11	4	1	147	0	0	0	0	0	0	0	247	1	0
07:45 AM	2	0	20	6	2	123	0	0	0	0	0	0	0	298	10	0
08:00 AM	17	0	15	5	4	143	0	0	0	0	0	0	0	277	15	0
08:15 AM	9	0	7	5	3	150	0	0	0	0	0	0	0	310	6	0
08:30 AM	4	0	9	3	4	156	0	0	0	0	0	0	0	288	7	0
08:45 AM	5	0	6	2	1	148	0	0	0	0	0	0	0	259	4	0
09:00 AM	2	0	4	2	3	129	0	1	0	0	0	0	0	291	3	0
09:15 AM	1	0	5	2	0	130	0	0	0	0	0	0	0	293	4	0
09:30 AM	3	0	6	6	2	145	0	0	0	0	0	0	0	302	1	0
09:45 AM	2	0	2	1	1	170	0	0	0	0	0	0	0	273	2	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\22AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000022
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	DURAND WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
07:45 AM	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
08:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
08:30 AM	2	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
09:00 AM	1	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0
09:15 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\22PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000022
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	DURAND WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	3	0	2	4	1	269	0	0	0	0	0	0	0	210	4	0
04:15 PM	5	0	8	3	1	277	0	1	0	0	0	0	0	211	6	0
04:30 PM	2	0	5	6	1	277	0	1	0	0	0	0	0	218	2	3
04:45 PM	1	0	9	4	6	234	0	3	0	0	0	0	0	243	3	0
05:00 PM	4	0	11	4	6	291	0	0	0	0	0	0	0	219	3	0
05:15 PM	1	0	7	2	3	239	0	0	0	0	0	0	0	230	5	0
05:30 PM	5	0	6	1	10	288	0	0	0	0	0	0	0	215	4	0
05:45 PM	2	0	4	6	10	268	0	0	0	0	0	0	0	210	5	0
06:00 PM	6	0	3	2	2	320	1	1	0	0	0	0	0	165	3	0
06:15 PM	2	0	4	2	1	280	0	2	0	0	0	0	0	207	2	0
06:30 PM	0	0	13	2	5	247	0	1	0	0	0	0	0	188	5	0
06:45 PM	2	0	4	2	0	245	0	0	0	0	0	0	0	159	1	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\22PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000022
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	DURAND WAY Southbound				SAND HILL RD Westbound				Northbound				SAND HILL RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0
04:45 PM	1	0	0	0	1	7	0	0	0	0	0	0	0	3	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\23AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000023
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				Westbound				CLARK WAY Northbound				CLARK WAY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	1	0	1	0	0	0	0	0	6	2	0	4	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	13	2	0	7	0	4	2
07:30 AM	0	1	0	0	0	0	0	0	0	18	1	2	2	0	2	6
07:45 AM	1	1	0	0	0	0	0	0	0	24	0	0	15	0	13	3
08:00 AM	20	42	0	0	0	0	0	0	0	34	5	6	8	0	20	0
08:15 AM	12	11	0	0	0	0	0	0	0	9	7	4	9	0	16	3
08:30 AM	2	5	0	0	0	0	0	0	0	9	8	0	6	0	4	1
08:45 AM	3	1	0	0	0	0	0	0	0	1	2	1	13	0	2	2
09:00 AM	1	3	0	4	0	0	0	0	0	4	5	0	5	0	3	1
09:15 AM	0	2	0	0	0	0	0	0	0	0	2	0	8	0	1	1
09:30 AM	0	1	0	4	0	0	0	0	0	2	4	2	3	0	1	0
09:45 AM	1	2	0	2	0	0	0	0	0	3	5	1	8	0	3	6

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\23AM FINAL.ppd
Start Date: 3/8/2016
Start Time: 7:00:00 AM
Site Code: 00000023
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				Westbound				CLARK WAY Northbound				CLARK WAY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
07:15 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	8	0	0	0	0	0	0	0	0	0	0	3	0	0	0
08:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0
08:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	2	0	1	0
08:30 AM	0	8	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:45 AM	0	12	0	0	0	0	0	0	0	1	1	0	2	0	0	0
09:00 AM	0	7	0	0	0	0	0	0	0	3	1	0	1	0	0	0
09:15 AM	0	6	0	0	0	0	0	0	0	1	1	0	2	0	0	0
09:30 AM	0	5	0	0	0	0	0	0	0	1	0	0	1	0	0	0
09:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\23PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000023
Comment 1: **Vehicular Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				Westbound				CLARK WAY Northbound				CLARK WAY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	5	14	0	0	0	0	0	0	0	2	10	1	7	0	3	12
04:15 PM	4	6	0	0	0	0	0	0	0	4	4	5	2	0	1	4
04:30 PM	2	3	0	0	0	0	0	0	0	1	5	0	8	0	0	1
04:45 PM	0	7	0	0	0	0	0	0	0	3	6	0	9	0	0	2
05:00 PM	1	5	0	1	0	0	0	0	0	3	7	5	10	0	1	6
05:15 PM	0	6	0	2	0	0	0	0	0	4	13	2	12	0	2	0
05:30 PM	4	5	0	1	0	0	0	0	0	1	10	3	7	0	1	6
05:45 PM	2	2	0	0	0	0	0	0	0	1	6	2	7	0	1	5
06:00 PM	4	7	0	0	0	0	0	0	0	0	5	0	1	0	0	1
06:15 PM	2	1	0	0	0	0	0	0	0	2	8	4	7	0	0	0
06:30 PM	0	1	0	0	0	0	0	0	0	0	4	2	8	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	0

File Name: I:\DATA 2016\FP Stanford 3-16\TMC\23PM FINAL.ppd
Start Date: 3/8/2016
Start Time: 4:00:00 PM
Site Code: 00000023
Comment 1: **Bicycle Turning Movement Count**
Comment 2: 0
Comment 3: 0
Comment 4: 0

	CLARK WAY Southbound				Westbound				CLARK WAY Northbound				CLARK WAY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
04:15 PM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	0	0	0	6	3	0	1	0	1	0
05:00 PM	0	2	0	0	0	0	0	0	0	8	0	0	1	0	1	0
05:15 PM	0	0	0	0	0	0	0	0	0	4	2	0	1	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	8	3	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	7	4	0	2	0	0	0
06:30 PM	1	0	0	0	0	0	0	0	0	9	3	0	0	0	1	0
06:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0

ATTACHMENT B

TABLE B-1:
SUMMARY OF MAINSTREET INPUT VARIABLES (EXISTING CONDITIONS)

MainStreet Variable	Units	Input Value	Source
Developed area	acres	520	
Proportion of households within ¼ mile of transit	percentage	0	
Transit available	binary (Yes/No)	Yes	
Location in Central Business District or Transit-Oriented Development	binary (Yes/No)	No	
Employment within 1 mile	employment	11,101	Mountain View Model (2015)
Employment within 30 minutes by transit	percentage of regional employment	1%	Mountain View Model (2015)
Household size	people/household	2.31	American Community Survey 2012
Vehicle ownership	vehicles/household	1.62	American Community Survey 2012
Intersection density	intersection/square mile	16.48	Environmental Protection Agency Smart Location Database 2013

Source: Fehr & Peers, December 2016.

TABLE B-2:
SUMMARY OF MAINSTREET INPUT VARIABLES
2030 NORTH BAYSHORE PRECISE PLAN PROJECT WITH SMALLER RESIDENTIAL UNITS

MainStreet Variable	Units	Input Value	Source
Developed area	acres	520	
Proportion of households within ¼ mile of transit	percentage	100	
Transit available	binary (Yes/No)	Yes	
Location in Central Business District or Transit-Oriented Development	binary (Yes/No)	No	
Employment within 1 mile	employment	16,885	Mountain View Model (2030)
Employment within 30 minutes by transit	percentage of regional employment	1%	Mountain View Model (2030)
Household size	people/household	1.75	American Community Survey 2012
Vehicle ownership	vehicles/household	1.25	American Community Survey 2012
Intersection density	intersection/square mile	16.48	Environmental Protection Agency Smart Location Database 2013

Source: Fehr & Peers, December 2016.

TABLE B-3:
SUMMARY OF MAINSTREET INPUT VARIABLES
2030 NORTH BAYSHORE PRECISE PLAN PROJECT WITH STANDARD RESIDENTIAL UNITS

MainStreet Variable	Units	Input Value	Source
Developed area	acres	520	
Proportion of households within ¼ mile of transit	percentage	100	
Transit available	binary (Yes/No)	Yes	
Location in Central Business District or Transit-Oriented Development	binary (Yes/No)	No	
Employment within 1 mile	employment	16,885	Mountain View Model (2030)
Employment within 30 minutes by transit	percentage of regional employment	1%	Mountain View Model (2030)
Household size	people/household	2.31	American Community Survey 2012
Vehicle ownership	vehicles/household	1.62	American Community Survey 2012
Intersection density	intersection/square mile	16.48	Environmental Protection Agency Smart Location Database 2013

Source: Fehr & Peers, December 2016.

ATTACHMENT C

TABLE C-1
SCENARIO LAND USE SUMMARY

Scenario	Households	Residents	Employment	Service Population
Base Scenarios				
2014 North Bayshore Precise Plan	363	762	37,887	38,649
North Bayshore Precise Plan with Standard Residential Units, Standard Parking	10,213	21,447	38,910	60,357
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking	10,213	21,447	38,910	60,357
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking	10,213	18,000	38,910	56,910
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking	10,213	18,000	38,910	56,910
Land Use Sensitivity Tests				
North Bayshore Precise Plan with Standard Residential Units, Standard Parking, within Gateway Capacity	863	1,800	38,910	40,710
North Bayshore Precise Plan with Standard Residential Units, Reduced Parking, within Gateway Capacity	2,363	5,000	38,910	43,910
North Bayshore Precise Plan with Smaller Residential Units, Standard Parking, within Gateway Capacity	1,863	3,400	38,910	42,310
North Bayshore Precise Plan with Smaller Residential Units, Reduced Parking, within Gateway Capacity	3,363	6,000	38,910	44,910
Household Characteristic Sensitivity Tests				
North Bayshore Precise Plan with Studio Residential Units, Reduced Parking	10,213	10,600	38,910	49,510
North Bayshore Precise Plan with Smaller Residential Units, 0.33 Parking Spaces Per Unit	10,213	18,000	38,910	56,910
North Bayshore Precise Plan with Smaller Residential Units, 0.25 Parking Spaces Per Unit	10,213	18,000	38,910	56,910
North Bayshore Precise Plan with Studio Residential Units, 0.33 Parking Spaces Per Unit	10,213	10,600	38,910	49,510
North Bayshore Precise Plan with Studio Residential Units, 0.25 Parking Spaces Per Unit	10,213	10,600	38,910	49,510

Source: MainStreet, Fehr & Peers, December 2016.

ATTACHMENT D

Table D-1: Existing							
Table D-1: Existing							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (0,000 DUs)	0	0	0	0	0	0	0
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (0,000 Employees)	0	0	0	0	0	0	0
Total Person Trips	102,425	11,181	1,539	12,720	1,982	8,815	10,797
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 5.5%, AM: 8.9%, PM: 10.3%)							
Residential (Daily: 21.2%, AM: 49.1%, PM: 33.9%)	-578	-20	-76	-96	-49	-30	-79
Employment (Daily: 5.1%, AM: 8.3%, PM: 9.8%)	-5,055	-921	-115	-1,036	-180	-853	-1,033
External Person Trips							
External Residential Person Trips	2,148	21	78	99	96	57	153
External Employment Person Trips	94,644	10,219	1,270	11,489	1,657	7,875	9,532
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 80.6%, AM: 75.8%, PM: 76.5%)	1,732	17	58	75	72	45	117
HOV (Daily: 15.4%, AM: 18.2%, PM: 18.3%)	330	4	14	18	17	11	28
Transit/Shuttle (Daily: 2.2%, AM: 4.0%, PM: 3.9%)	47	0	4	4	5	1	6
Active (Daily: 1.8%, AM: 2.0%, PM: 1.3%)	39	0	2	2	2	0	2
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**1,732**	**17**	**58**	**75**	**72**	**45**	**117**
HOV Occupancy (Daily: 2.00, AM: 2.00, PM: 2.00)	**165**	**2**	**7**	**9**	**9**	**5**	**14**
External Residential Vehicle Trips [A]	***1,897***	***19***	***65***	***84***	***81***	***50***	***131***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 68.0%, AM: 48.3%, PM: 55.0%)	64,374	4,611	933	5,544	969	4,276	5,245
HOV (Daily: 12.9%, AM: 12.4%, PM: 16.6%)	12,193	1,344	79	1,423	421	1,166	1,587
Transit/Shuttle (Daily: 17.1%, AM: 34.6%, PM: 26.4%)	16,184	3,771	207	3,978	207	2,307	2,514
Active (Daily: 2.0%, AM: 4.7%, PM: 2.0%)	1,893	493	51	544	60	126	186
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**64,374**	**4,611**	**933**	**5,544**	**969**	**4,276**	**5,245**
HOV Occupancy (Daily: 2.00, AM: 2.19, PM: 2.14)	**6,097**	**611**	**40**	**651**	**211**	**530**	**741**
External Employment Vehicle Trips [B]	***70,471***	***5,222***	***973***	***6,195***	***1,180***	***4,806***	***5,986***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 17.8, PM: 13.1)							
External Transit Vehicles [C]	***1,082***	***142***	***82***	***224***	***88***	***104***	***192***
Gateway Total Vehicles [A+B+C]	***73,450***	***5,383***	***1,120***	***6,503***	***1,349***	***4,960***	***6,309***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-1,597**	**0**	**-1,597**	**-431**	**-1,200**	**-1,631**
Percent Over Capacity (%)	N/A	-23%	0%	-20%	-24%	-19%	-21%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
External Employment Vehicle Trips Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
External Transit Vehicle Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
All Vehicle Growth	***0***	***0***	***0***	***0***	***0***	***0***	***0***

Bold values indicate units of **VEHICLE** trips

Table D-2: NBPP (Pipeline) / No Project							
Table D-2: NBPP (Pipeline) / No Project							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (0,000 DUs)	0	0	0	0	0	0	0
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (13,044 Employees)	52,348	5,849	727	6,576	965	4,583	5,548
Total Person Trips	154,773	17,030	2,266	19,296	2,947	13,398	16,345
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 5.4%, AM: 8.7%, PM: 8.9%)							
Residential (Daily: 25.2%, AM: 55.6%, PM: 37.8%)	-687	-23	-85	-108	-55	-33	-88
Employment (Daily: 5.0%, AM: 8.2%, PM: 8.5%)	-7,671	-1,397	-174	-1,571	-238	-1,129	-1,367
External Person Trips							
External Residential Person Trips	2,039	18	69	87	90	54	144
External Employment Person Trips	144,376	15,592	1,938	17,530	2,564	12,182	14,746
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 79.4%, AM: 73.6%, PM: 75.0%)	1,619	14	50	64	65	43	108
HOV (Daily: 15.1%, AM: 18.4%, PM: 18.1%)	308	4	12	16	16	10	26
Transit/Shuttle (Daily: 3.0%, AM: 5.7%, PM: 4.9%)	61	0	5	5	6	1	7
Active (Daily: 2.5%, AM: 2.3%, PM: 2.1%)	51	0	2	2	3	0	3
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**1,619**	**14**	**50**	**64**	**65**	**43**	**108**
HOV Occupancy (Daily: 2.00, AM: 2.00, PM: 2.00)	**154**	**2**	**6**	**8**	**8**	**5**	**13**
External Residential Vehicle Trips [A]	***1,773***	***16***	***56***	***72***	***73***	***48***	***121***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	78,619	5,973	849	6,822	1,313	5,180	6,493
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	24,321	2,304	273	2,577	813	2,251	3,064
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	37,538	6,489	523	7,012	341	4,483	4,824
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,898	826	293	1,119	97	268	365
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**78,619**	**5,973**	**849**	**6,822**	**1,313**	**5,180**	**6,493**
HOV Occupancy (Daily: 2.50, AM: 2.77, PM: 2.71)	**9,728**	**823**	**109**	**932**	**325**	**804**	**1,129**
External Employment Vehicle Trips [B]	***88,347***	***6,796***	***958***	***7,754***	***1,638***	***5,984***	***7,622***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 25.6, PM: 24.5)							
External Transit Vehicles [C]	***2,089***	***168***	***106***	***274***	***69***	***128***	***197***
Gateway Total Vehicles [A+B+C]	***92,209***	***6,980***	***1,120***	***8,100***	***1,780***	***6,160***	***7,940***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**0**	**0**	**0**	**0**	**0**	**0**
Percent Over Capacity (%)	N/A	0%	0%	0%	0%	0%	0%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**-124**	**-3**	**-9**	**-12**	**-8**	**-2**	**-10**
External Employment Vehicle Trips Growth	**17,876**	**1,574**	**-15**	**1,559**	**458**	**1,178**	**1,636**
External Transit Vehicle Growth	**1,007**	**26**	**24**	**50**	**-19**	**24**	**5**
All Vehicle Growth	***18,759***	***1,597***	***0***	***1,597***	***431***	***1,200***	***1,631***

Bold values indicate units of **VEHICLE** trips

Table D-3: NBPP with Res (Standard HH Size, Standard Parking Rates)							
Table D-3: NBPP with Res (Standard HH Size, Standard Parking Rates)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	73,974	1,123	4,186	5,309	3,940	2,364	6,304
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	232,852	18,612	6,509	25,121	6,962	16,121	23,083
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 10.1%, AM: 13.7%, PM: 12.9%)							
Residential (Daily: 12.0%, AM: 19.5%, PM: 14.9%)	-9,204	-227	-846	-1,073	-610	-366	-976
Employment (Daily: 9.2%, AM: 12.1%, PM: 12.1%)	-14,314	-2,107	-262	-2,369	-348	-1,654	-2,002
External Person Trips							
External Residential Person Trips	67,496	937	3,494	4,431	3,475	2,085	5,560
External Employment Person Trips	141,838	15,341	1,907	17,248	2,529	12,016	14,545
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 79.4%, AM: 74.2%, PM: 75.1%)	53,578	745	2,541	3,286	2,519	1,655	4,174
HOV (Daily: 15.1%, AM: 17.4%, PM: 17.6%)	10,206	175	596	771	591	388	979
Transit/Shuttle (Daily: 3.0%, AM: 5.5%, PM: 5.0%)	2,025	11	231	242	250	27	277
Active (Daily: 2.5%, AM: 3.0%, PM: 2.3%)	1,687	6	126	132	115	15	130
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**53,578**	**745**	**2,541**	**3,286**	**2,519**	**1,655**	**4,174**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.07)	**5,103**	**80**	**298**	**378**	**296**	**176**	**472**
External Residential Vehicle Trips [A]	***58,681***	***825***	***2,839***	***3,664***	***2,815***	***1,831***	***4,646***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	77,236	5,877	835	6,712	1,295	5,109	6,404
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	23,894	2,266	269	2,535	802	2,221	3,023
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	36,878	6,385	515	6,900	336	4,422	4,758
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,830	813	288	1,101	96	264	360
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**77,236**	**5,877**	**835**	**6,712**	**1,295**	**5,109**	**6,404**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,558**	**809**	**108**	**917**	**321**	**793**	**1,114**
External Employment Vehicle Trips [B]	***86,794***	***6,686***	***943***	***7,629***	***1,616***	***5,902***	***7,518***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 22.7, PM: 20.6)							
External Transit Vehicles [C]	***2,161***	***166***	***149***	***315***	***117***	***127***	***244***
Gateway Total Vehicles [A+B+C]	***147,636***	***7,677***	***3,931***	***11,608***	***4,548***	***7,860***	***12,408***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**697**	**2,811**	**3,508**	**2,768**	**1,700**	**4,468**
Percent Over Capacity (%)	N/A	10%	251%	43%	156%	28%	56%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**56,784**	**806**	**2,774**	**3,580**	**2,734**	**1,781**	**4,515**
External Employment Vehicle Trips Growth	**16,323**	**1,464**	**-30**	**1,434**	**436**	**1,096**	**1,532**
External Transit Vehicle Growth	**1,079**	**24**	**67**	**91**	**29**	**23**	**52**
All Vehicle Growth	***74,186***	***2,294***	***2,811***	***5,105***	***3,199***	***2,900***	***6,099***

Bold values indicate units of **VEHICLE** trips

Table D-4: NBPP with Res (Standard HH Size, Reduced Parking Rates)

Table D-4: NBPP with Res (Standard HH Size, Reduced Parking Rates)

	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	73,974	1,123	4,186	5,309	3,940	2,364	6,304
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	232,852	18,612	6,509	25,121	6,962	16,121	23,083
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 15.4%, AM: 20.7%, PM: 18.6%)							
Residential (Daily: 20.1%, AM: 35.1%, PM: 25.1%)	-15,417	-409	-1,523	-1,932	-1,025	-616	-1,641
Employment (Daily: 13.1%, AM: 16.7%, PM: 16.0%)	-20,442	-2,907	-361	-3,268	-461	-2,191	-2,652
External Person Trips							
External Residential Person Trips	61,283	755	2,817	3,572	3,060	1,835	4,895
External Employment Person Trips	135,710	14,541	1,808	16,349	2,416	11,479	13,895
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 71.3%, AM: 62.3%, PM: 65.8%)	43,705	582	1,643	2,225	1,812	1,411	3,223
HOV (Daily: 13.6%, AM: 14.6%, PM: 15.4%)	8,324	136	385	521	425	330	755
Transit/Shuttle (Daily: 6.3%, AM: 11.3%, PM: 10.2%)	3,861	19	383	402	450	48	498
Active (Daily: 8.8%, AM: 11.9%, PM: 8.6%)	5,393	18	406	424	373	46	419
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**43,705**	**582**	**1,643**	**2,225**	**1,812**	**1,411**	**3,223**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.08)	**4,162**	**62**	**193**	**255**	**213**	**150**	**363**
External Residential Vehicle Trips [A]	***47,867***	***644***	***1,836***	***2,480***	***2,025***	***1,561***	***3,586***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	73,900	5,571	792	6,363	1,237	4,881	6,118
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	22,861	2,147	255	2,402	766	2,121	2,887
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	35,285	6,052	488	6,540	321	4,224	4,545
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,664	771	273	1,044	92	253	345
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**73,900**	**5,571**	**792**	**6,363**	**1,237**	**4,881**	**6,118**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,144**	**767**	**102**	**869**	**306**	**758**	**1,064**
External Employment Vehicle Trips [B]	***83,044***	***6,338***	***894***	***7,232***	***1,543***	***5,639***	***7,182***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 21.0, PM: 18.3)							
External Transit Vehicles [C]	***2,175***	***157***	***174***	***331***	***154***	***122***	***276***
Gateway Total Vehicles [A+B+C]	***133,086***	***7,139***	***2,904***	***10,043***	***3,722***	***7,322***	***11,044***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**159**	**1,784**	**1,943**	**1,942**	**1,162**	**3,104**
Percent Over Capacity (%)	N/A	2%	159%	24%	109%	19%	39%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**45,970**	**625**	**1,771**	**2,396**	**1,944**	**1,511**	**3,455**
External Employment Vehicle Trips Growth	**12,573**	**1,116**	**-79**	**1,037**	**363**	**833**	**1,196**
External Transit Vehicle Growth	**1,093**	**15**	**92**	**107**	**66**	**18**	**84**
All Vehicle Growth	***59,636***	***1,756***	***1,784***	***3,540***	***2,373***	***2,362***	***4,735***

Bold values indicate units of **VEHICLE** trips

Table D-5: NBPP with Res (Smaller HH Size, Standard Parking Rates)							
Table D-5: NBPP with Res (Smaller HH Size, Standard Parking Rates)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,843	985	3,842	4,827	3,743	2,069	5,812
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	221,721	18,474	6,165	24,639	6,765	15,826	22,591
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 13.3%, AM: 18.0%, PM: 16.5%)							
Residential (Daily: 16.4%, AM: 27.0%, PM: 23.0%)	-10,751	-277	-1,079	-1,356	-894	-496	-1,390
Employment (Daily: 12.0%, AM: 15.7%, PM: 14.1%)	-18,738	-2,738	-341	-3,079	-407	-1,931	-2,338
External Person Trips							
External Residential Person Trips	54,818	749	2,917	3,666	2,994	1,660	4,654
External Employment Person Trips	137,414	14,710	1,828	16,538	2,470	11,739	14,209
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 77.7%, AM: 71.4%, PM: 73.3%)	42,594	592	2,027	2,619	2,100	1,311	3,411
HOV (Daily: 14.8%, AM: 16.7%, PM: 17.2%)	8,113	138	476	614	492	307	799
Transit/Shuttle (Daily: 3.3%, AM: 5.8%, PM: 5.3%)	1,809	10	204	214	225	22	247
Active (Daily: 4.2%, AM: 6.0%, PM: 4.2%)	2,302	9	210	219	177	20	197
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**42,594**	**592**	**2,027**	**2,619**	**2,100**	**1,311**	**3,411**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.07)	**4,057**	**63**	**238**	**301**	**246**	**140**	**386**
External Residential Vehicle Trips [A]	***46,651***	***655***	***2,265***	***2,920***	***2,346***	***1,451***	***3,797***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	74,827	5,635	801	6,436	1,265	4,991	6,256
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	23,149	2,173	257	2,430	782	2,170	2,952
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	35,728	6,122	494	6,616	329	4,320	4,649
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,710	780	276	1,056	94	258	352
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**74,827**	**5,635**	**801**	**6,436**	**1,265**	**4,991**	**6,256**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,260**	**776**	**103**	**879**	**313**	**775**	**1,088**
External Employment Vehicle Trips [B]	***84,087***	***6,411***	***904***	***7,315***	***1,578***	***5,766***	***7,344***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 22.8, PM: 20.8)							
External Transit Vehicles [C]	***2,085***	***159***	***140***	***299***	***111***	***124***	***235***
Gateway Total Vehicles [A+B+C]	***132,823***	***7,225***	***3,309***	***10,534***	***4,035***	***7,341***	***11,376***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**245**	**2,189**	**2,434**	**2,255**	**1,181**	**3,436**
Percent Over Capacity (%)	N/A	4%	195%	30%	127%	19%	43%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**44,754**	**636**	**2,200**	**2,836**	**2,265**	**1,401**	**3,666**
External Employment Vehicle Trips Growth	**13,616**	**1,189**	**-69**	**1,120**	**398**	**960**	**1,358**
External Transit Vehicle Growth	**1,003**	**17**	**58**	**75**	**23**	**20**	**43**
All Vehicle Growth	***59,373***	***1,842***	***2,189***	***4,031***	***2,686***	***2,381***	***5,067***

Bold values indicate units of **VEHICLE** trips

Table D-6: NBPP with Res (Smaller HH Size, Reduced Parking Rates)							
Table D-6: NBPP with Res (Smaller HH Size, Reduced Parking Rates)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,843	985	3,842	4,827	3,743	2,069	5,812
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	221,721	18,474	6,165	24,639	6,765	15,826	22,591
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 18.6%, AM: 25.0%, PM: 22.2%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	-16,327	-417	-1,623	-2,040	-1,310	-727	-2,037
Employment (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	-24,913	-3,664	-456	-4,120	-518	-2,460	-2,978
External Person Trips							
External Residential Person Trips	49,242	609	2,373	2,982	2,578	1,429	4,007
External Employment Person Trips	131,239	13,784	1,713	15,497	2,359	11,210	13,569
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 69.6%, AM: 59.5%, PM: 63.9%)	34,290	466	1,307	1,773	1,466	1,093	2,559
HOV (Daily: 13.3%, AM: 14.0%, PM: 14.9%)	6,532	109	307	416	343	256	599
Transit/Shuttle (Daily: 6.6%, AM: 11.7%, PM: 10.6%)	3,250	16	332	348	387	37	424
Active (Daily: 10.5%, AM: 14.9%, PM: 10.6%)	5,170	18	427	445	382	43	425
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**34,290**	**466**	**1,307**	**1,773**	**1,466**	**1,093**	**2,559**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.08)	**3,266**	**50**	**154**	**204**	**172**	**116**	**288**
External Residential Vehicle Trips [A]	***37,556***	***516***	***1,461***	***1,977***	***1,638***	***1,209***	***2,847***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	71,465	5,281	750	6,031	1,208	4,766	5,974
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	22,109	2,035	241	2,276	747	2,072	2,819
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	34,122	5,737	463	6,200	314	4,125	4,439
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,543	731	259	990	90	247	337
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**71,465**	**5,281**	**750**	**6,031**	**1,208**	**4,766**	**5,974**
HOV Occupancy (Daily: 2.50, AM: 2.77, PM: 2.71)	**8,844**	**727**	**96**	**823**	**299**	**740**	**1,039**
External Employment Vehicle Trips [B]	***80,309***	***6,008***	***846***	***6,854***	***1,507***	***5,506***	***7,013***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 21.3, PM: 18.8)							
External Transit Vehicles [C]	***2,076***	***149***	***159***	***308***	***140***	***119***	***259***
Gateway Total Vehicles [A+B+C]	***119,941***	***6,673***	***2,466***	***9,139***	***3,285***	***6,834***	***10,119***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-307**	**1,346**	**1,039**	**1,505**	**674**	**2,179**
Percent Over Capacity (%)	N/A	-4%	120%	13%	85%	11%	27%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**35,659**	**497**	**1,396**	**1,893**	**1,557**	**1,159**	**2,716**
External Employment Vehicle Trips Growth	**9,838**	**786**	**-127**	**659**	**327**	**700**	**1,027**
External Transit Vehicle Growth	**994**	**7**	**77**	**84**	**52**	**15**	**67**
All Vehicle Growth	***46,491***	***1,290***	***1,346***	***2,636***	***1,936***	***1,874***	***3,810***

Bold values indicate units of **VEHICLE** trips

Table D-7: NBPP with Res (Standard HH Size, Standard Parking Rates) - Gateway Capacity							
Table D-7: NBPP with Res (Standard HH Size, Standard Parking Rates) - Gateway Capacity							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (0,500 DUs)	3,755	57	213	270	200	120	320
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	162,633	17,546	2,536	20,082	3,222	13,877	17,099
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 7.8%, AM: 11.3%, PM: 11.6%)							
Residential (Daily: 22.0%, AM: 47.0%, PM: 33.0%)	-1,426	-46	-173	-219	-114	-68	-182
Employment (Daily: 7.2%, AM: 10.5%, PM: 10.9%)	-11,259	-1,823	-227	-2,050	-313	-1,488	-1,801
External Person Trips							
External Residential Person Trips	5,055	52	194	246	231	139	370
External Employment Person Trips	144,893	15,625	1,942	17,567	2,564	12,182	14,746
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 79.4%, AM: 74.0%, PM: 74.9%)	4,013	41	141	182	167	110	277
HOV (Daily: 15.1%, AM: 17.5%, PM: 17.6%)	764	10	33	43	39	26	65
Transit/Shuttle (Daily: 3.0%, AM: 5.7%, PM: 5.1%)	152	1	13	14	17	2	19
Active (Daily: 2.5%, AM: 2.8%, PM: 2.4%)	126	0	7	7	8	1	9
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**4,013**	**41**	**141**	**182**	**167**	**110**	**277**
HOV Occupancy (Daily: 2.00, AM: 1.95, PM: 2.03)	**382**	**5**	**17**	**22**	**20**	**12**	**32**
External Residential Vehicle Trips [A]	***4,395***	***46***	***158***	***204***	***187***	***122***	***309***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	78,900	5,986	851	6,837	1,313	5,180	6,493
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	24,409	2,308	274	2,582	813	2,251	3,064
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	37,672	6,503	524	7,027	341	4,483	4,824
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,912	828	293	1,121	97	268	365
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**78,900**	**5,986**	**851**	**6,837**	**1,313**	**5,180**	**6,493**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,764**	**824**	**110**	**934**	**325**	**804**	**1,129**
External Employment Vehicle Trips [B]	***88,664***	***6,810***	***961***	***7,771***	***1,638***	***5,984***	***7,622***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 25.6, PM: 24.2)							
External Transit Vehicles [C]	***2,101***	***168***	***107***	***275***	***72***	***128***	***200***
Gateway Total Vehicles [A+B+C]	***95,160***	***7,024***	***1,226***	***8,250***	***1,897***	***6,234***	***8,131***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**44**	**106**	**150**	**117**	**74**	**191**
Percent Over Capacity (%)	N/A	1%	9%	2%	7%	1%	2%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**2,498**	**27**	**93**	**120**	**106**	**72**	**178**
External Employment Vehicle Trips Growth	**18,193**	**1,588**	**-12**	**1,576**	**458**	**1,178**	**1,636**
External Transit Vehicle Growth	**1,019**	**26**	**25**	**51**	**-16**	**24**	**8**
All Vehicle Growth	***21,710***	***1,641***	***106***	***1,747***	***548***	***1,274***	***1,822***

Bold values indicate units of **VEHICLE** trips

Table D-8: NBPP with Res (Standard HH Size, Reduced Parking Rates) - Gateway Capacity

Table D-8: NBPP with Res (Standard HH Size, Reduced Parking Rates) - Gateway Capacity

	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (2,000 DUs)	15,020	228	850	1,078	800	480	1,280
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	173,898	17,717	3,173	20,890	3,822	14,237	18,059
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 13.1%, AM: 18.3%, PM: 17.3%)							
Residential (Daily: 27.0%, AM: 57.0%, PM: 38.0%)	-4,791	-153	-573	-726	-359	-216	-575
Employment (Daily: 11.5%, AM: 15.8%, PM: 15.4%)	-17,990	-2,754	-343	-3,097	-443	-2,106	-2,549
External Person Trips							
External Residential Person Trips	12,955	116	431	547	586	351	937
External Employment Person Trips	138,162	14,694	1,826	16,520	2,434	11,564	13,998
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 71.3%, AM: 62.2%, PM: 65.8%)	9,239	89	251	340	347	270	617
HOV (Daily: 13.6%, AM: 14.6%, PM: 15.5%)	1,760	21	59	80	82	63	145
Transit/Shuttle (Daily: 6.3%, AM: 11.3%, PM: 10.1%)	816	3	59	62	86	9	95
Active (Daily: 8.8%, AM: 11.9%, PM: 8.5%)	1,140	3	62	65	71	9	80
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**9,239**	**89**	**251**	**340**	**347**	**270**	**617**
HOV Occupancy (Daily: 2.00, AM: 2.00, PM: 2.07)	**880**	**10**	**30**	**40**	**41**	**29**	**70**
External Residential Vehicle Trips [A]	***10,119***	***99***	***281***	***380***	***388***	***299***	***687***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	75,235	5,629	800	6,429	1,246	4,917	6,163
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	23,275	2,170	257	2,427	772	2,137	2,909
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	35,922	6,116	493	6,609	324	4,256	4,580
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,730	779	276	1,055	92	254	346
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**75,235**	**5,629**	**800**	**6,429**	**1,246**	**4,917**	**6,163**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,310**	**775**	**103**	**878**	**309**	**763**	**1,072**
External Employment Vehicle Trips [B]	***84,545***	***6,404***	***903***	***7,307***	***1,555***	***5,680***	***7,235***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 24.8, PM: 22.9)							
External Transit Vehicles [C]	***2,041***	***159***	***110***	***269***	***82***	***122***	***204***
Gateway Total Vehicles [A+B+C]	***96,705***	***6,662***	***1,294***	***7,956***	***2,025***	***6,101***	***8,126***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-318**	**174**	**-144**	**245**	**-59**	**186**
Percent Over Capacity (%)	N/A	-5%	16%	-2%	14%	-1%	2%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**8,222**	**80**	**216**	**296**	**307**	**249**	**556**
External Employment Vehicle Trips Growth	**14,074**	**1,182**	**-70**	**1,112**	**375**	**874**	**1,249**
External Transit Vehicle Growth	**959**	**17**	**28**	**45**	**-6**	**18**	**12**
All Vehicle Growth	***23,255***	***1,279***	***174***	***1,453***	***676***	***1,141***	***1,817***

Bold values indicate units of **VEHICLE** trips

Table D-9: NBPP with Res (Smaller HH Size, Standard Parking Rates) - Gateway Capacity							
Table D-9: NBPP with Res (Smaller HH Size, Standard Parking Rates) - Gateway Capacity							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (1,500 DUs)	9,570	150	585	735	570	315	885
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	168,448	17,639	2,908	20,547	3,592	14,072	17,664
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 10.8%, AM: 15.8%, PM: 14.5%)							
Residential (Daily: 24.0%, AM: 46.0%, PM: 39.0%)	-2,951	-88	-340	-428	-279	-157	-436
Employment (Daily: 9.8%, AM: 14.4%, PM: 12.8%)	-15,241	-2,506	-312	-2,818	-369	-1,756	-2,125
External Person Trips							
External Residential Person Trips	9,345	103	399	502	436	245	681
External Employment Person Trips	140,911	14,942	1,857	16,799	2,508	11,914	14,422
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 77.7%, AM: 71.3%, PM: 73.3%)	7,261	81	277	358	306	193	499
HOV (Daily: 14.8%, AM: 16.9%, PM: 17.2%)	1,384	20	65	85	71	46	117
Transit/Shuttle (Daily: 3.3%, AM: 5.8%, PM: 5.3%)	308	1	28	29	33	3	36
Active (Daily: 4.2%, AM: 6.0%, PM: 4.3%)	392	1	29	30	26	3	29
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**7,261**	**81**	**277**	**358**	**306**	**193**	**499**
HOV Occupancy (Daily: 2.00, AM: 2.02, PM: 2.05)	**692**	**9**	**33**	**42**	**36**	**21**	**57**
External Residential Vehicle Trips [A]	***7,953***	***90***	***310***	***400***	***342***	***214***	***556***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	76,732	5,724	813	6,537	1,284	5,066	6,350
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	23,737	2,207	263	2,470	795	2,202	2,997
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	36,637	6,219	501	6,720	334	4,384	4,718
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,805	792	280	1,072	95	262	357
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**76,732**	**5,724**	**813**	**6,537**	**1,284**	**5,066**	**6,350**
HOV Occupancy (Daily: 2.50, AM: 2.77, PM: 2.71)	**9,495**	**788**	**105**	**893**	**318**	**786**	**1,104**
External Employment Vehicle Trips [B]	***86,227***	***6,512***	***918***	***7,430***	***1,602***	***5,852***	***7,454***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 25.3, PM: 24.0)							
External Transit Vehicles [C]	***2,053***	***161***	***106***	***267***	***73***	***125***	***198***
Gateway Total Vehicles [A+B+C]	***96,233***	***6,763***	***1,334***	***8,097***	***2,017***	***6,191***	***8,208***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-217**	**214**	**-3**	**237**	**31**	**268**
Percent Over Capacity (%)	N/A	-3%	19%	0%	13%	1%	3%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**6,056**	**71**	**245**	**316**	**261**	**164**	**425**
External Employment Vehicle Trips Growth	**15,756**	**1,290**	**-55**	**1,235**	**422**	**1,046**	**1,468**
External Transit Vehicle Growth	**971**	**19**	**24**	**43**	**-15**	**21**	**6**
All Vehicle Growth	***22,783***	***1,380***	***214***	***1,594***	***668***	***1,231***	***1,899***

Bold values indicate units of **VEHICLE** trips

Table D-10: NBPP with Res (Smaller HH Size, Reduced Parking Rates) - Gateway Capacity

Table D-10: NBPP with Res (Smaller HH Size, Reduced Parking Rates) - Gateway Capacity

	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (3,000 DUs)	19,140	300	1,170	1,470	1,140	630	1,770
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	178,018	17,789	3,493	21,282	4,162	14,387	18,549
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 15.8%, AM: 22.8%, PM: 20.9%)							
Residential (Daily: 32.0%, AM: 63.0%, PM: 55.0%)	-6,997	-215	-834	-1,049	-707	-394	-1,101
Employment (Daily: 13.5%, AM: 19.4%, PM: 16.8%)	-21,130	-3,382	-421	-3,803	-483	-2,293	-2,776
External Person Trips							
External Residential Person Trips	14,869	126	490	616	578	323	901
External Employment Person Trips	135,022	14,066	1,748	15,814	2,394	11,377	13,771
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 69.6%, AM: 59.4%, PM: 63.9%)	10,354	96	270	366	329	247	576
HOV (Daily: 13.3%, AM: 14.0%, PM: 14.9%)	1,973	23	63	86	76	58	134
Transit/Shuttle (Daily: 6.6%, AM: 11.7%, PM: 10.5%)	981	3	69	72	87	8	95
Active (Daily: 10.5%, AM: 14.9%, PM: 10.7%)	1,561	4	88	92	86	10	96
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**10,354**	**96**	**270**	**366**	**329**	**247**	**576**
HOV Occupancy (Daily: 2.00, AM: 2.05, PM: 2.09)	**987**	**10**	**32**	**42**	**38**	**26**	**64**
External Residential Vehicle Trips [A]	***11,341***	***106***	***302***	***408***	***367***	***273***	***640***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	73,525	5,389	766	6,155	1,226	4,838	6,064
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	22,745	2,078	246	2,324	759	2,102	2,861
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	35,106	5,854	472	6,326	318	4,187	4,505
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,646	745	264	1,009	91	250	341
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**73,525**	**5,389**	**766**	**6,155**	**1,226**	**4,838**	**6,064**
HOV Occupancy (Daily: 2.50, AM: 2.77, PM: 2.71)	**9,098**	**742**	**98**	**840**	**304**	**751**	**1,055**
External Employment Vehicle Trips [B]	***82,623***	***6,131***	***864***	***6,995***	***1,530***	***5,589***	***7,119***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 24.6, PM: 22.9)							
External Transit Vehicles [C]	***2,005***	***152***	***108***	***260***	***81***	***120***	***201***
Gateway Total Vehicles [A+B+C]	***95,969***	***6,389***	***1,274***	***7,663***	***1,978***	***5,982***	***7,960***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-591**	**154**	**-437**	**198**	**-178**	**20**
Percent Over Capacity (%)	N/A	-8%	14%	-5%	11%	-3%	0%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**9,444**	**87**	**237**	**324**	**286**	**223**	**509**
External Employment Vehicle Trips Growth	**12,152**	**909**	**-109**	**800**	**350**	**783**	**1,133**
External Transit Vehicle Growth	**923**	**10**	**26**	**36**	**-7**	**16**	**9**
All Vehicle Growth	***22,519***	***1,006***	***154***	***1,160***	***629***	***1,022***	***1,651***

Bold values indicate units of **VEHICLE** trips

Table D-11: NBPP with Res (1 Person Households, Reduced Parking Rates)							
Table D-11: NBPP with Res (1 Person Households, Reduced Parking Rates)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	35,910	563	2,195	2,758	2,139	1,182	3,321
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	194,788	18,052	4,518	22,570	5,161	14,939	20,100
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 19.1%, AM: 26.8%, PM: 21.9%)							
Residential (Daily: 28.0%, AM: 52.0%, PM: 38.0%)	-10,818	-314	-1,222	-1,536	-868	-482	-1,350
Employment (Daily: 17.0%, AM: 23.0%, PM: 18.5%)	-26,468	-4,013	-499	-4,512	-532	-2,529	-3,061
External Person Trips							
External Residential Person Trips	27,818	290	1,127	1,417	1,416	787	2,203
External Employment Person Trips	129,684	13,435	1,670	15,105	2,345	11,141	13,486
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 66.5%, AM: 54.7%, PM: 60.0%)	18,495	219	556	775	728	594	1,322
HOV (Daily: 12.7%, AM: 12.9%, PM: 14.1%)	3,523	52	131	183	171	139	310
Transit/Shuttle (Daily: 8.3%, AM: 14.5%, PM: 13.3%)	2,295	9	197	206	266	26	292
Active (Daily: 12.6%, AM: 17.9%, PM: 12.7%)	3,505	10	243	253	251	28	279
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**18,495**	**219**	**556**	**775**	**728**	**594**	**1,322**
HOV Occupancy (Daily: 2.00, AM: 2.03, PM: 2.08)	**1,762**	**24**	**66**	**90**	**86**	**63**	**149**
External Residential Vehicle Trips [A]	***20,257***	***243***	***622***	***865***	***814***	***657***	***1,471***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	70,618	5,147	731	5,878	1,201	4,737	5,938
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	21,847	1,984	236	2,220	743	2,059	2,802
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	33,718	5,592	451	6,043	312	4,100	4,412
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,501	712	252	964	89	245	334
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**70,618**	**5,147**	**731**	**5,878**	**1,201**	**4,737**	**5,938**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.72)	**8,739**	**709**	**94**	**803**	**297**	**735**	**1,032**
External Employment Vehicle Trips [B]	***79,357***	***5,856***	***825***	***6,681***	***1,498***	***5,472***	***6,970***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 22.7, PM: 20.1)							
External Transit Vehicles [C]	***2,001***	***145***	***130***	***275***	***116***	***118***	***234***
Gateway Total Vehicles [A+B+C]	***101,615***	***6,244***	***1,577***	***7,821***	***2,428***	***6,247***	***8,675***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-736**	**457**	**-279**	**648**	**87**	**735**
Percent Over Capacity (%)	N/A	-11%	41%	-3%	36%	1%	9%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**18,360**	**224**	**557**	**781**	**733**	**607**	**1,340**
External Employment Vehicle Trips Growth	**8,886**	**634**	**-148**	**486**	**318**	**666**	**984**
External Transit Vehicle Growth	**919**	**3**	**48**	**51**	**28**	**14**	**42**
All Vehicle Growth	***28,165***	***861***	***457***	***1,318***	***1,079***	***1,287***	***2,366***

Bold values indicate units of **VEHICLE** trips

Table D-12: NBPP with Res (Smaller HH Size, 0.33 Parking Spaces Per Unit)							
Table D-12: NBPP with Res (Smaller HH Size, 0.33 Parking Spaces Per Unit)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,843	985	3,842	4,827	3,743	2,069	5,812
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	221,721	18,474	6,165	24,639	6,765	15,826	22,591
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 23.1%, AM: 31.3%, PM: 25.8%)							
Residential (Daily: 33.0%, AM: 61.0%, PM: 44.0%)	-21,638	-626	-2,437	-3,063	-1,711	-948	-2,659
Employment (Daily: 19.0%, AM: 23.7%, PM: 19.1%)	-29,669	-4,135	-514	-4,649	-550	-2,610	-3,160
External Person Trips							
External Residential Person Trips	43,931	400	1,559	1,959	2,177	1,208	3,385
External Employment Person Trips	126,483	13,313	1,655	14,968	2,327	11,060	13,387
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 68.3%, AM: 57.1%, PM: 61.7%)	29,983	304	814	1,118	1,173	917	2,090
HOV (Daily: 13.0%, AM: 13.4%, PM: 14.5%)	5,711	71	191	262	275	216	491
Transit/Shuttle (Daily: 8.2%, AM: 14.6%, PM: 13.2%)	3,624	13	273	286	408	39	447
Active (Daily: 10.5%, AM: 15.0%, PM: 10.5%)	4,613	12	281	293	321	36	357
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**29,983**	**304**	**814**	**1,118**	**1,173**	**917**	**2,090**
HOV Occupancy (Daily: 2.00, AM: 2.05, PM: 2.08)	**2,856**	**32**	**96**	**128**	**138**	**98**	**236**
External Residential Vehicle Trips [A]	***32,839***	***336***	***910***	***1,246***	***1,311***	***1,015***	***2,326***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	68,875	5,100	725	5,825	1,191	4,703	5,894
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	21,307	1,966	233	2,199	739	2,044	2,783
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	32,886	5,541	447	5,988	309	4,070	4,379
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,415	706	250	956	88	243	331
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**68,875**	**5,100**	**725**	**5,825**	**1,191**	**4,703**	**5,894**
HOV Occupancy (Daily: 2.50, AM: 2.77, PM: 2.71)	**8,523**	**702**	**93**	**795**	**296**	**730**	**1,026**
External Employment Vehicle Trips [B]	***77,398***	***5,802***	***818***	***6,620***	***1,487***	***5,433***	***6,920***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 21.8, PM: 18.6)							
External Transit Vehicles [C]	***2,028***	***144***	***144***	***288***	***143***	***117***	***260***
Gateway Total Vehicles [A+B+C]	***112,265***	***6,282***	***1,872***	***8,154***	***2,941***	***6,565***	***9,506***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-698**	**752**	**54**	**1,161**	**405**	**1,566**
Percent Over Capacity (%)	N/A	-10%	67%	1%	65%	7%	20%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**30,942**	**317**	**845**	**1,162**	**1,230**	**965**	**2,195**
External Employment Vehicle Trips Growth	**6,927**	**580**	**-155**	**425**	**307**	**627**	**934**
External Transit Vehicle Growth	**946**	**2**	**62**	**64**	**55**	**13**	**68**
All Vehicle Growth	***38,815***	***899***	***752***	***1,651***	***1,592***	***1,605***	***3,197***

Bold values indicate units of **VEHICLE** trips

Table D-13: NBPP with Res (Smaller HH Size, 0.25 Parking Spaces Per Unit)							
Table D-13: NBPP with Res (Smaller HH Size, 0.25 Parking Spaces Per Unit)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,843	985	3,842	4,827	3,743	2,069	5,812
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	221,721	18,474	6,165	24,639	6,765	15,826	22,591
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 26.0%, AM: 35.1%, PM: 29.4%)							
Residential (Daily: 38.0%, AM: 72.0%, PM: 52.0%)	-24,916	-739	-2,877	-3,616	-2,022	-1,121	-3,143
Employment (Daily: 21.0%, AM: 25.7%, PM: 21.1%)	-32,792	-4,484	-558	-5,042	-607	-2,884	-3,491
External Person Trips							
External Residential Person Trips	40,653	287	1,119	1,406	1,866	1,035	2,901
External Employment Person Trips	123,360	12,964	1,611	14,575	2,270	10,786	13,056
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 65.1%, AM: 52.3%, PM: 57.8%)	26,465	215	521	736	902	775	1,677
HOV (Daily: 12.4%, AM: 12.3%, PM: 13.6%)	5,041	51	122	173	212	182	394
Transit/Shuttle (Daily: 10.0%, AM: 17.5%, PM: 15.9%)	4,065	11	235	246	420	41	461
Active (Daily: 12.5%, AM: 17.9%, PM: 12.7%)	5,082	10	241	251	332	37	369
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**26,465**	**215**	**521**	**736**	**902**	**775**	**1,677**
HOV Occupancy (Daily: 2.00, AM: 2.06, PM: 2.08)	**2,521**	**23**	**61**	**84**	**106**	**83**	**189**
External Residential Vehicle Trips [A]	***28,986***	***238***	***582***	***820***	***1,008***	***858***	***1,866***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	67,174	4,967	706	5,673	1,162	4,586	5,748
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	20,781	1,914	227	2,141	720	1,994	2,714
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	32,074	5,396	435	5,831	302	3,969	4,271
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,331	687	243	930	86	237	323
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**67,174**	**4,967**	**706**	**5,673**	**1,162**	**4,586**	**5,748**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**8,312**	**684**	**91**	**775**	**288**	**712**	**1,000**
External Employment Vehicle Trips [B]	***75,486***	***5,651***	***797***	***6,448***	***1,450***	***5,298***	***6,748***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 22.2, PM: 18.3)							
External Transit Vehicles [C]	***2,008***	***140***	***134***	***274***	***144***	***115***	***259***
Gateway Total Vehicles [A+B+C]	***106,480***	***6,029***	***1,513***	***7,542***	***2,602***	***6,271***	***8,873***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-951**	**393**	**-558**	**822**	**111**	**933**
Percent Over Capacity (%)	N/A	-14%	35%	-7%	46%	2%	12%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**27,089**	**219**	**517**	**736**	**927**	**808**	**1,735**
External Employment Vehicle Trips Growth	**5,015**	**429**	**-176**	**253**	**270**	**492**	**762**
External Transit Vehicle Growth	**926**	**-2**	**52**	**50**	**56**	**11**	**67**
All Vehicle Growth	***33,030***	***646***	***393***	***1,039***	***1,253***	***1,311***	***2,564***

Bold values indicate units of **VEHICLE** trips

Table D-14: NBPP with Res (1 Person Households, 0.33 Parking Spaces Per Unit)							
Table D-14: NBPP with Res (1 Person Households, 0.33 Parking Spaces Per Unit)							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	35,910	563	2,195	2,758	2,139	1,182	3,321
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	194,788	18,052	4,518	22,570	5,161	14,939	20,100
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 24.2%, AM: 31.5%, PM: 27.9%)							
Residential (Daily: 37.0%, AM: 70.0%, PM: 50.0%)	-14,295	-423	-1,644	-2,067	-1,142	-635	-1,777
Employment (Daily: 21.0%, AM: 25.7%, PM: 23.1%)	-32,792	-4,484	-558	-5,042	-665	-3,162	-3,827
External Person Trips							
External Residential Person Trips	24,341	181	705	886	1,142	634	1,776
External Employment Person Trips	123,360	12,964	1,611	14,575	2,212	10,508	12,720
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 68.3%, AM: 57.0%, PM: 61.7%)	16,613	137	368	505	615	481	1,096
HOV (Daily: 13.0%, AM: 13.5%, PM: 14.5%)	3,164	33	87	120	145	113	258
Transit/Shuttle (Daily: 8.2%, AM: 14.6%, PM: 13.2%)	2,008	6	123	129	214	21	235
Active (Daily: 10.5%, AM: 14.9%, PM: 10.5%)	2,556	5	127	132	168	19	187
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**16,613**	**137**	**368**	**505**	**615**	**481**	**1,096**
HOV Occupancy (Daily: 2.00, AM: 2.03, PM: 2.08)	**1,582**	**15**	**44**	**59**	**73**	**51**	**124**
External Residential Vehicle Trips [A]	***18,195***	***152***	***412***	***564***	***688***	***532***	***1,220***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	67,174	4,967	706	5,673	1,133	4,468	5,601
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	20,781	1,914	227	2,141	701	1,942	2,643
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	32,074	5,396	435	5,831	294	3,867	4,161
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,331	687	243	930	84	231	315
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**67,174**	**4,967**	**706**	**5,673**	**1,133**	**4,468**	**5,601**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**8,312**	**684**	**91**	**775**	**280**	**694**	**974**
External Employment Vehicle Trips [B]	***75,486***	***5,651***	***797***	***6,448***	***1,413***	***5,162***	***6,575***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 23.7, PM: 20.6)							
External Transit Vehicles [C]	***1,893***	***140***	***112***	***252***	***102***	***111***	***213***
Gateway Total Vehicles [A+B+C]	***95,574***	***5,943***	***1,321***	***7,264***	***2,203***	***5,805***	***8,008***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-1,037**	**201**	**-836**	**423**	**-355**	**68**
Percent Over Capacity (%)	N/A	-15%	18%	-10%	24%	-6%	1%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**16,298**	**133**	**347**	**480**	**607**	**482**	**1,089**
External Employment Vehicle Trips Growth	**5,015**	**429**	**-176**	**253**	**233**	**356**	**589**
External Transit Vehicle Growth	**811**	**-2**	**30**	**28**	**14**	**7**	**21**
All Vehicle Growth	***22,124***	***560***	***201***	***761***	***854***	***845***	***1,699***

Bold values indicate units of **VEHICLE** trips

Table D-15: NBPP with Res (1 Person Households, 0.25 Parking Spaces Per Unit)							
Table D-15: NBPP with Res (1 Person Households, 0.25 Parking Spaces Per Unit)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	35,910	563	2,195	2,758	2,139	1,182	3,321
Existing Employment Trips (24,843 Employees)	99,699	11,140	1,385	12,525	1,837	8,728	10,565
Additional Employment Trips (14,067 Employees)	56,453	6,308	784	7,092	1,040	4,942	5,982
Total Person Trips	194,788	18,052	4,518	22,570	5,161	14,939	20,100
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 27.0%, AM: 36.2%, PM: 30.4%)							
Residential (Daily: 43.0%, AM: 81.0%, PM: 58.0%)	-16,613	-489	-1,903	-2,392	-1,325	-736	-2,061
Employment (Daily: 23.0%, AM: 29.5%, PM: 24.5%)	-35,915	-5,147	-640	-5,787	-705	-3,349	-4,054
External Person Trips							
External Residential Person Trips	22,023	115	446	561	959	533	1,492
External Employment Person Trips	120,237	12,301	1,529	13,830	2,172	10,321	12,493
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 65.1%, AM: 52.4%, PM: 57.8%)	14,337	86	208	294	464	399	863
HOV (Daily: 12.4%, AM: 12.1%, PM: 13.5%)	2,731	20	48	68	108	94	202
Transit/Shuttle (Daily: 10.0%, AM: 17.6%, PM: 15.9%)	2,202	5	94	99	216	21	237
Active (Daily: 12.5%, AM: 17.8%, PM: 12.7%)	2,753	4	96	100	171	19	190
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**14,337**	**86**	**208**	**294**	**464**	**399**	**863**
HOV Occupancy (Daily: 2.00, AM: 2.06, PM: 2.08)	**1,366**	**9**	**24**	**33**	**54**	**43**	**97**
External Residential Vehicle Trips [A]	***15,703***	***95***	***232***	***327***	***518***	***442***	***960***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 38.9%, PM: 44.0%)	65,474	4,713	670	5,383	1,112	4,388	5,500
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.8%)	20,255	1,816	215	2,031	688	1,908	2,596
Transit/Shuttle (Daily: 26.0%, AM: 40.0%, PM: 32.7%)	31,262	5,120	413	5,533	289	3,798	4,087
Active (Daily: 2.7%, AM: 6.4%, PM: 2.5%)	3,246	652	231	883	83	227	310
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**65,474**	**4,713**	**670**	**5,383**	**1,112**	**4,388**	**5,500**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.72)	**8,102**	**649**	**86**	**735**	**275**	**681**	**956**
External Employment Vehicle Trips [B]	***73,576***	***5,362***	***756***	***6,118***	***1,387***	***5,069***	***6,456***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 24.1, PM: 20.6)							
External Transit Vehicles [C]	***1,859***	***133***	***101***	***234***	***101***	***109***	***210***
Gateway Total Vehicles [A+B+C]	***91,138***	***5,590***	***1,089***	***6,679***	***2,006***	***5,620***	***7,626***
Over Capacity Calculations							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-1,390**	**-31**	**-1,421**	**226**	**-540**	**-314**
Percent Over Capacity (%)	N/A	-20%	-3%	-18%	13%	-9%	-4%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**13,806**	**76**	**167**	**243**	**437**	**392**	**829**
External Employment Vehicle Trips Growth	**3,105**	**140**	**-217**	**-77**	**207**	**263**	**470**
External Transit Vehicle Growth	**777**	**-9**	**19**	**10**	**13**	**5**	**18**
All Vehicle Growth	***17,688***	***207***	***-31***	***176***	***657***	***660***	***1,317***

Bold values indicate units of **VEHICLE** trips

Appendix C:
North Bayshore Master Plan – Project Trip Generation

FEHR & PEERS

Memorandum

Date: December 19, 2022

To: Kristy Weis and Tyler Rogers, David J. Powers
Diana Pancholi, City of Mountain View

From: Daniel Rubins, Mackenzie Watten, and Franziska Church, Fehr & Peers

Subject: North Bayshore Master Plan – Morning Peak Hour Inbound Single-Occupancy Vehicle Mode Share for Non-Residential Development in the North Bayshore District and Trip Generation Summary Tables

SJ21-2116

This memorandum summarizes the morning peak hour inbound single-occupancy vehicle (SOV) mode share for the North Bayshore (NBS) District non-residential development (a person's mode of travel for the day is typically selected during the morning) at the three North Bayshore gateways and provides trip generation estimates for the North Bayshore Master Plan, and the North Bayshore area (inclusive of the North Bayshore Precise Plan, Shoreline Park, and Santiago Villa). The daily trip generation estimates are used for the VMT assessment for the North Bayshore Master Plan and the North Bayshore area, while the peak hour trip generation estimates for the North Bayshore Master Plan will be used in the Multimodal Transportation Analysis.

Discussion of Policies

The North Bayshore Precise Plan (NBPP), which was adopted in 2014 and updated in 2017 includes two related but disparate policies for non-residential development mode share for North Bayshore:

- **The North Bayshore District Trip Cap Policy** is expressed as an absolute number of vehicles in section 8.3 of the NBPP. The North Bayshore District Trip Cap Policy quantifies the physical vehicle capacity of the three main gateways (San Antonio Road, Rengstorff Avenue, and Shoreline Boulevard), and represents the number of vehicles that can be served during the peak morning and evening periods while maintaining reasonable freedom of vehicular movement (i.e., avoiding gridlock conditions). To achieve the District Trip Cap Policy (as studied in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* (2017)), all non-residential person trips (e.g., employees commuting, visitors, deliveries, etc.) to North Bayshore would need to achieve a 35%

morning peak hour inbound single-occupancy vehicle mode share at each developments driveways.

- **The Site-Specific TDM Plan Policy** is expressed as a mode share percentage in several ways in sections 6.14 and 8.3 of the NBPP and a precise definition in the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines* (the North Bayshore *TDM Plan Guidelines* are used for this memorandum). The Site-Specific TDM Plan Policy applies a 45% morning peak hour inbound single-occupancy vehicle mode share at each development's driveways (or at a district parking structures with specified vehicle trip targets) for future employees (and associated visitors) commuting to North Bayshore <u>without accounting for employees living and working in North Bayshore (i.e., internalized office trips)</u>.

These polices—as described in the NBPP and other implementation documents—are not consistent and involve different commute and visitor mode share assumptions for North Bayshore development. For the small individual development projects that have been evaluated up to this point, this discrepancy did not cause substantial differences in results. However, the North Bayshore Master Plan represents a large percentage of the total future land development in North Bayshore, and thus this policy disparity is notable. Knowing there is a difference in the policies, we have developed the trip generation scenarios to show the outcomes of both policies.

North Bayshore District Trip Cap Policy

To achieve the District Trip Cap Policy, all existing and future non-residential development would need to achieve at most a 35% morning peak hour inbound single-occupancy vehicle mode share at the driveways.

Reviewing the available North Bayshore gateway travel data from the NBPP Transportation Impact Analysis reports (completed in 2014 and 2017) and on-going monitoring reports (Spring 2014 to Spring 2020), existing trips will need to be reduced to accommodate future non-residential development based on the following:

- The North Bayshore gateways are near capacity today;
- Council policy direction, the NBPP does not allow the addition of any substantial new vehicle capacity (i.e., new lanes.) to the North Bayshore gateways or street network (refer to the Priority Transportation Improvements in the 2017 North Bayshore Precise Plan approved transportation improvements and the *Circulation Study* for proposed changes to the approved transportation improvements);
- North Bayshore Precise Plan specifies up to two travel lanes plus turn pockets for Shoreline Boulevard north of Plymouth Street, Amphitheater Parkway, Rengstorff Avenue, and Garcia Avenue; and
- Future development will add more trips to the network than available capacity.

The 2017 NBPP policies recognize this need and crafted policies that reduce existing trips such as the following:

- Adding housing in North Bayshore;
- Reducing the single-occupancy vehicle mode share percentage throughout North Bayshore with district-wide TDM programs and a single-occupancy vehicle mode share goal for commute (and visitor) trips;
- Prioritizing transportation improvements that support bus, carpool, bicycle, and walking; and
- Managing vehicle arrivals and departures by imposing a trip cap.

Therefore, to ensure the North Bayshore District Trip Cap Policy is met at the gateways, while allowing for future NBPP office land uses to generate vehicle trips, a 35% morning peak hour single-occupancy vehicle mode share is applied district-wide to existing and future non-residential development traveling to North Bayshore.[1] A driveway-specific single-occupancy vehicle goal with residential in North Bayshore would be less than 35% (e.g., 32% or 30%) to account for internalized person trips.

Site-Specific TDM Plan Policy Requirements

The Site-Specific TDM Plan Policy requirements apply a 45% single-occupancy vehicle goal to future employee commute trips at the driveways to establish vehicle trip targets for just the employee commute trip. This goal omits internalized person trips, which influences both the driveway single-occupancy vehicle goals and does not account for building vacancy.

The 45% single-occupancy vehicle goal applied at the driveways and only applicable to future employees, will not achieve the North Bayshore District Trip Cap Policy. To be consistent with the North Bayshore District Trip Cap Policy, the Site-Specific TDM Plan Policy requirement would need to be adjusted (changes to the location of inbound employment trip monitoring, inbound mode split single-occupancy vehicle percentage, and/or which employees and visitors the goal applies to), or its purpose for setting trip targets clearly stated.

Trip Generation Scenarios

Our trip generation analysis includes seven scenarios that include an Existing Conditions (Scenario 1), two NBPP scenarios (Scenarios 2 and 3), the North Bayshore Master Plan and all other future non-residential development achieving the adopted Site-Specific TDM Policy requirements (a 45% single-occupancy vehicle goal) (Scenario 4), approximately 93% percent of all North Bayshore District non-residential development (including the North Bayshore Master Plan)

[1] As shown in the *North Bayshore Precise Plan with Residential – Project Trip Generation Estimates* memorandum (February 2017).

achieving a 35% morning peak hour inbound single-occupancy vehicle goal (Scenario 5), approximately 93% percent of all North Bayshore District non-residential development (including the North Bayshore Master Plan) achieving a 35% morning peak hour inbound single-occupancy vehicle goal with a historical development vacancy rate (Scenario 6), and approximately 93% percent of all North Bayshore District non-residential development (including the North Bayshore Master Plan) achieving a 35% morning peak hour inbound single-occupancy vehicle goal with a historical development vacancy rate and the Rengstorff Connector (Scenario 7). The trip generation scenarios include:

- **Scenario 1: Existing Condition** – Existing gateway counts (February 2020) and travel characteristics from the *North Bayshore Transportation Monitoring Report and Near-Term Growth Assessment* (May 2020) report.
- **Scenario 2: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Standard Residential Parking Supply Conditions)**[2] – Cumulative travel behavior based on the City of Mountain View travel model and the 2007 Association of Bay Area Governments (ABAG) land use projections for adjacent jurisdictions and planned and funded transportation system improvement in the *Valley Transportation Plan (VTP) 2040*. In the NBPP boundary, this scenario includes the following:
    - The NBPP land use program from Existing Conditions (2020):
        - 9,850 residential units
            - 7,880 market rate dwelling units
            - 1,970 affordable rate dwelling units
        - 5,069,866 square feet of office space
            - 3,474,060 additional square feet of office building space
            - 1,393,469 square feet of research & development rebuilt as office space
            - 202,337 square feet of industrial rebuilt as office space
        - 187,660 square feet of retail/commercial land uses (retail, restaurant, or service commercial)
        - 400 hotel rooms
        - 98,000 square foot athletic club
        - 88,500 square foot theater
        - Shoreline at Mountain View growth of approximately 2,800 daily trips

[2] This is similar to the trip generation scenario studied in detail in the *Final Subsequent Environmental Impact Report for the North Bayshore Precise Plan* certified in November 2017.

   - The North Bayshore transportation improvements are presented in **Figure 1**.
   - Market rate residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 1.2 spaces per dwelling unit.
   - Affordable residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 1.2 spaces per dwelling unit.
   - Non-residential development collectively achieving an approximately 32% morning peak hour inbound single-occupancy vehicle (SOV) mode share at the driveways for non-residential development.
   - Non-residential development includes a mixed-use trip reduction applied to existing and future development to account for the additional residential opportunities in North Bayshore that allow some current workers to live nearby.
   - North Bayshore non-residential development occupancy that includes a 7% historical vacancy rate.[3]

- **Scenario 3: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Reduced Residential Parking Supply Conditions)[4]** – Scenario 2 with a reduced residential parking supply rate of 0.6 spaces per dwelling unit.
- **Scenario 4: Cumulative Conditions with NBPP Growth[5] and the North Bayshore Master Plan Achieving the Site-Specific TDM Plan Policy Goal** – Cumulative travel behavior outside of the NBPP boundary will be based on the same land use and transportation system assumptions as Scenario 2. Within the NBPP boundary, this scenario includes the following:
   a. The NBPP growth with the NBS Master Plan from Existing Conditions (2020):
      - 9,098 residential units
         - 7,605 market rate dwelling units
         - 1,493 affordable rate dwelling units

[3] A vacancy rate expresses the portion of building square footage that is unoccupied. A vacancy rate allows owners to offer non-residential development options to meet a tenant’s needs at a market rate price without over supplying non-residential development. Based on conversations with local real estate brokers during the General Plan and Mountain View travel model update, City staff established a 7% historical vacancy rate. This vacancy rate has been used in previous versions of the North Bayshore Precise Plan transportation analysis and the City of Mountain View General Plan transportation analysis.
[4] This is similar to the trip generation scenario adopted by City Council.
[5] NBPP growth is the sum of the near-term growth documented the North Bayshore Transportation Monitoring Report and Near-Term Growth Assessment (May 2020), and the pending Gateway Master Plan.

- 5,587,216 square feet of office space
  - 3,487,472 additional square feet of office building space
  - 1,900,011 square feet of research & development rebuilt as office space
  - 199,733 square feet of industrial rebuilt as office space
- 343,496 square feet of retail/commercial land uses (retail, restaurant, or service commercial)
- 725 hotel rooms
- 98,000 square foot athletic club
- 88,500 square foot theater

- The North Bayshore transportation improvements are presented in **Figure 1**.
- The locations of the development projects are presented in **Figure 2** presents a summary of their associated land use assumptions (which in some cases involve demolition of existing buildings as well as construction of new buildings).
- Non-NBS Master Plan market rate residential housing mix of 70% studio and 1-bedroom apartments and 30% 2- and 3-bedroom apartments with a residential parking supply rate of 0.6 spaces per dwelling unit.
- NBS Master Plan market rate residential housing (mix of 60% studio and 1-bedroom apartments and 40% 2- and 3-bedroom dwelling units) with a reduced residential parking supply rate of 0.65 spaces per dwelling unit.
- NBS Master Plan affordable residential housing mix of 25% studio, 1-bedroom, 2-bedroom, and 3-bedroom dwelling units with a reduced parking supply rate of 0.69 spaces per dwelling unit.
- Existing non-Google development (6% of non-residential development) achieves 63%[6] morning peak hour inbound single-occupancy vehicle mode share.
- Existing Google, future Google, and future non-Google non-residential development achieving a 35% morning peak hour inbound single-occupancy vehicle mode share (94% of non-residential development).
- Non-residential development includes a mixed-use trip reduction applied to existing and future development to account for the additional residential opportunities in North Bayshore that allow some current workers to live nearby.

[6] The 63% morning peak hour inbound single-occupancy vehicle mode share is derived from the observed 74% mode share (*Intuit Building 20 Vehicle Trip Generation and Mode Share Monitoring* memorandum, Fehr & Peers, May 2019) with an adjustment for internalized trips of North Bayshore employees living and working in North Bayshore.

  - North Bayshore non-residential development includes a 7% historical vacancy rate.[7]
  - NBS Master Plan parking at a ratio of 2.0 parking spaces per 1,000 square feet of office space.
  - On-site and District parking as shown in the NBS Master Plan (e.g., JS-P-1, JN-P-1, SA-P-1, SB-P-1, MW-P-1, and MW-P-2) (refer to **Figure 3**).

- **Scenario 5: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal** – Scenario 4 with existing Google, future Google, and future non-Google non-residential development achieving a 35% morning peak hour inbound single-occupancy vehicle mode share (93% of non-residential development).
- **Scenario 6: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal with a Historical Vacancy Rate** – Scenario 5 with a North Bayshore non-residential development occupancy that includes a 7 percent historical vacancy rate.
- **Scenario 7: Cumulative Conditions with NBPP Growth and the North Bayshore Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector** – Scenario 6 with the entire Rengstorff Connector.[8]

Morning Inbound Mode Share Assumptions for Non-Residential Development

As outlined above, the North Bayshore District Trip Cap Policy and the Site-Specific TDM Plan Policy requirements involve different assumptions about the morning peak hour inbound single-occupancy vehicle mode share.

For each of the seven trip generation scenarios, we summarized the morning peak hour inbound single-occupancy vehicle mode share goal for North Bayshore non-residential development in **Table 1** at the driveway. Scenario 1 is based on existing travel characteristics. Scenarios 2 and 3 model the North Bayshore Vehicle Trip Cap Policy (as studied in the *Subsequent Environmental Impact Report for the North Bayshore Precise Plan* (2017)), while the North Bayshore Master Plan scenarios model the Site-Specific TDM Plan Policy requirements as proposed by the North

[7] A vacancy rate expresses the portion of building square footage that is unoccupied. A vacancy rate allows owners to offer non-residential development options to meet a tenant's needs at a market rate price without over supplying non-residential development. Based on conversations with local real estate brokers during the General Plan and City of Mountain View travel model update, City staff established a 7% historical vacancy rate. This vacancy rate has been used in previous versions of the North Bayshore Precise Plan transportation analysis and the City of Mountain View General Plan transportation analysis.

[8] Scenarios 6 and 7 have the same gateway trip generation. However, Scenario 7 will include the entire Rengstorff Connector.

Bayshore Master Plan (Scenario 4), and a modified Site Specific TDM Plan Policy requirement of 35% morning peak hour inbound single-occupancy vehicle mode share applied to 93% of non-residential development (Scenario 5). A modified Scenario 5 is evaluated with a 7 % non-residential development vacancy rate consistent with previous North Bayshore Precise Plan and Mountain View General Plan transportation analysis (Scenario 6). Finally, a modified Scenario 6 is evaluated that includes the entire Rengstorff Connector (Scenario 7).

The primary differences between trip generation scenarios modeling the North Bayshore District Trip Cap Policy and the Site-Specific TDM Plan Policy requirements are:

- Location of inbound employment trip monitoring (gateway or driveway)
- Inbound mode split single-occupancy vehicle percentage for development (35% or 45%)
- Which employees or visitors the goal applies to (existing, future, or both)

Table 1: Morning Peak Hour Inbound Mode Share Assumptions for Non-Residential Development in North Bayshore

Metric		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenarios 6 & 7
Policy Modeled		N/A	NBS District Trip Cap Policy (Adopted)[1]	NBS District Trip Cap Policy (Adopted)[1]	Site-Specific TDM Plan Policy	Modified Site-Specific TDM Plan Policy	Modified Site-Specific TDM Plan Policy
Location of Inbound Trip Monitoring		Driveway	Driveway	Driveway	Driveway	Driveway	Driveway
Inbound Mode Split SOV plus Trucks[2]	Existing Non-Google Development	80%[3]	32%	30%	69%	69%	69%
	Future Non-Google Development	-			45%	35%	35%
	Existing Google Development	50%[4]			43%	35%	35%
	Future Google Development	-			45%	35%	35%
	Effective District-Wide	53%[5]			45%[6]	37%[6]	37%[6]

Notes:

1. North Bayshore District Trip Cap Policy as studied in the *North Bayshore Precise Plan Subsequent Environmental Impact Report* (2017). To achieve the District Trip Cap Policy, all existing and future non-residential development would need to achieve a 35% single-occupancy vehicle mode share. The addition of residential in the North Bayshore District further reduces the non-residential development SOV rate.
2. SOV = Single-occupancy vehicle.
3. Based on *Intuit Building 20 Vehicle Trip Generation and Mode Share Monitoring* memorandum, May 2019.
4. Based on Google employee mode share survey, adjusted to reflect mode share for all trips (in addition to employee trips) that occur at non-residential developments.
5. Effective district-wide morning peak hour single-occupancy vehicle rate derived from *Spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment* (May 2020), *North Bayshore Framework Master Plan Appendix C: TDM Plan* (August 2021), and employment weightings of approximately 11% non-Google development, and 89% Google development provide by City staff.
6. Effective district-wide morning peak hour single-occupancy vehicle rate for Scenarios 4, 5, 6, and 7 are based on employment weightings of approximately 6% for existing non-Google development, 14% for future non-Google development, 52% for existing Google development, and 28% for future Google development.
7. Per City staff direction, only a subset of the scenarios will be evaluated for the VMT analysis (Scenarios 1, 2 and 6) and the Multi-Modal Transportation Analysis (Scenarios 1 and 7). Scenarios 3, 4, and 5 are included in the memorandum for informational purposes – specifically for understanding the evolution of this document from previous iterations.

Source: Fehr & Peers, 2022.

Scenario 4 is equivalent to all approved and pending development in North Bayshore achieving the Site-Specific TDM Plan Policy, and takes account of employees living and working in North Bayshore (i.e., internalized office trips). Scenario 4 will include the North Bayshore Master Plan achieving the Site-Specific TDM Plan Policy, which is a 45% morning peak hour inbound single-occupancy vehicle mode share at the development driveways (or district parking structures) for employees and visitors commuting to North Bayshore Master Plan. Scenario 5 is a modified version of achieving the Site-Specific TDM Plan Policy (a 35% morning peak hour inbound single-occupancy vehicle mode share),and includes existing Google non-residential development meeting this SOV goal. Scenario 6 is a modified Scenario 5 with a 7% non-residential development vacancy rate consistent with previous North Bayshore Precise Plan and Mountain View General Plan transportation analysis. Scenario 7 is the same trip generation as Scenario 6 with the addition of the entire Rengstorff Connector.

Additional Trip Generation Assumptions

The gateway trip generation methods described in the *North Bayshore Precise Plan with Residential – Project Trip Generation Estimates* (February 2017) memorandum were updated to account for the following:

- Affordable housing trip rates using the California Household Travel Survey trip generation data for households that fit the household size, household income, and vehicle ownership of a household that might occupy an affordable housing unit. (Applied to Scenarios 2 through 7).
- An affordable housing mix of 25% studio, 1-bedroom, 2-bedroom, and 3-bedroom dwelling units with a reduced parking supply rate of 0.69 spaces per dwelling unit. (Applied to the North Bayshore Master Plan residential in Scenarios 4 through 7).
- A market rate housing mix of 60% studio and 1-bedroom, and 40% 2-bedroom and 3-bedroom dwelling units with a reduced parking supply rate of 0.65 spaces per dwelling unit. (Applied to the North Bayshore Master Plan residential in Scenarios 4 through 7).
- Calibration of the gateway and driveway person and vehicle trip rates to the Spring 2020 gateway counts and mode share presented in the *Spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment* (May 2020) and internalization data from comparable developments sites. (Applied to Scenarios 1 through 7)
- Calibration of non-Google development person and vehicle trip rates to *Intuit Building 20 Vehicle Trip Generation and Mode Share Monitoring* memorandum (May 2019) and employment weightings of approximately 11% non-Google development, and 89% Google development provide by City staff. (Applied to Scenario 1)
- Calibration of Google development person and vehicle trip rates based on the *Spring 2020 North Bayshore District Transportation Monitoring and Near-Term Growth Assessment* (May 2020), *North Bayshore Framework Master Plan Appendix C: TDM Plan* (August 2021), internalization from comparable development sites, and employment weightings of approximately 11% non-Google development, and 89% Google development provide by City staff. (Applied to Scenarios 4 through 7)

Further, the differences between achieving the North Bayshore District Trip Cap Policy versus the Site-Specific TDM Plan Policy requirement are illustrated in **Table 2**. In this table we show the different inputs for the morning commute to North Bayshore (<u>all percentages are expressed on a per employee basis for employee development</u>):

- Portion of Vacancy (0% to 7% historical)
- Portion of Employee Commute within Peak-Hour (37%)
- Inbound Mode Split (refer to **Table 1**)
- Inbound Occupancy (varies based on vehicle type)

As noted earlier, the Scenario 1 information is based on observed data described in the *North Bayshore Transportation Monitoring Report and Near-Term Growth Assessment* (May 2020) report. While the Scenarios 2 and 3 information is from the *North Bayshore Precise Plan with Residential – Project Trip Generation Estimates* (February 2017) memorandum with an update to include affordable housing trip rates. Scenario 4 assumes the North Bayshore Master Plan achieves the adopted Site-Specific TDM Policy requirements (a 45% single-occupancy vehicle goal per the *North Bayshore Transportation Demand Management (TDM) Plan Guidelines* (February 2015)) plus a reduction for employees living and working in North Bayshore (i.e., internalized office trips). Scenario 5 assumes the North Bayshore Master Plan achieves a modified Site-Specific TDM Policy requirement (a 35% single-occupancy vehicle goal). Scenario 6 is a modified Scenario 5 with a 7 % non-residential development vacancy rate. Scenario 7 is the same trip generation as Scenario 6 with the addition of the entire Rengstorff Connector.

The North Bayshore TDM Plan Guidelines only provide guidance on the inbound vehicle mode split and vehicle occupancy rates. Compared to Scenarios 2 and 3, Scenarios 5, 6, and 7 apply a modified Site-Specific TDM Policy requirement to all but existing non-google development and use values different than what are needed to achieve the gateway trip cap including:

- Lower Portion of Vacancy (0% versus 7%)
- Higher Inbound Mode Split (38% versus 30%)
- Lower Inbound Occupancy (lower HOV and transit occupancies)

As presented, Scenarios 4 through 7 trip generation would exceed the gateway trip cap policy, and the peak hour trip generation estimates studied under the NBPP environmental analysis.

Table 2: North Bayshore Gateway Trip Generation Inputs: Inbound Vehicle Trips during the AM Peak Hour

Metric		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenarios 6 & 7
Portion Vacant		0.5%	7%	7%	0%	0%	7%
Portion Internal/Live-Work Portion Commute to NBS		7% 93%	16% 84%	21% 79%	21% 79%	21% 79%	21% 79%
Portion of Commute within Peak Hour		37%	37%	37%	37%	37%	37%
Inbound Mode Split	SOV+Trucks =	Refer to **Table 1**					
Inbound Occupancy	SOV+Trucks = HOV = Transit = Active =	1 2.2 26.6 1	1 2.8 38.6 1	1 2.8 38.6 1	1 2.2 24 1	1 2.2 24 1	1 2.2 24 1

Source: Fehr & Peers, 2022.

Trip Generation Estimates

Based on our understanding of the North Bayshore Master Plan project, the Site-Specific TDM Plan Policy, and the North Bayshore District Trip Cap Policy, we presented morning peak hour inbound single-occupancy vehicle mode share assumptions to define Existing Conditions (Scenario 1), the NBPP (Scenarios 2 and 3), the North Bayshore Master Plan achieving the Site-Specific TDM Policy requirement (Scenario 4), the North Bayshore Master Plan achieving a modified Site-Specific TDM Policy requirement (Scenario 5), the North Bayshore Master Plan achieving a modified Site-Specific TDM Policy requirement with a historical vacancy rate (Scenario 6), and the North Bayshore Master Plan achieving a modified Site-Specific TDM Policy requirement with a historical vacancy rate and the Rengstorff Connector (Scenario 7). Per City staff direction, only a subset of the scenarios will be evaluated for the VMT Assessment (Scenarios 1, 2, and 6) and the MTA (Scenarios 1 and 7).

We have included a gateway trip generation summary of all seven scenarios (Table A-0). The gateway trip estimates for each scenario are attached (referred to attached Tables A-1 to A-7). The attached trip generation estimates include daily, AM peak hour, and PM peak hour trip estimates that will be used in the VMT Assessment and the MTA (Scenario 6/7). Mode share and vehicle occupancy assumptions for the two-way directions are also included in the gateway trip generation. The North Bayshore Master Plan trip generation achieving the Site Specific TDM Policy requirement, achieving the Modified Site Specific TDM Policy, achieving the Modified Site Specific TDM Policy with a historical vacancy rate, and achieving the Modified Site Specific TDM

Policy with a historical vacancy rate and the Rengstorff Connector are attached as Tables B-1, B-2, B-3, and B-4, respectively.

Finally, the NBS Master Plan person and vehicle trip generation is summarized in Table C-1. Table C-2 summarizes the person trip generation by mode of travel. This summary shows the majority (more than 40 percent daily and 50 percent during the peak hours) of the combined residential and non-residential person trips are by pedestrians, bicyclists, and transit riders. Further the single-occupancy vehicles and high-occupancy vehicles will park in six district parking garages, which then requires the ½ mile or so between the garages and the final destinations will be as a pedestrian, bicyclist, or transit trips.

Table C-3 summarizes the vehicle trip generation by mode of travel. As shown in Table C-3, most of the vehicles (61.8 percent) to the NBS Master Plan are SOVs; these vehicles transport 50.0 percent of the daily person travel. Pedestrian travel is the next largest vehicle mode of travel with 24.1 percent of the daily vehicle travel; pedestrian travel is 19.5 percent of daily person travel. While transit vehicles are smaller than other vehicle modes (2.2 percent of daily vehicle travel), transit vehicles carry 15.7 percent of the daily person travel. Transit is forecasted to carry more people than carpooling and bicycling combined (11.9 percent of vehicles; 14.8 percent of the daily person travel).

Attachments

Figures

Figure 1: North Bayshore Precise Plan Transportation Improvement Projects
Figure 2: North Bayshore Precise Plan Growth Project Locations
Figure 3: North Bayshore Master Plan – Parking Locations

North Bayshore Gateway Trip Estimates

Table A-0: Gateway Trip Generation Summary (Scenarios 1 to 7)
Table A-1: Existing (Spring 2020)
Table A-2: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Standard Residential Parking Supply Conditions)
Table A-3: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Reduced Residential Parking Supply Conditions)
Table A-4: Cumulative Conditions with NBPP Growth and Master Plan Achieving the Site-Specific TDM Plan Policy Goal
Table A-5: Cumulative Conditions with NBPP Growth and Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal
Table A-6: Cumulative Conditions with NBPP Growth and Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

Table A-7: Cumulative Conditions with NBPP Growth and Master Plan Achieving a Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector[9]

North Bayshore Master Plan Trip Generation Estimates

Table B-1: North Bayshore Master Plan Trip Generation: Achieving the Site-Specific TDM Plan Policy Goal

Table B-2: North Bayshore Master Plan Trip Generation: Achieving a Modified Site-Specific TDM Plan Policy Goal

Table B-3: North Bayshore Master Plan Trip Generation: Achieving a Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

Table B-4: North Bayshore Master Plan Trip Generation: Achieving a Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector[10]

North Bayshore Master Plan Person and Vehicle Trip Generation by Mode of Travel

Table C-1: North Bayshore Master Plan Person and Vehicle Trip Generation by Mode of Travel

Table C-2: North Bayshore Master Plan Person Trip Generation by Mode of Travel

Table C-3: North Bayshore Master Plan Vehicle Trip Generation by Mode of Travel

[9] Scenarios 6 and 7 (Tables A-6 and A-7) have the same gateway trip generation. However, Scenario 7 will include the entire Rengstorff Connector.

[10] Scenarios 6 and 7 (Tables B-3 and B-4) have the same project trip generation. However, Scenario 7 will include the entire Rengstorff Connector.

Table A-0: Gateway Trip Generation Summary (Scenarios 1 to 7)							
Vehicle Demand Scenarios (CEQA and MTA Scenarios)	**Daily**	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Scenario 1 (Existing) (CEQA)	78,372	6,310	1,337	7,647	1,456	5,286	6,742
Scenario 2 (NBPP Standard Park) (CEQA)	133,260	7,146	3,375	10,522	4,042	7,745	11,787
Scenario 3 (NBPP Reduced Park, Adopted)	120,514	6,598	2,546	9,144	3,307	7,224	10,531
Scenario 4 (NBS Site Specific TDM Plan Policy)	150,346	9,753	3,183	12,936	3,754	9,336	13,090
Scenario 5 (NBS Modified Site Specific TDM Plan Policy)	135,513	8,503	2,950	11,453	3,597	8,091	11,688
Scenario 6 (NBS Modified Site Specific TDM Plan Policy, with a Historical Vacancy Rate) (CEQA)	128,713	7,959	2,850	10,809	3,463	7,619	11,082
Scenario 7 (NBS Modified Site Specific TDM Plan Policy, with a Historical Vacancy Rate and Rengstorff Connector) (Focused MTA)*	128,713	7,959	2,850	10,809	3,463	7,619	11,082

*Scenario 6 and 7 have the same gateway trip generation. However, Scenario 7 will include the entire Rengstorff Connector.

Per City staff direction, only a subset of the scenarios will be evaluated for the VMT analysis (Scenarios 1, 2 and 6) and the Focused Multi-Modal Transportation Analysis (Scenarios 1 and 7). Scenarios 3, 4, and 5 are included in the memorandum for informational purposes – specifically for understanding the evolution of this document from previous iterations.

Table A-1: Existing (Spring 2020)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (0,000 DUs)	0	0	0	0	0	0	0
Existing Non-Residential Trips (24,779 Employees)	101,346	10,995	1,573	12,568	1,924	9,355	11,279
Additional Non-Residential Trips (0,000 Employees)	0	0	0	0	0	0	0
Total Person Trips	104,072	11,036	1,727	12,763	2,069	9,442	11,511
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 5.0%, AM: 8.0%, PM: 9.9%)							
Residential (Daily: 21.2%, AM: 49.1%, PM: 33.9%)	578	20	76	96	49	30	79
Non-Residential (Daily: 4.6%, AM: 7.4%, PM: 9.4%)	4,616	814	116	930	181	879	1,060
Gateway Person Trips							
Gateway Residential Person Trips	2,148	21	78	99	96	57	153
Gateway Non-Residential Person Trips	96,730	10,181	1,457	11,638	1,743	8,476	10,219
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	578	20	76	96	49	30	79
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	4,616	814	116	930	181	879	1,060
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 80.6%, AM: 75.8%, PM: 76.5%)	1,732	17	58	75	72	45	117
HOV (Daily: 15.4%, AM: 18.2%, PM: 18.3%)	330	4	14	18	17	11	28
Transit/Shuttle (Daily: 2.2%, AM: 4.0%, PM: 3.9%)	47	0	4	4	5	1	6
Active (Daily: 1.8%, AM: 2.0%, PM: 1.3%)	39	0	2	2	2	0	2
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**1,732**	**17**	**58**	**75**	**72**	**45**	**117**
HOV Occupancy (Daily: 2.00, AM: 2.00, PM: 2.00)	**165**	**2**	**7**	**9**	**9**	**5**	**14**
Gateway Residential Vehicle Trips [E]	***1,897***	***19***	***65***	***84***	***81***	***50***	***131***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 75.1%, AM: 60.1%, PM: 57.5%)	72,666	5,840	1,155	6,995	1,056	4,819	5,875
HOV (Daily: 5.4%, AM: 6.2%, PM: 9.8%)	5,213	697	19	716	382	623	1,005
Transit/Shuttle (Daily: 18.6%, AM: 32.8%, PM: 31.9%)	17,976	3,553	270	3,823	302	2,958	3,260
Active (Daily: 0.9%, AM: 0.9%, PM: 0.8%)	875	91	13	104	3	76	79
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**72,666**	**5,840**	**1,155**	**6,995**	**1,056**	**4,819**	**5,875**
HOV Occupancy (Daily: 2.00, AM: 2.19, PM: 2.12)	**2,607**	**317**	**10**	**327**	**192**	**283**	**475**
Gateway Non-Residential Vehicle Trips [F]	***75,273***	***6,157***	***1,165***	***7,322***	***1,248***	***5,102***	***6,350***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.9, PM: 12.5)							
Gateway Transit Vehicles [G]	***1,202***	***134***	***107***	***241***	***127***	***134***	***261***
Gateway Total Vehicles [E + F + G = H]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***

Table A-1: Existing (Spring 2020)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 63.5%, AM: 38.5%, PM: 50.4%)	1,732	17	58	75	72	45	117
HOV (Daily: 12.1%, AM: 9.2%, PM: 12.1%)	330	4	14	18	17	11	28
Transit/Shuttle (Daily: 1.7%, AM: 2.1%, PM: 2.6%)	47	0	4	4	5	1	6
Active (Daily: 22.7%, AM: 50.2%, PM: 34.9%)	617	20	78	98	51	30	81
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**1,732**	**17**	**58**	**75**	**72**	**45**	**117**
HOV Occupancy (Daily: 2.00, AM: 2.00, PM: 2.00)	**165**	**2**	**7**	**9**	**9**	**5**	**14**
Internal+Gateway Residential Vehicle Trips [I]	***1,897***	***19***	***65***	***84***	***81***	***50***	***131***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 71.7%, AM: 55.7%, PM: 52.1%)	72,666	5,840	1,155	6,995	1,056	4,819	5,875
HOV (Daily: 5.1%, AM: 5.7%, PM: 8.9%)	5,213	697	19	716	382	623	1,005
Transit/Shuttle (Daily: 17.7%, AM: 30.4%, PM: 28.9%)	17,976	3,553	270	3,823	302	2,958	3,260
Active (Daily: 5.5%, AM: 8.2%, PM: 10.1%)	5,491	905	129	1,034	184	955	1,139
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**72,666**	**5,840**	**1,155**	**6,995**	**1,056**	**4,819**	**5,875**
HOV Occupancy (Daily: 2.00, AM: 2.19, PM: 2.12)	**2,607**	**317**	**10**	**327**	**192**	**283**	**475**
Internal+Gateway Non-Residential Vehicle Trips [J]	***75,273***	***6,157***	***1,165***	***7,322***	***1,248***	***5,102***	***6,350***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.9, PM: 12.5)							
Internal+Gateway Transit Vehicles [K]	***1,202***	***134***	***107***	***241***	***127***	***134***	***261***
Internal+Gateway Total Vehicles [I + J + K = L]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [F]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [G]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [E + F + G = H]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Gateway Non-Residential Vehicle Trips Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Gateway Transit Vehicle Growth	**0**	**0**	**0**	**0**	**0**	**0**	**0**
All Gateway Vehicle Growth	***0***	***0***	***0***	***0***	***0***	***0***	***0***

Bold values indicate units of **VEHICLE** trips

Table A-2: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Standard Residential Parking Supply)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,212	985	3,802	4,787	3,703	2,049	5,752
Existing Non-Residential Trips (23,312 Employees)	95,346	10,344	1,480	11,824	1,810	8,800	10,610
Additional Non-Residential Trips (15,598 Employees)	63,796	6,921	990	7,911	1,211	5,888	7,099
Total Person Trips	224,080	18,291	6,426	24,717	6,869	16,824	23,693
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 13.3%, AM: 18.0%, PM: 16.4%)							
Residential (Daily: 16.4%, AM: 27.0%, PM: 23.0%)	10,647	277	1,068	1,345	885	492	1,377
Non-Residential (Daily: 12.0%, AM: 15.7%, PM: 14.1%)	19,097	2,710	387	3,097	427	2,075	2,502
Gateway Person Trips							
Gateway Residential Person Trips	54,291	749	2,888	3,637	2,963	1,644	4,607
Gateway Non-Residential Person Trips	140,045	14,555	2,083	16,638	2,594	12,613	15,207
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	10,647	277	1,068	1,345	885	492	1,377
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	19,097	2,710	387	3,097	427	2,075	2,502
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 76.3%, AM: 69.8%, PM: 71.7%)	41,397	582	1,956	2,538	2,027	1,278	3,305
HOV (Daily: 15.7%, AM: 17.5%, PM: 18.0%)	8,523	147	491	638	508	322	830
Transit/Shuttle (Daily: 3.6%, AM: 6.3%, PM: 5.7%)	1,941	11	219	230	241	23	264
Active (Daily: 4.4%, AM: 6.4%, PM: 4.6%)	2,430	9	222	231	187	21	208
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**41,397**	**582**	**1,956**	**2,538**	**2,027**	**1,278**	**3,305**
HOV Occupancy (Daily: 2.11, AM: 2.16, PM: 2.19)	**4,035**	**63**	**233**	**296**	**241**	**138**	**379**
Gateway Residential Vehicle Trips [E]	***45,432***	***645***	***2,189***	***2,834***	***2,268***	***1,416***	***3,684***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 39.0%, PM: 44.0%)	76,260	5,576	912	6,488	1,328	5,363	6,691
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.7%)	23,592	2,150	294	2,444	822	2,331	3,153
Transit/Shuttle (Daily: 26.0%, AM: 39.8%, PM: 32.8%)	36,412	6,058	562	6,620	345	4,642	4,987
Active (Daily: 2.7%, AM: 6.5%, PM: 2.5%)	3,781	771	315	1,086	99	277	376
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**76,260**	**5,576**	**912**	**6,488**	**1,328**	**5,363**	**6,691**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,437**	**768**	**118**	**886**	**329**	**833**	**1,162**
Gateway Non-Residential Vehicle Trips [F]	***85,697***	***6,344***	***1,030***	***7,374***	***1,657***	***6,196***	***7,853***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 21.9, PM: 21.0)							
Gateway Transit Vehicles [G]	***2,131***	***157***	***156***	***313***	***117***	***133***	***250***
Gateway Total Vehicles [E + F + G = H]	***133,260***	***7,146***	***3,375***	***10,521***	***4,042***	***7,745***	***11,787***

Table A-2: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Standard Residential Parking Supply)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 63.7%, AM: 50.9%, PM: 55.2%)	41,397	582	1,956	2,538	2,027	1,278	3,305
HOV (Daily: 13.1%, AM: 12.8%, PM: 13.9%)	8,523	147	491	638	508	322	830
Transit/Shuttle (Daily: 3.0%, AM: 4.6%, PM: 4.4%)	1,941	11	219	230	241	23	264
Active (Daily: 20.2%, AM: 31.7%, PM: 26.5%)	13,077	286	1,290	1,576	1,072	513	1,585
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**41,397**	**582**	**1,956**	**2,538**	**2,027**	**1,278**	**3,305**
HOV Occupancy (Daily: 2.11, AM: 2.16, PM: 2.19)	**4,035**	**63**	**233**	**296**	**241**	**138**	**379**
Internal+Gateway Residential Vehicle Trips [I]	***45,432***	***645***	***2,189***	***2,834***	***2,268***	***1,416***	***3,684***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 47.9%, AM: 32.9%, PM: 37.8%)	76,260	5,576	912	6,488	1,328	5,363	6,691
HOV (Daily: 14.8%, AM: 12.4%, PM: 17.8%)	23,592	2,150	294	2,444	822	2,331	3,153
Transit/Shuttle (Daily: 22.9%, AM: 33.5%, PM: 28.2%)	36,412	6,058	562	6,620	345	4,642	4,987
Active (Daily: 14.4%, AM: 21.2%, PM: 16.2%)	22,878	3,481	702	4,183	526	2,352	2,878
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**76,260**	**5,576**	**912**	**6,488**	**1,328**	**5,363**	**6,691**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.71)	**9,437**	**768**	**118**	**886**	**329**	**833**	**1,162**
Internal+Gateway Non-Residential Vehicle Trips [J]	***85,697***	***6,344***	***1,030***	***7,374***	***1,657***	***6,196***	***7,853***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 21.9, PM: 21.0)							
Internal+Gateway Transit Vehicles [K]	***2,131***	***157***	***156***	***313***	***117***	***133***	***250***
Internal+Gateway Total Vehicles [I + J + K = L]	***133,260***	***7,146***	***3,375***	***10,521***	***4,042***	***7,745***	***11,787***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	45,432	645	2,189	2,834	2,268	1,416	3,684
Gateway Non-Residential Vehicle Trips [F]	85,697	6,344	1,030	7,374	1,657	6,196	7,853
Gateway Transit Vehicle [G]	2,131	157	156	313	117	133	250
Gateway Total Vehicles [E + F + G = H]	***133,260***	***7,146***	***3,375***	***10,521***	***4,042***	***7,745***	***11,787***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**43,535**	**626**	**2,124**	**2,750**	**2,187**	**1,366**	**3,553**
Gateway Non-Residential Vehicle Trips Growth	**10,424**	**187**	**-135**	**52**	**409**	**1,094**	**1,503**
Gateway Transit Vehicle Growth	**929**	**23**	**49**	**72**	**-10**	**-1**	**-11**
All Gateway Vehicle Growth	***54,888***	***836***	***2,038***	***2,874***	***2,586***	***2,459***	***5,045***

Bold values indicate units of **VEHICLE** trips

Table A-3: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Reduced Residential Parking Supply)							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,850 DUs)	62,212	985	3,802	4,787	3,703	2,049	5,752
Existing Non-Residential Trips (23,312 Employees)	95,346	10,344	1,480	11,824	1,810	8,800	10,610
Additional Non-Residential Trips (15,598 Employees)	63,796	6,921	990	7,911	1,211	5,888	7,099
Total Person Trips	224,080	18,291	6,426	24,717	6,869	16,824	23,693
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 18.5%, AM: 25.0%, PM: 22.0%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	16,170	417	1,607	2,024	1,297	720	2,017
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	25,390	3,626	518	4,144	544	2,644	3,188
Gateway Person Trips							
Gateway Residential Person Trips	48,768	609	2,349	2,958	2,551	1,416	3,967
Gateway Non-Residential Person Trips	133,752	13,639	1,952	15,591	2,477	12,044	14,521
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	16,170	417	1,607	2,024	1,297	720	2,017
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	25,390	3,626	518	4,144	544	2,644	3,188
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.3%, AM: 58.0%, PM: 62.4%)	33,304	458	1,257	1,715	1,411	1,066	2,477
HOV (Daily: 14.1%, AM: 14.6%, PM: 15.7%)	6,856	115	316	431	355	268	623
Transit/Shuttle (Daily: 6.9%, AM: 12.1%, PM: 11.0%)	3,353	17	342	359	398	38	436
Active (Daily: 10.7%, AM: 15.3%, PM: 10.9%)	5,255	19	434	453	387	44	431
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**33,304**	**458**	**1,257**	**1,715**	**1,411**	**1,066**	**2,477**
HOV Occupancy (Daily: 2.11, AM: 2.17, PM: 2.19)	**3,246**	**49**	**150**	**199**	**169**	**115**	**284**
Gateway Residential Vehicle Trips [E]	***36,550***	***507***	***1,407***	***1,914***	***1,580***	***1,181***	***2,761***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 54.5%, AM: 39.0%, PM: 44.0%)	72,833	5,225	855	6,080	1,268	5,121	6,389
HOV (Daily: 16.8%, AM: 14.7%, PM: 20.7%)	22,532	2,014	275	2,289	786	2,226	3,012
Transit/Shuttle (Daily: 26.0%, AM: 39.8%, PM: 32.8%)	34,776	5,677	527	6,204	329	4,432	4,761
Active (Daily: 2.7%, AM: 6.5%, PM: 2.5%)	3,611	723	295	1,018	94	265	359
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**72,833**	**5,225**	**855**	**6,080**	**1,268**	**5,121**	**6,389**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.72)	**9,013**	**719**	**110**	**829**	**314**	**795**	**1,109**
Gateway Non-Residential Vehicle Trips [F]	***81,846***	***5,944***	***965***	***6,909***	***1,582***	***5,916***	***7,498***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 20.4, PM: 19.1)							
Gateway Transit Vehicles [G]	***2,118***	***147***	***174***	***321***	***145***	***127***	***272***
Gateway Total Vehicles [E + F + G = H]	***120,514***	***6,598***	***2,546***	***9,144***	***3,307***	***7,224***	***10,531***

Table A-3: Cumulative Conditions with Adopted NBPP (with Smaller Residential Units and Reduced Residential Parking Supply)							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.3%, AM: 34.4%, PM: 41.4%)	33,304	458	1,257	1,715	1,411	1,066	2,477
HOV (Daily: 10.6%, AM: 8.7%, PM: 10.4%)	6,856	115	316	431	355	268	623
Transit/Shuttle (Daily: 5.2%, AM: 7.2%, PM: 7.3%)	3,353	17	342	359	398	38	436
Active (Daily: 32.9%, AM: 49.7%, PM: 40.9%)	21,425	436	2,041	2,477	1,684	764	2,448
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**33,304**	**458**	**1,257**	**1,715**	**1,411**	**1,066**	**2,477**
HOV Occupancy (Daily: 2.11, AM: 2.17, PM: 2.19)	**3,246**	**49**	**150**	**199**	**169**	**115**	**284**
Internal+Gateway Residential Vehicle Trips [I]	***36,550***	***507***	***1,407***	***1,914***	***1,580***	***1,181***	***2,761***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 45.8%, AM: 30.8%, PM: 36.1%)	72,833	5,225	855	6,080	1,268	5,121	6,389
HOV (Daily: 14.2%, AM: 11.6%, PM: 17.0%)	22,532	2,014	275	2,289	786	2,226	3,012
Transit/Shuttle (Daily: 21.9%, AM: 31.4%, PM: 26.9%)	34,776	5,677	527	6,204	329	4,432	4,761
Active (Daily: 18.1%, AM: 26.2%, PM: 20.0%)	29,001	4,349	813	5,162	638	2,909	3,547
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**72,833**	**5,225**	**855**	**6,080**	**1,268**	**5,121**	**6,389**
HOV Occupancy (Daily: 2.50, AM: 2.76, PM: 2.72)	**9,013**	**719**	**110**	**829**	**314**	**795**	**1,109**
Internal+Gateway Non-Residential Vehicle Trips [J]	***81,846***	***5,944***	***965***	***6,909***	***1,582***	***5,916***	***7,498***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 18.0, AM: 20.4, PM: 19.1)							
Internal+Gateway Transit Vehicles [K]	***2,118***	***147***	***174***	***321***	***145***	***127***	***272***
Internal+Gateway Total Vehicles [I + J + K = L]	***120,514***	***6,598***	***2,546***	***9,144***	***3,307***	***7,224***	***10,531***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	36,550	507	1,407	1,914	1,580	1,181	2,761
Gateway Non-Residential Vehicle Trips [F]	81,846	5,944	965	6,909	1,582	5,916	7,498
Gateway Transit Vehicle [G]	2,118	147	174	321	145	127	272
Gateway Total Vehicles [E + F + G = H]	***120,514***	***6,598***	***2,546***	***9,144***	***3,307***	***7,224***	***10,531***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**34,653**	**488**	**1,342**	**1,830**	**1,499**	**1,131**	**2,630**
Gateway Non-Residential Vehicle Trips Growth	**6,573**	**-213**	**-200**	**-413**	**334**	**814**	**1,148**
Gateway Transit Vehicle Growth	**916**	**13**	**67**	**80**	**18**	**-7**	**11**
All Gateway Vehicle Growth	***42,142***	***288***	***1,209***	***1,497***	***1,851***	***1,938***	***3,789***

Bold values indicate units of **VEHICLE** trips

Table A-4: Cumulative Conditions with NBPP Growth and Master Plan Achieving Site-Specific TDM Plan Policy Goal							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,098 DUs)	59,591	910	3,679	4,589	3,519	1,976	5,495
Existing Non-Residential Trips (24,779 Employees)	101,346	10,995	1,573	12,568	1,924	9,355	11,279
Additional Non-Residential Trips (17,830 Employees)	72,925	7,911	1,132	9,043	1,384	6,731	8,115
Total Person Trips	236,588	19,857	6,538	26,395	6,972	18,149	25,121
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 18.3%, AM: 24.6%, PM: 21.6%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	15,518	387	1,556	1,943	1,235	695	1,930
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	27,804	3,970	569	4,539	596	2,895	3,491
Gateway Person Trips							
Gateway Residential Person Trips	46,799	564	2,277	2,841	2,429	1,368	3,797
Gateway Non-Residential Person Trips	146,467	14,936	2,136	17,072	2,712	13,191	15,903
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	15,518	387	1,556	1,943	1,235	695	1,930
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	27,804	3,970	569	4,539	596	2,895	3,491
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.8%, AM: 58.6%, PM: 63.1%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 14.2%, AM: 14.7%, PM: 15.8%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 6.6%, AM: 11.8%, PM: 10.6%)	3,104	14	321	335	368	36	404
Active (Daily: 10.4%, AM: 14.9%, PM: 10.5%)	4,845	18	403	421	354	42	396
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Gateway Residential Vehicle Trips [E]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 73.0%, AM: 59.1%, PM: 57.0%)	106,890	8,546	1,543	10,089	1,677	7,393	9,070
HOV (Daily: 8.4%, AM: 7.8%, PM: 12.7%)	12,311	1,237	101	1,338	661	1,363	2,024
Transit/Shuttle (Daily: 17.4%, AM: 30.5%, PM: 29.0%)	25,514	4,844	360	5,204	334	4,272	4,606
Active (Daily: 1.2%, AM: 2.6%, PM: 1.3%)	1,752	309	132	441	40	163	203
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**106,890**	**8,546**	**1,543**	**10,089**	**1,677**	**7,393**	**9,070**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.13)	**6,156**	**562**	**51**	**613**	**331**	**620**	**951**
Gateway Non-Residential Vehicle Trips [F]	***113,046***	***9,108***	***1,594***	***10,702***	***2,008***	***8,013***	***10,021***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 14.6, AM: 14.8, PM: 12.5)							
Gateway Transit Vehicles [G]	***1,956***	***174***	***200***	***374***	***219***	***181***	***400***
Gateway Total Vehicles [E + F + G = H]	***150,346***	***9,753***	***3,183***	***12,936***	***3,754***	***9,336***	***13,090***

Table A-4: Cumulative Conditions with NBPP Growth and Master Plan Achieving Site-Specific TDM Plan Policy Goal							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.7%, AM: 34.8%, PM: 41.9%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 10.7%, AM: 8.8%, PM: 10.5%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 5.0%, AM: 7.0%, PM: 7.1%)	3,104	14	321	335	368	36	404
Active (Daily: 32.6%, AM: 49.4%, PM: 40.5%)	20,363	405	1,959	2,364	1,589	737	2,326
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Internal+Gateway Residential Vehicle Trips [I]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 61.3%, AM: 46.7%, PM: 46.8%)	106,890	8,546	1,543	10,089	1,677	7,393	9,070
HOV (Daily: 7.1%, AM: 6.2%, PM: 10.4%)	12,311	1,237	101	1,338	661	1,363	2,024
Transit/Shuttle (Daily: 14.6%, AM: 24.1%, PM: 23.7%)	25,514	4,844	360	5,204	334	4,272	4,606
Active (Daily: 17.0%, AM: 23.0%, PM: 19.1%)	29,556	4,279	701	4,980	636	3,058	3,694
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**106,890**	**8,546**	**1,543**	**10,089**	**1,677**	**7,393**	**9,070**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.13)	**6,156**	**562**	**51**	**613**	**331**	**620**	**951**
Internal+Gateway Non-Residential Vehicle Trips [J]	***113,046***	***9,108***	***1,594***	***10,702***	***2,008***	***8,013***	***10,021***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 14.6, AM: 14.8, PM: 12.5)							
Internal+Gateway Transit Vehicles [K]	***1,956***	***174***	***200***	***374***	***219***	***181***	***400***
Internal+Gateway Total Vehicles [I + J + K = L]	***150,346***	***9,753***	***3,183***	***12,936***	***3,754***	***9,336***	***13,090***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	35,344	471	1,389	1,860	1,527	1,142	2,669
Gateway Non-Residential Vehicle Trips [F]	113,046	9,108	1,594	10,702	2,008	8,013	10,021
Gateway Transit Vehicle [G]	1,956	174	200	374	219	181	400
Gateway Total Vehicles [E + F + G = H]	***150,346***	***9,753***	***3,183***	***12,936***	***3,754***	***9,336***	***13,090***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**33,447**	**452**	**1,324**	**1,776**	**1,446**	**1,092**	**2,538**
Gateway Non-Residential Vehicle Trips Growth	**37,773**	**2,951**	**429**	**3,380**	**760**	**2,911**	**3,671**
Gateway Transit Vehicle Growth	**754**	**40**	**93**	**133**	**92**	**47**	**139**
All Gateway Vehicle Growth	***71,974***	***3,443***	***1,846***	***5,289***	***2,298***	***4,050***	***6,348***

Bold values indicate units of **VEHICLE** trips

Table A-5: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,098 DUs)	59,591	910	3,679	4,589	3,519	1,976	5,495
Existing Non-Residential Trips (24,779 Employees)	101,346	10,995	1,573	12,568	1,924	9,355	11,279
Additional Non-Residential Trips (17,830 Employees)	72,925	7,911	1,132	9,043	1,384	6,731	8,115
Total Person Trips	236,588	19,857	6,538	26,395	6,972	18,149	25,121
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 18.3%, AM: 24.6%, PM: 21.6%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	15,518	387	1,556	1,943	1,235	695	1,930
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	27,804	3,970	569	4,539	596	2,895	3,491
Gateway Person Trips							
Gateway Residential Person Trips	46,799	564	2,277	2,841	2,429	1,368	3,797
Gateway Non-Residential Person Trips	146,467	14,936	2,136	17,072	2,712	13,191	15,903
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	15,518	387	1,556	1,943	1,235	695	1,930
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	27,804	3,970	569	4,539	596	2,895	3,491
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.8%, AM: 58.6%, PM: 63.1%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 14.2%, AM: 14.7%, PM: 15.8%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 6.6%, AM: 11.8%, PM: 10.6%)	3,104	14	321	335	368	36	404
Active (Daily: 10.4%, AM: 14.9%, PM: 10.5%)	4,845	18	403	421	354	42	396
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Gateway Residential Vehicle Trips [E]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 59.7%, AM: 47.6%, PM: 46.8%)	87,496	7,006	1,126	8,132	1,448	6,002	7,450
HOV (Daily: 10.2%, AM: 9.9%, PM: 12.6%)	14,915	1,493	195	1,688	633	1,363	1,996
Transit/Shuttle (Daily: 28.9%, AM: 40.4%, PM: 36.8%)	42,260	6,297	598	6,895	494	5,356	5,850
Active (Daily: 1.2%, AM: 2.1%, PM: 3.8%)	1,796	140	217	357	137	470	607
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**87,496**	**7,006**	**1,126**	**8,132**	**1,448**	**6,002**	**7,450**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.13)	**7,458**	**678**	**98**	**776**	**317**	**619**	**936**
Gateway Non-Residential Vehicle Trips [F]	***94,954***	***7,684***	***1,224***	***8,908***	***1,765***	***6,621***	***8,386***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.6, PM: 9.9)							
Gateway Transit Vehicles [G]	***5,215***	***348***	***337***	***685***	***305***	***328***	***633***
Gateway Total Vehicles [E + F + G = H]	***135,513***	***8,503***	***2,950***	***11,453***	***3,597***	***8,091***	***11,688***

Table A-5: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.7%, AM: 34.8%, PM: 41.9%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 10.7%, AM: 8.8%, PM: 10.5%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 5.0%, AM: 7.0%, PM: 7.1%)	3,104	14	321	335	368	36	404
Active (Daily: 32.6%, AM: 49.4%, PM: 40.5%)	20,363	405	1,959	2,364	1,589	737	2,326
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Internal+Gateway Residential Vehicle Trips [I]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 50.2%, AM: 37.6%, PM: 38.4%)	87,496	7,006	1,126	8,132	1,448	6,002	7,450
HOV (Daily: 8.6%, AM: 7.8%, PM: 10.3%)	14,915	1,493	195	1,688	633	1,363	1,996
Transit/Shuttle (Daily: 24.2%, AM: 31.9%, PM: 30.2%)	42,260	6,297	598	6,895	494	5,356	5,850
Active (Daily: 17.0%, AM: 22.7%, PM: 21.1%)	29,600	4,110	786	4,896	733	3,365	4,098
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**87,496**	**7,006**	**1,126**	**8,132**	**1,448**	**6,002**	**7,450**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.13)	**7,458**	**678**	**98**	**776**	**317**	**619**	**936**
Internal+Gateway Non-Residential Vehicle Trips [J]	***94,954***	***7,684***	***1,224***	***8,908***	***1,765***	***6,621***	***8,386***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.6, PM: 9.9)							
Internal+Gateway Transit Vehicles [K]	***5,215***	***348***	***337***	***685***	***305***	***328***	***633***
Internal+Gateway Total Vehicles [I + J + K = L]	***135,513***	***8,503***	***2,950***	***11,453***	***3,597***	***8,091***	***11,688***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	35,344	471	1,389	1,860	1,527	1,142	2,669
Gateway Non-Residential Vehicle Trips [F]	94,954	7,684	1,224	8,908	1,765	6,621	8,386
Gateway Transit Vehicle [G]	5,215	348	337	685	305	328	633
Gateway Total Vehicles [E + F + G = H]	***135,513***	***8,503***	***2,950***	***11,453***	***3,597***	***8,091***	***11,688***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**33,447**	**452**	**1,324**	**1,776**	**1,446**	**1,092**	**2,538**
Gateway Non-Residential Vehicle Trips Growth	**19,681**	**1,527**	**59**	**1,586**	**517**	**1,519**	**2,036**
Gateway Transit Vehicle Growth	**4,013**	**214**	**230**	**444**	**178**	**194**	**372**
All Gateway Vehicle Growth	***57,141***	***2,193***	***1,613***	***3,806***	***2,141***	***2,805***	***4,946***

Bold values indicate units of **VEHICLE** trips

Table A-6: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,098 DUs)	59,591	910	3,679	4,589	3,519	1,976	5,495
Existing Non-Residential Trips (23,312 Employees)	95,346	10,344	1,480	11,824	1,810	8,800	10,610
Additional Non-Residential Trips (16,389 Employees)	67,031	7,272	1,041	8,313	1,273	6,187	7,460
Total Person Trips	224,694	18,567	6,354	24,921	6,747	17,050	23,797
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 18.4%, AM: 24.8%, PM: 21.8%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	15,518	387	1,556	1,943	1,235	695	1,930
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	25,907	3,699	530	4,229	555	2,698	3,253
Gateway Person Trips							
Gateway Residential Person Trips	46,799	564	2,277	2,841	2,429	1,368	3,797
Gateway Non-Residential Person Trips	136,470	13,917	1,991	15,908	2,528	12,289	14,817
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	15,518	387	1,556	1,943	1,235	695	1,930
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	25,907	3,699	530	4,229	555	2,698	3,253
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.8%, AM: 58.6%, PM: 63.1%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 14.2%, AM: 14.7%, PM: 15.8%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 6.6%, AM: 11.8%, PM: 10.6%)	3,104	14	321	335	368	36	404
Active (Daily: 10.4%, AM: 14.9%, PM: 10.5%)	4,845	18	403	421	354	42	396
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Gateway Residential Vehicle Trips [E]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 59.8%, AM: 47.7%, PM: 46.9%)	81,553	6,532	1,050	7,582	1,351	5,594	6,945
HOV (Daily: 10.2%, AM: 9.9%, PM: 12.5%)	13,890	1,389	182	1,571	589	1,270	1,859
Transit/Shuttle (Daily: 28.8%, AM: 40.4%, PM: 36.8%)	39,355	5,865	557	6,422	460	4,987	5,447
Active (Daily: 1.2%, AM: 2.0%, PM: 3.8%)	1,672	131	202	333	128	438	566
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**81,553**	**6,532**	**1,050**	**7,582**	**1,351**	**5,594**	**6,945**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**6,945**	**632**	**92**	**724**	**295**	**577**	**872**
Gateway Non-Residential Vehicle Trips [F]	***88,498***	***7,164***	***1,142***	***8,306***	***1,646***	***6,171***	***7,817***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.5, PM: 9.8)							
Gateway Transit Vehicles [G]	***4,871***	***324***	***319***	***643***	***290***	***306***	***596***
Gateway Total Vehicles [E + F + G = H]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***

Table A-6: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.7%, AM: 34.8%, PM: 41.9%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 10.7%, AM: 8.8%, PM: 10.5%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 5.0%, AM: 7.0%, PM: 7.1%)	3,104	14	321	335	368	36	404
Active (Daily: 32.6%, AM: 49.4%, PM: 40.5%)	20,363	405	1,959	2,364	1,589	737	2,326
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Internal+Gateway Residential Vehicle Trips [I]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 50.2%, AM: 37.7%, PM: 38.4%)	81,553	6,532	1,050	7,582	1,351	5,594	6,945
HOV (Daily: 8.6%, AM: 7.8%, PM: 10.3%)	13,890	1,389	182	1,571	589	1,270	1,859
Transit/Shuttle (Daily: 24.2%, AM: 31.9%, PM: 30.1%)	39,355	5,865	557	6,422	460	4,987	5,447
Active (Daily: 17.0%, AM: 22.6%, PM: 21.2%)	27,579	3,830	732	4,562	683	3,136	3,819
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**81,553**	**6,532**	**1,050**	**7,582**	**1,351**	**5,594**	**6,945**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**6,945**	**632**	**92**	**724**	**295**	**577**	**872**
Internal+Gateway Non-Residential Vehicle Trips [J]	***88,498***	***7,164***	***1,142***	***8,306***	***1,646***	***6,171***	***7,817***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.5, PM: 9.8)							
Internal+Gateway Transit Vehicles [K]	***4,871***	***324***	***319***	***643***	***290***	***306***	***596***
Internal+Gateway Total Vehicles [I + J + K = L]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	35,344	471	1,389	1,860	1,527	1,142	2,669
Gateway Non-Residential Vehicle Trips [F]	88,498	7,164	1,142	8,306	1,646	6,171	7,817
Gateway Transit Vehicle [G]	4,871	324	319	643	290	306	596
Gateway Total Vehicles [E + F + G = H]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**33,447**	**452**	**1,324**	**1,776**	**1,446**	**1,092**	**2,538**
Gateway Non-Residential Vehicle Trips Growth	**13,225**	**1,007**	**-23**	**984**	**398**	**1,069**	**1,467**
Gateway Transit Vehicle Growth	**3,669**	**190**	**212**	**402**	**163**	**172**	**335**
All Gateway Vehicle Growth	***50,341***	***1,649***	***1,513***	***3,162***	***2,007***	***2,333***	***4,340***

Bold values indicate units of **VEHICLE** trips

Table A-7: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (363 DUs)	2,726	41	154	195	145	87	232
Additional Residential Trips (9,098 DUs)	59,591	910	3,679	4,589	3,519	1,976	5,495
Existing Non-Residential Trips (23,312 Employees)	95,346	10,344	1,480	11,824	1,810	8,800	10,610
Additional Non-Residential Trips (16,389 Employees)	67,031	7,272	1,041	8,313	1,273	6,187	7,460
Total Person Trips	224,694	18,567	6,354	24,921	6,747	17,050	23,797
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 18.4%, AM: 24.8%, PM: 21.8%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	15,518	387	1,556	1,943	1,235	695	1,930
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	25,907	3,699	530	4,229	555	2,698	3,253
Gateway Person Trips							
Gateway Residential Person Trips	46,799	564	2,277	2,841	2,429	1,368	3,797
Gateway Non-Residential Person Trips	136,470	13,917	1,991	15,908	2,528	12,289	14,817
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	15,518	387	1,556	1,943	1,235	695	1,930
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	25,907	3,699	530	4,229	555	2,698	3,253
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.8%, AM: 58.6%, PM: 63.1%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 14.2%, AM: 14.7%, PM: 15.8%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 6.6%, AM: 11.8%, PM: 10.6%)	3,104	14	321	335	368	36	404
Active (Daily: 10.4%, AM: 14.9%, PM: 10.5%)	4,845	18	403	421	354	42	396
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Gateway Residential Vehicle Trips [E]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 59.8%, AM: 47.7%, PM: 46.9%)	81,553	6,532	1,050	7,582	1,351	5,594	6,945
HOV (Daily: 10.2%, AM: 9.9%, PM: 12.5%)	13,890	1,389	182	1,571	589	1,270	1,859
Transit/Shuttle (Daily: 28.8%, AM: 40.4%, PM: 36.8%)	39,355	5,865	557	6,422	460	4,987	5,447
Active (Daily: 1.2%, AM: 2.0%, PM: 3.8%)	1,672	131	202	333	128	438	566
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**81,553**	**6,532**	**1,050**	**7,582**	**1,351**	**5,594**	**6,945**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**6,945**	**632**	**92**	**724**	**295**	**577**	**872**
Gateway Non-Residential Vehicle Trips [F]	***88,498***	***7,164***	***1,142***	***8,306***	***1,646***	***6,171***	***7,817***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.5, PM: 9.8)							
Gateway Transit Vehicles [G]	***4,871***	***324***	***319***	***643***	***290***	***306***	***596***
Gateway Total Vehicles [E + F + G = H]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***

Table A-7: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.7%, AM: 34.8%, PM: 41.9%)	32,203	425	1,241	1,666	1,365	1,032	2,397
HOV (Daily: 10.7%, AM: 8.8%, PM: 10.5%)	6,647	107	312	419	342	258	600
Transit/Shuttle (Daily: 5.0%, AM: 7.0%, PM: 7.1%)	3,104	14	321	335	368	36	404
Active (Daily: 32.6%, AM: 49.4%, PM: 40.5%)	20,363	405	1,959	2,364	1,589	737	2,326
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**32,203**	**425**	**1,241**	**1,666**	**1,365**	**1,032**	**2,397**
HOV Occupancy (Daily: 2.12, AM: 2.16, PM: 2.21)	**3,141**	**46**	**148**	**194**	**162**	**110**	**272**
Internal+Gateway Residential Vehicle Trips [I]	***35,344***	***471***	***1,389***	***1,860***	***1,527***	***1,142***	***2,669***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 50.2%, AM: 37.7%, PM: 38.4%)	81,553	6,532	1,050	7,582	1,351	5,594	6,945
HOV (Daily: 8.6%, AM: 7.8%, PM: 10.3%)	13,890	1,389	182	1,571	589	1,270	1,859
Transit/Shuttle (Daily: 24.2%, AM: 31.9%, PM: 30.1%)	39,355	5,865	557	6,422	460	4,987	5,447
Active (Daily: 17.0%, AM: 22.6%, PM: 21.2%)	27,579	3,830	732	4,562	683	3,136	3,819
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**81,553**	**6,532**	**1,050**	**7,582**	**1,351**	**5,594**	**6,945**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**6,945**	**632**	**92**	**724**	**295**	**577**	**872**
Internal+Gateway Non-Residential Vehicle Trips [J]	***88,498***	***7,164***	***1,142***	***8,306***	***1,646***	***6,171***	***7,817***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.7, AM: 10.5, PM: 9.8)							
Internal+Gateway Transit Vehicles [K]	***4,871***	***324***	***319***	***643***	***290***	***306***	***596***
Internal+Gateway Total Vehicles [I + J + K = L]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]	1,897	19	65	84	81	50	131
Gateway Non-Residential Vehicle Trips [N]	75,273	6,157	1,165	7,322	1,248	5,102	6,350
Gateway Transit Vehicle [O]	1,202	134	107	241	127	134	261
Gateway Total Vehicles [M + N + O = P]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]	35,344	471	1,389	1,860	1,527	1,142	2,669
Gateway Non-Residential Vehicle Trips [F]	88,498	7,164	1,142	8,306	1,646	6,171	7,817
Gateway Transit Vehicle [G]	4,871	324	319	643	290	306	596
Gateway Total Vehicles [E + F + G = H]	***128,713***	***7,959***	***2,850***	***10,809***	***3,463***	***7,619***	***11,082***
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth	**33,447**	**452**	**1,324**	**1,776**	**1,446**	**1,092**	**2,538**
Gateway Non-Residential Vehicle Trips Growth	**13,225**	**1,007**	**-23**	**984**	**398**	**1,069**	**1,467**
Gateway Transit Vehicle Growth	**3,669**	**190**	**212**	**402**	**163**	**172**	**335**
All Gateway Vehicle Growth	***50,341***	***1,649***	***1,513***	***3,162***	***2,007***	***2,333***	***4,340***

Bold values indicate units of **VEHICLE** trips

Table B-1: North Bayshore Master Plan Trip Generation: Achieving Site-Specific TDM Plan Policy Goal - By Land Use											
Land Use	**Quantity**	**Unit**	**Service Population**	**Daily Total**	**AM Peak Hour**			**PM Peak Hour**			**Source**
					In	**Out**	**Total**	**In**	**Out**	**Total**	
North Bayshore Master Plan Trips											
Residential - Market Rate	5,600	DU	10,080	21,560	280	902	1,182	991	694	1,685	CHTS + Local Rate Blend for Market Rate Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
Residential - Affordable	1,400	DU	2,660	4,929	64	202	266	220	160	380	CHTS + Local Rate Blend for Affordable Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
North Bayshore Master Plan Residential Trips (A)			*12,740*	*26,489*	*344*	*1,104*	*1,448*	*1,211*	*854*	*2,065*	
Office	3,145.9	KSF	12,584	23,527	2,744	352	3,096	443	2,353	2,796	Office Share of Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Retail	240.0	KSF	641	9,722	130	79	209	182	192	374	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Active Space	4.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Hotel	525	Rooms	210	2,515	68	53	121	47	47	94	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Community	55.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Police Operations Center	2.0	KSF	8	21	2	0	2	0	2	2	Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Public Parking at SA-P-1	240	Spaces	0	440	20	20	40	20	20	40	Existing Travel Behavior
North Bayshore Master Plan Non-Residential Trips (B)			*13,443*	*36,225*	*2,964*	*504*	*3,468*	*692*	*2,614*	*3,306*	*Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation*
North Bayshore Master Plan Trips (A + B = C)			*26,183*	*62,714*	*3,308*	*1,608*	*4,916*	*1,903*	*3,468*	*5,371*	
Existing Building Credit											
Office/R&D	1,650.7	KSF	-5,749	-16,597	-1,340	-247	-1,587	-282	-1,121	-1,403	Existing Google Non-Residential Travel Behavior
Industrial	92.5	KSF	-110	-405	-51	-7	-58	-6	-36	-42	ITE 11th Edition + Internalization: Daily - 10%, AM Peak Hour - 15%, PM Peak Hour - 30%
Public Parking at SA-P-1	240	Spaces	0	-440	-20	-20	-40	-20	-20	-40	Existing Travel Behavior
Existing Building Credit (D)			*-5,859*	*-17,442*	*-1,411*	*-274*	*-1,685*	*-308*	*-1,177*	*-1,485*	
Net Increase (C + D = E)			**20,324**	**45,272**	**1,897**	**1,334**	**3,231**	**1,595**	**2,291**	**3,886**	

Table B-2: North Bayshore Master Plan Trip Generation: Achieving Modified Site-Specific TDM Plan Policy Goal - By Land Use											
Land Use	**Quantity**	**Unit**	**Service Population**	**Daily Total**	**AM Peak Hour**			**PM Peak Hour**			**Source**
					In	**Out**	**Total**	**In**	**Out**	**Total**	
North Bayshore Master Plan Trips											
Residential - Market Rate	5,600	DU	10,080	21,560	280	902	1,182	991	694	1,685	CHTS + Local Rate Blend for Market Rate Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
Residential - Affordable	1,400	DU	2,660	4,929	64	202	266	220	160	380	CHTS + Local Rate Blend for Affordable Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
North Bayshore Master Plan Residential Trips (A)			*12,740*	*26,489*	*344*	*1,104*	*1,448*	*1,211*	*854*	*2,065*	
Office	3,145.9	KSF	12,584	18,476	2,234	312	2,546	376	1,844	2,220	Office Share of Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Retail	240.0	KSF	641	9,722	130	79	209	182	192	374	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Active Space	4.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Hotel	525	Rooms	210	2,515	68	53	121	47	47	94	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Community	55.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Police Operations Center	2.0	KSF	8	18	1	0	1	0	1	1	Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Public Parking at SA-P-1	240	Spaces	0	440	20	20	40	20	20	40	Existing Travel Behavior
North Bayshore Master Plan Non-Residential Trips (B)			*13,443*	*31,171*	*2,453*	*464*	*2,917*	*625*	*2,104*	*2,729*	*Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation*
North Bayshore Master Plan Trips (A + B = C)			*26,183*	*57,660*	*2,797*	*1,568*	*4,365*	*1,836*	*2,958*	*4,794*	
Existing Building Credit											
Office/R&D	1,650.7	KSF	-5,749	-16,597	-1,340	-247	-1,587	-282	-1,121	-1,403	Existing Google Non-Residential Travel Behavior
Industrial	92.5	KSF	-110	-405	-51	-7	-58	-6	-36	-42	ITE 11th Edition + Internalization: Daily - 10%, AM Peak Hour - 15%, PM Peak Hour - 30%
Public Parking at SA-P-1	240	Spaces	0	-440	-20	-20	-40	-20	-20	-40	Existing Travel Behavior
Existing Building Credit (D)			*-5,859*	*-17,442*	*-1,411*	*-274*	*-1,685*	*-308*	*-1,177*	*-1,485*	
Net Increase (C + D = E)			**20,324**	**40,218**	**1,386**	**1,294**	**2,680**	**1,528**	**1,781**	**3,309**	

Table B-3: North Bayshore Master Plan Trip Generation: Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate - By Land Use											
Land Use	**Quantity**	**Unit**	**Service Population**	**Daily Total**	**AM Peak Hour**			**PM Peak Hour**			**Source**
					In	**Out**	**Total**	**In**	**Out**	**Total**	
North Bayshore Master Plan Trips											
Residential - Market Rate	5,600	DU	10,080	21,560	280	902	1,182	991	694	1,685	CHTS + Local Rate Blend for Market Rate Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
Residential - Affordable	1,400	DU	2,660	4,929	64	202	266	220	160	380	CHTS + Local Rate Blend for Affordable Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
North Bayshore Master Plan Residential Trips (A)			*12,740*	*26,489*	*344*	*1,104*	*1,448*	*1,211*	*854*	*2,065*	
Office	3,145.9	KSF	11,703	16,359	2,066	281	2,347	334	1,700	2,034	Office Share of Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Retail	240.0	KSF	596	9,722	130	79	209	182	192	374	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Active Space	4.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Hotel	525	Rooms	210	2,515	68	53	121	47	47	94	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Community	55.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Police Operations Center	2.0	KSF	7	16	1	0	1	0	1	1	Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Public Parking at SA-P-1	240	Spaces	0	440	20	20	40	20	20	40	Existing Travel Behavior
North Bayshore Master Plan Non-Residential Trips (B)			*12,516*	*29,052*	*2,285*	*433*	*2,718*	*583*	*1,960*	*2,543*	*Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation*
North Bayshore Master Plan Trips (A + B = C)			*25,256*	*55,541*	*2,629*	*1,537*	*4,166*	*1,794*	*2,814*	*4,608*	
Existing Building Credit											
Office/R&D	1,650.7	KSF	-5,749	-16,597	-1,340	-247	-1,587	-282	-1,121	-1,403	Existing Google Non-Residential Travel Behavior
Industrial	92.5	KSF	-110	-405	-51	-7	-58	-6	-36	-42	ITE 11th Edition + Internalization: Daily - 10%, AM Peak Hour - 15%, PM Peak Hour - 30%
Public Parking at SA-P-1	240	Spaces	0	-440	-20	-20	-40	-20	-20	-40	Existing Travel Behavior
Existing Building Credit (D)			*-5,859*	*-17,442*	*-1,411*	*-274*	*-1,685*	*-308*	*-1,177*	*-1,485*	
Net Increase (C + D = E)			**19,397**	**38,099**	**1,218**	**1,263**	**2,481**	**1,486**	**1,637**	**3,123**	

Table B-4: North Bayshore Master Plan Trip Generation: Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate and Rengstorff Connector - By Land Use											
Land Use	**Quantity**	**Unit**	**Service Population**	**Daily Total**	**AM Peak Hour**			**PM Peak Hour**			**Source**
					In	**Out**	**Total**	**In**	**Out**	**Total**	
North Bayshore Master Plan Trips											
Residential - Market Rate	5,600	DU	10,080	21,560	280	902	1,182	991	694	1,685	CHTS + Local Rate Blend for Market Rate Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
Residential - Affordable	1,400	DU	2,660	4,929	64	202	266	220	160	380	CHTS + Local Rate Blend for Affordable Housing, Adjusted for NBS MP Unit Mix and Parking Ratio
North Bayshore Master Plan Residential Trips (A)			*12,740*	*26,489*	*344*	*1,104*	*1,448*	*1,211*	*854*	*2,065*	
Office	3,145.9	KSF	11,703	16,359	2,066	281	2,347	334	1,700	2,034	Office Share of Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Retail	240.0	KSF	596	9,722	130	79	209	182	192	374	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Active Space	4.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Hotel	525	Rooms	210	2,515	68	53	121	47	47	94	ITE 11th Edition + Internalization: Daily - 40%, AM Peak Hour - 50%, PM Peak Hour - 70%
Community	55.0	KSF	0	0	0	0	0	0	0	0	Assumed to be 100% Internalization
Police Operations Center	2.0	KSF	7	16	1	0	1	0	1	1	Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation
Public Parking at SA-P-1	240	Spaces	0	440	20	20	40	20	20	40	Existing Travel Behavior
North Bayshore Master Plan Non-Residential Trips (B)			*12,516*	*29,052*	*2,285*	*433*	*2,718*	*583*	*1,960*	*2,543*	*Modified Site-Specific TDM Plan Policy Goal Total from Gateway Trip Generation*
North Bayshore Master Plan Trips (A + B = C)			*25,256*	*55,541*	*2,629*	*1,537*	*4,166*	*1,794*	*2,814*	*4,608*	
Existing Building Credit											
Office/R&D	1,650.7	KSF	-5,749	-16,597	-1,340	-247	-1,587	-282	-1,121	-1,403	Existing Google Non-Residential Travel Behavior
Industrial	92.5	KSF	-110	-405	-51	-7	-58	-6	-36	-42	ITE 11th Edition + Internalization: Daily - 10%, AM Peak Hour - 15%, PM Peak Hour - 30%
Public Parking at SA-P-1	240	Spaces	0	-440	-20	-20	-40	-20	-20	-40	Existing Travel Behavior
Existing Building Credit (D)			*-5,859*	*-17,442*	*-1,411*	*-274*	*-1,685*	*-308*	*-1,177*	*-1,485*	
Net Increase (C + D = E)			**19,397**	**38,099**	**1,218**	**1,263**	**2,481**	**1,486**	**1,637**	**3,123**	

Table C-1: North Bayshore Master Plan Person and Vehicle Trip Generation by Mode of Travel							
	Daily	**AM In**	**AM Out**	**AM Total**	**PM In**	**PM Out**	**PM Total**
All Land Uses: Person Trips							
Existing Residential Trips (0 DUs)	0	0	0	0	0	0	0
Additional Residential Trips (7,000 DUs)	46,340	700	2,870	3,570	2,730	1,540	4,270
Existing Non-Residential Trips (0,000 Employees)	0	0	0	0	0	0	0
Additional Non-Residential Trips (12,516 Employees)	51,190	5,553	795	6,348	972	4,725	5,697
Total Person Trips	97,530	6,253	3,665	9,918	3,702	6,265	9,967
All Land Uses: Internal vs Gateway Person Trips							
Internal Trips Percentage (Daily: 20.2%, AM: 28.1%, PM: 24.7%)							
Residential (Daily: 24.9%, AM: 40.6%, PM: 33.7%)	11,539	285	1,165	1,450	920	519	1,439
Non-Residential (Daily: 16.0%, AM: 21.0%, PM: 18.0%)	8,167	1,166	167	1,333	175	850	1,025
Gateway Person Trips							
Gateway Residential Person Trips	34,801	415	1,705	2,120	1,810	1,021	2,831
Gateway Non-Residential Person Trips	43,023	4,387	628	5,015	797	3,875	4,672
Residential Land Use: Internal Mode Choice							
Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	11,539	285	1,165	1,450	920	519	1,439
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Residential Vehicle Trips [A]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Non-Residential Land Use: Internal Mode Choice							
Non-Residential - Internal Mode Choice							
SOV+Trucks (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
HOV (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Transit/Shuttle (Daily: 0.0%, AM: 0.0%, PM: 0.0%)	0	0	0	0	0	0	0
Active (Daily: 100.0%, AM: 100.0%, PM: 100.0%)	8,167	1,166	167	1,333	175	850	1,025
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HOV Occupancy (Daily: 0.00, AM: 0.00, PM: 0.00)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Internal Non-Residential Vehicle Trips [B]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
All Land Uses: Internal Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 0.0, AM: 0.0, PM: 0.0)							
Internal Transit Vehicles [C]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Internal Total Vehicles [A + B + C = D]	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Residential Land Use: Gateway Mode Choice							
Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 68.9%, AM: 58.8%, PM: 63.3%)	23,988	312	934	1,246	1,021	770	1,791
HOV (Daily: 14.3%, AM: 14.9%, PM: 15.9%)	4,973	80	235	315	257	194	451
Transit/Shuttle (Daily: 6.6%, AM: 11.7%, PM: 10.5%)	2,283	10	238	248	272	26	298
Active (Daily: 10.2%, AM: 14.6%, PM: 10.3%)	3,557	13	298	311	260	31	291
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**23,988**	**312**	**934**	**1,246**	**1,021**	**770**	**1,791**
HOV Occupancy (Daily: 2.12, AM: 2.17, PM: 2.21)	**2,343**	**34**	**111**	**145**	**121**	**83**	**204**
Gateway Residential Vehicle Trips [E]	***26,331***	***346***	***1,045***	***1,391***	***1,142***	***853***	***1,995***
Non-Residential Land Use: Gateway Mode Choice							
Non-Residential - Gateway Mode Choice							
SOV+Trucks (Daily: 57.5%, AM: 45.0%, PM: 44.2%)	24,738	1,943	313	2,256	410	1,655	2,065
HOV (Daily: 10.8%, AM: 10.3%, PM: 13.0%)	4,647	457	60	517	191	418	609
Transit/Shuttle (Daily: 30.4%, AM: 42.5%, PM: 38.7%)	13,079	1,943	187	2,130	153	1,655	1,808
Active (Daily: 1.3%, AM: 2.2%, PM: 4.1%)	559	44	68	112	43	147	190
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**24,738**	**1,943**	**313**	**2,256**	**410**	**1,655**	**2,065**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**2,324**	**208**	**30**	**238**	**96**	**190**	**286**
Gateway Non-Residential Vehicle Trips [F]	***27,062***	***2,151***	***343***	***2,494***	***506***	***1,845***	***2,351***
All Land Uses: Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.9, AM: 9.5, PM: 8.8)							
Gateway Transit Vehicles [G]	***1,720***	***108***	***142***	***250***	***137***	***103***	***240***
Gateway Total Vehicles [E + F + G = H]	***55,113***	***2,605***	***1,530***	***4,135***	***1,785***	***2,801***	***4,586***

Table C-1: North Bayshore Master Plan Person and Vehicle Trip Generation by Mode of Travel							
	Daily	AM In	AM Out	AM Total	PM In	PM Out	PM Total
Residential Land Use: Internal+Gateway Mode Choice							
Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 51.8%, AM: 34.9%, PM: 41.9%)	23,988	312	934	1,246	1,021	770	1,791
HOV (Daily: 10.7%, AM: 8.8%, PM: 10.6%)	4,973	80	235	315	257	194	451
Transit/Shuttle (Daily: 4.9%, AM: 6.9%, PM: 7.0%)	2,283	10	238	248	272	26	298
Active (Daily: 32.6%, AM: 49.4%, PM: 40.5%)	15,096	298	1,463	1,761	1,180	550	1,730
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**23,988**	**312**	**934**	**1,246**	**1,021**	**770**	**1,791**
HOV Occupancy (Daily: 2.12, AM: 2.17, PM: 2.21)	**2,343**	**34**	**111**	**145**	**121**	**83**	**204**
Internal+Gateway Residential Vehicle Trips [I]	***26,331***	***346***	***1,045***	***1,391***	***1,142***	***853***	***1,995***
Non-Residential Land Use: Internal+Gateway Mode Choice							
Non-Residential - Internal+Gateway Mode Choice							
SOV+Trucks (Daily: 48.3%, AM: 35.5%, PM: 36.2%)	24,738	1,943	313	2,256	410	1,655	2,065
HOV (Daily: 9.1%, AM: 8.1%, PM: 10.7%)	4,647	457	60	517	191	418	609
Transit/Shuttle (Daily: 25.5%, AM: 33.6%, PM: 31.7%)	13,079	1,943	187	2,130	153	1,655	1,808
Active (Daily: 17.1%, AM: 22.8%, PM: 21.4%)	8,726	1,210	235	1,445	218	997	1,215
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**24,738**	**1,943**	**313**	**2,256**	**410**	**1,655**	**2,065**
HOV Occupancy (Daily: 2.00, AM: 2.17, PM: 2.13)	**2,324**	**208**	**30**	**238**	**96**	**190**	**286**
Internal+Gateway Non-Residential Vehicle Trips [J]	***27,062***	***2,151***	***343***	***2,494***	***506***	***1,845***	***2,351***
All Land Uses: Internal+Gateway Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 8.9, AM: 9.5, PM: 8.8)							
Internal+Gateway Transit Vehicles [K]	***1,720***	***108***	***142***	***250***	***137***	***103***	***240***
Internal+Gateway Total Vehicles [I + J + K = L]	***55,113***	***2,605***	***1,530***	***4,135***	***1,785***	***2,801***	***4,586***
Gateway Vehicle Trips Growth							
Gateway Vehicle Trips (Spring 2020)							
Gateway Residential Vehicle Trips [M]							
Gateway Non-Residential Vehicle Trips [N]							
Gateway Transit Vehicle [O]							
Gateway Total Vehicles [M + N + O = P]							
All Land Uses: Gateway Vehicle Trip Calculations							
Gateway Residential Vehicle Trips [E]							
Gateway Non-Residential Vehicle Trips [F]							
Gateway Transit Vehicle [G]							
Gateway Total Vehicles [E + F + G = H]							
Gateway Vehicle Trips Growth Over Existing (Spring 2020)							
Gateway Residential Vehicle Trips Growth							
Gateway Non-Residential Vehicle Trips Growth							
Gateway Transit Vehicle Growth							
All Gateway Vehicle Growth							

Bold values indicate units of **VEHICLE** trips

Table C-2: North Bayshore Master Plan Person Trip Generation by Mode of Travel

Mode of Travel	Daily Person Trips	AM Peak Hour Person Trips			PM Peak Hour Person Trips		
		In	Out	Total	In	Out	Total
Pedestrian	19,060 (19.5%)	1,210 (19.3%)	1,360 (37.0%)	2,570 (25.9%)	1,120 (30.2%)	1,240 (19.8%)	2,360 (23.6%)
Bicycle	4,760 (4.9%)	300 (4.8%)	340 (9.2%)	640 (6.4%)	280 (7.5%)	310 (4.9%)	590 (5.9%)
Transit	15,360 (15.7%)	1,950 (31.2%)	430 (11.7%)	2,380 (23.9%)	430 (11.6%)	1,680 (26.8%)	2,110 (21.1%)
Subtotal (Pedestrian+Bicycle+Transit)	*39,180 (40.1%)*	*3,460 (55.3%)*	*2,130 (57.9%)*	*5,590 (56.2%)*	*1,830 (49.3%)*	*3,230 (51.5%)*	*5,060 (50.6%)*
High-Occupancy Vehicle (HOV)	9,620 (9.9%)	540 (8.6%)	300 (8.2%)	840 (8.5%)	450 (12.1%)	610 (9.7%)	1,060 (10.6%)
Single-Occupancy Vehicle (SOV)	48,730 (50.0%)	2,260 (36.1%)	1,250 (33.9%)	3,510 (35.3%)	1,430 (38.6%)	2,430 (38.8%)	3,860 (38.8%)
Subtotal (SOV+HOV)	*58,350 (59.9%)*	*2,800 (44.7%)*	*1,550 (42.1%)*	*4,350 (43.8%)*	*1,880 (50.7%)*	*3,040 (48.5%)*	*4,920 (49.4%)*
Total	**97,530 (100.0%)**	**6,260 (100.0%)**	**3,680 (100.0%)**	**9,940 (100.0%)**	**3,710 (100.0%)**	**6,270 (100.0%)**	**9,980 (100.0%)**

Table C-3: North Bayshore Master Plan Vehicle Trip Generation by Mode of Travel

Mode of Travel	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
		In	Out	Total	In	Out	Total
Pedestrian	19,060 (24.1%)	1,210 (29.4%)	1,360 (42.4%)	2,570 (35.1%)	1,120 (35.3%)	1,240 (28.6%)	2,360 (31.4%)
Bicycle	4,760 (6.0%)	300 (7.3%)	340 (10.6%)	640 (8.7%)	280 (8.8%)	310 (7.1%)	590 (7.9%)
Transit	1,720 (2.2%)	110 (2.7%)	140 (4.4%)	250 (3.4%)	140 (4.4%)	100 (2.3%)	240 (3.2%)
Subtotal (Pedestrian+Bicycle+Transit)	*25,540 (32.3%)*	*1,620 (39.4%)*	*1,840 (57.4%)*	*3,460 (47.2%)*	*1,540 (48.5%)*	*1,650 (38.0%)*	*3,190 (42.5%)*
High-Occupancy Vehicle (HOV)	4,660 (5.9%)	240 (5.8%)	120 (3.7%)	360 (4.9%)	200 (6.3%)	260 (6.0%)	460 (6.1%)
Single-Occupancy Vehicle (SOV)	48,730 (61.8%)	2,260 (54.8%)	1,250 (38.9%)	3,510 (47.9%)	1,430 (45.2%)	2,430 (56.0%)	3,860 (51.4%)
Subtotal (SOV+HOV)	*53,390 (67.7%)*	*2,500 (60.6%)*	*1,370 (42.6%)*	*3,870 (52.8%)*	*1,630 (51.5%)*	*2,690 (62.0%)*	*4,320 (57.5%)*
Total	**78,930 (100.0%)**	**4,120 (100.0%)**	**3,210 (100.0%)**	**7,330 (100.0%)**	**3,170 (100.0%)**	**4,340 (100.0%)**	**7,510 (100.0%)**

North Bayshore Master Plan – Detailed Project Trip Generation by Gateway

FEHR PEERS

Table 1: Detailed Gateway Trip Generation

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	Morning Peak Hour			Evening Peak Hour		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)	78,372	6,310	1,337	7,647	1,456	5,286	6,742
New Project Vehicle Trips	94,619	4,546	2,306	6,852	2,802	4,710	7,512
Existing Demolition Vehicle Trip Credit	-20,071	-1,626	-313	-1,939	-353	-1,356	-1,709
Mixed-Use Trip Reduction	-24,207	-1,271	-480	-1,751	-442	-1,021	-1,463
Scenario Gateway Total Vehicle Trips	**128,713**	**7,959**	**2,850**	**10,809**	**3,463**	**7,619**	**11,082**
Net New Gateway Vehicle Trips	50,341	1,649	1,513	3,162	2,007	2,333	4,340

Table 2: Detailed Gateway Morning Peak Hour Trip Generation by Gateway

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	San Antonio			Rengstorff			Shoreline		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)		1,352	237	1,589	2,477	411	2,888	2,482	688	3,170
New Project Vehicle Trips		300	57	357	2,042	953	2,995	2,204	1,296	3,500
Existing Demolition Vehicle Trip Credit		-77	-16	-93	-803	-150	-953	-746	-147	-893
Mixed-Use Trip Reduction		-272	-85	-357	-499	-148	-647	-500	-247	-747
Scenario Gateway Total Vehicle Trips		**1,303**	**193**	**1,496**	**3,217**	**1,066**	**4,283**	**3,440**	**1,590**	**5,030**
Net New Gateway Vehicle Trips		-49	-44	-93	740	655	1,395	958	902	1,860

Table 3: Detailed Gateway Evening Peak Hour Trip Generation by Gateway

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	San Antonio			Rengstorff			Shoreline		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)		231	852	1,083	491	2,022	2,513	735	2,412	3,147
New Project Vehicle Trips		63	265	328	1,175	2,026	3,201	1,564	2,419	3,983
Existing Demolition Vehicle Trip Credit		-17	-68	-85	-182	-653	-835	-154	-635	-789
Mixed-Use Trip Reduction		-70	-165	-235	-149	-391	-540	-223	-465	-688
Scenario Gateway Total Vehicle Trips		**207**	**884**	**1,091**	**1,335**	**3,004**	**4,339**	**1,922**	**3,731**	**5,653**
Net New Gateway Vehicle Trips		-24	32	8	844	982	1,826	1,187	1,319	2,506

Rounded

Table 1: Detailed Gateway Trip Generation

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	Morning Peak Hour			Evening Peak Hour		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)	78,370	6,310	1,340	7,650	1,460	5,280	6,740
New Project Vehicle Trips	94,620	4,540	2,310	6,850	2,800	4,720	7,520
Existing Demolition Vehicle Trip Credit	-20,070	-1,630	-320	-1,950	-350	-1,360	-1,710
Mixed-Use Trip Reduction	-24,210	-1,260	-480	-1,740	-450	-1,020	-1,470
Scenario Gateway Total Vehicle Trips	**128,710**	**7,960**	**2,850**	**10,810**	**3,460**	**7,620**	**11,080**
Net New Gateway Vehicle Trips	50,340	1,650	1,510	3,160	2,000	2,340	4,340

Table 2: Detailed Gateway Morning Peak Hour Trip Generation by Gateway

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	San Antonio			Rengstorff			Shoreline		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)		1,350	240	1,590	2,480	410	2,890	2,480	690	3,170
New Project Vehicle Trips		300	60	360	2,040	950	2,990	2,200	1,300	3,500
Existing Demolition Vehicle Trip Credit		-80	-20	-100	-800	-150	-950	-750	-150	-900
Mixed-Use Trip Reduction		-270	-90	-360	-500	-150	-650	-490	-240	-730
Scenario Gateway Total Vehicle Trips		**1,300**	**190**	**1,490**	**3,220**	**1,060**	**4,280**	**3,440**	**1,600**	**5,040**
Net New Gateway Vehicle Trips		-50	-50	-100	740	650	1,390	960	910	1,870

Table 3: Detailed Gateway Evening Peak Hour Trip Generation by Gateway

Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	San Antonio			Rengstorff			Shoreline		
	Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips (Spring 2020)		230	850	1,080	490	2,020	2,510	740	2,410	3,150
New Project Vehicle Trips		60	270	330	1,180	2,030	3,210	1,560	2,420	3,980
Existing Demolition Vehicle Trip Credit		-20	-70	-90	-180	-650	-830	-150	-640	-790
Mixed-Use Trip Reduction		-70	-170	-240	-150	-390	-540	-230	-460	-690
Scenario Gateway Total Vehicle Trips		**200**	**880**	**1,080**	**1,340**	**3,010**	**4,350**	**1,920**	**3,730**	**5,650**
Net New Gateway Vehicle Trips		-30	30	0	850	990	1,840	1,180	1,320	2,500

Table 4: Detailed Gateway Trip Generation
Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	Daily	Morning Peak Hour			Evening Peak Hour		
	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Existing Gateway Vehicle Trips	78,372	6,310	1,337	7,647	1,456	5,286	6,742
Project Vehicle Trips							
Intuit (Bayshore Parkway)	1,518	120	22	142	30	103	133
Microsoft	5,473	433	79	512	108	371	479
Sobrato Mixed Use	4,846	195	142	337	168	225	393
Shashi Hotel	1,298	31	23	54	24	25	49
Charleston East	5,116	405	74	479	101	347	448
La Avenida Affordable Housing	340	5	13	18	16	11	27
Landings	4,114	326	59	385	81	279	360
Huff Garage	2,742	217	40	257	54	186	240
Gateway Master Plan (Non-Google)	13,631	185	317	502	426	349	775
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	2,238	30	47	77	65	54	119
North Bayshore Master Plan: Joaquin North On-Site Parking	12,615	238	509	747	559	452	1,011
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	3,499	197	56	253	67	165	232
North Bayshore Master Plan: Joaquin South On-Site Parking	3,747	63	152	215	168	131	299
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	2,311	292	40	332	47	240	287
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	11,699	1,440	213	1,653	250	1,190	1,440
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	8,994	136	105	241	182	184	366
North Bayshore Master Plan: Shorebird On-Site Parking	8,651	210	340	550	374	340	714
North Bayshore Master Plan: Pear On-Site Parking	1,787	23	75	98	82	58	140
Project Total Vehicle Trips	**94,619**	**4,546**	**2,306**	**6,852**	**2,802**	**4,710**	**7,512**
Existing Demolition Vehicle Trips							
Intuit (Bayshore Parkway)	0	0	0	0	0	0	0
Microsoft	0	0	0	0	0	0	0
Sobrato Mixed Use	0	0	0	0	0	0	0
Shashi Hotel	0	0	0	0	0	0	0
Charleston East	0	0	0	0	0	0	0
La Avenida Affordable Housing	-123	-13	-2	-15	-2	-10	-12
Landings	-2,506	-202	-37	-239	-43	-169	-212
Huff Garage	0	0	0	0	0	0	0
Gateway Master Plan (Non-Google)	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North On-Site Parking	-5,060	-408	-75	-483	-85	-342	-427
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin South On-Site Parking	-231	-27	-5	-32	-4	-20	-24
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	-1,333	-108	-20	-128	-23	-90	-113
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	-440	-20	-20	-40	-20	-20	-40
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	0	0	0	0	0	0	0
North Bayshore Master Plan: Shorebird On-Site Parking	-10,299	-838	-153	-991	-175	-698	-873
North Bayshore Master Plan: Pear On-Site Parking	-79	-10	-1	-11	-1	-7	-8
Existing Total Demolition Vehicle Trips	**-20,071**	**-1,626**	**-313**	**-1,939**	**-353**	**-1,356**	**-1,709**
Mixed-Use Trip Reduction	-24,207	-1,271	-480	-1,751	-442	-1,021	-1,463
Scenario Gateway Total Vehicle Trips	**128,713**	**7,959**	**2,850**	**10,809**	**3,463**	**7,619**	**11,082**
Net New Gateway Vehicle Trips	50,341	1,649	1,513	3,162	2,007	2,333	4,340

Table 5: Detailed Gateway Morning Peak Hour Trip Generation by Gateway
Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate

	San Antonio			Rengstorff			Shoreline		
	Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips	1,352	237	1,589	2,477	411	2,889	2,482	688	3,170
Project Vehicle Trips									
Intuit (Bayshore Parkway)	82	15	97	38	7	45	0	0	0
Microsoft	0	0	0	43	8	51	390	71	461
Sobrato Mixed Use	0	0	0	20	14	34	175	128	303
Shashi Hotel	0	0	0	3	2	5	28	21	49
Charleston East	8	8	16	162	30	192	235	36	271
La Avenida Affordable Housing	0	0	0	1	1	2	4	12	16
Landings	7	3	10	261	37	298	58	19	77
Huff Garage	4	4	8	87	16	103	126	20	146
Gateway Master Plan (Non-Google)	0	0	0	74	127	201	111	190	301
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	0	0	0	15	24	39	15	23	38
North Bayshore Master Plan: Joaquin North On-Site Parking	0	0	0	119	255	374	119	254	373
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	0	0	0	79	22	101	118	34	152
North Bayshore Master Plan: Joaquin South On-Site Parking	0	0	0	25	61	86	38	91	129
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	199	27	226	93	13	106	0	0	0
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	0	0	0	864	128	992	576	85	661
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	0	0	0	61	47	108	75	58	133
North Bayshore Master Plan: Shorebird On-Site Parking	0	0	0	95	153	248	115	187	302
North Bayshore Master Plan: Pear On-Site Parking	0	0	0	2	8	10	21	67	88
Project Total Vehicle Trips	**300**	**57**	**357**	**2,042**	**953**	**2,995**	**2,204**	**1,296**	**3,500**
Existing Demolition Vehicle Trips									
Intuit (Bayshore Parkway)	0	0	0	0	0	0	0	0	0
Microsoft	0	0	0	0	0	0	0	0	0
Sobrato Mixed Use	0	0	0	0	0	0	0	0	0
Shashi Hotel	0	0	0	0	0	0	0	0	0
Charleston East	0	0	0	0	0	0	0	0	0
La Avenida Affordable Housing	0	0	0	-1	0	-1	-12	-2	-14
Landings	-4	-2	-6	-162	-23	-185	-36	-12	-48
Huff Garage	0	0	0	0	0	0	0	0	0
Gateway Master Plan (Non-Google)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North On-Site Parking	0	0	0	-204	-38	-242	-204	-37	-241
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin South On-Site Parking	0	0	0	-11	-2	-13	-16	-3	-19
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	-73	-14	-87	-35	-6	-41	0	0	0
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	0	0	0	-12	-12	-24	-8	-8	-16
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Shorebird On-Site Parking	0	0	0	-377	-69	-446	-461	-84	-545
North Bayshore Master Plan: Pear On-Site Parking	0	0	0	-1	0	-1	-9	-1	-10
Existing Total Demolition Vehicle Trips	**-77**	**-16**	**-93**	**-803**	**-150**	**-953**	**-746**	**-147**	**-893**
Mixed-Use Trip Reduction	-272	-85	-357	-499	-148	-647	-500	-247	-747
Scenario Gateway Total Vehicle Trips	**1,303**	**193**	**1,496**	**3,217**	**1,066**	**4,284**	**3,440**	**1,590**	**5,030**
Net New Gateway Vehicle Trips	-49	-44	-93	740	655	1,395	958	902	1,860

Table 6: Detailed Gateway Evening Peak Hour Trip Generation by Gateway Scenario 3: Cumulative Conditions with NBPP Growth and Master Plan Achieving Modified Site-Specific TDM Plan Policy Goal, with a Historical Vacancy Rate									
	San Antonio			Rengstorff			Shoreline		
	Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing Gateway Vehicle Trips	231	852	1,083	491	2,022	2,513	735	2,412	3,147
Project Vehicle Trips									
Intuit (Bayshore Parkway)	20	70	90	10	33	43	0	0	0
Microsoft	0	0	0	11	37	48	97	334	431
Sobrato Mixed Use	0	0	0	17	23	40	151	202	353
Shashi Hotel	0	0	0	2	3	5	22	22	44
Charleston East	6	14	20	39	125	164	56	208	264
La Avenida Affordable Housing	0	0	0	2	1	3	14	10	24
Landings	2	11	13	73	193	266	6	75	81
Huff Garage	3	7	10	21	67	88	30	112	142
Gateway Master Plan (Non-Google)	0	0	0	170	140	310	256	209	465
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	0	0	0	33	27	60	32	27	59
North Bayshore Master Plan: Joaquin North On-Site Parking	0	0	0	280	226	506	279	226	505
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	0	0	0	27	66	93	40	99	139
North Bayshore Master Plan: Joaquin South On-Site Parking	0	0	0	67	52	119	101	79	180
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	32	163	195	15	77	92	0	0	0
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	0	0	0	150	714	864	100	476	576
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	0	0	0	82	83	165	100	101	201
North Bayshore Master Plan: Shorebird On-Site Parking	0	0	0	168	153	321	206	187	393
North Bayshore Master Plan: Pear On-Site Parking	0	0	0	8	6	14	74	52	126
Project Total Vehicle Trips	**63**	**265**	**328**	**1,175**	**2,026**	**3,201**	**1,564**	**2,419**	**3,983**
Existing Demolition Vehicle Trips									
Intuit (Bayshore Parkway)	0	0	0	0	0	0	0	0	0
Microsoft	0	0	0	0	0	0	0	0	0
Sobrato Mixed Use	0	0	0	0	0	0	0	0	0
Shashi Hotel	0	0	0	0	0	0	0	0	0
Charleston East	0	0	0	0	0	0	0	0	0
La Avenida Affordable Housing	0	0	0	0	-1	-1	-2	-9	-11
Landings	-1	-7	-8	-39	-117	-156	-3	-45	-48
Huff Garage	0	0	0	0	0	0	0	0	0
Gateway Master Plan (Non-Google)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North District Parking Garage (JN-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin North On-Site Parking	0	0	0	-43	-171	-214	-42	-171	-213
North Bayshore Master Plan: Joaquin South Parking Garage (JS-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Joaquin South On-Site Parking	0	0	0	-2	-8	-10	-2	-12	-14
North Bayshore Master Plan: Marine Way District Parking Garage (MW-P-1 & MW-P-2)	-16	-61	-77	-7	-29	-36	0	0	0
North Bayshore Master Plan: Amphitheatre District Parking Garage (SA-P-1)	0	0	0	-12	-12	-24	-8	-8	-16
North Bayshore Master Plan: Shorebird District Parking Garage (SB-P-1)	0	0	0	0	0	0	0	0	0
North Bayshore Master Plan: Shorebird On-Site Parking	0	0	0	-79	-314	-393	-96	-384	-480
North Bayshore Master Plan: Pear On-Site Parking	0	0	0	0	-1	-1	-1	-6	-7
Existing Total Demolition Vehicle Trips	**-17**	**-68**	**-85**	**-182**	**-653**	**-835**	**-154**	**-635**	**-789**
Mixed-Use Trip Reduction	-70	-165	-235	-149	-391	-540	-223	-465	-688
Scenario Gateway Total Vehicle Trips	**207**	**884**	**1,091**	**1,335**	**3,004**	**4,339**	**1,922**	**3,731**	**5,653**
Net New Gateway Vehicle Trips	-24	32	8	844	982	1,826	1,187	1,319	2,506

Table 7: Gateway Morning and Evening Peak Hour Trip Distributions												
	Morning Inbound			Morning Outbound			Evening In			Evening Outbound		
	San Antonio	Rengstorff	Shoreline	San Antonio	Rengstorff	Shoreline	San Antonio	Rengstorff	Shoreline	San Antonio	Rengstorff	Shoreline
NBS Area	In AM	In AM	In AM	Out AM	Out AM	Out AM	In PM	In PM	In PM	Out PM	Out PM	Out PM
1	2%	43%	56%	4%	44%	52%	2%	41%	57%	4%	46%	51%
2	0%	45%	55%	0%	45%	55%	0%	45%	55%	0%	45%	55%
3	2%	6%	92%	3%	1%	96%	2%	9%	89%	0%	1%	99%
4	0%	10%	90%	0%	10%	90%	0%	10%	90%	0%	10%	90%
5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6	0%	50%	50%	0%	50%	50%	0%	50%	50%	0%	50%	50%
7	0%	40%	60%	0%	40%	60%	0%	40%	60%	0%	40%	60%
8	2%	40%	58%	11%	40%	49%	6%	39%	55%	4%	36%	60%
9	2%	66%	32%	4%	58%	38%	2%	58%	40%	4%	70%	26%
10	2%	80%	17%	5%	63%	31%	3%	90%	7%	4%	69%	27%
11	38%	62%	0%	44%	55%	1%	34%	66%	0%	43%	57%	0%
12	68%	32%	0%	68%	32%	0%	68%	32%	0%	68%	32%	0%
13	2%	45%	53%	3%	45%	51%	2%	43%	55%	4%	50%	46%
14	0%	60%	40%	0%	60%	40%	0%	60%	40%	0%	60%	40%

Appendix D:
North Bayshore Precise Plan – Vehicle Gateway Capacity

MEMORANDUM

Date: July 2, 2014

To: Matt Raimi and Eric Yurkovich, Raimi + Associates
Martin Alkire, City of Mountain View
Judy Fenerty and John Schwarz, David J. Powers & Associates
Jim Lightbody, AECOM

From: Daniel Rubins and Julie Morgan

Subject: North Bayshore Precise Plan EIR – Establishing Vehicle Gateway Capacity and Sensitivity Tests on Accommodating New Growth

SJ13-1450

This memorandum summarizes the vehicle capacity at the gateways to the North Bayshore area as well as sensitivity tests related to accommodating new growth in that area. The North Bayshore area is bounded by US Route 101 to the south, Stevens Creek to the east (including Santiago Villa Mobile Home Park), San Francisco Bay and the Shoreline Recreation area to the north, and San Antonio Road to the west.

Observations of traffic flow were conducted at the five roadway segments listed below; in combination, these roadway segments carry all of the traffic that flows into or out of the North Bayshore area.

1. San Antonio Road between Bayshore Parkway and Casey Avenue
2. Bayshore Parkway between San Antonio Road and Garcia Avenue
3. Rengstorff Avenue between US 101 Northbound Ramps and Garcia Avenue-Charleston Road
4. Shoreline Boulevard between US 101 Northbound Ramps-La Avenida and Pear Avenue
5. La Avenida between Shoreline Boulevard and Inigo Way

Understanding the vehicle capacity constraints that exist along these roadways will help define the number of peak hour vehicle trips that can be accommodated into and out of North Bayshore. Several sensitivity tests were also conducted to determine the order-of-magnitude effectiveness of a variety of transportation and planning strategies that would be needed to accommodate the future travel demand expected from the projected growth in the North Bayshore area. This gateway capacity analysis and sensitivity tests will assist the project team in defining the range of potential land use and employment that could be accommodated in the North Bayshore area.

METHODS

The vehicle gateway capacity estimates[1] are based on existing street configurations and observed vehicle demand during the morning peak hour and evening peak hour. The peak period estimates are based on the ratio between existing peak period and peak hour counts for Shoreline Boulevard and across the gateways. These vehicle capacity estimates refine the planning level capacity estimates prepared during the *City of Mountain View Shoreline Transportation Study* (June 2013).

Shoreline Boulevard: Peak Hour Vehicle Saturation Flow Rate

For Shoreline Boulevard, the saturation flow rates were directly observed; the level of existing peak hour congestion means that this gateway is already operating at capacity. The vehicle saturation flow rate is defined as the maximum rate of vehicle traffic per lane per hour under ideal conditions (dry weather, few large vehicles, wide travel lanes, flat grade, etc.). In order to determine the saturation flow rate at the Shoreline Boulevard gateway, field observations were collected for four movements at two intersections:

- Shoreline Boulevard and US 101 Northbound Ramps-La Avenida
    - Northbound through movement (on Shoreline Boulevard)
    - Westbound right turn (US 101 Northbound off-ramp to Shoreline Boulevard)
- Shoreline Boulevard and Pear Avenue
    - Northbound through movement (on Shoreline Boulevard)
    - Northbound through-right turn movement (on Shoreline Boulevard)

The capacity for inbound trips during the morning peak hour capacity is defined by the number of vehicles that can use Shoreline Boulevard just north of US 101 (between La Avenida and Pear

[1] Vehicle gateway capacity is the maximum number of vehicles that can be served in a peak hour or peak period while maintaining freedom of vehicle movement through the gateways.

Avenue). The evening peak hour outbound flow is constrained by the operations of the Shoreline Boulevard and US 101 northbound ramps-La Avenida intersection.

Other Locations: Peak Hour Vehicle Capacity

The Rengstorff Avenue, San Antonio Road and Bayshore Parkway gateway locations are less congested than Shoreline Boulevard; thus, field observations and intersection operations sensitivity analysis were completed to determine the capacity at these locations by estimating the point at which future queuing would spill out of the existing storage pockets at two intersections:

- San Antonio Road and Bayshore Parkway intersection (controls the Bayshore and San Antonio gateways).
- Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road intersection (controls the Rengstorff Avenue gateway).

Because vehicle queuing directly affects gateway capacity, the capacity was estimated by incrementally increasing the intersection vehicle volumes[2] until the 95th percentile queues began to exceed the existing storage pockets (generally to the US 101 Northbound Ramps). The overall intersection delay was also considered; however, given the directional nature of North Bayshore area traffic, we found that relying on average intersection delay did not capture the weaving and queuing delay entering the North Bayshore area during the morning and leaving during the evening. The queuing sensitivity results with the Year 2030 Cumulative with Project Conditions forecasts from the North Bayshore Precise Plan Transportation Impact Analysis report for key turn movements are shown in **Table 1** for the morning peak hour and **Table 2** for the evening peak hour.

A review of the City of Mountain View Travel Demand Forecasting Model[3] under Year 2030 conditions confirms that the directional travel patterns of inbound in the morning and outbound in the evening are expected to persist into the future, and that the majority of vehicle growth is

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[2] Vehicle counts and intersection operations from the technical memorandum *North Bayshore Precise Plan: Existing Transportation Conditions* (Fehr & Peers, August 2012) were used for this analysis.

[3] A description of the model, trip adjustments for land use strategies, trip adjustments for transportation demand management (TDM) strategies, and planned roadway system improvements are discussed in the Transportation and Circulation section of the *City of Mountain View 2030 General Plan and Greenhouse Gas Reduction Program Environmental Impact Report*.

expected to occur at San Antonio Road, Bayshore Parkway, and Rengstorff Avenue (because there is very little available capacity at Shoreline Boulevard).

PEAK HOUR VEHICLE CAPACITY RESULTS

Under Existing Conditions, Shoreline Boulevard is at capacity during the morning and evening peak hours. When considering all of the North Bayshore Area gateway points together, we find that the combined volume could increase by approximately 15 percent during the morning and evening peak hours before reaching capacity. The San Antonio Road, Bayshore Parkway and Rengstorff Avenue entry/exit points will likely see the greatest increase in vehicle traffic because that is where the available capacity exists; the Shoreline Boulevard/La Avenida entry/exit points will not be able to accommodate much additional traffic because of existing capacity constraints. **Table 3** shows the existing (as of February 2014) morning and evening peak hour volumes and the peak hour vehicle capacities for all of the North Bayshore area gateways combined. **Table 4** shows the capacities for each gateway separately.

The North Bayshore area traffic is predominantly inbound in the morning and outbound in the evening. These vehicle capacity estimates account for the highly directional flow of traffic and maintain a similar level of peak direction to non-peak directional flow. The close spacing of the local streets (La Avenida, Bayshore Parkway, and Garcia Avenue-Charleston Road) to the US 101 interchange ramps limits existing and future vehicle storage.

The combined total capacity of all the gateways is calculated as:

- Morning Peak Hour = 8,100 peak hour vehicles
- Evening Peak Hour = 7,940 peak hour vehicles

PEAK PERIOD VEHICLE CAPACITY RESULTS

Table 5 shows the existing relationship between the peak hour and the peak period for Shoreline Boulevard separately, and across all gateways combined. Based on observations, the Shoreline Boulevard gateway is at capacity and experiences conditions where vehicle demand is equal to or exceeds capacity for 2 ½ hours to three hours each morning. The factor calculated from the counts is 2.7; that means that the total volume at Shoreline Boulevard across the three-hour peak period is 2.7 times the volume in the single peak hour. This factor is higher at Shoreline Boulevard in the peak direction (inbound during the morning and outbound during the evening) than at the other North Bayshore gateways, because Shoreline is the gateway that experiences the most sustained level of demand over multiple hours. This factor of 2.7 has then been applied to all of the gateways combined to estimate the maximum peak period capacity; this result therefore reflects the total peak period capacity if all of the gateways were as fully-utilized as Shoreline Boulevard is today. The results for all gateways combined are shown in **Table 6**, while **Table 7** shows the peak period vehicle capacities for each gateway individually.

SENSITIVITY TESTS FOR ACCOMMODATING FUTURE GROWTH

Typically the evaluation of a land use project begins by estimating its trip generation using an independent land use variable such as building size or number of employees. The surrounding transportation network is then sized to accommodate the estimated vehicle demand resulting from the trip generation calculations. This approach may not account for changes in mode split that could be achieved with an extensive TDM program, or the effects of a constrained roadway network on local travel choices. In order to understand the interrelated effects of the proposed land use program in North Bayshore and the vehicle capacity constraints on the access points into the area, we conducted several sensitivity tests with different planning and transportation strategies to determine how the future growth could be accommodated. The tests focused on the morning period, because that is the time when travelers typically decide which mode of travel to use for that day.

The purpose of a vehicular trip generation estimate is to determine the number of new vehicle trips entering and exiting the North Bayshore Area for various purposes (e.g., employee trips, visitor trips, and shopping trips) during a selected time period. The proposed project includes approximately 3,400,000 square feet of office and R&D space with supporting land uses (see **Tables 8** and **9** for more details on land use allocation).

Future Demand with Existing Travel Characteristics

If the current travel characteristics of North Bayshore tenants remain the same and the effectiveness of current TDM programs in the area remains constant,[4] we estimate that the

[4] Vehicle trip rates summarized in *North Bayshore Precise Plan EIR – Establishing Existing Travel Characteristics for North Bayshore* (March 2014).

proposed project would generate between 10,430 and 11,200 vehicle trips during the morning peak hour, and 9,840 and 10,580 vehicle trips during the evening peak hour. Please refer to **Table 10** for a summary of the vehicle trip estimates based on building size and employees. This level of traffic demand would exceed the available vehicular capacity at the North Bayshore gateways that was described in the previous section (i.e., 8,100 vehicles in the morning and 7,940 vehicles in the evening).

Gateway Capacity Improvements

Per the City's policy direction, the environmental analysis assumes no major infrastructure projects that would add significant roadway capacity for automobiles. There may be opportunities to construct a few localized improvements at certain gateway intersections that could marginally improve intersection operations and increase the gateway vehicle capacity. Examples of these types of improvements would include extending turn pockets to provide more storage for turning vehicles, re-aligning the US 101 off-ramp at Shoreline Boulevard, and/or HOV/transit queue jump lanes. The transportation analysis for the environmental impact analysis report will identify what localized improvements, if any, would be feasible and beneficial as mitigations. For the purposes of the sensitivity tests described here, we have made a basic assumption that localized improvements could achieve a 5 percent increase in vehicle capacity, which would allow an additional 400 morning peak hour vehicles to be accommodated.

City of Mountain View TDM Policies

The *Mountain View 2030 General Plan* (July 2012) includes policies to develop, adopt and monitor transportation demand management strategies for land development project in North Bayshore area. These polices include:

- POLICY LUD 17.2: Transportation Demand Management strategies. Require developments to include and implement Transportation Demand Management (TDM) strategies.
- POLICY MOB 10.2: Reduced travel demand. Promote effective TDM programs for existing and new development.

Upon completion of the *Mountain View 2030 General Plan*, City staff initiated the *Shoreline Regional Park Community Transportation Study* (2013) to identify:

- long-term transportation infrastructure (local streets, freeway interchange improvements, transit lanes, dedicated bicycle facilities);
- transportation demand management (employer incentive programs);
- parking management and supply strategies; and
- implementation of a transportation management association (TMA) responsible for implementing a shuttle program.

A 45 percent single occupancy (drive-alone) mode choice goal was identified as a potential North Bayshore performance measure. As described in the *North Bayshore Precise Plan EIR – Establishing Travel Characteristics for North Bayshore* (April 2014) the percentage of people who drive alone currently ranges between 50 percent and 63 percent, depending on the time period; the lowest drive-alone rate occurs during the morning peak hour.

In order to achieve a 45 percent SOV rate, people traveling to and from the North Bayshore area would need to use a variety of other modes. For example, the proposed project is estimated to generate up to approximately 6,800 peak hour transit passengers inbound during the morning peak hour. The addition of passengers from the project will increase demand on the private shuttle and public transit systems. In addition, some current drive-alone users would switch to carpooling and some carpool vehicles would add more occupants; thus, the proposed project is estimated to generate approximately 4,300 carpoolers inbound during the morning peak hour.

Sensitivity Test Results

Several sensitivity tests were conducted to determine how the proposed Precise Plan land use program could be accommodated within the available gateway capacities. Sensitivity tests looked at the effectiveness of TDM programs, the potential for spreading the vehicle demand over all gateways and over multiple hours, and the effects of making localized improvements to marginally increase vehicle capacity. The sensitivity results are shown in **Table 11**. These results indicate that the full project (an additional 3.4 million square feet) could be accommodated within the available gateway capacities under the following conditions:

- All of the gateways were fully utilized for all three hours of the morning peak period.
- Operational improvements at the gateways were implemented such that vehicle capacity was increased by at least 5 percent.
- The entire North Bayshore area were to achieve the 45 percent SOV goal.

A combination of transportation management association, City and regional funding sources would be needed to implement area-wide transportation infrastructure and the robust TDM programs that would be needed to achieve the City's goals. The North Bayshore precise plan is expected to provide additional detail regarding the transportation system and programs needed to implement the community vision expressed by members of the public and City Council.

ATTACHMENTS

Tables

TABLES

TABLE 1 INTERSECTION SENSITIVITY RESULTS: MORNING PEAK HOUR

Movement	Volume[1]	Average Delay[2]	LOS[3]	Storage Pocket (feet)	Queue Length (feet)
San Antonio Road and Bayshore Parkway[4]					
Eastbound Left-Through	530	167.7	F	70	1100+
Eastbound Right	260	21.6	C	70	230+
Northbound Left Turn	340	34.9	C	300	340
Northbound Through	300	18.5	B	300	230
Northbound Right Turn	530	17.8	B	150	60
Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road[5]					
Northbound Left Turn	600	39.9	D	200	875
Northbound Through	1,570	38.2	D	400	1,100
Northbound Right Turn	790	70.9	E	400	1,375

Notes:

1. Vehicle volume based on intersection forecasts under Year 2030 Cumulative with Project Conditions within the *North Bayshore Precise Plan TIA*.
2. Lane group control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual*.
3. LOS = Level of Service. LOS calculations conducted using the Synchro analysis software package, which apply the methods described in the *2000 Highway Capacity Manual*.
4. San Antonio Road is two lanes for 620 feet between US 101 northbound loop ramp and Bayshore Parkway. Nearest upstream intersection (San Antonio Road and US 101 Northbound off-ramp allows 300 feet of storage between intersections equal to left turn and through storage distances.
5. Nearest upstream intersection (Rengstorff Avenue and US 101 Northbound off-ramp allows 400 feet of weaving between intersections equal to through and right-turn storage distances.
6. Queue lengths rounded to nearest 10 feet.

Source: Fehr & Peers, July 2014.

TABLE 2 INTERSECTION SENSITIVITY RESULTS: EVENING PEAK HOUR

Movement	Volume[1]	Average Delay[2]	LOS[3]	Storage Pocket (feet)	Queue Length (feet)
San Antonio Road and Bayshore Parkway[4]					
Westbound Left Turn	480	>180	F	80	740+
Westbound Through-Right	370	87.1	F	80	550+
Southbound Left Turn	10	112.0	F	90	30
Southbound Through Right	350	38.7	D	90	240
Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road[5]					
Westbound Left Turn	650	55.9	E	190	700
Southbound Through	870	48.5	D	190	725
Eastbound Right Turn	570	45.0	D	400	950

Notes:

1. Vehicle volume based on intersection forecasts under Year 2030 Cumulative with Project Conditions within the *North Bayshore Precise Plan TIA*.
2. Lane group control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual*.
3. LOS = Level of Service. LOS calculations conducted using the Synchro analysis software package, which apply the methods described in the *2000 Highway Capacity Manual*.
4. San Antonio Road is two lanes for 620 feet between US 101 northbound loop ramp and Bayshore Parkway. Nearest upstream intersection (San Antonio Road and US 101 Northbound off-ramp allows 300 feet of storage between intersections equal to left turn and through storage distances.
5. Nearest upstream intersection (Rengstorff Avenue and US 101 Northbound off-ramp allows 400 feet of weaving between intersections equal to through and right-turn storage distances.
6. Queue lengths rounded to nearest 10 feet.

Source: Fehr & Peers, July 2014.

TABLE 3 PEAK HOUR VEHICLE COUNTS AND CAPACITY: ALL GATEWAYS COMBINED

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Existing Counts (2014)	6,100	990	7,090	1,430	5,260	6,690
Existing Gateway Capacity	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Percent Difference between Capacity and Counts	*+14.4%*	*+13.1%*	*+14.2%*	*+24.5%*	*+17.1%*	*+18.7%*

Notes:
1. Peak hour volumes rounded to nearest 10 vehicles. Morning peak hour is from 8:45 AM to 9:45 AM and the evening peak hour is from 5:15 PM to 6:15 PM.

Source: Fehr & Peers, July 2014.

TABLE 4 PEAK HOUR VEHICLE CAPACITY BY GATEWAY

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	460	70	530	150	480	630
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	1,070	100	1,170	250	860	1,110
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	2,960	330	3,290	350	2,090	2,440
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	2,490	470	2,960	1,030	2,250	3,280
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	150	150	N/A	480	480
Total	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**

Notes:
1. Peak hour volumes rounded to nearest 10 vehicles. Morning peak hour is from 8:45 AM to 9:45 AM and the evening peak hour is from 5:15 PM to 6:15 PM.

Source: Fehr & Peers, July 2014.

TABLE 5 PEAK PERIOD TO PEAK HOUR RATIOS

Gateway	Morning			Evening		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Shoreline Boulevard between US 101 Northbound Ramps-La Avenida and Pear Avenue						
Peak Period	6,650	1,250	7,900	2,460	5,760	8,220
Peak Hour	2,430	470	2,900	860	2,120	2,980
Perk Period to Peak Hour Ratio	2.73	2.65	2.72	2.87	2.71	2.76
All Gateways Combined						
Peak Period	13,940	2,750	16,690	4,250	13,470	17,720
Peak Hour	6,100	990	7,090	1,430	5,260	6,690
Perk Period to Peak Hour Ratio	2.29	2.78	2.35	2.97	2.56	2.65

Notes:
1. Rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM. Morning peak hour is from 8:45 AM to 9:45 AM and the evening peak hour is from 5:15 PM to 6:15 PM.

Source: Fehr & Peers, July 2014.

TABLE 6 PEAK PERIOD VEHICLE COUNTS AND CAPACITY: ALL GATEWAYS COMBINED

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Existing Counts (2014)	13,940	2,750	16,690	4,250	13,470	17,720
Existing Gateway Capacity	**18,850**	**3,020**	**21,870**	**4,810**	**16,630**	**21,440**
Percent Difference between Capacity and Counts	*+35.2%*	*+9.8%*	*+30.6%*	*+13.2%*	*+23.5%*	*+21.0%*

Notes:
1. Peak period volumes rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM.

Source: Fehr & Peers, July 2014.

TABLE 7 PEAK PERIOD VEHICLE CAPACITY BY GATEWAY

Gateway	Morning Peak Period			Evening Peak Period		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	1,240	190	1,430	410	1,300	1,710
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	2,900	270	3,170	690	2,320	3,010
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	7,990	880	8,870	950	5,630	6,580
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	6,720	1,260	7,980	2,780	6,070	8,850
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	420	420	N/A	1,310	1,310
Total	**18,850**	**3,020**	**21,870**	**4,810**	**16,630**	**21,440**

Notes:

1. Peak period volumes rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM.

Source: Fehr & Peers, July 2014.

TABLE 8
LAND USE IN THE NORTH BAYSHORE AREA: OCCUPIED BUILDING SIZE

Land Use	Units	General Plan		
		Existing	2030 General Plan	2030 North Bayshore Precise Plan
Single Family	Dwelling Units	3	1	1
Multi-Family	Dwelling Units	348	344	344
Subtotal (Residential) [A]	**Dwelling Units**	**351**	**345**	**345**
Office	Square Feet	265,464	4,674,674	3,931,569
Research & Development	Square Feet	6,026,591	4,820,170	5,671,855
Subtotal (Office and R&D) [B]	**Square Feet**	**6,292,055**	**9,494,844**	**9,603,424**
Retail	Square Feet	0	153,697	68,425
Industrial	Square Feet	335,904	189,584	153,575
Restaurant	Square Feet	10,282	10,282	10,282
Service Commercial	Square Feet	128,978	99,276	114,574
Subtotal (Supporting Uses) [C]	**Square Feet**	**475,164**	**452,839**	**346,856**
Motel	Rooms	0	293	290
Church	Building	1	1	1
Institutional/Recreation	Trips	7,400	7,257	8,257
Subtotal (Other Uses)	***(Various)***	***(Various)***	***(Various)***	***(Various)***
Total Residential [A]	**Dwelling Units**	**351**	**345**	**345**
Total Employment Uses [B+C]	**Square Feet**	**6,767,219**	**9,947,683**	**9,950,280**

Notes:
1. Land use summarized from the City of Mountain View Travel Demand Model traffic analysis zones (TAZs) 3126-3133. “Occupied” building square footage accounts for a 7 percent vacancy rate off the total building square footage. The total building square footage is: Existing Conditions = 7,276,578 square feet, Year 2030 General Plan = 10,696,434 square feet, and 2030 North Bayshore Precise Plan = 10,699,226 square feet.

Source: City of Mountain View Travel Model. July 2014.

TABLE 9
LAND USE IN THE NORTH BAYSHORE AREA: EMPLOYEE AND POPULATION ESTIMATES

Land Use	Units	General Plan		
		Existing	2030 General Plan	2030 North Bayshore Precise Plan Project
Single Family	Population	8	2	2
Multi-Family	Population	749	722	722
Subtotal (Residential) [A]	**Population**	**757**	**724**	**724**
Office	Employees	1,061	14,164	15,726
Research & Development	Employees	21,093	12,050	19,851
Subtotal (Office and R&D) [B]	**Employees**	**22,154**	**26,214**	**35,577**
Retail	Employees	0	410	183
Industrial	Employees	400	228	184
Restaurant	Employees	68	67	67
Service Commercial	Employees	387	298	344
Subtotal (Supporting Uses) [C]	**Employees**	**855**	**1,003**	**778**
Motel	Employees	0	117	116
Church	Employees	10	10	10
Institutional/Recreation	Employees	740	726	826
Subtotal (Other Uses)	**Employees**	**(Various)**	***(Various)***	***(Various)***
Total Residential [A]	**Dwelling Units**	**757**	**724**	**724**
Total Employment Uses [B+C]	**Employees**	**23,009**	**27,217**	**36,355**

Notes:
1. Land use summarized from the City of Mountain View Travel Demand Model traffic analysis zones (TAZs) 3126-3133.
2. For Existing and 2030 General Plan, the assumed densities for Office and R&D land uses are 3.03 and 2.50 employees per 1,000 square feet, respectively.
3. For 2030 Precise Plan project, the assumed densities for Office and R&D land uses are 4.00 and 3.5 employees per 1,000 square feet, respectively.
4. For informational purposes, if there were a zero vacancy rate and employee estimates would include : Existing Conditions = 24,744 employees, Year 2030 General Plan = 26,266 employees, and 2030 North Bayshore Precise Plan = 39,092 employees.

Source: City of Mountain View Travel Model. July 2014.

TABLE 10 TRIP GENERATION ESTIMATES: EXISTING TRAVEL BEHAVIOR

North Bayshore Land Use	Morning Peak Hour Trips			Evening Peak Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Future Demand with Existing Trip Making (9,950,280 s.f.)	8,970	1,460	10,430	2,070	7,770	9,840
Future Demand with Increased Employee Density and Existing TDM Program (~36,360 employees)	9,630	1,570	11,200	2,220	8,360	10,580

Notes:

1. Trip generation estimates based on existing travel surveys based on building size, and employee density.

Source: Fehr & Peers, July 2014.

TABLE 11 SENSITIVITY TEST RESULTS

Sensitivity Test	Additional Building Area Accommodated (square feet)	Total Building Size (square feet)	Total Employees
Peak Hour			
1. Existing gateway capacity and existing TDM effectiveness.	+957,000	8,233,600	26,000
2. Existing gateway capacity with increased vehicle occupancy (meeting 45% SOV goal).	+1,625,900	8,902,500	30,300
3. Localized improvements at gateways and existing TDM effectiveness.	+1,397,800	8,674,400	27,400
4. Localized improvements at gateways with increased vehicle occupancy (meeting 45% SOV goal).	+2,102,600	9,379,200	31,900
Peak Period			
5. Existing gateway capacity and existing TDM effectiveness.	+957,000	8,233,600	26,000
6. Existing gateway capacity with increased vehicle occupancy (meeting 45% SOV goal).	+2,943,700	10,220,300	34,700
7. Localized improvements at gateways and existing TDM effectiveness.	+1,397,800	8,674,400	27,400
8. Localized improvements at gateways with increased vehicle occupancy (meeting 45% SOV goal).	+3,422,600	10,699,200	36,400

Notes: Land use summary of within North Bayshore Area (City of Mountain View Travel Demand Model traffic analysis zones (TAZs) 3126-3133) except motel, church, and institutional recreation.
Source: Fehr & Peers, July 2014.

MEMORANDUM

Date: December 2, 2016

To: Martin Alkire, City of Mountain View
Judy Shanley and Judy Fenerty, David J. Powers & Associates

From: Daniel Rubins and Julie Morgan

Subject: North Bayshore Precise Plan with Residential EIR – Vehicle Gateway Capacity with Residential

SJ13-1450.02

This memorandum summarizes the vehicle capacity at the gateways to the North Bayshore area and how that capacity would be affected by the addition of residential land use in North Bayshore. The North Bayshore area is bounded by US Route 101 to the south, Stevens Creek to the east (including Santiago Villa Mobile Home Park), San Francisco Bay and the Shoreline Recreation area to the north, and San Antonio Road to the west.

METHODS

The vehicle gateway capacity estimates[1] are based on existing street configurations and observed vehicle demand during the morning peak hour and evening peak hour. The five roadway segments listed below carry all of the traffic that enters or exits the North Bayshore area:

1. San Antonio Road between Bayshore Parkway and Casey Avenue
2. Bayshore Parkway between San Antonio Road and Garcia Avenue
3. Rengstorff Avenue between US 101 Northbound Ramps and Garcia Avenue-Charleston Road

[1] For the purposes of this analysis, "vehicle gateway capacity" is defined as the maximum number of vehicles that can be served in a specified time period while maintaining reasonable freedom of vehicle movement through the gateways. Rather than apply a theoretical per-lane capacity assumption, the vehicle capacity for each gateway was calculated based on observed vehicle demand, queuing characteristics, and available vehicle storage that could be accommodated without blocking other movements and causing gridlock.

4. Shoreline Boulevard between US 101 Northbound Ramps-La Avenida and Pear Avenue
5. La Avenida between Shoreline Boulevard and Inigo Way

The sum of these flows is the peak hour vehicle gateway capacity.

The peak period capacity estimates are based on the ratio between existing peak hour and peak period counts for Shoreline Boulevard and across the gateways.

Note that planning-level estimates of gateway capacity were prepared during the *City of Mountain View Shoreline Transportation Study* (June 2013), and were adopted as part of the North Bayshore Precise Plan (December 2014) (see Appendix F of the *North Bayshore Precise Plan: Final Transportation Analysis*, October 2016). The analysis presented in this memorandum is a more detailed operational analysis of the key gateway locations than has been conducted previously, intended to refine the earlier estimates and evaluate how the addition of varying levels of residential development would affect the vehicle capacity.

Peak Hour Vehicle Gateway Capacity Analysis

A vehicle gateway capacity analysis was performed during the morning and evening peak hours at three intersections most commonly referred to as the North Bayshore Gateways:

- San Antonio Road and Bayshore Parkway (controls the Bayshore and San Antonio gateways).
- Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road (controls the Rengstorff Avenue gateway).
- Shoreline Boulevard and La Avenida-US 101 Northbound Ramps (controls the Shoreline Boulevard and La Avenida gateways).

The vehicle gateway capacity was tested using the forecasted volumes for the following scenarios:

- Existing Conditions
- Adopted North Bayshore Precise Plan
- North Bayshore Precise Plan with 1,500 additional dwelling units
- North Bayshore Precise Plan with 4,000 additional dwelling units
- North Bayshore Precise Plan with 7,000 additional dwelling units
- North Bayshore Precise Plan with 9,850 additional dwelling units

Upon review of the results, an additional scenario was created called North Bayshore Precise Plan with Residential Gateway Capacity. This final scenario represents the maximum vehicle capacity at the gateways assuming all vehicles would be distributed across all gateways.

For this analysis, the overall intersection delay and the 95th percentile queues were reviewed to determine at what point the vehicle demand would likely exceed capacity. Overall intersection vehicle delay provides a general indication of the efficiency with which an intersection operates; however, because traffic patterns at the North Bayshore gateways are highly directional, with most vehicles traveling inbound in the morning and outbound in the evening, and because the traffic flow are sometimes constrain by the local street configuration, it is important to also look at the 95th percentile queues. For example, inbound vehicles encounter very short spacing between the US 101 northbound ramps and the next local street intersections, which limits the number of vehicles that can be stored without backing up into adjacent intersections and causing gridlock. For inbound vehicles we analyzed the 95th percentile queues that extend between the local streets and the US 101 interchanges, and for outbound traffic, we analyzed the 95th percentile queue relative to the left turn storage pocket and the adjacent intersection upstream of the gateway.

PEAK HOUR VEHICLE CAPACITY RESULTS

The primary traffic-related effect of adding residential uses to the North Bayshore area will be to create a somewhat more balanced directional traffic flow, increasing the amount of outbound traffic in the morning and inbound traffic in the evening. While there is ample physical space on the major roads such as Shoreline Boulevard and Rengstorff Avenue to accommodate more morning outbound and evening inbound traffic, it is important to consider how that new traffic will interact with the large numbers of vehicles moving in the peak direction. For example, much of the planned residential development is designated to occur on either side of Shoreline Boulevard; this means that many of the vehicles leaving the residential neighborhoods in the morning will use one of the east-west streets and then turn, left or right, onto southbound Shoreline Boulevard. Signal timings along Shoreline Boulevard will need to be adjusted to accommodate this increased number of turning vehicles, and the left-turning vehicles in particular will tend to interrupt the flow of northbound vehicles entering North Bayshore. Thus, the net effect of the additional traffic from the residential uses will be somewhat complicated.

The results of the delay and queuing analyses for all of the scenarios described above are presented in **Attachment A**. Each table in **Attachment A** shows the detailed level of service and queuing results, but the most important information is the pattern is the pattern revealed by this summary. Specifically, as the vehicle volume increases the overall intersection and approach delay is incrementally reduced and the approach queues grow in length. The intersection operations is color coded to highlight this pattern. While bold text is used to indicate approaches that exceed available storage. The results at each gateway differ depending on the number of residential units tested. At the San Antonio Road gateway, particularly in the evening peak hour, the addition of vehicle volume leads to an incremental degradation of intersection level of service and queuing. At the Rengstorff Avenue gateway, the adopted NBPP already results in high levels of delay and long queues; the addition of residential units results in modest improvements, although the overall intersection still operates at LOS F and queue lengths often exceed available storage. At the Shoreline Boulevard gateway, the addition of residential units would generally increase the peak direction queue lengths and the level of delay as compared to the adopted NBPP.

As described above, the final scenario shown in all the tables in **Attachment A** is the Residential Gateway Capacity. This is the maximum volume that results in levels of intersection delay and queue lengths that are similar to those already adopted in the NBPP. For reference, the Residential Gateway Capacity volumes for the critical inbound and outbound turn movements at each gateway intersection are presented in **Tables 1** and **2**. The movements shown in this table are those that influence the gateway vehicle capacity.

Table 3 shows the morning and evening peak hour volumes and the peak hour vehicle capacities for all of the North Bayshore area gateways combined for existing (as of June 2015), the adopted North Bayshore Precise Plan, and the North Bayshore Precise Plan with Residential Gateway Capacity. **Tables 4** and **5** show the capacities for each gateway separately for the Adopted NBPP and the NBPP with Residential, respectively. As shown, the addition of approximately 1,500 to 3,000 residential units could be accommodated within the gateway capacity.

The combined total capacity of all the gateways under the adopted North Bayshore Precise Plan is calculated as:

- Morning Peak Hour = 8,100 peak hour vehicles
- Evening Peak Hour = 7,940 peak hour vehicles

With the addition of the residential units described above, the combined total capacity of all the gateways would slightly increase to:

- Morning Peak Hour = 8,290 peak hour vehicles
- Evening Peak Hour = 8,030 peak hour vehicles

Most of the increase in capacity occurs at the San Antonio and Bayshore Parkway gateways, because those facilities are not fully utilized today. The capacities at the Rengstorff Avenue and the Shoreline Boulevard/La Avenida gateways would not change; these facilities are already heavily used, and they would be most affected by the additional turning traffic from the residential areas conflicting with the peak directional traffic. For example, during the morning peak hour, the additional outbound traffic generated by the residential units would reduce the amount of green time that can be allocated to inbound traffic at the following locations:

- Rengstorff Avenue Gateway:
  - Westbound through and left turn from Charleston Road and the northbound through movements.
- Shoreline Boulevard/La Avenida Gateways:
  - Westbound movements from La Avenida and the northbound/southbound through movements.
  - Westbound movements from US 101 Off-Ramps and the northbound/southbound through movements.

During the evening peak hour, the additional inbound traffic would reduce the amount of green time that can be allocated to the outbound traffic at these same locations.

PEAK PERIOD VEHICLE CAPACITY RESULTS

The peak period volume is determined using the peak hour-to-peak period factor of 2.7 from the gateway counts; that means that the total volume at Shoreline Boulevard across the three-hour peak period is 2.7 times the volume in the single peak hour (Appendix F of the *North Bayshore Precise Plan: Final Transportation Analysis*, October 2016). This factor is higher at Shoreline Boulevard than at the other North Bayshore gateways, because Shoreline is the gateway that experiences the most sustained level of demand over multiple hours. This factor of 2.7 has been applied uniformly to all of the gateways to estimate the maximum peak period capacity; this result therefore reflects the total peak period capacity if all of the gateways were as fully-utilized as Shoreline Boulevard is today. The results for all gateways combined are shown in **Table 6**, while **Tables 7** and **8** shows the peak period vehicle capacities for each gateway individually for the adopted North Bayshore Precise Plan and the North Bayshore Precise Plan with Residential, respectively.

ATTACHMENTS

Tables

TABLES

TABLE 1 MAXIMUM CRITICAL VOLUMES AT GATEWAY INTERSECTIONS: MORNING PEAK HOUR

Movement	Volume[1]	Average Delay[2]	LOS[3]	Storage (feet)	Queue Length (feet)
San Antonio Road and Bayshore Parkway[4]					
Inbound					
Eastbound Left-Through	270	50.6	D	70	**330+**
Eastbound Right	190	23.8	C	70	**80**
Northbound Left Turn	230	30.9	C	300	240+
Northbound Through	400	16.5	B	300	260
Northbound Right Turn	750	15.7	B	150	90
Outbound					
Westbound Left Turn	110	24.4	C	80	**90**
Westbound Through-Right	130	25.0	C	80	**120**
Southbound Left Turn	30	149.0	F	90	50
Southbound Through Right	160	20.8	C	90	60
Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road[5]					
Inbound					
Northbound Left Turn	300	63.4	E	200	**350+**
Northbound Through	1,550	52.4	D	400	**820+**
Northbound Right Turn	770	36.0	D	400	340
Outbound					
Westbound Left Turn	180	63.4	E	190	120+
Southbound Through	390	31.7	C	190	130
Eastbound Through-Right Turn	340	32.8	C	400	130

TABLE 1 MAXIMUM CRITICAL VOLUMES AT GATEWAY INTERSECTIONS: MORNING PEAK HOUR

Shoreline Boulevard and La Avenida – Northbound US 101 Ramps					
Inbound					
Westbound Right Turn (US 101 Off Ramp)	1,300	215.9	F	1,800	1,060+
Northbound Through	910	36.3	D	920	440
Outbound					
Southbound Through	500	25.6	C	600	130
Westbound Left-Through (La Avenida)	260	126.8	F	600	270+

Notes:
1. Vehicle volume based on intersection forecasts under Gateway Capacity with residential.
2. Lane group control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual*.
3. LOS = Level of Service. LOS calculations conducted using the Synchro analysis software package, which apply the methods described in the *2000 Highway Capacity Manual*.
4. San Antonio Road is two lanes for 620 feet between US 101 northbound loop ramp and Bayshore Parkway. Nearest upstream intersection (San Antonio Road and US 101 Northbound off-ramp) allows 300 feet of storage between intersections equal to left turn and through storage distances.
5. Nearest upstream intersection (Rengstorff Avenue and US 101 Northbound off-ramp) allows 400 feet of weaving between intersections equal to through and right-turn storage distances.
6. Queue lengths rounded to nearest 10 feet.
7. Bold text indicates estimated vehicle queue is greater than available storage.
8. '+' indicates the queue may be longer because volume exceeds capacity. Queue shown is the maximum after two cycles.

Source: Fehr & Peers, December 2016.

TABLE 2 MAXIMUM CRITICAL VOLUMES AT GATEWAY INTERSECTIONS: EVENING PEAK HOUR

Movement	Volume[1]	Average Delay[2]	LOS[3]	Storage (feet)	Queue Length (feet)
San Antonio Road and Bayshore Parkway[4]					
Inbound					
Eastbound Left-Through	220	71.2	E	70	**270+**
Eastbound Right	480	84.4	F	70	**300+**
Northbound Left Turn	320	64.3	E	300	**360+**
Northbound Through	90	16.3	B	300	70
Northbound Right Turn	150	16.1	B	150	40
Outbound					
Westbound Left Turn	380	44.0	D	80	**370+**
Westbound Through-Right	410	89.9	F	80	**520+**
Southbound Left Turn	20	86.8	F	90	40
Southbound Through Right	530	33.2	C	90	**180**
Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road[5]					
Inbound					
Northbound Left Turn	110	126.8	F	200	**200+**
Northbound Through	230	17.8	B	400	90
Northbound Right Turn	310	9.5	A	400	30
Outbound					
Westbound Left Turn	630	269.4	F	190	**450+**
Southbound Through	740	33.3	C	190	**370+**
Eastbound Through-Right	770	40.6	D	400	**270**

TABLE 2 MAXIMUM CRITICAL VOLUMES AT GATEWAY INTERSECTIONS: EVENING PEAK HOUR

Shoreline Boulevard and La Avenida – Northbound US 101 Ramps					
Inbound					
Westbound Right Turn (US 101 Off Ramp)	790	208.0	F	1,800	640+
Northbound Through	370	15.2	B	920	110
Outbound					
Southbound Through	1,550	68.1	E	600	**1,140+**
Westbound Left-Through (La Avenida)	570	494.8	F	600	**590+**

Notes:

1. Vehicle volume based on intersection forecasts under Gateway Capacity with residential.
2. Lane group control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual*.
3. LOS = Level of Service. LOS calculations conducted using the Synchro analysis software package, which apply the methods described in the *2000 Highway Capacity Manual*.
4. San Antonio Road is two lanes for 620 feet between US 101 northbound loop ramp and Bayshore Parkway. Nearest upstream intersection (San Antonio Road and US 101 Northbound off-ramp) allows 300 feet of storage between intersections equal to left turn and through storage distances.
5. Nearest upstream intersection (Rengstorff Avenue and US 101 Northbound off-ramp) allows 400 feet of weaving between intersections equal to through and right-turn storage distances.
6. Queue lengths rounded to nearest 10 feet.
7. Bold text indicates estimated vehicle queue is greater than available storage.
8. '+' indicates the queue may be longer because volume exceeds capacity. Queue shown is the maximum after two cycles.

Source: Fehr & Peers, December 2016.

TABLE 3 PEAK HOUR VEHICLE COUNTS AND CAPACITY: ALL GATEWAYS COMBINED

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Existing Conditions						
Existing Counts (2015)[1]	5,390	1,110	6,500	1,350	4,970	6,320
2014 North Bayshore Precise Plan						
Adopted Gateway Capacity[2]	6,980	1,120	8,100	1,780	6,160	7,940
Percent Difference between Capacity and Counts	+29.5%	+0.90%	+24.6%	+31.9%	+23.9%	+25.6%
North Bayshore Precise Plan with Residential Gateway Capacity						
Gateway Capacity with Residential	6,300	1,990	8,290	2,310	5,720	8,030
Percent Difference between Capacity and Counts	+16.9%	+79.3%	+27.5%	+71.1%	+15.1%	+27.1%

Notes:
1. Peak hour volumes rounded to nearest 10 vehicles and includes internal gateway trips at the San Antonio and Shoreline gateways.
2. Gateway capacity defined in the 2014 North Bayshore Precise Plan.

Source: Fehr & Peers, December 2016.

TABLE 4 PEAK HOUR VEHICLE CAPACITY BY GATEWAY: ADOPTED NBPP

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	460	70	530	150	480	630
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	1,070	100	1,170	250	860	1,110
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	2,960	330	3,290	350	2,090	2,440
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	2,490	470	2,960	1,030	2,250	3,280
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	150	150	N/A	480	480
Total	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**

Notes:
1. Peak hour volumes rounded to nearest 10 vehicles.

Source: Fehr & Peers, *North Bayshore Precise Plan EIR – Establishing Vehicle Gateway Capacity and Sensitivity Tests on Accommodating New Growth*, July 2014.

TABLE 5 PEAK HOUR VEHICLE CAPACITY BY GATEWAY: NBPP WITH RESIDENTIAL GATEWAY CAPACITY

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	510	190	700	150	550	700
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	950	240	1,190	340	790	1,130
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	2,620	670	3,290	650	1,790	2,440
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	2,220	620	2,840	1,170	2,010	3,180
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	270	270	N/A	580	580
Total	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**

Notes:

1. Peak hour volumes rounded to nearest 10 vehicles.

Source: Fehr & Peers, December 2016.

TABLE 6 PEAK PERIOD VEHICLE COUNTS AND CAPACITY: ALL GATEWAYS COMBINED

Gateway	Morning Peak Hour			Evening Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Existing Conditions						
Existing Counts (2015)	13,080	2,680	15,760	4,120	13,030	17,150
2014 North Bayshore Precise Plan						
Adopted Gateway Capacity	18,850	3,020	21,870	4,810	16,630	21,440
Percent Difference between Capacity and Counts	+44.1%	+12.7%	+38.8%	+16.7%	+27.6%	+25.0%
North Bayshore Precise Plan with Residential Gateway Capacity						
Gateway Capacity with Residential	17,010	5,370	22,380	6,250	15,450	21,700
Percent Difference between Capacity and Counts	+30.0%	+100.4%	+42.0%	+51.7%	+18.5%	+26.5%

Notes:

1. Peak period volumes rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM.

Source: Fehr & Peers, December 2016.

TABLE 7 PEAK PERIOD VEHICLE CAPACITY BY GATEWAY: ADOPTED NBPP

Gateway	Morning Peak Period			Evening Peak Period		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	1,240	190	1,430	410	1,300	1,710
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	2,900	270	3,170	690	2,320	3,010
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	7,990	880	8,870	950	5,630	6,580
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	6,720	1,260	7,980	2,780	6,070	8,850
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	420	420	N/A	1,310	1,310
Total	**18,850**	**3,020**	**21,870**	**4,810**	**16,630**	**21,440**

Notes:

1. Peak period volumes rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM.

Source: Fehr & Peers, *North Bayshore Precise Plan EIR – Establishing Vehicle Gateway Capacity and Sensitivity Tests on Accommodating New Growth*, July 2014.

TABLE 8 PEAK PERIOD VEHICLE CAPACITY BY GATEWAY: NBPP WITH RESIDENTIAL GATEWAY CAPACITY

Gateway	Morning Peak Period			Evening Peak Period		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1. San Antonio Rd between Bayshore Prkwy and Casey Ave	1,380	510	1,890	410	1,490	1,900
2. Bayshore Prkwy between San Antonio Rd and Garcia Ave	2,570	650	3,220	920	2,130	3,050
3. Rengstorff Ave between US 101 Northbound Ramps and Garcia Ave-Charleston Rd	7,070	1,810	8,880	1,760	4,830	6,590
4. Shoreline Blvd. between US 101 Northbound Ramps-La Avenida and Pear Ave	5,990	1,670	7,670	3,160	5,430	8,590
5. La Avenida between Shoreline Blvd and Inigo Wy	N/A	730	730	N/A	1,570	1,570
Total	**17,010**	**5,370**	**22,390**	**6,250**	**15,450**	**21,700**

Notes:
1. Peak period volumes rounded to nearest 10 vehicles. Morning peak period is from 7:00 AM to 10:00 AM and the evening peak period is from 4:00 PM to 7:00 PM.

Source: Fehr & Peers, December 2016.

ATTACHMENT A

Table A-1: San Antonio Road and Bayshore Parkway during the AM Peak Hour

	Level of Service Summary										Queue Summary			
	Intersection		Bayshore Parkway (EB Approach)		Bayshore Parkway (WB Approach)		San Antonio Road (NB Approach)		San Antonio Road (SB Approach)		Bayshore Parkway (EB Approach)	Bayshore Parkway (WB Approach)	San Antonio Road (NB Approach)	San Antonio Road (SB Approach)
Scenario	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**Queue (ft)**	**Queue (ft)**	**Queue (ft)**	**Queue (ft)**
Existing Conditions	B	19.8	B	19.4	C	23.3	B	13.6	F	81.9	**#174**	49	**#229**	36
Adopted NBPP	B	19.7	C	25.3	C	22.8	B	16.7	C	32.3	**#352**	50	**270**	26
NBPP with 1,500 Dwelling Units	C	21.2	C	26.6	C	24.4	B	16.4	E	55.7	**#328**	54	**287**	45
NBPP with 4,000 Dwelling Units	C	21.2	C	26.7	C	24.5	B	16.5	D	48.3	**#328**	58	**294**	45
NBPP with 7,000 Dwelling Units	C	21.8	C	28.7	C	24.8	B	16.7	D	41.5	**#341**	73	**294**	56
NBPP with 9,850 Dwelling Units	C	24.5	D	40.5	C	26.2	B	17.6	D	35.4	**#354**	**89**	**#240**	66
Residential Gateway Capacity	C	25.3	D	39.5	C	24.8	B	18.5	D	41.3	**#328**	**115**	**#240**	56

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight.
4. Bold text indicates queue length greater than available approach storage. EB approach storage of 70 feet; WB approach storage of 80 feet; NB approach storage of 150 feet; SB approach of 90 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.

Table A-2: San Antonio Road and Bayshore Parkway during the PM Peak Hour

	Level of Service Summary										Queue Summary			
	Intersection		Bayshore Parkway (EB Approach)		Bayshore Parkway (WB Approach)		San Antonio Road (NB Approach)		San Antonio Road (SB Approach)		Bayshore Parkway (EB Approach)	Bayshore Parkway (WB Approach)	San Antonio Road (NB Approach)	San Antonio Road (SB Approach)
Scenario	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**Queue (ft)**	**Queue (ft)**	**Queue (ft)**	**Queue (ft)**
Existing Conditions	C	29.4	C	28.9	C	30.7	C	27.9	C	31.2	**#175**	**180**	**#343**	**99**
Adopted NBPP	E	75.8	F	>120	F	80.9	D	42.0	C	33.8	**#364**	**#575**	**#356**	**142**
NBPP with 1,500 Dwelling Units	D	49.3	E	56.4	D	54.5	D	46.3	C	34.4	**#274**	**#478**	**#356**	**148**
NBPP with 4,000 Dwelling Units	E	66.6	F	97.4	E	73.3	D	45.1	C	34.6	**#312**	**#530**	**#356**	**161**
NBPP with 7,000 Dwelling Units	F	102.6	F	>120	F	87.5	D	42.8	C	34.7	**#409**	**#562**	**#356**	**173**
NBPP with 9,850 Dwelling Units	F	>120	F	>120	F	106.8	D	42.1	D	35.1	**#466**	**#593**	**#356**	**187**
Residential Gateway Capacity	E	59.7	F	80.2	E	70.0	D	43.6	D	35.2	**#298**	**#524**	**#356**	**183**

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight. Bold text indicates queue length greater than available approach storage.
4. Bold text indicates queue length greater than available approach storage. EB approach storage of 70 feet; WB approach storage of 80 feet; NB approach storage of 150 feet; SB approach of 90 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.

Table A-3: Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road during the AM Peak Hour

Scenario	Level of Service Summary										Queue Summary			
	Intersection		Garcia Avenue (EB Approach)		Charleston Road (WB Approach)		Rengstorff Avenue (NB Approach)		Amphitheatre Parkway (SB Approach)		Garcia Avenue (EB Approach)	Charleston Road (WB Approach)	Rengstorff Avenue (NB Approach)	Amphitheatre Parkway (SB Approach)
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Queue (ft)	Queue (ft)	Queue (ft)	Queue (ft)
Existing Conditions	D	37.5	D	42.8	D	42.4	D	36	C	33.8	#197	105	**#392**	33
Adopted NBPP	F	>120	F	>120	D	44.0	F	88.6	C	32.4	**#650**	205	**#1050**	41
NBPP with 1,500 Dwelling Units	F	111.8	F	>120	D	44.1	D	47.8	C	31.5	**#683**	**214**	**#817**	87
NBPP with 4,000 Dwelling Units	F	110.7	F	>120	D	50.7	D	48.8	C	31.7	**#683**	**214**	**#823**	98
NBPP with 7,000 Dwelling Units	F	113.7	F	>120	F	>120	D	52.0	C	34.6	**#683**	**#221**	**#849**	185
NBPP with 9,850 Dwelling Units	F	>120	F	>120	F	>120	E	58.6	D	36.9	**#683**	**#274**	**#896**	**233**
Residential Gateway Capacity	F	108.8	F	>120	D	50.7	D	48.8	C	32.6	**#683**	**214**	**#823**	132

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight.
4. Bold text indicates queue length greater than available approach storage. EB approach storage of 400 feet; WB approach storage of 190 feet; NB approach storage of 200 feet; SB approach of 190 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.

Table A-4: Rengstorff Avenue-Amphitheatre Parkway and Garcia Avenue-Charleston Road during the PM Peak Hour

Scenario	Level of Service Summary										Queue Summary			
	Intersection		Garcia Avenue (EB Approach)		Charleston Road (WB Approach)		Rengstorff Avenue (NB Approach)		Amphitheatre Parkway (SB Approach)		Garcia Avenue (EB Approach)	Charleston Road (WB Approach)	Rengstorff Avenue (NB Approach)	Amphitheatre Parkway (SB Approach)
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Queue (ft)	Queue (ft)	Queue (ft)	Queue (ft)
Existing Conditions	F	110.6	D	41.6	F	>120	D	37.8	C	24.8	211	**#490**	#182	173
Adopted NBPP	F	97.4	D	39.8	F	>120	D	48.4	D	39.2	#287	**#497**	**#202**	**#419**
NBPP with 1,500 Dwelling Units	F	117.6	D	39.7	F	>120	C	23.8	D	40.2	312	**#581**	#121	**#488**
NBPP with 4,000 Dwelling Units	F	118.7	D	44.5	F	>120	C	24.4	D	47.0	#391	**#590**	#160	**#531**
NBPP with 7,000 Dwelling Units	F	>120	D	43.7	F	>120	D	37.3	E	56.4	#391	**#648**	**#222**	**#568**
NBPP with 9,850 Dwelling Units	F	>120	D	39.5	F	>120	D	47.8	F	92.9	360	**#706**	**#261**	**#598**
Residential Gateway Capacity	E	77.5	D	50.0	F	>120	D	36.2	C	33.7	**#400**	**#446**	**#203**	**#366**

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight.
4. Bold text indicates queue length greater than available approach storage. EB approach storage of 400 feet; WB approach storage of 190 feet; NB approach storage of 200 feet; SB approach of 190 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.

Table A-5: Shoreline Boulevard and La Avenida - Northbound US 101 Ramps during the AM Peak Hour

Scenario	Level of Service Summary										Queue Summary			
	Intersection		NB US 101 Ramp (WB Approach)		La Avenida (WB Approach)		Shoreline Boulevard (NB Approach)		Shoreline Boulevard (SB Approach)		NB US 101 Ramp (WB Approach)	La Avenida (WB Approach)	Shoreline Boulevard (NB Approach)	Shoreline Boulevard (SB Approach)
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Queue (ft)	Queue (ft)	Queue (ft)	Queue (ft)
Existing Conditions	F	88.3	F	>120	E	78.0	C	26.6	C	20.4	**#1005**	127	477	115
Adopted NBPP	F	>120	F	>120	E	76.8	C	25.5	C	20.9	**#1285**	126	481	108
NBPP with 1,500 Dwelling Units	F	>120	F	>120	F	82.3	D	24.2	B	19.9	**#1578**	140	434	114
NBPP with 4,000 Dwelling Units	F	>120	F	>120	F	105.9	C	25.5	C	22.1	**#1602**	#223	441	178
NBPP with 7,000 Dwelling Units	F	>120	F	>120	F	>120	C	27.0	C	24.5	**#1631**	#334	460	259
NBPP with 9,850 Dwelling Units	F	>120	F	>120	F	>120	C	27.9	C	26.0	**#1708**	#420	481	329
Residential Gateway Capacity	F	97.3	F	>120	F	>120	C	26.1	C	20.7	**#1056**	#273	441	134

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight.
4. Bold text indicates queue length greater than available approach storage. WB approach (Shoreline) storage of 1,800 feet (highlighted >1000 feet); WB approach (La Avenida) storage of 600 feet; NB approach storage of 920 feet; SB approach of 600 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.

Table A-6: Shoreline Boulevard and La Avenida - Northbound US 101 Ramps during the PM Peak Hour

Scenario	Level of Service Summary										Queue Summary			
	Intersection		NB US 101 Ramp (WB Approach)		La Avenida (WB Approach)		Shoreline Boulevard (NB Approach)		Shoreline Boulevard (SB Approach)		NB US 101 Ramp (WB Approach)	La Avenida (WB Approach)	Shoreline Boulevard (NB Approach)	Shoreline Boulevard (SB Approach)
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Queue (ft)	Queue (ft)	Queue (ft)	Queue (ft)
Existing Conditions	F	98.2	E	57.5	F	>120	A	6	F	117.1	275	#405	99	**#1572**
Adopted NBPP	F	107	F	82.5	F	>120	A	7.5	F	109.6	#489	#470	110	**#1667**
NBPP with 1,500 Dwelling Units	F	>120	F	>120	F	>120	A	6.7	F	88.2	#801	**#607**	86	**#1341**
NBPP with 4,000 Dwelling Units	F	>120	F	>120	F	>120	A	8.0	F	113.1	**#1159**	**#621**	113	**#1469**
NBPP with 7,000 Dwelling Units	F	>120	F	>120	F	>120	A	9.2	F	>120	**#1521**	**#676**	141	**#1586**
NBPP with 9,850 Dwelling Units	F	>120	F	>120	F	>120	B	10.3	F	>120	**#1811**	**#709**	172	**#1703**
Residential Gateway Capacity	F	>120	F	>120	F	>120	A	8.0	D	52.7	#636	#587	113	**#1142**

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 Highway Capacity Manual* .
2. LOS = Level of Service. EB = Eastbound. WB = Westbound. NB = Northbound. SB = Southbound.
3. LOS A-C in Green highlight, LOS D in Yellow highlight, LOS E in Orange highlight, LOS F in Red highlight.
4. Bold text indicates queue length greater than available approach storage. WB approach (Shoreline) storage of 1,800 feet (highlighted >1000 feet); WB approach (La Avenida) storage of 600 feet; NB approach storage of 920 feet; SB approach of 600 feet.
5. "#" indicates the queue may be longer because the 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.