Initial Study Of Environmental Significance

PROJECT NAME:	**North Bayshore Gateway Area Master Plan**	FILE NUMBER: 19-058
SITE ADDRESS:	Area bounded by North Shoreline Boulevard, Highway 101, Plymouth Street (see Figure 2.2-3 and Figure 2.2-4) in Mountain View	APN: 116-10-070, -10-086, -10-088, -10-101, -13-034, -13-027, -13-030, -13-037, -13-038
APPLICANT:	City of Mountain View	
PROPERTY OWNERS:	Google and Sywest	

PREVIOUSLY CERTIFIED EIRs:

- City of Mountain View. *Subsequent Environmental Impact Report for the North Bayshore Precise Plan.* State Clearinghouse (SCH) #: 2013082088. November 2017. (NBPP SEIR)
- ---. *Environmental Impact Report for the North Bayshore Precise Plan.* SCH #: 2013082088. November 2014. (NBPP EIR)
- ---. *Draft 2030 General Plan and Greenhouse Gas Reduction Program Final Environmental Impact Report.* SCH #: 2011012069. September 2012. (General Plan EIR)

PROJECT DESCRIPTION SUMMARY: The City is proposing a Master Plan to implement the North Bayshore Precise Plan. Given the uncertainty of the real estate market, the City envisions that the Master Plan would build-out under one of two potential development options: (1) Office Option and (2) No Office Option. The key elements of the two options are similar in that both include residential, retail/entertainment, and hotel uses in approximately the same locations. The differences are in the amounts of proposed residential and office uses as outlined below.

The **Office Option** includes:

- 1,500-2,100 residential units
- Up to 500,000 square feet of office uses
- 75,000-300,000 square feet of retail/ entertainment uses
- 150-200 hotel rooms

The **No Office Option** includes:

- 2,000-2,800 residential units
- No office uses
- 75,000-300,000 square feet of retail/ entertainment uses
- 150-200 hotel rooms

The proposed Master Plan also includes General Plan and Precise Plan amendments to include the parcel at 1555 Plymouth Street (APN: 116-13-027) into the Master Plan area. The Office Option is the City's preferred option. The Master Plan (under either option) identifies three land use "sub-districts" and development standards and guidelines. The development standards and guidelines pertain to block structure, land use program, open space, site and building design standards, parking, street design, and infrastructure.

The project also includes minor amendments to General Plan and Precise Plan maps to: reflect new character area and complete neighborhood boundaries to be consistent with the proposed Master Plan; correct errors by delineating open space areas according to property line boundaries; and clarify where existing and proposed greenways are shown.
BRIEF ENVIRONMENTAL SETTING: The Master Plan area encompasses an approximately 29-acre area bounded by Plymouth Street to the north, U.S. Highway 101 to the south, North Shoreline Boulevard to the east, and existing three- to six-story office uses to the west. Existing development in the Master Plan area includes several lower density one-story commercial and industrial/R&D buildings, surface parking areas, and a movie theater complex. Mature trees are located throughout the area, primarily within the surface parking lots.
DETERMINATION: The proposed project is in compliance with CEQA because this Addendum was prepared pursuant to CEQA Guidelines Sections 15162 and 15164 and found with implementation of the North Bayshore Precise Plan standards and guidelines, standard City conditions of approval, state regulations, and mitigation measures identified in the General Plan EIR, NBPP EIR, and NBPP SEIR, the implementation of the proposed Master Plan would not result in any new significant or substantially more severe environmental impacts beyond those previously evaluated and disclosed in the General Plan EIR, NBPP EIR, and NBPP SEIR.

NO ADDITIONAL IMPACT FINDING: The proposed project is in compliance with CEQA because the Addendum was prepared pursuant to CEQA Guidelines Sections 15162 and 15164 and found that with implementation of standard City policies and conditions of approval and certain mitigation measures identified in the certified General Plan EIR, NBPP EIR, and NBPP SEIR, the proposed project would not result in any new or more significant environmental impacts beyond those previously evaluated and disclosed in these EIRs.

Prepared by: Martin Alkire
Community Development Department

Date: November 20, 2021

All referenced documentation is available for public review at the City of Mountain View, located at 500 Castro Street, Mountain View, CA 94039 during normal business hours.

TABLE OF CONTENTS

TABLE OF CONTENTS

Figures

Tables

Appendices

SECTION 1.0 INTRODUCTION AND PURPOSE

This Initial Study Checklist/Addendum has been prepared by the City of Mountain View as the Lead Agency, in conformance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, and the regulations and policies of the City of Mountain View.

This Addendum to the certified 2017 Subsequent Environmental Impact Report for the North Bayshore Precise Plan (NBPP SEIR) (SCH#: 2013082088) addresses proposed refinements to the previously approved project. The purpose of this Addendum is to evaluate whether the proposed refinements to the development studied in the NBPP SEIR, which are described in Section 2.3 Project Description, will require major revisions to the certified NBPP SEIR due to new significant impacts or a substantial increase in the severity of significant impacts previously identified in the NBPP SEIR.

SECTION 2.0 PROJECT INFORMATION

2.1 BACKGROUND INFORMATION

In 2012, the City adopted its 2030 General Plan to guide change and infrastructure investment in the City through 2030. One of the "change areas" identified in the 2030 General Plan is the North Bayshore area. This approximately 636-acre area is located in the northern end of the City, bordering Shoreline at Mountain View Regional Park to the north, Highway 101 to the south, Palo Alto to the west, and Stevens Creek to the east.

To implement the 2030 General Plan for this area, the City adopted the North Bayshore Precise Plan (Precise Plan) in 2014 and then updated it in 2017 to include residential uses.

The Precise Plan provides a vision and guiding principles, development standards, and design guidelines for the area, in conformance with the General Plan's vision and North Bayshore land use designations. The Precise Plan facilitates development of complete neighborhoods and character areas within North Bayshore; development of affordable housing; protection and enhancement of area ecosystems and habitat; improved transportation connections and expanded and improved public spaces in the area. The Precise Plan allows up to 3.6 million square feet of net new commercial uses (including office and commercial building uses and 400 hotel rooms) and 9,850 residential units (with a goal of 20 percent affordable units). The Precise Plan also includes strategies for new and enhanced parks, bike and pedestrian improvements, and public streets.

The Precise Plan is organized into four character areas, one of which is the Gateway Character Area. The Gateway Character Area is envisioned as a mixed-use urban center and is located within the Joaquin Neighborhood. The area supports a broad range of office, residential, entertainment, retail, restaurant, service, and hotel uses. The Gateway Character Area allows the highest intensities and tallest building heights in the Precise Plan area. New buildings will include minimal setbacks, active ground floor retail uses, and human-scale, pedestrian-oriented frontages.

The Precise Plan also identifies three Complete Neighborhood Areas, one of which is the Joaquin Neighborhood. A Master Plan is required by the Precise Plan for each Complete Neighborhood Area to help achieve key Precise Plan objectives, such as creating a broad mix of diverse land uses, new publicly accessible streets, and the phasing of new development and infrastructure improvements.

The environmental impacts of the Precise Plan were disclosed in the General Plan EIR, NBPP EIR, and NBPP SEIR.

2.2 PROJECT LOCATION AND BRIEF EXISTING SITE CONDITIONS DESCRIPTION

The proposed City-initiated North Bayshore Gateway Master Plan (Master Plan) area is located in the Gateway Character Area of the Precise Plan and includes the southern portion of the Joaquin Neighborhood. The Joaquin Neighborhood encompasses 68 acres and the Precise Plan development targets for this neighborhood are summarized in Table 2.2-1.

Table 2.2-1: Complete Neighborhood Targets: Joaquin Neighborhood

	Residential Units*	Employment Square Footage**	Retail/Entertainment Square Footage***	Hotel Rooms	Public Open Space
Joaquin Neighborhood	3,950	2.5 million	240,000	200	Community park/ Neighborhood park

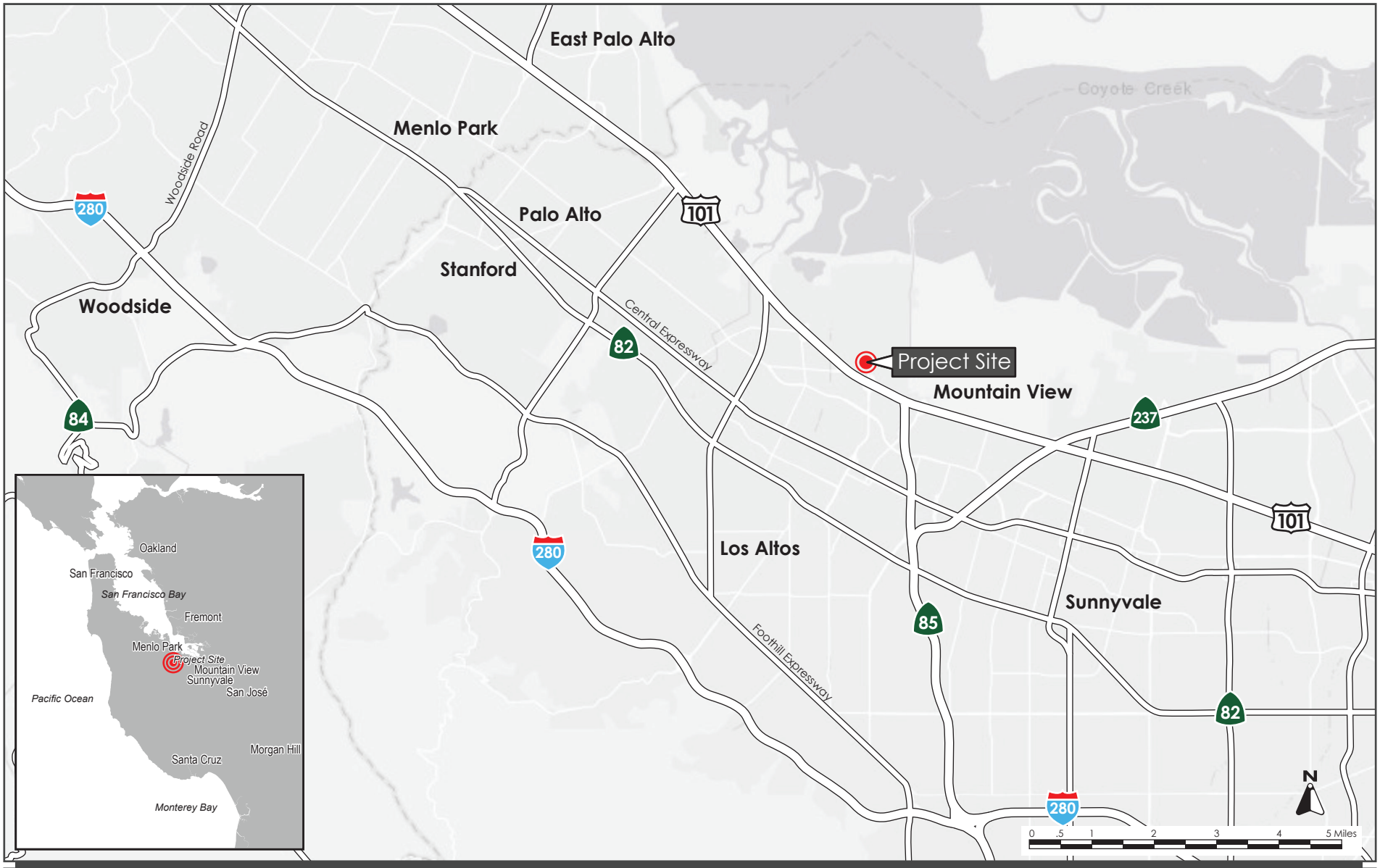
* The Precise Plan has a housing unit mix goal of 40 percent micro-unit/studios, 30 percent one bedroom units, 20 percent two bedroom units, and 10 percent three bedroom units. The Precise Plan also assumes that 20 percent of the residential units are built as affordable units.

** Includes office, R&D, industrial, and service uses. Includes new and existing building square footage.

*** Includes retail, restaurant, and movie theatre uses. Includes new and existing building square footage.

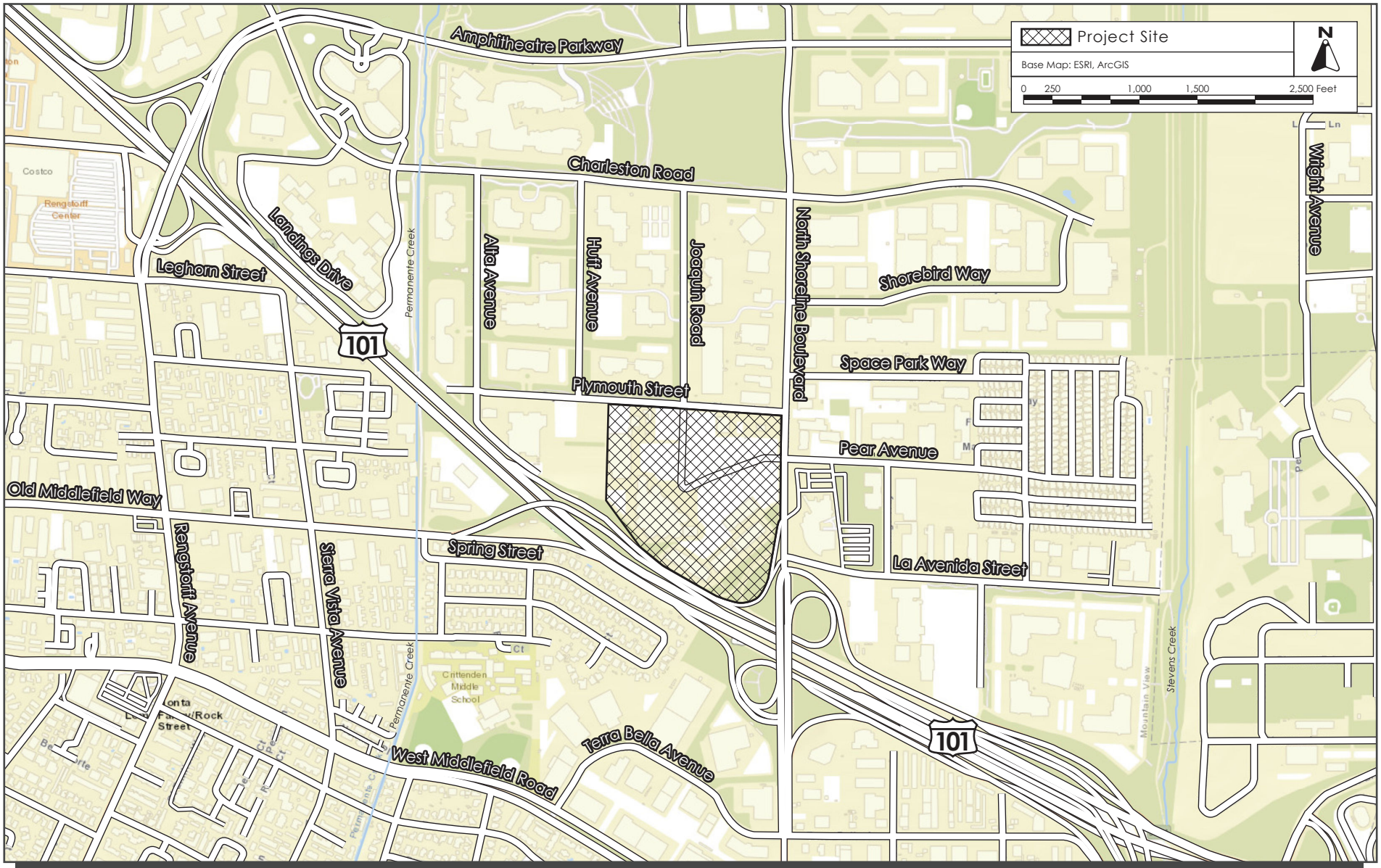
The Master Plan encompasses an approximately 29-acre area bounded by Plymouth Street to the north, Highway 101 to the south, North Shoreline Boulevard to the east, and existing three- to six-story office uses to the west as shown in Figure 2.2-3. The Master Plan area has a General Plan land use designation of North Bayshore Mixed-Use Center and is zoned P(39) – Planned Community North Bayshore Precise Plan. Existing development in the Master Plan area includes several lower density one-story commercial and industrial/R&D buildings, surface parking areas, and a movie theater complex. Mature trees are located throughout the area, primarily within the surface parking lots.

A regional map and a vicinity map of the site are shown on Figure 2.2-1 and Figure 2.2-2, and an aerial photograph of the Master Plan area and the surrounding area is shown on Figure 2.2-3. Figure 2.2-4 shows the Gateway Character Area of the Precise Plan.



REGIONAL MAP

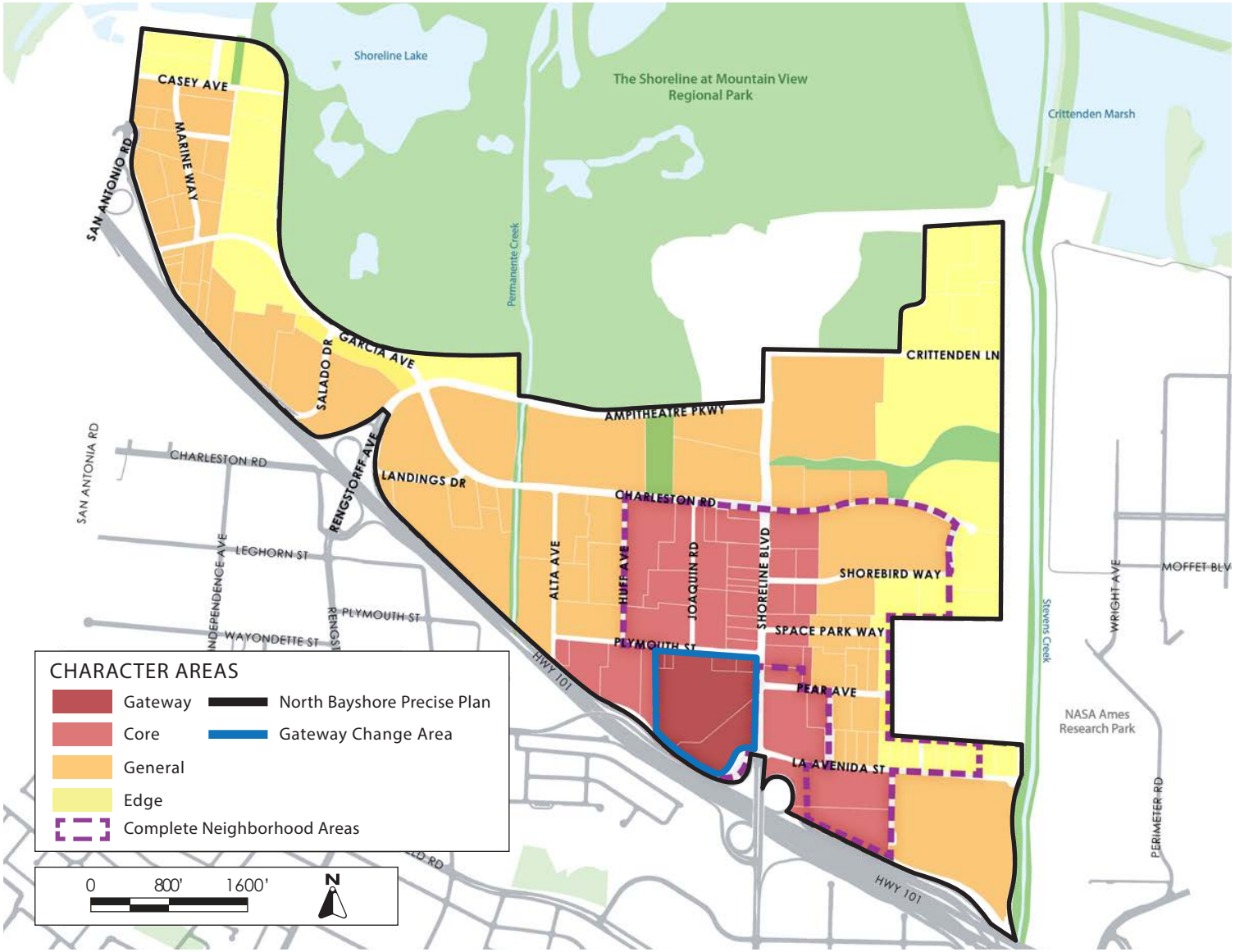
FIGURE 2.2-1



VICINITY MAP

FIGURE 2.2-2

AERIAL PHOTOGRAPH AND SURROUNDING LAND USES | FIGURE 2.2-3



GATEWAY CHANGE AREA

FIGURE 2.2-4

2.3 PROJECT DESCRIPTION

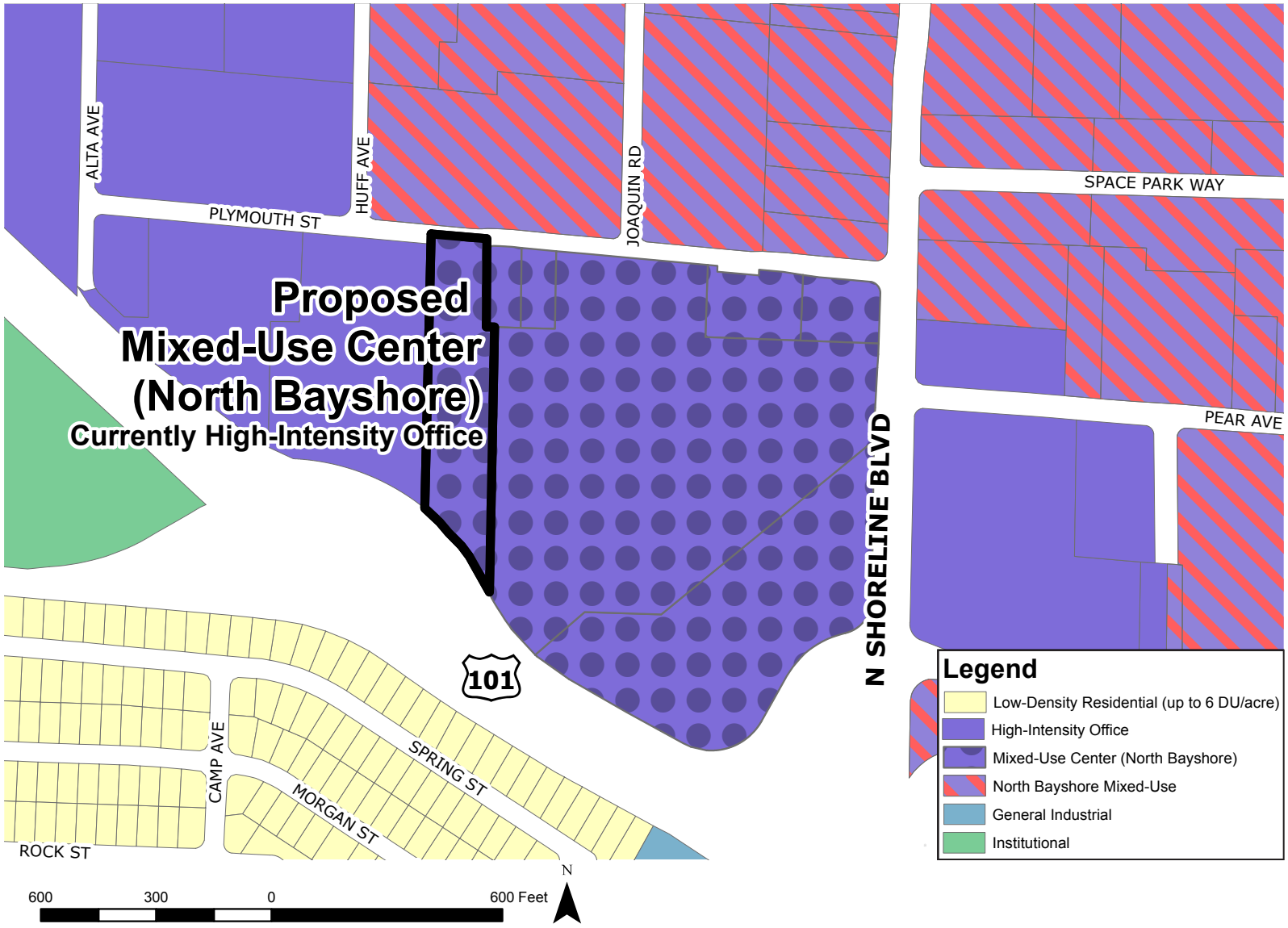
The City is proposing the Master Plan to implement the Precise Plan and help guide the integrated development of this key large "gateway" area that includes multiple property owners. The vision for the Master Plan is to build on the existing and future adjacent land uses and street network, establish a destination gathering place, and create a complete neighborhood. A copy of the draft Master Plan is included in Appendix A.

The proposed Master Plan is a refinement to the Precise Plan by providing more detailed assignment of land uses, densities, and circulation for the Master Plan area than provided in the Precise Plan and NBPP SEIR. The Master Plan would also require a General Plan amendment and Precise Plan amendment in order to add the parcel located at 1555 Plymouth Street (APN: 116-13-027) to the Master Plan area. The parcel's General Plan designation would be changed from High-Intensity Office to North Bayshore Mixed-Use Center (see Figure 2.3-1) and the parcel's designation within the NBPP would be changed from Core Character Area to the Gateway Character Area and be included within the Joaquin Complete Neighborhood (see Figure 2.3-2). Additionally, minor text amendments to the Precise Plan would be made to reflect the design standards in the proposed Master Plan. The environmental impacts of the proposed Master Plan (including the proposed General Plan and Precise Plan amendments) are the subject of this Initial Study Checklist/Addendum.

The project also includes minor amendments to General Plan and Precise Plan maps to: reflect new character area and complete neighborhood boundaries to be consistent with the proposed Master Plan; correct errors by delineating open space areas according to property line boundaries, and clarify where existing and proposed greenways are shown. These amendments do not affect the environmental analysis or conclusions in the NBPP SEIR and, therefore, are not discussed further in this document.

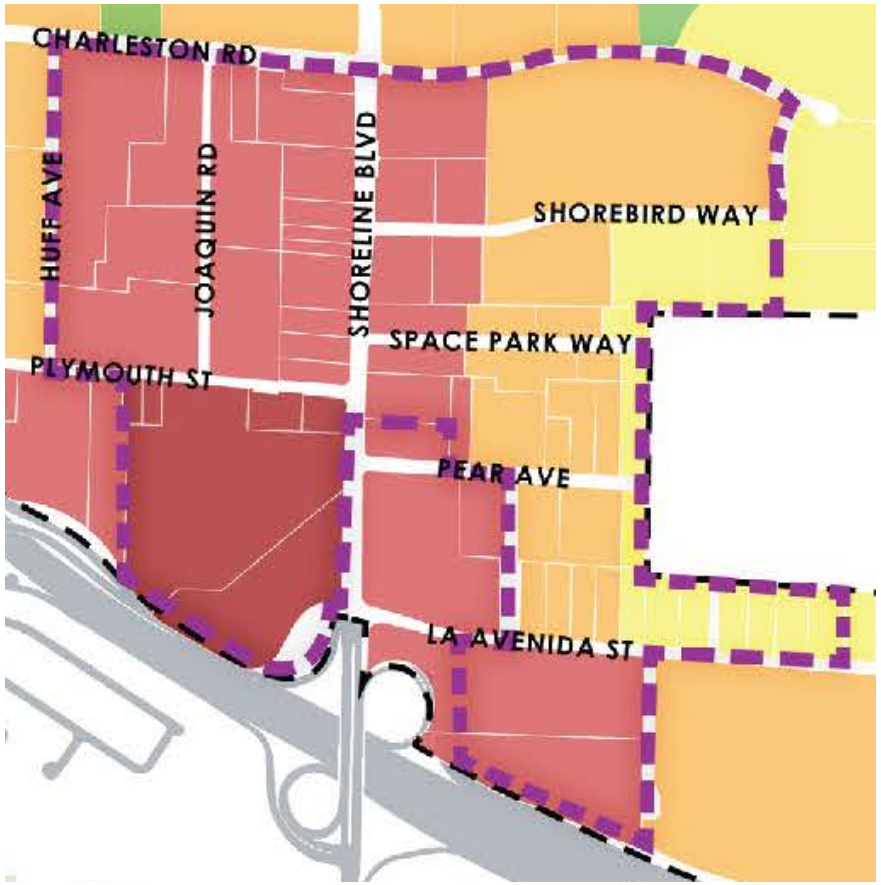
2.3.1 Land Use Sub-Districts and Development Options

The Master Plan includes three "sub-districts" as shown on Figure 2.3-3. The Residential sub-district is located in the northwest corner of the Master Plan area and residential land uses are allowed in this sub-district. The Mixed-Use sub-district is located in the northeast corner of the Master Plan area and residential, office, retail/entertainment, and hotel land uses are allowed in this sub-district. The Mixed-Use Entertainment sub-district is located in the southern portion of the Master Plan area and residential, office, retail/entertainment, and hotel land uses are allowed in this sub-district.



Source: City of Mountain View.

PROPOSED GENERAL PLAN AMENDMENT | FIGURE 2.3-1



EXISTING

PROPOSED

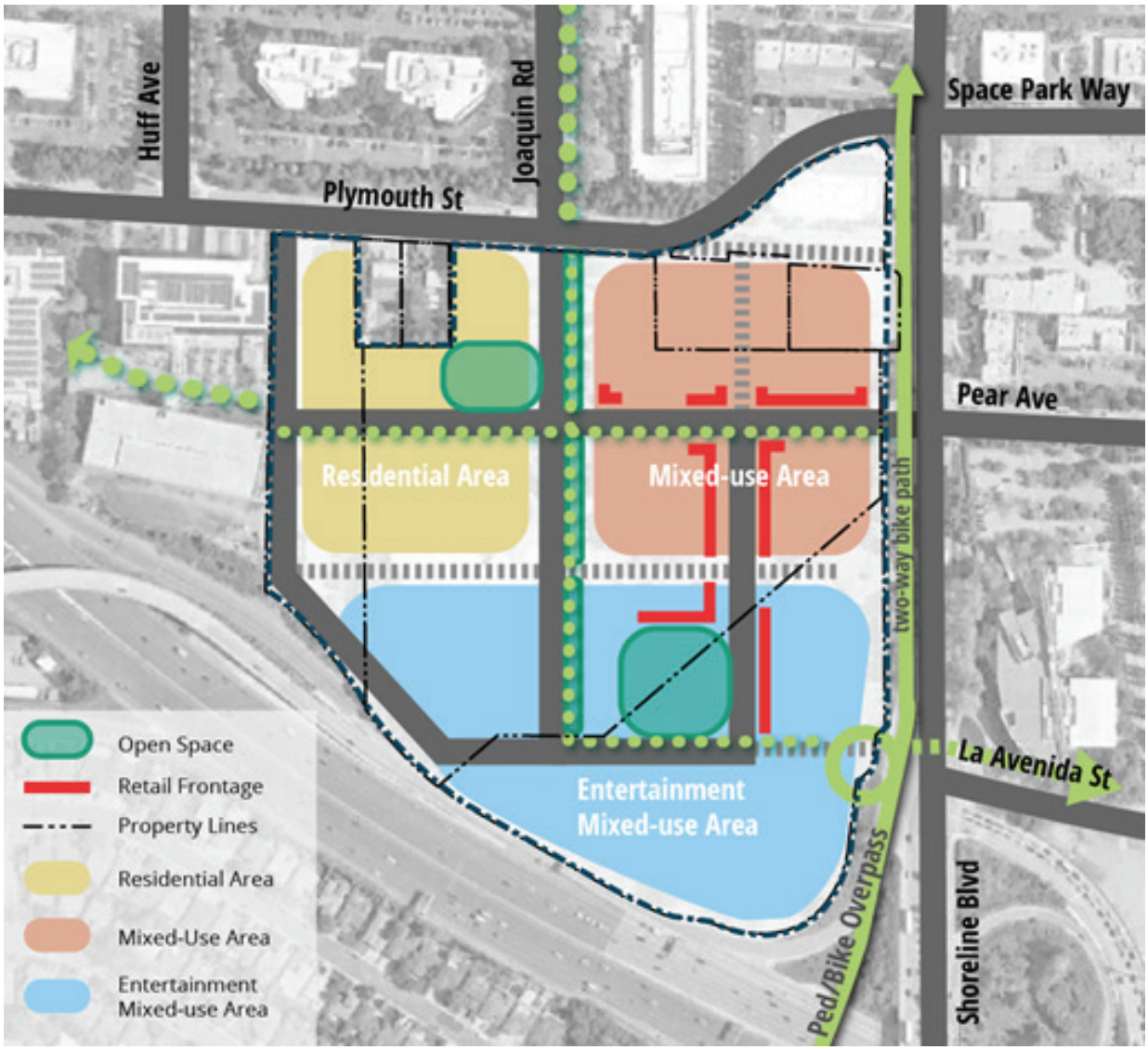
CHARACTER AREAS

- Gateway
- Core
- General
- Edge
- Complete Neighborhood Areas

0 200 800 1,200 1,600 Feet

N

PROPOSED PRECISE PLAN AMENDMENT | FIGURE 2.3-2



GATEWAY MASTER PLAN LAND USE SUBDISTRICTS | FIGURE 2.3-3

Given the uncertainty of the real estate market, the City envisions that the Master Plan would build-out under one of two potential development options: (1) Office Option or (2) No Office Option. Each development option is summarized in Table 2.3-1 below. The Office Option is the preferred project option.

Table 2.3-1: North Bayshore Gateway Master Plan Development Options

Option	Residential Dwelling Units	Office Square Footage	Retail/ Entertainment Square Footage	Hotel Rooms	Open Space
1. Office Option	1,200-2,100	Up to 500,000	50,000-300,000	150-200	70,000
2. No Office Option	1,500-2,800	None	50,000-300,000	150-200	70,000

The key elements of the two development options are similar in that both include residential, retail/entertainment, hotel uses, and open space in approximately the same locations. The difference between the two options is the amount of proposed residential and office uses, as shown in Table 2.3-1. Both options would follow the specific parcel development numbers identified in Table 2.3-2 below.

Overall, the proposed Master Plan would allow up to approximately 71 percent of the residential units, 20 percent of the office space, 100 percent of the retail/entertainment space, and 100 percent of the hotel rooms targeted for the Joaquin Neighborhood.

2.3.2 Development Standards and Guidelines

The Master Plan includes development standards and guidelines for the following subjects:

- Block Structure
- Land Use Program
- Open Space
- Site and Building Design Standards
- Parking
- Street Design
- Infrastructure

The primary development standards and guidelines that result in changes to the environment are summarized below. Refer to Appendix A for a complete description of all the development standards and guidelines.

2.3.2.1 *Land Use Program*

The Master Plan area is comprised of six parcels (parcels A through F, as shown on Figure 2.3-4). Minimum and maximum development numbers for each land use for the parcels are identified in the Master Plan and summarized below in Table 2.3-2.

Table 2.3-2: North Bayshore Gateway Master Plan Land Uses by Parcel					
Parcel	**Minimum Residential Dwelling Units**	**Maximum Office Square Footage[1]**	**Minimum Open Space Square Footage**	**Minimum Ground Floor Retail Square Footage**	**Maximum Retail/ Entertainment Square Footage + Hotel Rooms**
Parcel A	655	250,000[2]	50,000	25,000	275,000 + 200 Hotel Rooms[2]
Parcel B	545	250,000[2]	20,000	25,000	275,000 + 200 Hotel Rooms[2]
Parcel C					
Parcel D					
Parcel E					
Parcel F[3]	-	N/A	-	-	-
Total	**1,200**	**500,000**	**70,000**	**50,000**	**300,000 + 200 Hotel Rooms**

[1] Prior to occupancy of any office floor space, a minimum of 500 residential units shall obtain occupancy permits and all necessary street right-of-way, public infrastructure, and public open spaces shall be completed or have a phasing plan approved by the City.

[2] Total number of hotel rooms and designated floor areas would not exceed the cumulative maximum for the North Bayshore Gateway Master Plan area.

[3] Parcel F allows residential or retail uses with no minimums

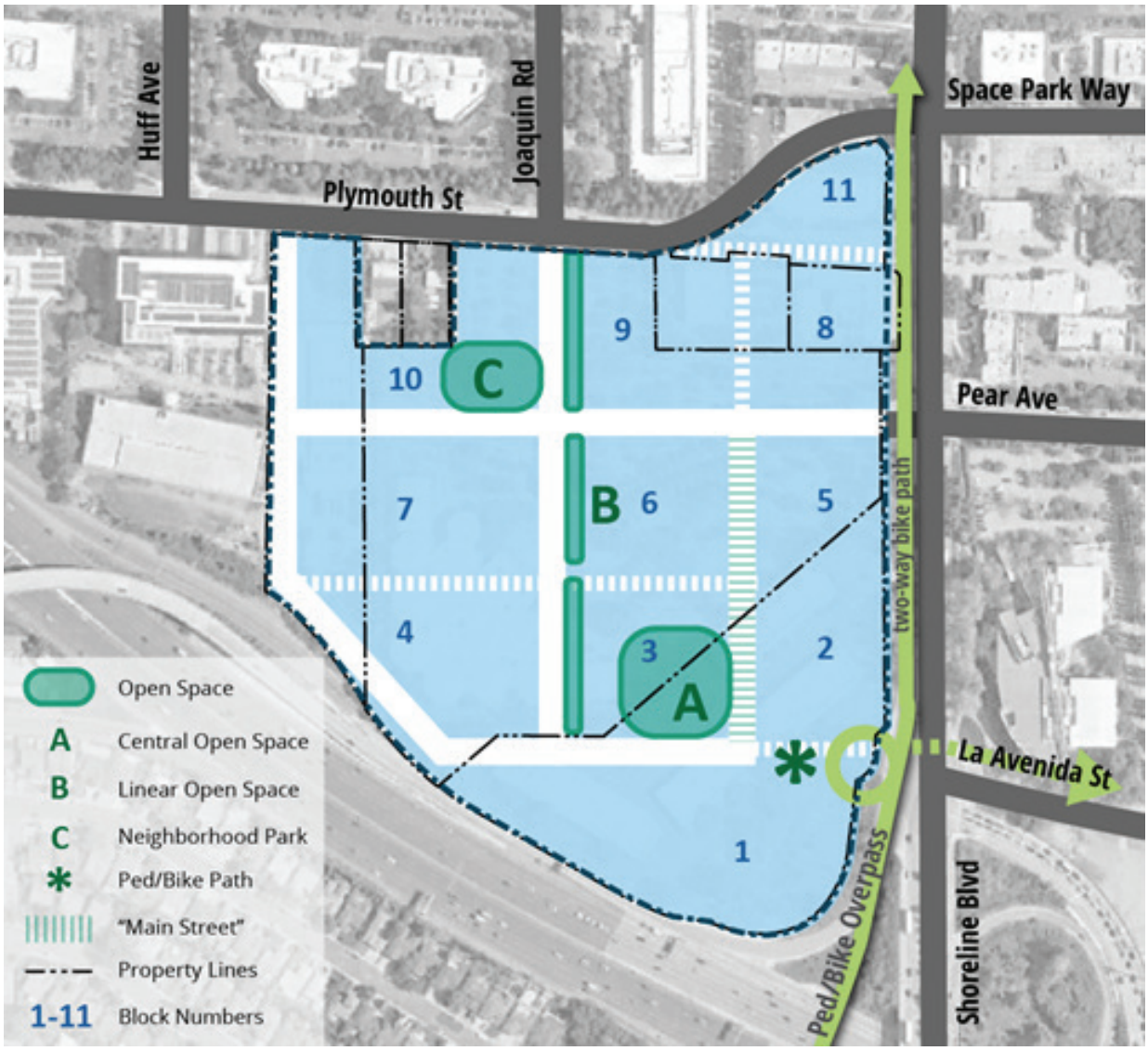
2.3.2.2 *Open Space*

The Master Plan includes an Open Space Plan with publicly accessible open spaces (see Figure 2.3-5). The Master Plan includes a minimum:

- 30,000-square foot Central Open Space located within Blocks 3 and/or 6;
- 15,000-square foot Linear Open Space located along the west side of Blocks 3, 6, and 9; and
- 20,000-square foot Neighborhood Park located within Blocks 7 and/or 10.

For the purposes of this environmental analysis, it is assumed a maximum of 70,000 square feet of open space is developed under the proposed Master Plan (refer to Table 2.3-1).

GATEWAY MASTER PLAN LAND USE PARCELS | FIGURE 2.3-4



GATEWAY MASTER PLAN PROPOSED OPEN SPACE | FIGURE 2.3-5

2.3.2.3 *Street Design*

Figure 2.4-1 outlines the general location of public and private roadway connections and bike facilities in the Master Plan Area. The connections include neighborhood streets, a "Main Street", greenways, and service streets.

Under the proposed Master Plan, Joaquin Road would be extended south through the Master Plan area (see Neighborhood Street J on Figure 2.4-1) and Pear Avenue would be extended west through the Master Plan area (see Neighborhood Street P on Figure 2.4-1). The extensions of Joaquin Road and Pear Avenue would connect to a new street proposed along the western edge of the Master Plan area (see Service Streets C and B2 on Figure 2.4-1). Additional public and private streets are shown on Figure 2.4-1. Additional details on each street design and minimum right-of-way width are provided in Appendix A.

2.3.2.4 *Infrastructure*

The Master Plan includes infrastructure improvements include new sewer mains, water mains, and recycled water main within the Master Plan area that connect to the City's existing systems. These infrastructure improvements are described in more detail and shown graphically in the Master Plan included in Appendix A.

2.4 APPROVALS REQUIRED

The discretionary action for the project includes adoption by the City Council, General Plan Amendment, and Precise Plan Amendment. Following adoption, subsequent submittal and review of Master Plans and PC (Planned Community) Permits within the North Bayshore Gateway Master Plan area by property owners/developers would then be required.

GATEWAY MASTER PLAN PROPOSED STREET MAP | FIGURE 2.4-1

SECTION 3.0 ENVIRONMENTAL CHECKLIST

The purpose of the checklist is to evaluate the categories in terms of any **"changes"** or **"new information"** that may result in a changed environmental impact evaluation. A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no relevant change in the condition or status of the impact due to its insignificance or its treatment in a previous environmental document.

Overriding considerations were adopted with the certification of an EIR that accepted the possibility of certain impacts regardless of whether mitigations could reduce them to a less-than-significant level. Thus, certain environmental categories might be answered with a "no" in the checklist because the proposed project does not introduce changes that would result in a modification to the conclusion of the EIR Findings Document.

EXPLANATION OF CHECKLIST EVALUATION CATEGORIES:

A. Where an Impact Was Analyzed in Prior Environmental Documents
This column provides a reference to the pages of the other environmental documents where information and analysis may be found relative to the environmental issue listed under each topic.

B. Do Proposed Changes Involve New or More Severe Impacts?
Pursuant to Section 15162(a)(1) of the CEQA Guidelines, this column indicates whether the changes represented by the proposed project will result in new significant impacts not disclosed in the prior EIR or substantial increases in the severity of a previously identified significant impact. A yes answer is required if there are new or worsened significant impacts that require "major revisions of the previous EIR or negative declaration." If a "yes" answer is given, additional mitigation measures or alternatives may be needed.

C. Any New Circumstances Involving New or More Severe Impacts?
Pursuant to Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether changed circumstances affecting the proposed project will result in new significant impacts not disclosed in the prior EIR or substantial increases of the severity of a previously identified significant impact. A yes answer is required if there are new or worsened significant impacts that require "major revisions of the previous EIR or negative declaration." If a "yes" answer is given, additional mitigation measures or alternatives may be needed.

D. Any New Information of Substantial Importance Requiring New Analysis or Verification? Pursuant to Section 15162(a)(3) of the CEQA Guidelines, this column indicates whether new information "of substantial importance" is available requiring an update to the analysis of a previous EIR to verify that the environmental conclusions and mitigations remain valid. Any such information is only relevant if it "was not known and could not have been known with reasonable diligence at the time of the previous EIR." To be relevant in this context, such new information must show one or more of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If the new information shows the existence of new significant effects or significant effects that are substantially more severe than were previously disclosed, then new mitigation measures should be considered.

If the new information shows that previously rejected mitigation measures or alternatives are now feasible, such measures or alternatives should be considered again.

If the new information shows the existence of mitigation measures or alternatives that are (i) considerably different from those included in the prior EIR and (ii) able to substantially reduce one or more significant effects, then such mitigation measures or alternatives also should be considered.

E. Prior Environmental Document Mitigations Implemented or Mitigations Address Impacts. Pursuant to Section 15162(a)(3) of the CEQA Guidelines, this column indicates whether the SEIR provides mitigations to address effects in the related impact category. If N/A is indicated, the SEIR and this checklist conclude that the impact does not occur with this project and, therefore, no mitigation is needed.

DISCUSSION AND MITIGATION SECTIONS

Discussion

A discussion of the elements of the checklist is provided under each environmental category in order to clarify the answers. The discussion provides information about the particular environmental issue, how the project relates to the issue and the status of any mitigation that may be required or that has already been implemented. The impacts of the two development options under the Master Plan are assumed to be the same or similar unless explicitly noted.

Standard Mitigation Measures

Applicable standard mitigation measures are listed under each environmental category.

EIR Mitigation Measures

Applicable mitigation measures from previous EIRs that apply to the changes or new information are referenced under each environmental category.

Special Mitigation Measures

If changes or new information involve new impacts, special mitigations will be listed which will be included as project conditions to address those impacts.

3.1 AESTHETICS

	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Have a substantial adverse effect on a scenic vista?	NBPP Draft SEIR (2017) pp. 135-136	No	No	No	N/A
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NBPP Draft SEIR (2017) pp. 135-136	No	No	No	N/A
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?[1] If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	NBPP Draft SEIR (2017) pp. 136 -138	No	No	No	N/A
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	NBPP Draft SEIR (2017) pp. 138-139	No	No	No	N/A

3.1.1 Existing Setting

The existing aesthetics setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

Most of the Master Plan area is located in the Gateway Character Area of the Precise Plan (with the 1555 Plymouth Street parcel currently located in the Core Character Area) and includes the southern portion of the Joaquin Neighborhood. The Master Plan area can be described as lower density with large existing surface parking areas, a few one-story commercial and industrial/R&D buildings, and a movie theater complex. Mature trees are located throughout the Master Plan area, primarily within the surface parking lots.

[1] Public views are those that are experienced from publicly accessible vantage point.

3.1.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which the proposed Master Plan is fundamentally consistent with) would result in less than significant impacts to aesthetic resources.

a. Under existing conditions, views of the Santa Cruz Mountains from Plymouth Street and North Shoreline Boulevard are limited due to the presence of mature trees and intervening structures and roadways. The Precise Plan allows the highest densities and greatest building heights within the Gateway Character Area, where the project site is located.[2] The maximum building height allowed in the Gateway Character Area is eight stories (140 feet) for non-residential buildings and 15 stories (160 feet) for residential buildings.[3] As described in Section 2.0 Project Information, the proposed Master Plan is consistent with the land use and density assumptions in the Precise Plan for the Master Plan area. The NBPP SEIR concluded that future development in compliance with General Plan Policies LUD 9.5 and LUD 16.5,[4] the maximum building heights identified in the Precise Plan, and the view study standard in Section 3.3.5 Building Height and Massing of the Precise Plan, where applicable, would not result in significant impacts to scenic resources.

As described in Section 2.0 Project Information, the Master Plan is proposed to implement the Precise Plan and the proposed density in the Master Plan is consistent with the density assumed for the Master Plan area in the Precise Plan. Furthermore, future development implementing the proposed Master Plan would comply with General Plan Policies LUD 9.5 and LUD 16.5 and complete view studies (if applicable) to ensure that significant viewsheds would be preserved by retention of open space between proposed buildings. For these reasons, the project would result in the same less than significant impact on scenic vistas as disclosed in the NBPP SEIR.

b. There are no officially designated State Scenic Highways in the Precise Plan area, nor is the Precise Plan area visible from a designated State Scenic Highway. The proposed Master Plan (which is within the Precise Plan) would not, therefore, damage scenic resources within a State Scenic Highway and there would be no impact. This is the same impact as disclosed in the NBPP SEIR.

c. The Master Plan area is located within an urbanized area. Future development implementing the proposed Master Plan under either development option would be consistent with General Plan policies designed to protect and enhance scenic quality including General Plan Policy LUD 6.3, which encourages building facades and frontages that create a presence at the street and along pathways, and General Plan Policy LUD 9.1, which ensures that new development includes sensitive height and setback transitions. As discussed under checklist question a., future development projects would be consistent with Policies LUD 9.5 and 16.5, which would preserve views and viewsheds, as well as General Plan Policy 9.6, which would minimize light and glare from new development.

In addition, as discussed in the NBPP SEIR, the City's development review process ensures the architecture and urban design of new development would protect the City's visual environment. The development review process includes ensuring that future development projects (including those within the Master Plan area) are consistent with the development standards and guidelines of the

[2] City of Mountain View. *North Bayshore Precise Plan*. June 2019. Page 56.
[3] City of Mountain View. *North Bayshore Precise Plan*. June 2019. Pages 72 and 73.
[4] General Plan Policy LUD 9.5 states preserve significant views throughout the community. General Plan Policy LUD 16.5 states "Protect views by including open areas between tall buildings".

Precise Plan so the proposed project fits the planned form and scenic quality of the area. Future development under the proposed Master Plan would be subject to the same development review process described in the NBPP SEIR. For these reasons, implementation of the proposed Master Plan would not conflict with applicable regulations governing scenic quality and would result in the same less than significant impact disclosed in the NBPP SEIR.

d. Future development within the proposed Master Plan under either development option would be consistent with General Plan Policy LUD 9.6, which includes minimizing the amount of light and glare from new development, and the requirements in Chapter 3: Land Use and Design and 5.2 Bird Safe Design of the Precise Plan, which would reduce the likelihood of bird-building collision fatalities through night-light pollution reduction. Thus, consistent with the NBPP SEIR, the project would not create a new source of substantial light or glare.

3.1.3 Conclusion

The proposed project would not result in a new or substantially increased significant aesthetic impact compared to the NBPP SEIR.

3.2 AIR QUALITY

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Conflict with or obstruct implementation of the applicable air quality plan?	NBPP Draft SEIR (2017) pp. 152-157	No	No	No	N/A
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	NBPP Draft SEIR (2017) pp. 159-160, 171	No	No	No	MM AQ-2.1, MM AQ-2.2
c. Expose sensitive receptors to substantial pollutant concentrations?	NBPP Draft SEIR (2017) pp. 160-169	No	No	No	MM AQ-3.1, MM AQ-4.1
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	NBPP Draft SEIR (2017) pp. 169-170	No	No	No	N/A

3.2.1 Existing Setting

The Master Plan area generates air pollutant emissions from building operations and vehicle trips by employees and visitors.

3.2.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which the proposed Master Plan is fundamentally consistent with) would result in less than significant impacts with regard to air quality with implementation of identified air quality mitigation measures.

a. The NBPP SEIR concluded that the Precise Plan and its policies were consistent with the Bay Area Air Quality Management District (BAAQMD) Clean Air Plan (CAP) primary goals and control measures. As described in the NBPP SEIR, implementation of projects under the Precise Plan (including the proposed Master Plan) would not disrupt or hinder implementation of any CAP control measures. Further, the NBPP SEIR includes mitigation measures MM AQ-2.1, MM AQ-2.2, and MM AQ-3.1 to reduce the impacts related to increases in criteria air pollutants, as described below under checklist question b.

b. The NBPP SEIR identified a less than significant air quality impact with mitigation incorporated (Impact AQ-2) related to the construction emissions of dust and criteria pollutants and their precursors from future development and a less than significant plan-level impact regarding operational criteria air pollutants and precursors; the proposed project's contribution to these identified impacts are described below.

Construction Period Emissions

As discussed in the NBPP SEIR, implementation of the Precise Plan (which includes either of the development options proposed for the Master Plan) would result in short-term emissions from construction activities. The NBPP SEIR concluded that construction emissions from future development projects would be less than significant with the implementation of mitigation measures MM AQ-2.1, which requires enhanced dust control best management practices (BMPs) recommended by BAAQMD, and MM AQ-2.2, which requires large construction projects use construction equipment with higher engine tier ratings or retrofitted with exhaust control measures to achieve a 20 percent NO_x reduction and 45 percent particulate reduction. Because development under the proposed Master Plan was accounted for in the Precise Plan, the Master Plan would result in the same construction air quality impact as disclosed in the NBPP SEIR.

Operational Period Emissions

The NBPP SEIR concluded that implementation of the Precise Plan (which includes either of the development options proposed for the Master Plan) would not cause significant increases in vehicle trips compared to population growth and would not interfere with 2010 CAP control measures. For this reason, the Precise Plan (as well as the proposed Master Plan), would not result in significant plan-level operational criteria air pollutant emissions. The BAAQMD Air Quality Guidelines do not have thresholds related to direct and indirect regional criteria pollutant emissions resulting from plan (i.e., Precise Plan or Master Plan) implementation; rather, they only require emissions computations for project-level analysis.

Implementation of the proposed Master Plan under either development option would result in long-term area and mobile source emissions from operation and use of subsequent development. Per General Plan Policy INC 20.7[5] and the NBPP SEIR, future development projects within the Master Plan area shall be required to prepare a project-level analysis of operational criteria air pollutant emissions in conformance with the BAAQMD CEQA Air Quality Guidelines and implement any identified mitigation measures.[6]

c. The NBPP SEIR identified a less than significant air quality impact with mitigation incorporated (Impact AQ-3 and AQ-4) related to health risks associated with exposure to TAC emissions during construction and operational phases; the proposed project's contribution to these identified impacts are described below.

[5] General Plan Policy INC 20.7 states to protect the public from substantial pollutant concentrations.
[6] For "General Office" projects, this operational criteria pollutant screening threshold (NO_x) is 346,000 square feet. For residential projects, this screening threshold varies between 325 and 511 dwelling units depending on the type of residential use. For "Hotel" projects, this screening threshold is 489 rooms.

Construction Health Risk

The NBPP SEIR identified a less than significant air quality impact (Impact AQ-3) with mitigation incorporated from temporary construction activities near sensitive receptors, specifically from short-term impacts from construction air pollutant emissions including criteria pollutants, toxic air contaminants (TACs), and $PM_{2.5}$. The NBPP SEIR requires that future development projects implement mitigation measure MM AQ-3.1 from the NBPP SEIR, which requires development projects, depending on the project size and location, to complete a construction health risk assessment and implement measures to reduce significant risk to a less than significant level. Because future development analyzed in the NBPP SEIR includes either of the proposed Master Plan development options, future development under the proposed Master Plan would result in the same construction health risk impacts as disclosed in the NBPP SEIR.

Operational Health Risk

The NBPP SEIR identified a less than significant air quality impact (Impact AQ-4) with mitigation incorporated from health risks associated with exposure to existing sensitive receptors from future operational TAC emissions. Per *California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal. 4th 369 *(BIA v. BAAQMD)*, effects of the environment on the project are not considered CEQA impacts. The potential effect of existing TAC sources on future projects within the Precise Plan area was evaluated in the NBPP SEIR and is discussed in this document for informational purposes because the City's General Plan Policy INC 20.7 addresses existing air quality conditions affecting a proposed project.

The implementation of the Precise Plan, which includes either Master Plan development option, allows the development of new sensitive receptors (e.g., residences) in locations near stationary and mobile TAC sources such as arterial and collector roadways, highways, and diesel generators and anticipates new stationary TAC sources (such as emergency backup diesel generators for office buildings). The NBPP SEIR requires that future development proposals with sensitive receptors within 650 feet of U.S. 101 and future development proposals that include stationary sources implement mitigation measure MM AQ-4.1, which requires project-specific health risk assessment to evaluate effects of TAC and $PM_{2.5}$ exposure on sensitive receptors and implementation of measures to reduce the health risk to a less than significant level. Because the Precise Plan includes either of the proposed Master Plan development options, future development under the proposed Master Plan would result in the same operational health risk impacts as disclosed in the NBPP SEIR.

d. No significant sources of odors are contemplated in the Precise Plan or the proposed Master Plan. The NBPP SEIR concluded that future development under the Precise Plan, consistent with General Plan Policy INC 20.8,[7] would not result in significant odor impacts. Consistent with the NBPP SEIR, future development under the either of the proposed Master Plan development options would comply with General Plan Policy INC 20.8 to reduce odor impacts to a less than significant level.

3.2.3 Conclusion

The proposed project would not result in a new or substantially increased significant air quality impact compared to the NBPP SEIR.

[7] General Plan Policy INC 20.8 states protect residents from offensive odors.

3.3 BIOLOGICAL RESOURCES

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	NBPP Draft SEIR (2017) pp. 198-204, 222	No	No	No	NA
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	NBPP Draft SEIR (2017) pp. 204-206	No	No	No	NA
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	NBPP Draft SEIR (2017) pp. 204-206, 211	No	No	No	NA
d. Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	NBPP Draft SEIR (2017) pp. 206-207, 220	No	No	No	NA
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	NBPP Draft SEIR (2017) pp. 207, 223-224	No	No	No	NA

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NBPP Draft SEIR (2017) pp. 353	No	No	No	NA

3.3.1 Existing Setting

The existing biological setting, including regulatory framework, has not substantially changed since the certification of the 2017 Precise Plan SEIR.

The Master Plan encompasses an approximately 29-acre area surrounded by urban development (including roadways, a freeway, and existing development). The Master Plan area is developed with large existing surface parking areas, a few one-story commercial and industrial/R&D buildings, and a movie theater complex. As described in the Precise Plan SEIR, the entire Master Plan area is considered developed/landscaped habitat and there are no sensitive (including aquatic) habitats present. The primary biological feature on-site are mature trees mostly located within the surface parking lots.

3.3.2 Discussion

The Precise Plan SEIR concluded that the build-out of the Precise Plan (which includes either of the development options proposed for the Master Plan) would result in less than significant impacts to biological resources with mitigation incorporated, where relevant.

a. The NBPP SEIR concluded that implementation of the Precise Plan would have a less than significant impact on special-status species. Biological concerns identified in the NBPP SEIR specific to the Master Plan area are in regards to migratory and nesting birds, and bird strikes.

Migratory and Nesting Birds

Raptors (birds of prey) and nesting birds are protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Urban-adapted raptors and other birds nesting could be disturbed by construction activities within the Master Plan area and result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes abandonment and/or loss of reproductive efforts is considered a taking by the California Department of Fish and Wildlife (CDFW) and would constitute an impact.

In compliance with the MBTA and CDFW standard species management practices, future development projects under the proposed Master Plan must be consistent with the Nesting Bird Protection standards identified in Chapter 5: Habitat and Biological Resources of the Precise Plan, which include avoidance of construction during the nesting season, preconstruction surveys for nesting birds during breeding-season work, and maintenance of buffers around active nests. Consistent with the conclusion in the NBPP SEIR, the implementation of the Master Plan in accordance with the Precise Plan standards would not result in significant impacts to nesting birds.

Bird Strikes

The Precise Plan (Chapter 5) includes Bird Safe Design measures to reduce or avoid the potential for bird collisions through façade treatments and light pollution reduction. Consistent with the Precise Plan SEIR, future development projects (including those under the proposed Master Plan) shall implement the Bird Safe Design Standards in Chapter 5 of the Previse Plan. For these reasons, and consistent with the conclusion in the Precise Plan SEIR, the Master Plan would result in less than significant impacts with regard to bird strikes.

b, c. The Master Plan area is comprised of developed/landscaped habitat. There is no aquatic habitat within the Master Plan area (refer to Figure 4.3-2 of the NBPP SEIR). As such, future development projects under the Master Plan would not impact riparian habitat, protected wetlands, or other sensitive habitat.

d. The NBPP SEIR concluded that implementation of the Precise Plan would have a less than significant impact on important nursery sites in the area. According to the NBPP SEIR, the Precise Plan area is not a particularly important area for movement by non-flying wildlife, and it does not contain any high-quality corridors allowing dispersal of such animals through the area. The nearest important nursery site is the egret rookery along Shorebird Way, approximately 0.4-mile east of the Master Plan area.[8] As discussed above, future development under the Master Plan would comply with the Precise Plan's Nesting Bird Protection standards and Bird Safe Design measures (as described under checklist question a. above) to minimize adverse effects on native and migratory bird species and migratory bird movement to a less than significant level. This is the same impact as disclosed in the NBPP SEIR.

e. The implementation of either of the Master Plan options would likely require the removal of Heritage Trees. A Heritage Tree Removal Permit would be needed prior to the removal of any Heritage trees by future development projects. As a standard condition of approval, all future projects within the Precise Plan area (including the Master Plan area) would be required to comply with the City of Mountain View Heritage tree ordinance, and accompanying tree replacement and maintenance requirements. The removal of Heritage trees, therefore, would be a less than significant impact. This is the same impact as disclosed in the NBPP SEIR.

f. The Santa Clara Valley Habitat Plan/Natural Community Conservation Plan (Habitat Plan) is a conservation program to promote the recovery of endangered species in portions of Santa Clara County while accommodating planned development, infrastructure, and maintenance activities. One aspect that the Habitat Plan accounts for is the indirect impacts on nitrogen deposition (existing and

[8] City of Mountain View. *North Bayshore Precise Plan Subsequent Environmental Impact Report.* SCH# 2013082088 March 2017. Page 190.

future) and identifies measures to conserve and manage serpentine areas over the term of the Habitat Plan, such that cumulative impacts to this habitat and associated special status species would not be significant and adverse. Measures identified in the Habitat Plan are to be implemented by projects within the Habitat Plan area, which does not include the Precise Plan (or Master Plan) area. The NBPP SEIR concluded that the nitrogen emissions resulting from build-out of the Precise Plan are less than cumulatively considerable given the buildout of the Precise Plan is a small portion of Santa Clara County's overall emissions. For these reasons, the project would not conflict with an adopted habitat conservation plan and any impact would be less than significant (consistent with the NBPP SEIR).

3.3.3 Conclusion

The proposed project would not result in a new or substantially increased significant biological resources impact compared to the NBPP SEIR.

3.4 CULTURAL RESOURCES

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	NBPP Draft SEIR (2017) pp. 233-234	No	No	No	N/A
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	NBPP Draft SEIR (2017) pp. 234-236	No	No	No	N/A
c. Disturb any human remains, including those interred outside the formal cemeteries?	NBPP Draft SEIR (2017) pp. 236-237	No	No	No	N/A

3.4.1 Existing Setting

The NBPP SEIR identifies areas surrounding late 19th and early 20th century houses and the vicinity of U.S. 101/North Rengstorff/Amphitheater Parkway interchange to have moderate to high potential to contain historic-era archaeological resources.

According to the Precise Plan SEIR, there are no known historical resources located within the North Bayshore Precise Plan area.

3.4.2 Discussion

The NBPP SEIR concluded that with implementation of standard conditions of approval, impacts to cultural resources would be less than significant within the Precise Plan Area, which includes the Master Plan area.

a. As discussed in the Precise Plan SEIR, there are no historic resources in the Precise Plan area listed in the National Register of Historic Places or the California Register of Historic Resources, and the Precise Plan area does not contain property or parcels listed on the City's Register of Historic Resources.

As described in the NBPP SEIR, as part of the development review process, future development projects would evaluate if historic resources would be affected and the development projects would be subject to General Plan policies (including General Plan Policy LUD 11.1[9]) and standard

[9] General Plan Policy LUD 11.1 states support the preservation and restoration of structures and cultural resources listed in the Mountain View Register of Historic Resources, the California Register of Historic Places or National Register of Historic Places.

conditions of approval, which require implementation of the Secretary of Interior's Standards for the Treatment of Historic Properties, documentation of the historic resources, and/or salvage program to save and reuse the building's historically significant materials and features to the extent feasible. Thus, future development under the proposed Master Plan would not result in a new or substantially more severe significant impact than previously identified in the NBPP SEIR.

b, c. Although it is unlikely that buried historic or prehistoric buried archaeological resources are present on the site (as described in the NBPP SEIR), these resources could be encountered during excavation, construction, or infrastructure improvements for future development projects within the Precise Plan area (which includes the Master Plan area), resulting in a significant impact to cultural resources. Future development projects would implement the City's standard conditions of approval related to the discovery of prehistoric or historic period archaeological resources and human remains (in compliance with General Plan Policies LUD-11.5 and LUD-11.6[10]), should they be encountered on the site. The standard conditions outline protocols to follow to reduce impacts to archaeological resources and human remains, if discovered during construction. As concluded in the NBPP SEIR, with the implementation of the City's standard conditions of approval, future development in the Precise Plan (which includes the Master Plan area) would result in less than significant impacts to archaeological resources.

In addition, pursuant to SB 18, the City of Mountain View notified local tribes about the proposed General Plan amendment. Tamien Nation responded to the City's notification requesting consultation. The consultation was concluded on November 16, 2021 and the following conditions of approval were agreed upon by Tamien Nation and the City for future development at 1555 Plymouth Street:

- CULTURAL SENSITIVITY TRAINING: As requested during the Tribal Consultation process for the project, Cultural Sensitivity Training shall be provided to the construction crews at the beginning of the project by a qualified archaeologist and Native American representative to aid those involved in the project to become more familiar with the indigenous history of peoples in the vicinity of the project site.

- NATIVE AMERICAN ARCHAEOLOGICAL MONITOR: A Native American archaeological monitor shall be present for all ground-disturbing activities throughout the project construction process.

Tamien Nation also requested conditions of approval pertaining to the discovery of archaeological or tribal cultural resources and human remains. These requested conditions are the same as the standard conditions of approval identified and required of future development pursuant to the NBPP SEIR.

3.4.3 Conclusion

The proposed project would not result in a new or substantially increased significant cultural resources impact compared to the NBPP SEIR.

[10] General Plan Policy LUD 11.5 states "Require all new development to meet state codes regarding the identification and protection of archaeological and paleontological deposits." General Plan Policy LUD 11.6 states "Require all new development to meet state codes regarding the identification and protection of human remains."

3.5 ENERGY

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Address Impacts.
Would the project:					
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	NBPP Draft SEIR (2017) pp. 245-247	No	No	No	N/A
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	NBPP Draft SEIR (2017) pp. 247	No	No	No	N/A

3.5.1 Existing Setting

The existing setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

The Master Plan area currently uses energy in the form of electricity and natural gas from operations, lighting, heating, and cooling of existing buildings. Vehicle trips by employees, residents, and visitors use gasoline, electricity, and diesel fuel.

3.5.2 Discussion

Based on the NBPP SEIR, the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts with regard to energy.

a. Future construction of the uses under either of the Master Plan development options would require energy for the manufacture and transportation of building materials, preparation of the sites (e.g., demolition and grading), and the construction of buildings. The NBPP SEIR concluded that construction processes are generally designed to be efficient in order to avoid excess monetary costs. In addition, future development projects under the Precise Plan would be required to implement mitigation measure MM AQ-2.2 identified in the NBPP SEIR. This mitigation measure restricts equipment idling times and requires the applicant to post signs on the project site reminding workers to shut off idle equipment, thus reducing the potential for energy waste. Future development would also be required to comply with the Precise Plan requirements to recycle or salvage at least 65 percent of construction debris, which minimizes energy impacts from the creation of excessive waste. For these reasons, the NBPP SEIR concluded that future projects under the Precise Plan would not use fuel or energy in a wasteful manner during construction activities. Since the proposed Master

Plan would be consistent with the development and growth assumptions in the Precise Plan and be subject to the same regulations to promote energy efficiency during construction activities as identified for the Precise Plan, the proposed Master Plan would result in the same less than significant construction-related energy impact as disclosed in the NBPP SEIR.

The future occupation and operation of development under either of the Master Plan development options would consume energy for building heating and cooling, lighting, and appliance use. The NBPP SEIR estimated that the Precise Plan (which includes either of the Master Plan development options) would have an annual energy use of approximately 88.4 million kilowatt hours (kWh) of electricity and 157 million British thermal unit (Btu) of natural gas, which represents less than one percent of Santa Clara County's overall usage of electricity and natural gas and would not be considered a substantial increase in demand for energy resources in relation to Santa Clara County's and the State of California's overall use and projected supplies. In addition, future development projects under the Precise Plan would be required to meet the Mountain View Green Building Code requirements, mandatory CALGreen and LEED requirements, and other green building regulations outlined in Chapter 4 of the Precise Plan. As such, future development would meet or exceed Title 24 energy efficiency standards. Further, new residential and commercial/office projects participating in the Density Bonus Program would be required to implement additional green building measures specific in Appendix B and Appendix C of the Precise Plan. For the reasons described above and consistent with the NBPP SEIR, the Precise Plan would not result in the inefficient or wasteful use of energy or resources. Since the proposed Master Plan would be consistent with the development and growth assumptions in the Precise Plan and be subject to the same regulations to promote energy efficiency as identified for the Precise Plan, the proposed Master Plan would result in the same less than significant operational energy impact as disclosed in the NBPP SEIR.

b. As discussed in the NBPP SEIR, the City of Mountain View Greenhouse Gas Reduction Program requires Transportation Demand Management (TDM) Plans for non-residential uses in the City (including the Precise Plan area). Future development under the Precise Plan also would obtain electricity from Silicon Valley Clean Energy, which is 100 percent greenhouse gas (GHG)-emissions free energy from renewable and hydroelectric sources, consistent with the state's Renewables Portfolio Standard program and SB 350. In addition, the Precise Plan includes building standards that meet or exceed state mandated Title 24 energy efficiency standards, CALGreen standards, and Mountain View Green Building Code standards, especially with the inclusion of water efficiency and LEED requirements. Thus, implementation of the Precise Plan would not obstruct a state or local plan for renewable energy or energy efficiency. Future development under the proposed Master Plan would be consistent with the Precise Plan and comply with the same regulations summarized above. For this reason, the Master Plan would comply with existing plans for renewable energy and energy efficiency. This is the same impact as disclosed in the NBPP SEIR.

3.5.3 Conclusion

The proposed project would not result in a new or substantially increased significant energy impact compared to the NBPP SEIR.

3.6 GEOLOGY, SOILS, AND MINERALS

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?	NBPP Draft SEIR (2017) pp. 257	No	No	No	N/A
b. Result in substantial soil erosion or the loss of topsoil?	NBPP Draft SEIR (2017) pp. 258	No	No	No	N/A
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	NBPP Draft SEIR (2017) pp. 257-258	No	No	No	N/A
d. Be located on expansive soil, as defined in the current California Building Code, creating substantial risks to life or property?	NBPP Draft SEIR (2017) pp. 258	No	No	No	N/A

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	NBPP Draft SEIR (2017) pp. 258	No	No	No	N/A
f. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	NBPP Draft SEIR (2017) pp. 236-237	No	No	No	N/A
g. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	NBPP Draft SEIR (2017) pp. 259	No	No	No	N/A
h. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, specific plan or other land use plan?	NBPP Draft SEIR (2017) pp. 259	No	No	No	N/A

3.6.1 Existing Setting

The Precise Plan area (which includes the Master Plan area) is within a seismically active region and is located within a liquefaction hazard zone. [11] The Master Plan area is not subject to landslides or later spreading.

Consistent with the information disclosed in the NBPP SEIR, the Master Plan area is underlain by Urbanland – Hangerone complex soils which consist of clay, clay loam, and gravelly loam soils with a slope of 0 to 2 percent.[12] The Master Plan area is not located within a Santa Clara County Compressible Soils Hazard Zone.[13]

[11] County of Santa Clara, Department of Planning. Santa Clara County Geologic Hazard Zones. Map 10. June 28, 2002. https://www.sccgov.org/sites/dpd/DocsForms/Documents/GEO_GeohazardATLAS.pdf

[12] United States Department of Agriculture, Natural Resources Conservation Service. Web Soil Survey. February 4, 2021. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

[13] County of Santa Clara, Department of Planning. Santa Clara County Geologic Hazard Zones. Map 10. June 28, 2002. https://www.sccgov.org/sites/dpd/DocsForms/Documents/GEO_GeohazardATLAS.pdf

According to the NBPP SEIR, depth to groundwater varies throughout the Precise Plan area depending on site-specific conditions. Typical groundwater levels in the Precise Plan area (including the Master Plan area) range from five to 15 feet below ground surface. Groundwater in the Precise Plan area flows generally northeast to southeast towards the nearby marshlands adjoining San Francisco Bay. Groundwater flow direction may deviate from the regional trends due to zones of higher or lower permeability and groundwater pumping or recharge.

There are no known paleontological or mineral resources within the City of Mountain View.

3.6.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes the development proposed under the Master Plan) would result in less than significant impacts to geology, paleontology, and mineral resources.

a. As disclosed in the NBPP SEIR, the Master Plan area is located in a seismically active region, and as such, strong to very strong ground shaking would be expected during the lifetime of the proposed project. The Master Plan area is not located within an Alquist-Priolo special study zone on the California Geological Survey fault zone map. While no active faults are known to cross the Master Plan area and fault rupture is not anticipated to occur, ground shaking could damage structures and threaten future occupants of the Master Plan area. In addition, the Master Plan area is located in a liquefaction hazard area, which is consistent with the conclusions in the NBPP SEIR.

As identified in the Precise Plan, future development projects would be designed and constructed in accordance with CBC requirements and General Plan policies PSA 4.2, PSA 5.1, PSA 5.2, PSA 5.3, PSA 5.4, and INC 2.3.[14] Additionally, future development would be required to implement the standard conditions of approval identified in the NBPP SEIR of preparing a design-level geotechnical report and implementing the recommendations in the report to reduce seismic and seismic-related impacts to a less than significant level.

Future development under either Master Plan development option would not be subject to substantial slope instability or landslide related hazards due to the relatively flat topography of the area. The impacts of landslides on future development within the Master Plan area would, therefore, be less than significant. This is the same impact as disclosed in the NBPP SEIR.

b. Topography of the Master Plan area is relatively flat; therefore, the area would not be exposed to substantial erosion. Future development projects under the Master Plan would be required to meet standard conditions of approval to ensure that erosion would not occur during construction and operation, as described in detail in Section 3.9 Hydrology and Water Quality. This is the same impact as disclosed in the NBPP SEIR.

[14] General Plan Policies PSA 4.2 states to minimize impacts of natural disasters; General Plan Policies PSA 5.1 – 5.4 states to ensure new development addresses seismically induced geologic hazards, complies with Alquist-Priolo Earthquake Fault Zoning Act, ensure City uses effective technology to inform the community about potential hazards, ensure new underground utilities are designed to meet current seismic standards. General Plan Policy INC 2.3 states to require the use of available technology and earthquake resistant materials in the design and construction of all infrastructure projects.

c., d. Given the proximity (within 10-miles) of seismically active faults to the Precise Plan area, seismic ground shaking could result in liquefaction, subsidence, or differential settlement. According to the NBPP SEIR, soils with a high expansion potential occur in the Plan Area, which can cause heaving and cracking of slabs on-grade, pavements, and structures founded on shallow foundations. Implementation of the City's standard conditions of approval of preparing a design-level geotechnical report and implementing the recommendations in the report would reduce the impacts of seismic and seismic-related hazards and expansive soils to a less than significant level. This is the same impact as disclosed in the NBPP SEIR.

e. Future development under either Master Plan development option would connect to existing City sewer lines and would not require treatment of wastewater on-site using a septic system or option wastewater disposal system. Therefore, the project would have no impact on the ability of on-site soils to support option wastewater systems. This is the same impact as disclosed in the NBPP SEIR.

f. Per the NBPP SEIR, the location of paleontological resources within the Precise Plan area is unlikely and the compliance of future development with the City's standard condition of approval (per General Plan policy LUD-11.5) that outlines protocols to follow to reduce impacts to paleontological resources if encountered would reduce impacts to paleontological resources to a less than significant level. This is the same impact as disclosed in the NBPP SEIR.

g., h. As stated in the NBPP SEIR, no minerals or aggregate resources of statewide importance are located in the vicinity of Mountain View. Thus, there would be no impact.

3.6.3 Conclusion

The proposed project would not result in a new or substantially increased significant geology and soils impact compared to the NBPP SEIR.

3.7 GREENHOUSE GAS EMISSIONS

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	NBPP Draft SEIR (2017) pp. 266-270	No	No	No	MM GHG-1.1, MM GHG-1.2
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions?	NBPP Draft SEIR (2017) pp. 271-274	No	No	No	N/A

3.7.1 Existing Setting

The existing GHG emissions setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

The City of Mountain View adopted the Mountain View 2030 General Plan and Greenhouse Gas Reduction Program (GGRP) and certified the EIR in July 2012. The General Plan is the guiding document for future growth of the City. The GGRP is a separate but complementary document and long-range plan that implements the greenhouse gas emissions reduction goals of the General Plan and serves as a programmatic greenhouse gas reduction strategy for CEQA tiering purposes.

The 29-acre Master Plan area is currently developed with large existing surface parking areas, a few one-story commercial and industrial/R&D buildings, and a movie theater complex. The existing development within the Master Plan area generates GHG emissions primarily from vehicle trips by employees and visitors.

3.7.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in significant and unavoidable impacts to GHG emissions.

a., b. The Precise Plan provides standards and guidelines for development that is a model of highly sustainable development within the City of Mountain View. Based upon the GHG emissions analysis completed for the NBPP SEIR, these standards and guidelines, along with currently adopted state regulations would not be sufficient to meet the Senate Bill (SB) 32 targets for GHG emissions by 2030 (Impact GHG-1). The discussion following Impact GHG-1 in the NBPP SEIR outlines some measures that could be used to reduce this impact, but not to a less than significant level.

Mitigation measure MM GHG-1.1 requires projects to implement measures to avoid or reduce some of the projected GHG emissions. Achieving the substantial GHG emissions reductions needed by 2030 would require a substantial multi-pronged approach that includes policy decisions citywide (MM GHG-1.2 in the NBPP SEIR) and additional emission controls at the federal and state level and new and substantially advanced technologies whose adoption cannot be predicted with accuracy at this time. It also would require substantial behavioral changes to replace fuel sources and reduce single-occupant vehicle trips further, especially to and from workplaces.

As noted in Section 3.5 Energy, the Precise Plan includes a Density Bonus Program for new residential and commercial/office projects that requires projects to implement additional green building measures. The Precise Plan also requires green building measures for new non-residential development to help improve a project's sustainability performance. The City also has the GGRP, Climate Protection Roadmap, and Environmental Sustainability Action Plan, which include applicable policies to guide future sustainable development and further reduce GHG emissions over time.

The Precise Plan states that Density Bonus Program projects shall prepare an analysis of feasible energy efficiency and renewable energy, materials management, and mobility measures to reduce GHG emissions resulting from the development. Potential GHG reductions relating to transportation are also required to include a vehicle trip reduction performance standard and/or reduced parking standard. Consistent with the Precise Plan, GGRP, Climate Change Scoping Plan Update, and BAAQMD Clean Air Plan, the future development projects under the Precise Plan would also include a Transportation Demand Management program to meet the 45 percent single occupant vehicle reduction.

The NBPP SEIR concluded that total emissions in the Precise Plan area are projected to increase beyond those assumed in the City's GGRP. Therefore, implementation of the Precise Plan (which includes either Master Plan development option) would conflict with plans, policies, or regulations for reducing GHG emissions adopted by the City of Mountain View. Because development analyzed in the NBPP SEIR includes either of the proposed Master Plan development options, future development under the proposed Master Plan would result in the same significant and unavoidable GHG impact as disclosed in the NBPP SEIR. The Mountain View City Council adopted a Statement of Overriding Considerations for the Precise Plan's significant unavoidable GHG impacts disclosed in the NBPP SEIR.

3.7.3 Conclusion

The proposed project would not result in a new or substantially increased significant GHG impact compared to the NBPP SEIR.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	NBPP Draft SEIR (2017) pp. 297-298	No	No	No	N/A
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	NBPP Draft SEIR (2017) pp. 297-298	No	No	No	MM HAZ-4.1 through 4.15
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	NBPP Draft SEIR (2017) pp. 298-308	No	No	No	N/A
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	NBPP Draft SEIR (2017) pp. 308	No	No	No	MM HAZ-4.1 through 4.15
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	NBPP Draft SEIR (2017) pp. 308	No	No	No	N/A
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	NBPP Draft SEIR (2017) pp. 308-309	No	No	No	N/A

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
g. Expose people or structures to a significant risk of loss, injury or death involving wildland fires?	NBPP Draft SEIR (2017) pp. 309	No	No	No	N/A

3.8.1 Existing Setting

The existing hazardous materials setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

According to the NBPP SEIR, the Precise Plan area changed from a primarily open space and agricultural community to an intensive office/R&D and industrial development between 1939 to 2012. By 1939, the Precise Plan area was developed with existing roadways and corridors including Shoreline Boulevard, Plymouth Street, Charleston Road, and Bayshore Highway. In 1956, development expanded in the Precise Plan area, especially along Stevens Creek towards the Bay and south of Charleston Road. Large residential development expanded south and west of Bayshore Highway. By 1968, office/R&D and industrial development along the western boundary of the Precise Plan area and urban development was primarily south of Charleston Road. Also, Bayshore Highway became U.S. 101, with multiple ramp interchanges in the project area. From the early 1990's to the present, office/industrial has been the primary land use in the Precise Plan area.

From previous agricultural uses in the area, pesticides were likely applied during the course of normal farming operations. Subsequent to the agricultural use of the area, industrial and R&D uses would have had used and stored chemicals for manufacturing and research activities, and subsequently generated hazardous wastes from these processes.

The Master Plan area is located within the Teledyne-SpectraPhysics plume, which is down gradient from the Teledyne-SpectraPhysics Superfund Site. Construction of clean-up remedies have been completed. Shallow soil contamination has been removed, but groundwater monitoring and treatment are on-going. The treatment of impacted ground water will continue until established cleanup goals are met. The vast majority of the known groundwater contaminants consist of trichloroethene (TCE) and its degradation biproducts including dichloroethane and vinyl chloride.

3.8.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts with regard to hazards and hazardous materials resources with implementation of mitigation measures.

a. The Master Plan area is currently developed with buildings that could contain lead paint and/ or asbestos-containing materials given their age. Future development projects would comply with local, state, and federal laws, which require surveys be completed by a qualified professional to determine the presence of asbestos-containing materials (ACMs) and/ or lead-based paint on the structures proposed for demolition and their appropriate disposal if present. Thus, impacts would be reduced to a less than significant level (as described on the NBPP SEIR).

Future development under either of the Master Plan options could involve the routine use of limited amounts of fuels, oils, cleaning materials, and landscape maintenance chemicals. The small quantities of these materials would not generate substantial hazard. The Precise Plan includes a land use standard that prohibits extremely hazardous material users as defined in the City Code, except for exempt permitted materials. The NBPP SEIR concluded that projects under the Precise Plan that comply with federal, state, local requirements, General Plan policies and actions (Policies PSA 3.2 and PSA 3.3[15]), and standard City conditions of approval (which require toxic soil assessments and soil management plans) would reduce the potential for hazardous materials impacts to existing residents and businesses in and near the Precise Plan area to a less than significant level. Future development under the proposed Master Plan would comply with Precise Plan standards and the same regulations identified for development within the Precise Plan. For these reasons, the Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

b., d. The NBPP SEIR identified a potentially significant hazardous materials impact (Impact HAZ-3) from future construction activities associated with development on sites with contaminated soils and groundwater in the plan area. The Master Plan area is located within the Teledyne-SpectraPhysics plume area and contains two sites (1547 Plymouth Street and 1400 Shoreline Boulevard[16]) listed on hazardous materials lists compiled pursuant to Government Code Section 65962.5.

Mitigation measures MM HAZ-4.1 through MM HAZ-4.15 in the NBPP SEIR require all future development to:

- Comply with any and all mitigation or site management measures imposed on the site by an oversight agency;
- Consult the applicable oversight agency for guidance on soil transport and reuse on sites with identified contaminants of concern (COCs);
- Perform a Phase I, and if necessary, Phase II investigation to determine whether COCs are present, and if contaminants of concern are present on the project site, prepare a Remedial Action Plan, Air Monitoring Plan, and Vapor Intrusion Mitigation Plan;
- Obtain written approval from appropriate oversight agency for any soil/ soil vapor/ or groundwater remediation activities on-site;
- Sample soil for lead levels at properties adjacent to U.S. 101;
- Sample soil for possible residual pesticides, unless it can be definitively proved they have not been used for agricultural purposes;

[15] General Plan Policy PSA 3.2 states prevent injuries and environmental contamination due to the uncontrolled release of hazardous materials through prevention and enforcement of fire and life safety codes and General Plan Policy PSA 3.3 states carry out development review procedures that encourage effective identification and remediation of contamination and protection of public and environmental health and safety.
[16] State Water Resources Control Board. GeoTracker Map. http://geotracker.waterboards.ca.gov/. Accessed February 5, 2021.

- Comply with dewatering sampling requirements;
- Ensure that any soil exported from future project sites shall be analyzed for COCs at the receiving facility;
- Require that all General Contractors shall prepare a Health and Safety Plan (HSP);
- Protect groundwater monitoring wells and remediation systems during construction;
- Provide agency access to site if under active regulatory agency oversight;
- Comply with any relevant activity or use limitations imposed on the property; and
- Contact the City of Mountain View Fire Department and County Department of Environmental Health to determine if permits are required prior to facility closure, building demolition, or change in property use.

In addition to mitigation measures MM HAZ-4.1 through MM HAZ-4.15, future development would be required to comply with General Plan Policies INC 18.1, INC 18.2, and PSA 3.4[17] to reduce potential impacts from existing contaminated sites and structures. In addition, future development projects would be subject to the standard condition of approval identified in the NBPP SEIR regarding discovery of contaminated soils, toxic assessment, and soil management plans.

With compliance of existing regulations (including General Plan policies), the required program-level mitigation measures, and standard conditions identified in the NBPP SEIR and described briefly above, future development in the Precise Plan was concluded to have a less than significant impact with respect to development on a location listed hazardous materials site and possible emission of hazardous materials into the environment. Future development under the Master Plan, which is located in the Precise Plan area and consistent with the development assumptions in the Precise Plan, would be required to comply with the same regulations, measures, and standards identified for future development in the NBPP SEIR. For this reason, the Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR for the Precise Plan.

c. The nearest school to the Master Plan area is Crittenden Middle School located at 1701 Rock Street, approximately 0.2 miles south of the Master Plan area. The land uses proposed under the Master Plan development options (residential, office, commercial, and hotel uses) are not considered substantial emitters of hazardous materials or hazardous waste. Further, projects that comply with federal, state, local requirements, General Plan policies and actions (including PSA 3.2 and PSA 3.3), and standard and measures identified in the NBPP SEIR (which are briefly summarized above), would reduce the potential for hazardous materials impacts to existing and future schools to a less than significant level.

In addition, as discussed in the NBPP SEIR, any future applications for child-care facilities, and specialized education and training schools would be reviewed on a project-by-project basis, to determine the suitability of the use and to identify any potential impacts from hazardous materials in the area. All future projects shall be evaluated for their potential impacts on schools. For these reasons, the NBPP concluded that the implementation of the Precise Plan would not result in significant impacts to existing or proposed schools.

[17] General Plan Policy INC 18.1 states protect human and environmental health from environmental contamination. General Plan Policy 18.2 states cooperate with local, state and federal agencies that oversee environmental contamination and clean-up. General Plan Policy PSA 3.4 states work with local, state and federal oversight agencies to encourage remediation of contamination and protection of public and environmental health and safety.

Future development under either Master Plan option would be subject to the City's development review process and would comply with the same regulations, requirements, standards, and measures identified in the NBPP SEIR. Based on the above discussion, the Master Plan would result in the same less than significant impact to existing and future schools as disclosed in the NBPP SEIR for the Precise Plan.

e. The Master Plan is located within the Airport Influence Area for the Moffett Federal Airfield. Future development projects under the Master Plan would be required to comply with existing Federal Aviation Administration regulations and the Moffett Federal Airfield Comprehensive Land Use Plan, as well as General Plan Policy LUD 2.5[18], which would ensure that potential impacts on airport safety operations for Moffett Federal Airfield are less than significant. This is the same impact as disclosed in the NBPP SEIR.

f. The General Plan contains a number of policies and actions requiring maintenance of existing emergency response plans, development of a new emergency response plan for damaged utilities, development of a Local Hazard Mitigation Plan, emergency response training, and collaboration with local communities, large employers, and Moffett Federal Airfield to coordinate emergency response and preparedness.

As discussed in the NBPP SEIR, increased traffic as a result of new development in the City of Mountain View could impair emergency response and evacuation procedures; however, General Plan Policies MOB 10.1, MOB 10.2, and MOB 10.4 require the maintenance of efficient automobile infrastructure and effective TDM programs for existing and new developments.[19] The NBPP SEIR concluded that the Precise Plan's extensive TDM program and consistency with General Plan policies would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Since the proposed Master Plan is fundamentally consistent with the Precise Plan, the proposed Master Plan would result in the same less than significant impact to emergency response and evacuation plans as disclosed for the Precise Plan in the NBPP SEIR.

g. The Master Plan area is not within or adjacent to wildland areas and there would be no wildland fire impact. This is the same impact as disclosed in the NBPP SEIR.

3.8.3 Conclusion

The proposed project would not result in a new or substantially increased significant hazardous materials impact compared to the NBPP SEIR.

[18] General Plan Policy LUD 2.5 states encourage compatible land uses within the Airport Influence Area for Moffett Federal Airfield as part of Santa Clara County's Comprehensive Land Use Plan.

[19] General Plan Policy MOB 10.1 states to strive to maximize the efficiency of existing automobile infrastructure and manage major streets to discourage cut-through traffic on neighborhood streets. General Plan Policy MOB 10.2 states to promote effective Transportation Demand Management programs for existing and new development. General Plan Policy MOB 10.4 states to monitor emergency response times and where necessary consider appropriate measures to maintain emergency response time standards. Measures to ensure provision of adequate response times may include the expanded use of emergency vehicle signal preemption, evacuation route modifications, or the construction of new facilities (e.g., fire stations).

3.9 HYDROLOGY AND WATER QUALITY

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	NBPP Draft SEIR (2017) pp. 325-330	No	No	No	N/A
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	NBPP Draft SEIR (2017) pp. 336	No	No	No	N/A
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows?	NBPP Draft SEIR (2017) pp. 325-333	No	No	No	N/A

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	NBPP Draft SEIR (2017) pp. 333-336	No	No	No	N/A
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	N/A	No	No	No	N/A

3.9.1 Existing Setting

The existing hydrology and water quality setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

The elevation at the Master Plan area ranges from approximately 25 feet above mean sea level (amsl) near U.S. 101, to 18 feet amsl along the northern boundary of the Master Plan area. As discussed in the NBPP SEIR, the Master Plan area lies within flood hazard zone X.

The Master Plan area is approximately 84 percent covered with impervious surfaces.[20]

3.9.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts to hydrology and water quality.

a. As discussed in the NBPP SEIR, future development projects under the Precise Plan would require excavation and grading of sites, which could result in sediment and other pollutants being transported from active construction sites to nearby creeks, marshes, and the Bay through soil erosion, wind-blown dust, and stormwater runoff. The NBPP SEIR concluded that future development under the Precise Plan, in compliance with City and Regional Water Quality Control Board requirements (which include compliance with the statewide National Pollution Discharge Elimination System (NPDES) General Construction Permit, implementation of stormwater control BMPs, and implementation of construction sediment and erosion control plans) would reduce water quality impacts during construction activities to a less than significant level.

[20] Schaaf & Wheeler. *North Bayshore Gateway Master Plan Utility Impact Study*. February 5, 2021. Page 7-1.

The NBPP SEIR also discussed how post-construction water quality impacts could occur from new development. The NBPP SEIR concluded that future development, in compliance with the Municipal Regional Stormwater Permit Provision C.3 requirements, Precise Plan Stormwater Management Standards and Guidelines, and applicable City standard conditions of approval (which include hydromodification management, landscape design to minimize runoff, efficient irrigation, design criteria for outdoor storage areas, car washes for multi-family complexes, design criteria for parking garages, and private storm drain inlet stenciling) would ensure new development would not result in significant post-construction water quality impacts. Since the proposed Master Plan would be consistent with the development and growth assumptions in the Precise Plan and be subject to the same regulations, standards, guidelines, and conditions of approval identified in the NBPP SEIR to reduce post-construction water quality impacts, the proposed Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

b. The NBPP SEIR concluded that future development projects in the Precise Plan area (which includes the Master Plan area) would not deplete groundwater supplies or interfere with groundwater recharge. The proposed uses in the Master Plan area would not extract groundwater for irrigation or drinking purposes and any temporary dewatering during construction would not extract quantities that would deplete groundwater aquifers. The proposed Master Plan would be consistent with the Precise Plan and the analysis in the NBPP SEIR, therefore, the Master Plan would not result in new or substantially increased impacts than those described in the NBPP SEIR.

c. The proposed Master Plan would redevelop an existing urban area that is currently developed with surface parking and several industrial/R&D buildings. The redevelopment of the Master Plan area would not alter the drainage pattern of the area and would likely result in a decrease in impervious surface area given Precise Plan design guidelines. The NBPP SEIR concluded that new development under the Precise Plan would contribute runoff to the storm drain system serving the North Bayshore area, and the capacity of the North Bayshore drainage system is adequate to accommodate runoff from new development planned for the area. The stormwater management standards and guidelines identified in the Precise Plan would minimize runoff from new development projects, and each new development application would be reviewed for consistency with the Precise Plan. Therefore, it was concluded in the NBPP SEIR that development under the Precise Plan would not exceed the capacity of the storm drainage system, alter existing drainage patterns or degrade water quality from excess flows. Since the proposed Master Plan is fundamentally consistent with the Precise Plan, the proposed Master Plan would result in the same less than significant impact to storm drainage system capacity, drainage patterns, and water quality from runoff as disclosed in the NBPP SEIR.

d. The Master Plan area is not located in a 100-year flood zone. The Master Plan area is located within FEMA flood hazard zone X and is not located within a designated tsunami or seiche inundation zone. In addition, the uses allowed by the proposed Master Plan are anticipated to use only small quantities of fuels, oils, cleaning materials, and landscape maintenance chemicals that would be properly stored. Thus, the Master Plan would not result in release of pollutants from flooding, seiche, or tsunamis. This is the same impact as disclosed in the NBPP SEIR.

e. Valley Water prepared a Groundwater Management Plan in 2016, establishing recharge facilities, recycled water systems, and conservation strategies in order to proactively manage groundwater and surface water resources within its jurisdiction. There are no recharge facilities, pump plants, or drinking water treatment plants in the Precise Plan area (which includes the Master Plan area). Thus, any impact would be less than significant.

3.9.3 Conclusion

The proposed project would not result in a new or substantially increased significant hydrology and water quality impact compared to the NBPP SEIR.

3.10 LAND USE AND PLANNING

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Physically divide an established community?	NBPP Draft SEIR (2017) pp. 348-352	No	No	No	N/A
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	NBPP Draft SEIR (2017) pp. 348-353	No	No	No	N/A

3.10.1 Existing Setting

The existing land use setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR. The Master Plan area is located in the Precise Plan area and is surrounded by office and industrial/ R&D uses.

3.10.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts with regard to land use and planning.

a. The Master Plan (under either development option) proposes land uses consistent with the Precise Plan and similar to the land uses surrounding the Master Plan area. In addition, the Master Plan does not involve components that would physically divide an existing community (i.e., highways or railways). The Master Plan includes new public roadways that would provide connections to the surrounding neighborhoods. While properties within the Master Plan area are owned by different entities and could be developed at different times, each property would be required to meet the proposed Master Plan's circulation and design requirements in order to create an integrated and cohesive neighborhood. The NBPP SEIR concluded that implementation of the Precise Plan (which the proposed Master Plan is fundamentally consistent with) would not physically divide an established community. The proposed Master Plan, therefore, would not physically divide an established community.

b. The NBPP SEIR concluded that the Precise Plan incorporates standards and guidelines to minimize environmental impacts and would be consistent with land use plans, policies, and regulations. The proposed Master Plan (under either development option) includes amendments to the General Plan and Precise Plan to add one parcel (1555 Plymouth Street shown on Figure 2.3-1 and Figure 2.3-2) to the Master Plan area. While these amendments would change the type and density of development allowed on the parcel, the maximum allowed development within the NBPP would remain unchanged. Thus, the proposed Master Plan is consistent with the land use development assumptions in the Precise Plan and NBPP SEIR. For these reasons, the proposed Master Plan would not conflict with applicable land use plans, policies, or regulations and the impact would be less than significant. This is the same impact as disclosed in the NBPP SEIR.

3.10.3 Conclusion

The proposed project would not result in a new or substantially increased significant land use impact compared to the NBPP SEIR.

3.11 NOISE AND VIBRATION

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project result in:					
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	NBPP Draft SEIR (2017) pp. 366-371	No	No	No	N/A
b. Generation of excessive groundborne vibration or groundborne noise levels?	NBPP Draft SEIR (2017) pp. 371-373	No	No	No	MM NOI 4.1 through NOI 4.3
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	NBPP Draft SEIR (2017) pp. 376	No	No	No	N/A

3.11.1 Existing Setting

The existing noise and vibration setting, including regulatory framework and thresholds of significance, has not substantially changed since the certification of the 2017 NBPP SEIR. The Master Plan area is located in an urban area of the Precise Plan and is surrounded by office and industrial/R&D uses. Existing noise sources in the Master Plan area are vehicles on U.S. 101 and other roadways. Occasional airplane noise also contributes to ambient noise levels. Sensitive noise receptors adjacent to the Master Plan area include the Santiago Villa residential mobile home park, approximately 0.25-mile east of the Master Plan area.

3.11.2 Discussion

Based on the NBPP SEIR, the build-out of the Precise Plan (which includes the development proposed) would result in less than significant impacts with regard to noise and vibration with implementation of mitigation measures.

a. The temporary construction and permanent operational noise impacts resulting from the implementation of either of the Master Plan development options are discussed below.

Construction Noise

As described in the NBPP SEIR for the Precise Plan, no specific site development or construction is proposed as part of the Master Plan; however, future development and redevelopment projects would generate construction-related noise. Future development projects and related short-term noise impacts would be evaluated on a project-by-project basis and would be required to comply with applicable provisions of Chapter 8 of the City Code, which include limitations on construction days and hours.

As discussed in the NBPP SEIR, future development projects would also be required to comply with General Plan Policies NOI 1.1, NOI 1.2, NOI 1.3, and NOI 1.4, which would further minimize potential noise impacts from construction activity by requiring the City to take steps to reduce the exposure of noise sensitive land uses to construction related noise through the development review process.[21] In addition, future development projects would also comply with Policy NOI 1.7, which specifically requires enforcement of the permitted hours for construction activities, thereby reducing the exposure of sensitive receptors to significant noise impacts.[22]

In addition, future development under the Master Plan would be required to implement the standard conditions of approval identified in the NBPP SEIR regarding construction noise reduction measures, pile driving noise reduction measures, and construction practices and notice.

With implementation of the above standard conditions of approval and City of Mountain View 2030 General Plan polices, the NBPP SEIR determined that construction of future projects under the Precise Plan (which would include those under the Master Plan as well) would have a less than significant construction noise impact.

[21] General Plan Policy NOI 1.1 states to use the Outdoor Noise Environment Guidelines as a guide for planning and development decisions (Table 7.1). General Plan Policy NOI 1.2 requires new development of noise-sensitive land uses to incorporate measures into the project design to reduce interior and exterior noise levels to the following acceptable levels: New single-family developments shall maintain a standard of 65 dBA Ldn for exterior noise in private outdoor active use areas. New multi-family residential developments shall maintain a standard of 65 dBA Ldn for private and community outdoor recreation use areas. Noise standards do not apply to private decks and balconies in multi-family residential developments. Interior noise levels shall not exceed 45 dBA Ldn in all new single-family and multi-family residential units. Where new single-family and multi-family residential units would be exposed to intermittent noise from major transportation sources such as train or airport operations, new construction shall achieve an interior noise level of 65 dBA through measures such as site design or special construction materials. This standard shall apply to areas exposed to four or more major transportation noise events such as passing trains or aircraft flyovers per day. General Plan Policy NOI 1.3 states that if noise levels in the area of a proposed project would exceed normally acceptable thresholds, the City shall require a detailed analysis of proposed noise reduction measures to determine whether the proposed use is compatible. As needed, noise insulation features shall be included in the design of such projects to reduce exterior noise levels to meet acceptable thresholds, or for uses with no active outdoor use areas, to ensure acceptable interior noise levels. General Plan Policy 1.4 notes the use of site planning and project design strategies to achieve the noise level standards in NOI 1.1 (Land use compatibility) and in NOI 1.2 (Noise-sensitive land uses). The use of noise barriers shall be considered after all practical design-related noise measures have been integrated into the project design.

[22] General Plan Policy NOI 1.7 states "Restrict noise levels from stationary sources through enforcement of the Noise Ordinance."

Traffic Noise

The NBPP SEIR analysis included modeling of future traffic noise from full buildout of the Precise Plan (which includes either of the proposed Master Plan development options). Traffic noise increases above existing levels would be one dBA Ldn or less at noise-sensitive receptors within and outside of the Precise Plan area. Since the increase in traffic noise as a result of the Precise Plan buildout would be less than the three dBA threshold of significance, Precise Plan traffic was concluded to have a less than significant impact on noise-sensitive receptors in the area. Since the traffic from either of the Master Plan development options was included in the NBPP SEIR analysis of the Precise Plan, the Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

Mechanical Equipment Noise

General Plan Policy NOI 1.7 restricts noise levels from stationary sources through enforcement of the Noise Ordinance, which states that stationary equipment noise from any property must be maintained at or below 55 dBA Leq during daytime hours (i.e., between 7:00 a.m. and 10:00 p.m.) and at or below 50 dBA Leq during nighttime hours (i.e., between 10:00 p.m. and 7:00 a.m.) as measured at residential land uses.

As discussed in the NBPP SEIR, future uses within the Precise Plan area (which includes the Master Plan aera) would include mechanical systems (i.e., HVAC, exhaust fans, intake ventilation) on portions of the roof tops. The NBPP SEIR concluded that future development under the Precise Plan, with the implementation of the City's standard condition of approval of requiring mechanical equipment to meet the noise limit standards outlined in General Plan Policy NOI 1.7, would not result in significant noise impacts from mechanical equipment. Since the development under the proposed Master Plan is consistent with the Precise Plan, future development under the Master Plan would be subject to the same condition of approval identified in the NBPP SEIR and would result in the same less than significant impact from mechanical equipment noise as disclosed in the NBPP SEIR.

Non-CEQA Effects

Per BIA vs. BAAQMD, effects of the environment on the project are not considered CEQA impacts. The land use and noise compatibility of future residential land uses with the ambient noise environment was discussed in the NBPP SEIR and is discussed in this document for informational purposes as the City's General Plan has policies (including General Plan Polices NOI 1.1 and NOI 1.2) that addresses noise conditions on proposed projects.

Future development projects within the Master Plan area could place residential units near noise-generating land uses and roadways that exceed the interior and exterior noise standards set by Section 21.26 of the City Code and General Plan Policy NOI 1.2. The NBPP SEIR concluded that with implementation of City standard conditions of approval regarding site-specific acoustical analysis and noise barriers, interior and exterior noise levels for future residents would be at an acceptable level.

b. As described in the NBPP SEIR, groundborne vibration levels exceeding 0.3 inches per second Peak Particle Velocity (PPV) would have the potential to result in a significant vibration impact. Future construction under the Precise Plan may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers and hoe rams) are used. The NBPP SEIR concluded that future development under the Precise Plan would result in less than significant groundborne vibration impacts, with the implementation of mitigation measures MM NOI-4.1 through MM NOI-4.3 identified in the NBPP SEIR, which required avoiding pile driving where possible, avoiding vibration rollers and tapers, and completing vibration studies as necessary.

Since the development under the proposed Master Plan is consistent with the Precise Plan, future development under the Master Plan would be subject to the same mitigation measures identified in the NBPP SEIR and would result in the same less than significant impact from groundborne vibration as disclosed in the NBPP SEIR.

c. The nearest airport to the project site is Moffett Federal Airfield, approximately 1.2-miles east of the Master Plan area. The Master Plan area is outside of the 65 dB CNEL contour line for aircraft activities at Moffett Federal Airfield, therefore, it would not expose future residents or employees within the Master Plan area to excessive levels of noise from airport operations and the impact would be less than significant. This is the same impact as disclosed in the NBPP SEIR.

3.11.3 Conclusion

The proposed project would not result in a new or substantially increased significant noise impact compared to the NBPP SEIR.

3.12 POPULATION AND HOUSING

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	NBPP Draft SEIR (2017) pp. 384-385	No	No	No	N/A
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NBPP Draft SEIR (2017) pp. 385	No	No	No	N/A

3.12.1 Existing Setting

The existing population and housing setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

As discussed in the NBPP SEIR, an estimated 38,910 employees could be located in the Precise Plan area at buildout in 2030, an increase of 14,070 jobs over existing conditions. The NBPP SEIR allows development of up to 9,850 new multi-family residential units within the Precise Plan area, for approximately 10,210 total units (existing plus new) at full buildout.

3.12.2 Discussion

Based on the NBPP SEIR, the build-out of the Precise Plan (which includes the development proposed) would result in less than significant impacts with regard to population and housing.

a. The Precise Plan area is located in an urban, developed environment and is within a designated Change Area in the City of Mountain View General Plan. Growth is expected to occur within developed areas of the City and the proposed Master Plan under either development option is consistent with the General Plan goals for focused and sustainable growth because it supports the intensification of development in an urbanized area that is currently served by existing roads, transit, utilities, and public services. The Master Plan also includes new roadways. These new roadways are included in the Precise Plan. The Master Plan also includes utility infrastructure improvements to connect to existing systems. These utility connections were anticipated in the Precise Plan.

The proposed Master Plan and its associated growth is part of the growth assumed in the Precise Plan and the City's General Plan. For these reasons, implementation of the proposed Maser Plan would not contribute to substantial unplanned growth in the City.

b. There are no residential units within the Master Plan area. For these reasons, the implementation of the Master Plan would not displace existing residents or housing and would result in the same less than significant displacement impacts as previously disclosed in the NBPP SEIR.

3.12.3 Conclusion

The proposed project would not result in a new or substantially increased significant population and housing impact compared to the NBPP SEIR.

3.13 PUBLIC SERVICES

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
a. Fire protection?	NBPP Draft SEIR (2017) pp. 395-396	No	No	No	N/A
b. Police protection?	NBPP Draft SEIR (2017) pp. 396	No	No	No	N/A
c. Schools?	NBPP Draft SEIR (2017) pp. 397-398	No	No	No	N/A
d. Parks?	NBPP Draft SEIR (2017) pp. 398-400	No	No	No	N/A
e. Other public facilities?	NBPP Draft SEIR (2017) pp. 400	No	No	No	N/A

3.13.1 Existing Setting

The existing public services setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

The Precise Plan area (which includes the Master Plan area) is served by the Mountain View Fire Department. The nearest fire station to the Master Plan is Fire Station #5 located approximately 0.7 miles north at 2195 North Shoreline Boulevard. Police protection services are provided by the Mountain View Police Department (MVPD). The MVPD consists of authorized staff of 90 sworn and 45 non-sworn personnel.

The Master Plan area is located within the Mountain View Whisman School District, which includes seven elementary schools and two middle schools, and the Mountain View Los Altos High School District.

There are approximately 32 acres of existing parks and open space within the Precise Plan area, including Charleston Park (approximately 0.4 mile north of the Master Plan area), Shoreline Athletic Fields (approximately 1.1 miles northwest of the Master Plan area), and Garfield Park

(approximately 0.75 mile northwest of the Master Plan area). Shoreline at Mountain View Regional Park is located in the northern portion of the North Bayshore planning area. Per Chapter 41 of the City Code, the City has set a standard of three acres of park and recreational facilities per 1,000 residents.

There are no public libraries in the Precise Plan area. The Mountain View Public Library, located at 585 Franklin Street in Downtown, is the City's only library (approximately two miles south of the North Bayshore Precise Plan area).

3.13.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts with regard to public services.

a. Consistent with the discussion in the NBPP SEIR, implementation of the Master Plan would incrementally increase the use of public facilities; however, impacts would be less than significant, as described below.

Fire Protection Services

The buildout of the Precise Plan would incrementally increase the need for fire suppression and rescue response services, as described in the NBPP SEIR. Future development projects under the Precise Plan (which would include development projects under the Master Plan as well) would, however, be constructed to current Fire Code standards to increase fire safety overall. Further, the City of Mountain View Fire Department does not anticipate the need to construct a new fire station to accommodate growth anticipated in the buildout of the General Plan, which includes the Precise Plan. Future development projects would comply with General Plan Policies PSA 1.1 and PSA 3.1, which are intended to reduce impacts to emergency response times.[23] The NBPP SEIR concluded that buildout of the Precise Plan (which includes either of the Master Plan development options) would not substantially impact the provision of fire protection and rescue response or result in the need for new or physically altered facilities in order to maintain acceptable service ratios, response times, or other performance objectives. For these reasons, the Precise Plan (including the proposed Master Plan) would have a less than significant impact on fire services and facilities.

Police Protection Services

As discussed in the NBPP SEIR, future development projects under the Precise Plan would be designed and constructed in conformance with current codes, reviewed by the City of Mountain View to ensure appropriate safety features that minimize criminal activity are incorporated into project design, and be required to comply with General Plan Policies PSA 1.1, PSA 2.1, PSA 2.2, and PSA 2.3, which are intended to reduce impacts to emergency response times.[24] For these reasons,

[23] General Plan Policy PSA 1.1 states "Maintain adequate police and fire staffing, performance levels and facilities to serve the needs of the community." General Plan Policy PSA 3.1 states "Minimize property damage, injuries and loss of life from fire."

[24] General Plan Policy PSA 2.1 states "Provide superior community-oriented police services". General Plan Policy PSA 2.2 states "Ensure a sense of safety throughout the community." General Plan Policy PSA 2.3 states "Explore

the NBPP SEIR concluded that the implementation of the Precise Plan (which includes the proposed Master Plan) would not substantially affect the provision of police protection or result in the need for new or physically altered facilities in order to maintain acceptable service ratios, response times, or other performance objectives. The proposed Master Plan would result in the same less than significant impact to police protection services as disclosed in the NBPP SEIR.

School Facilities

The propose Master Plan would allow for up to 2,100 residential dwelling units under the preferred Office Option and up to 2,800 residential units under the No Office Option.

Based on the current student generation rates provided to the City for the Mountain View Whisman School District and Mountain View Los Altos High School District, the Master Plan would generate approximately 221 new elementary, 137 new middle school, and 165 high school students under buildout of the Office Option.[25] Under the No Office Option, the Master Plan would generate approximately 294 new elementary, 182 new middle school, and 220 new high school students. Table 3.13-1 below summarizes the Master Plan's student generation estimates.

Table 3.13-1: Estimated Master Plan Student Generation

Unit Type	Student Generation Rates (Multi-Family)[1]	Estimated Number of Students from Project					
		Office Land Use Option			No Office Land Use Option		
		K-5	6-8	9-12	K-5	6-8	9-12
Market Rate	0.171	61	38	45	81	50	61
Affordable	0.867	154	95	116	205	127	154
Micro-Unit (Studio)	0.016	6	4	4	8	5	5
	Total	221	137	165	294	182	220

[1] Assumes unit mix of 40 percent market rate, 20 percent affordable, and 40 percent micro-unit

Future residential development projects in the Precise Plan (including those proposed by the Master Plan) would be required to pay school impact fees to offset impacts to local schools. Consistent with state law (Government Code Section 65996) and the NBPP SEIR, payment of fees would reduce impacts to schools to a less than significant level. Future residential development under the Master Plan, which is consistent with the Precise Plan, would be required to pay school impact fees and result in the same less than significant impact as disclosed in the NBPP SEIR for the Precise Plan.

ways to improve service delivery and police effectiveness." General Plan Policy PSA 2.3 states "Explore ways to improve service delivery and police effectiveness."

[25] Student generation rates of 0.171, 0.867, and 0.016 per multi-family unit (see Table 3.13-1). Anderson, Eric. Principal Planner, City of Mountain View. Personal Communication. May 6, 2021.

Park Facilities

As discussed in the NBPP SEIR, the increases in residents and employees from the implementation of the Precise Plan would increase the use and demand for park facilities in the Precise Plan area.

The NBPP SEIR concluded that future residential development projects within the Precise Plan (which would include those under the proposed Master Plan) would either provide park facilities or pay park land fees consistent with the City's "Park Land Dedication or Fees In Lieu Thereof" Ordinance (Chapter 41.6 of the Mountain View Municipal Code) in order to meet the City's standard of three acres per 1,000 residents and reduce impacts parks and recreation resources to a less than significant level. As described in Section 2.3 Project Description, the Master Plan includes 65,000 to 70,000 square feet of publicly accessible open space. This proposed open space within the Master Plan would help offset the demand on park land by future residents in the Master Plan area. In addition, future residential development under the proposed Master Plan, which is consistent with the Precise Plan, would be required to pay the park land fees and result in the same less than significant impact as identified in the NBPP SEIR for the Precise Plan.

Library Facilities

As determined in the NBPP SEIR, the growth projected in the Precise Plan (which includes the growth proposed by the Master Plan) would not trigger the City to build or operate a new library and therefore impacts were concluded to be less than significant. The Master Plan is consistent with the Precise Plan and, therefore, would result in the same less than significant impact to library facilities as disclosed in the NBPP SEIR for the Precise Plan.

3.13.3 Conclusion

The proposed project would not result in a new or substantially increased significant public services impact compared to the NBPP SEIR.

3.14 RECREATION

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	NBPP Draft SEIR (2017) pp. 398-400	No	No	No	N/A
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	NBPP Draft SEIR (2017) pp. 398-400	No	No	No	N/A

3.14.1 Existing Setting

The existing recreational setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

As described in Section 3.13 Public Services, there are approximately 32 acres of parks and open space within the Precise Plan area, including Charleston Park (approximately 0.4 mile north of the Master Plan area at 1500 Charleston Road, Shoreline Athletic Fields (approximately 1.1 miles northwest of the Master Plan area), and Garfield Park (approximately 0.75 mile northwest of the Master Plan area). Per Chapter 41 of the City Code, the City has set a standard of three acres of park and recreational facilities per 1,000 residents.

The Precise Plan area also includes Shoreline at Mountain View Regional Park, a 750-acre wildlife and recreation area with multiple land uses, including a 50-acre small boat sailing lake, an 18-hole golf course, clubhouse, amphitheater, banquet facilities, the historic Rengstorff House, a self-guided interpretive sign system, extensive wetlands, open space, and wildlife habitat including lands currently managed for burrowing owls. The Permanente Creek Trail is also located within the Precise Plan area.

3.14.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either Master Plan development option) would result in less than significant impacts with regard to recreational facilities.

a. The increases in residents and employees from the implementation of the Precise Plan would increase the use and demand for park and recreational facilities in the Precise Plan area. The NBPP SEIR concluded that future development under the Precise Plan (which would also include those under the proposed Master Plan) would comply with Chapter 3.1 Urban Design Vision and Principles of the Precise Plan, which includes standards and guidelines for the future parks and open space network in the North Bayshore Precise Plan area. In addition, future development projects would either provide park facilities or pay park land fees consistent with the City's "Park Land Dedication or Fees In Lieu Thereof" Ordinance (Chapter 41.6 of the Mountain View Municipal Code) in order to meet the City's standard of three acres per 1,000 residents and to reduce impacts to parks and recreational facilities to a less than significant level. Since the amount of development proposed in the Master Plan is consistent with the development planned in the Precise Plan and future development under the Master Plan would pay park land fees, the Master Plan would result in the same less than significant impact to park and recreational facilities as disclosed in the NBPP SEIR. In addition, as described in Section 2.3 Project Description, the Master Plan includes 65,000 to 70,000 square feet of publicly accessible open space. This proposed open space within the Master Plan would help offset the demand on recreational facilities by future residents and employees living and working in the Master Plan area.

b. The NBPP SEIR determined that existing and planned parks and other recreational facilities are adequate to accommodate the recreational needs from the buildout of the Precise Plan (which includes the growth proposed in the Master Plan). In addition, future projects would be required to comply with Chapter 3.1, Urban Design Vision and Principles of the Precise Plan and pay park land fees. For these reasons, the NBPP SEIR concluded that the Precise Plan would not require the expansion of existing recreational facilities nor would the project require the construction of new facilities beyond what is planned for in the Precise Plan. The proposed Master Plan is fundamentally consistent with the Precise Plan, and future development under the Master Plan would pay park land fees. The proposed Master Plan includes 65,000 to 70,000 square feet of publicly accessible open space, which was evaluated in the NBPP SEIR and throughout this Initial Study/Addendum. The analysis in this Initial Study/Addendum concludes that the construction of the 65,000 to 70,000 square feet of open space would not result in new or substantially more severe significant impacts than previously disclosed in the NBPP SEIR. For these reasons, the Master Plan would result in the same less than significant impact to recreational facilities as disclosed in the NBPP SEIR.

3.14.3 Conclusion

The proposed project would not result in a new or substantially more severe significant recreation impact compared to the NBPP SEIR.

3.15 TRANSPORTATION

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities?	NBPP Draft SEIR (2017) pp. 459-489	No	No	No	N/A
b. For a land use project, conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	NBPP Draft SEIR (2017) pp. 495-497	No	No	No	N/A
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	NBPP Draft SEIR (2017) pp. 459-496	No	No	No	N/A
d. Result in inadequate emergency access?	NBPP Draft SEIR (2017) pp. 459-496	No	No	No	N/A

The discussion in this section is based in part on a Vehicle Miles Traveled (VMT) Assessment prepared by Fehr & Peers in July 2021. The VMT Assessment is included in Appendix B.

3.15.1 Existing Setting

The existing transportation setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR. In June 2020, subsequent to the certification of the NBPP SEIR, the City Council adopted a policy regarding the use of VMT (instead of Level of Service [LOS]) in transportation analyses pursuant to CEQA and SB 743.

Regional access to the Master Plan area is provided via U.S. 101, SR 85, and SR 237. Local access to the Master Plan area is provided via North Shoreline Boulevard and Plymouth Street. Driveways are located on North Shoreline Boulevard and Plymouth Street and provide access to the existing surface parking lots. Class II bike lanes are located on North Shoreline Boulevard and provide direct access to the Master Plan area.[26] Sidewalks are located around the perimeter of the Master Plan area. The nearest bus stop is located along the eastern boundary of the Master Plan area, approximately 130

[26] Class II bike lanes are defined as a striped lane with signage for one-way bike travel on a street or highway and are designed for the exclusive use of cyclists with certain exceptions.

feet south of the North Shoreline Boulevard and Pear Avenue intersection. The bus stop is serviced by the MVgo Shuttle (B route) and Santa Clara Valley Transportation Authority (VTA) bus route 40 and ACE Orange route.

3.15.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes the Master Plan area) with the implementation of identified mitigation measures would result in significant and unavoidable transportation impacts as measured by the congestion-based metric LOS, which was the standard traffic impact metric used at that time.

a. The NBPP SEIR concluded that implementation of the Precise Plan (which includes the Master Plan development) would conflict with a program plan, ordinance, or policy addressing the circulation system, roadways, bicycle lanes and pedestrian facilities.

Roadway Network

The NBPP EIR identified Impacts TRANS-1, TRANS-2, C-TRANS-1, and C-TRANS-2 pertaining to LOS deficiencies at study intersections and freeway segments. When the NBPP SEIR was certified, conflicts with LOS policies were considered significant impacts under CEQA. The traffic congestion resulting from the implementation of the proposed Master Plan was accounted for and included in the NBPP EIR transportation analysis. The Mountain View City Council adopted a Statement of Overriding Considerations for the significant unavoidable impacts disclosed in the NBPP SEIR (including Impacts TRANS-1 and TRANS-2). Today, pursuant to the 2018 amendments to the CEQA Guidelines, SB 743, the City's VMT policy, and recent case law (*Citizens for Positive Growth & Preservation v. City of Sacramento*), a project's effect on LOS can no longer constitute a significant impact under CEQA. Therefore, while the proposed Master Plan contributed to the LOS deficiencies identified in the NBPP EIR, these deficiencies are no longer considered impacts under CEQA. The Master Plan would result in the same LOS deficiencies identified in the NBPP SEIR. The Master Plan's consistency with the City's VMT policy is discussed under b.

Pedestrian and Bicycle Facilities

The NBPP SEIR concluded that build-out of the Precise Plan (which includes the Master Plan area) would not result in significant impacts to pedestrian or bicycle facilities. Some bicycle and pedestrian facilities currently serve the Precise Plan area and the NBPP SEIR concluded that implementation of the NBPP would further improve these facilities. The proposed Master Plan, which implements the NBPP, would improve pedestrian and bicycle facilities. The Master Plan includes a linear park (see Figure 2.3-5) that would provide pedestrian and bicyclist access along the proposed extension of Joaquin Road, a "Main Street" (see Figure 2.4-1) that may be closed to vehicles during special events, and greenways (see D1, D2, E1, and E2 on Figure 2.4-1) that may be closed to vehicles. Greenway E1 on Figure 2.4-1would connect to the future U.S. 101 pedestrian/bicycle overcrossing, providing a safe bicycle/pedestrian route between the Precise Plan area and downtown Mountain View. Future development projects within the Master Plan area would be reviewed by the City of Mountain View to ensure project designs do not interfere with existing and planned pedestrian and bicycle facilities. Thus, the proposed Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

Transit Facilities

The NBPP SEIR identified significant, unavoidable impacts to transit facilities (Impacts TRANS-4 and C-TRANS-3) due to the increase in transit vehicle delay at congested intersections. The increase in the number of potential transit users on the various transit systems from the proposed Master Plan was considered in the NBPP SEIR. The NBPP SEIR concluded that additional roadway traffic congestion caused by the build-out of the Precise Plan (which includes the proposed Master Plan area) would affect several transit corridors by increasing travel times and decreasing headway reliability. The Mountain View City Council adopted a Statement of Overriding Considerations for the significant unavoidable impacts disclosed in the NBPP SEIR (including Impacts TRANS-4 and C-TRANS-3).

The General Plan and Precise Plan include policies to encourage an increase in the City's transit ridership, decrease dependence on motor vehicles, and reduce transit delays. Planned transit vehicle pre-emption, signal coordination, and other improvements would help reduce the effect of peak hour traffic congestion on transit operations by reducing person delay and improving vehicle time reliability. Future development under the proposed Master Plan would be consistent with these policies, therefore, the Master Plan would result in the same significant, unavoidable impact as disclosed in the NBPP SEIR.

b. As mentioned above under Section 3.15.1 Existing Setting, subsequent to the certification of the NBPP SEIR, laws and regulations were passed making VMT (not LOS) the CEQA metric for transportation impacts. While VMT was not the metric for evaluating transportation impacts in the NBPP SEIR, a VMT assessment for the build-out of the Precise Plan was prepared in May 2017 and utilized in the air quality and greenhouse gas analyses in the NBPP SEIR. The NBPP SEIR disclosed that the Precise Plan would result in a daily VMT of 1,655,690, resulting in a VMT per service population of 29.1.[27,28] The results of the May 2017 VMT assessment showed that the Precise Plan increased total VMT for all geographies analyzed (including citywide and countywide), but decreased the VMT per service population from 31.3 to 29.1. Since the proposed Master Plan (i.e., the location, amount of development, proposed land uses, and estimated service population) is consistent with the Precise Plan, the VMT for the Master Plan was accounted for and disclosed as part of the VMT for the Precise Plan in the NBPP SEIR. The Master Plan does not change the VMT resulting from the Precise Plan. The Master Plan would result in the same impacts related to VMT that were disclosed in the NBPP SEIR.

As explained above, the VMT generated by the Master Plan and the impacts related to the Master Plan's VMT are not new information (as they were disclosed as part of the VMT for the larger Precise Plan in the NBPP SEIR). The City's VMT policy is, however, a new policy that was adopted since the certification of the NBPP SEIR. A new VMT Assessment (see Appendix B) was completed in July 2021 for the proposed Master Plan for informational purposes only to provide information about the Master Plan's individual effect on existing VMT.

[27] City of Mountain View. *Subsequent Environmental Impact Report for the North Bayshore Precise Plan*. Page 157. State Clearinghouse (SCH) #: 2013082088. November 2017.
[28] Fehr & Peers. *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates*. May 31, 2017.

The July 2021 VMT Assessment was prepared using the same methodology used to estimate the Precise Plan's VMT in the NBPP SEIR for consistency. Unlike the City's current VMT policy (which evaluates VMT impacts on a per capita and per employee basis), the Precise Plan's VMT disclosed in the NBPP SEIR was on a per service population basis.[29] Refer to Appendix B for details about the methodology and data assumptions that were assumed in the July 2021 VMT Assessment.

The July 2021 VMT Assessment concluded the Master Plan's addition of housing, smaller-than-typical parking ratios, and TDM reductions would result in a four to five percent reduction in the existing citywide VMT per service population, reducing the citywide VMT per service population from 13.9 to 13.2 (under the Office Option) or 13.3 (under the No Office Option). Within Santa Clara County, VMT would decline slightly, although there would be no significant change in the countywide VMT per service population of 13.7. The resulting reduction in citywide VMT per service population and the slight decline in countywide VMT per service population from the Master Plan is consistent with the conclusion of the NBPP SEIR VMT Assessment that development of housing near jobs in the Precise Plan can help keep trips more local, shortening travel distances and increasing residents' ability to accomplish some travel needs by walking, cycling, or using short-distance transit.[30]

The proposed Master Plan would reduce VMT citywide and countywide, however, the decrease would not be sufficient to be considered less than significant compared to the City's current VMT policy and thresholds of significance.[31] While the Master Plan's contributing effects on VMT would be significant when assessed as a new project for the first time against the City's current VMT policy and thresholds, the project's VMT and VMT-related impacts are not "new" impacts under Public Resources Code section 21166 and CEQA Guidelines section 15162, as the project's VMT was previously discussed, evaluated, and disclosed in the NBPP SEIR.

c. The NBPP SEIR determined that buildout of the Precise Plan would not result in increased hazards due to geometric design of the roadway system. Future development projects within the Master Plan area would be reviewed by the City of Mountain View to ensure proposed project designs are safe and would not substantially increase hazards due to a design feature or incompatible use. Thus, the proposed Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

[29] Service population represents residents plus employees.

[30] Fehr & Peers. *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates*. Page 4. May 31, 2017.

[31] Under the City's VMT policy, a project's characteristics are inputted into the Santa Clara Countywide VMT Tool and the results are compared to the City's thresholds of significance. For a mixed-use project like the proposed Master Plan, each land use is evaluated independently by applying the appropriate threshold for the particular land use. The City's VMT policy identifies the following thresholds of significance by land use:

- Residential: A proposed project exceeding a level of 15 percent below existing Nine-County Bay Area regional reference average VMT per capita shall be presumed to cause a significant transportation impact.
- Office: A proposed project exceeding a level of 15 percent below existing Nine-County Bay Area regional reference average VMT per employee shall be presumed to cause a significant transportation impact.
- Retail: A net increase in total VMT (difference in total VMT in the area affected with and without the project) shall be presumed to cause a significant transportation impact.

The 15 percent below Bay Area regional average VMT is 11.86 per capita and 13.03 per employee (source: Santa Clara Valley Transportation Authority. "VMT Evaluation Tool". Accessed July 7, 2021. https://vmttool.vta.org/).

d. The NBPP SEIR concluded that buildout of the Precise Plan would not interfere with emergency access or operations in the Precise Plan area. The proposed Master Plan is fundamentally consistent with the Precise Plan, therefore, the Master Plan would not have an impact on emergency access or operations either.

3.15.3 Conclusion

The proposed Master Plan would not result in a new or substantially increased significant transportation impact compared to the NBPP SEIR.

3.16 TRIBAL CULTURAL RESOURCES

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	NBPP Draft SEIR (2017) pp. 237	No	No	No	NA
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	NBPP Draft SEIR (2017) pp. 237	No	No	No	NA

3.16.1 Existing Setting

No tribal cultural resources or Native American resources were identified in the Precise Plan area as a result of email or telephone consultation and outreach.

3.16.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either Master Plan development option) would not impact tribal cultural resources.

a., b. Based on the information summarized in Section 3.16.1 Existing Setting, the NBPP SEIR concluded that no tribal cultural resources would be impacted by the implementation of the Precise Plan. The proposed Master Plan is fundamentally consistent with the Precise Plan, therefore, the Master Plan would not have an impact on tribal cultural resources either.

3.16.3 Conclusion

The proposed project would not result in a new or substantially increased significant tribal cultural resources impact compared to the NBPP SEIR.

3.17 UTILITIES AND SERVICE SYSTEMS

Environmental Issue Area	A. Where Impact Was Analyzed in Prior Environmental Documents.	B. Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	C. Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	D. Any New Information of Substantial Importance Requiring New Analysis or Verification?	E. Prior Environmental Documents Mitigations Implemented or Mitigations Address Impacts.
Would the project:					
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	NBPP Draft SEIR (2017) pp. 559-562	No	No	No	N/A
b. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	NBPP Draft SEIR (2017) pp. 554-558	No	No	No	N/A
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	NBPP Draft SEIR (2017) pp. 559-561	No	No	No	N/A
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	NBPP Draft SEIR (2017) pp. 563	No	No	No	N/A
e. Be noncompliant with federal, state, and local management and reduction statutes and regulations related to solid waste?	NBPP Draft SEIR (2017) pp. 563-564	No	No	No	N/A

3.17.1 Existing Setting

The existing utility setting, including regulatory framework, has not substantially changed since the certification of the 2017 NBPP SEIR.

Water, wastewater, and recycled water services in the Precise Plan area are owned and operated by the City of Mountain View. Wastewater from the Precise Plan area is gravity fed to the Shoreline Sewer Pump Station. Storm drain in the Precise Plan area are also operated and maintained by the City of Mountain view and is a network of pipes, channels, ditches, culverts, ponds and pumps that discharge to Adobe Creek, Permanente Creek, and Stevens Creek.

Solid waste collection and recycling services for residents and businesses in Mountain View are provided by Recology Mountain View.

3.17.2 Discussion

The NBPP SEIR concluded that the build-out of the Precise Plan (which includes either of the Master Plan development options) would result in less than significant impacts with regard to utilities and service systems. The City of Mountain View prepared a nexus study and has adopted a North Bayshore AIF on new development within the Precise Plan area. Impact fees are generally collected upon issuance of a building permit or certificate of occupancy and are used to fund needed capital facilities. The AIF paid by future development projects within the Master Plan area would be used to fund utility improvements necessary to address impacts generated by development in the Precise Plan area. The Precise Plan requires development projects to contribute funding to these utility-related improvements.

The below discussion specific to the Master Plan is based in part on a Utility Impact Study (UIS) prepared by Schaaf & Wheeler dated February 5, 2021 and included with this Addendum as Appendix C.

a. The existing sanitary sewer system in the Master Plan area consists of two conveyance paths. The first begins at Plymouth Street, on the north side of the Master Plan area, and flows north along Joaquin Road, east along Charleston toward North Shoreline Boulevard. The other begins at North Shoreline Boulevard just north of U.S. 101. Both conveyance paths combine at North Shoreline Boulevard and Charleston Road. As part of the proposed Master Plan, it is assumed the existing 12-inch sewer line crossing the Master Plan area would be realigned west and then north along the western edge of the Master Plan area. Sewer flows from the Master Plan area ultimately flow north to the Shoreline Sewer Pump Station.

Buildout of the proposed Master Plan under either development option would increase wastewater generation over the current condition on the site due to the overall increase in development. The sewer system has sufficient capacity under existing conditions. The future cumulative condition assumes all capital improvement projects identified in the Precise Plan have been constructed. With the project, one additional pipe downstream of the Master Plan area not previously identified in the NBPP SEIR requires upsizing from 12 to 15 inches.

The analysis in the NBPP SEIR determined that additional improvements beyond those identified in the SEIR are needed to increase the sanitary sewer system capacity to adequately convey sewer flow

under buildout of the Precise Plan. Future development under the Precise Plan is required to pay the North Bayshore AIF for capital improvements to sanitary sewer system and comply with the Precise Plan standards and guidelines related to timing of upgrades and maintenance in Chapter 7 Infrastructure and implementation actions outlined in Chapter 8 Implementation.

Based on the UIS prepared for the proposed Master Plan, wastewater generation and the impacts on the sanitary sewer would be within the anticipated overall wastewater increase for the Precise Plan area. Future development under the Master Plan would pay the North Bayshore AIF for capital improvements to the sanitary sewer system; therefore, impacts would be less than significant (consistent with the NBPP SEIR).

As discussed in Section 3.9 Hydrology and Water Quality, the NBPP SEIR concluded that new development under the Precise Plan would contribute runoff to the storm drain system serving the North Bayshore area, and the capacity of the North Bayshore drainage system is adequate to accommodate runoff from new development planned for the area.

The project would not require the relocation or construction of new or expanded water, electric power, natural gas, or telecommunications facilities that would result in significant environmental effects.

b. The Precise Plan (which includes either Master Plan development option) would result in an increase in water demand within the City of Mountain View. As described in the Precise Plan Water Supply Assessment (WSA), the City's available potable and non-potable water supplies are expected to be sufficient to meet the demand of existing uses and future uses under a Normal Year scenario through 2035. In a recent update, the 2015 Urban Water Management Plan concluded that there would be sufficient water supplies for planned development in Mountain View (which includes the development planned in the Precise Plan). Since the development under the proposed Master Plan is consistent with the assumptions in the Precise Plan, including the Precise Plan's green building and water conservation standards, its water demand has been accounted for in the Precise Plan WSA and 2015 Urban Water Management Plan, the Master Plan would not result in water demand greater than evaluated in the Precise Plan and the Master Plan would result in the same less than significant impact as disclosed in the NBPP SEIR.

c. The NBPP SEIR concluded that full buildout of the Precise Plan would not exceed the treatment capacity at the Regional Water Quality Control Plant (RWQCP). The UIS for the proposed Master Plan (see Table 5-3 of Appendix C) calculated that full buildout of the Master Plan would not exceed the wastewater flows disclosed in the NBPP SEIR. Thus, implementation of development under the Precise Plan (including the proposed Master Plan) would not prevent the Regional Water Quality Control Plant from meeting wastewater treatment requirements and the Master Plan would result in the same less than significant wastewater impact as disclosed in the NBPP SEIR.

d., e. Compared to existing conditions, the Master Plan would increase the amount of development at the site, which would increase the amount of solid waste generated. Future development within the Precise Plan (which would include future development under the proposed Master Plan) are required to comply with the California-mandated 50 percent waste diversion and CALGreen standards (including a construction waste recycling requirement and readily accessible areas for recycling). Further, the Precise Plan requires recycle or salvage of at least 80 percent of construction debris, as

well as development of a Building Waste Diversion Plan to divert 90 percent of materials from the landfill during operation. New developments are also required to divert and dispose of waste during operation in accordance with the state requirements and the policies in the General Plan (including General Plan Policies INC 11.1, INC 11.2, and INC 11.3).[32] Additionally, as discussed in the NBPP SEIR, there is capacity at Kirby Canyon Landfill to serve growth from the Precise Plan, which includes the growth proposed by the Master Plan. The NBPP SEIR disclosed the buildout of the Precise Plan (which includes the proposed development). Kirby Canyon Landfill has an estimated remaining capacity of approximately 16 million tons, and a closing date of approximately January 1, 2071.[33]

Based on the reasons, the NBPP SEIR concluded that the Precise Plan would not generate solid waste in excess of standard or in excess of local landfill capacity, or otherwise impair the attainment of waste management or reduction goals. Since the development proposed under the Master Plan is consistent with the development assumed in the Precise Plan and future development under the Master Plan is required to comply with the same regulations identified for future development in the Precise Plan, the Master Plan would result in the same less than significant solid waste impact as disclosed in the NBPP SEIR.

3.17.3 Conclusion

The proposed Master Plan would not result in a new or substantially increased significant utilities and service system impact compared to the NBPP SEIR.

[32] General Plan Policy INC 11.1 states meet or exceed all federal, state and local laws and regulations concerning solid waste diversion and implementation of recycling and source reduction programs. General Plan Policy INC 11.2 states maintain and expand recycling programs. General Plan Policy INC 11.3 states provide productive reuse or composting services or both for all discarded organic materials in the city, including all food and green waste.
[33] Azevedo, Becky. Waste Management Technical Manager for Waste Management. Personal communications. January 1, 2019.

SECTION 4.0 REFERENCES

County of Santa Clara, Department of Planning. Santa Clara County Geologic Hazard Zones. Map 10. June 28, 2002. https://www.sccgov.org/sites/dpd/DocsForms/Documents/GEO_GeohazardATLAS.pdf

City of Mountain View. *Subsequent Environmental Impact Report for the North Bayshore Precise Plan.* State Clearinghouse (SCH) #: 2013082088. November 2017.

---. *Environmental Impact Report for the North Bayshore Precise Plan.* SCH #: 2013082088. November 2014.

---. *Draft 2030 General Plan and Greenhouse Gas Reduction Program Final Environmental Impact Report.* SCH #: 2011012069. September 2012.

Fehr & Peers. *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates*. May 31, 2017.

---. *Vehicle Miles Traveled Assessment for the Gateway Master Plan Alternatives*. July 6, 2021.

Schaaf & Wheeler. *North Bayshore Gateway Master Plan Utility Impact Study*. February 5, 2021.

State Water Resources Control Board. GeoTracker Map. http://geotracker.waterboards.ca.gov/. Accessed February 5, 2021.

United States Department of Agriculture, Natural Resources Conservation Service. Web Soil Survey. February 4, 2021. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

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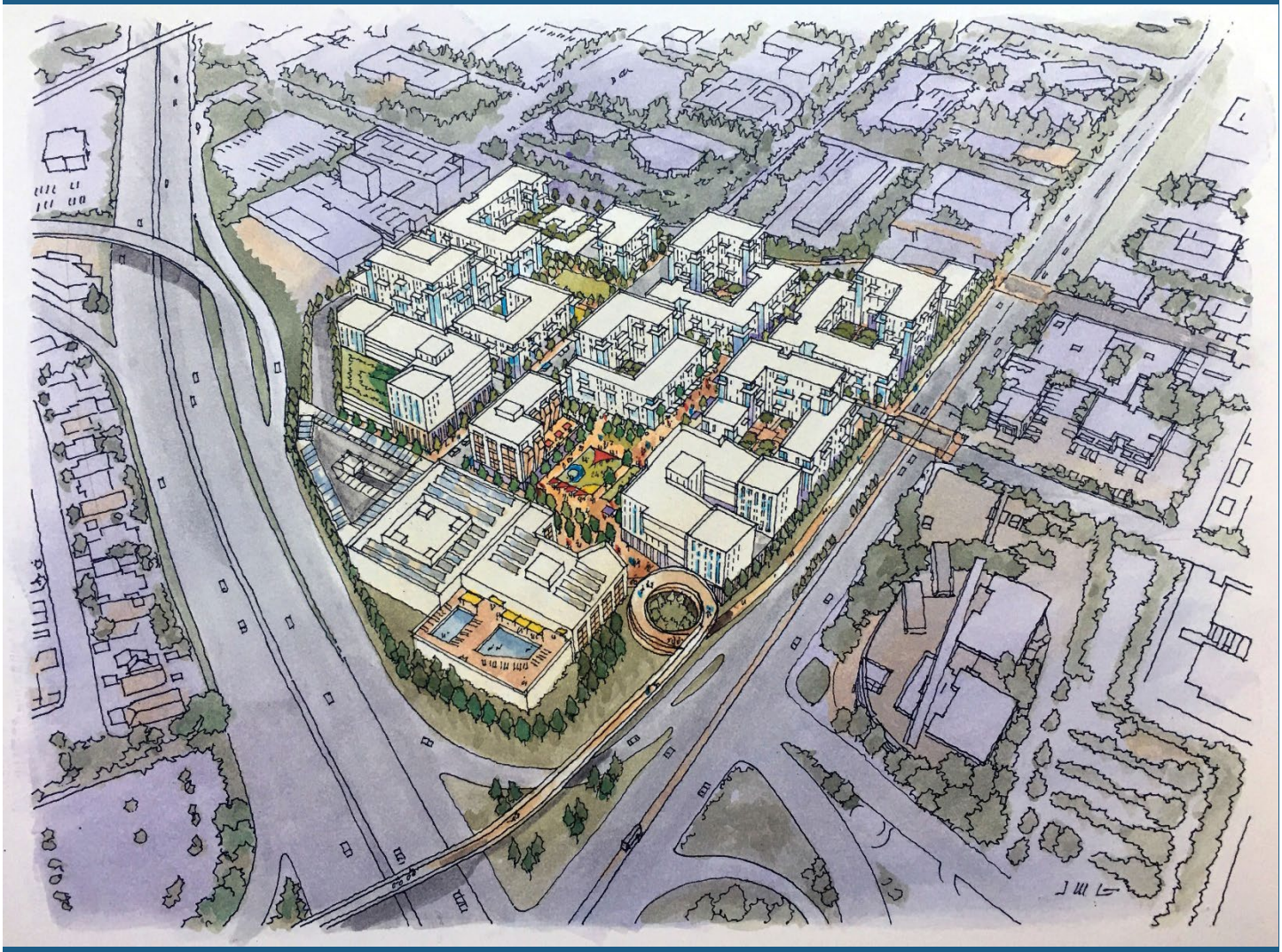

North Bayshore Gateway Master Plan

Public Draft – August 2021

Alkire, Martin

GATEWAY MASTER PLAN

ADOPTED BY THE MOUNTAIN VIEW CITY COUNCIL

_____

RESOLUTION NO. _____

EFFECTIVE DATE_____

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North Bayshore Gateway Master Plan

Table of Contents:

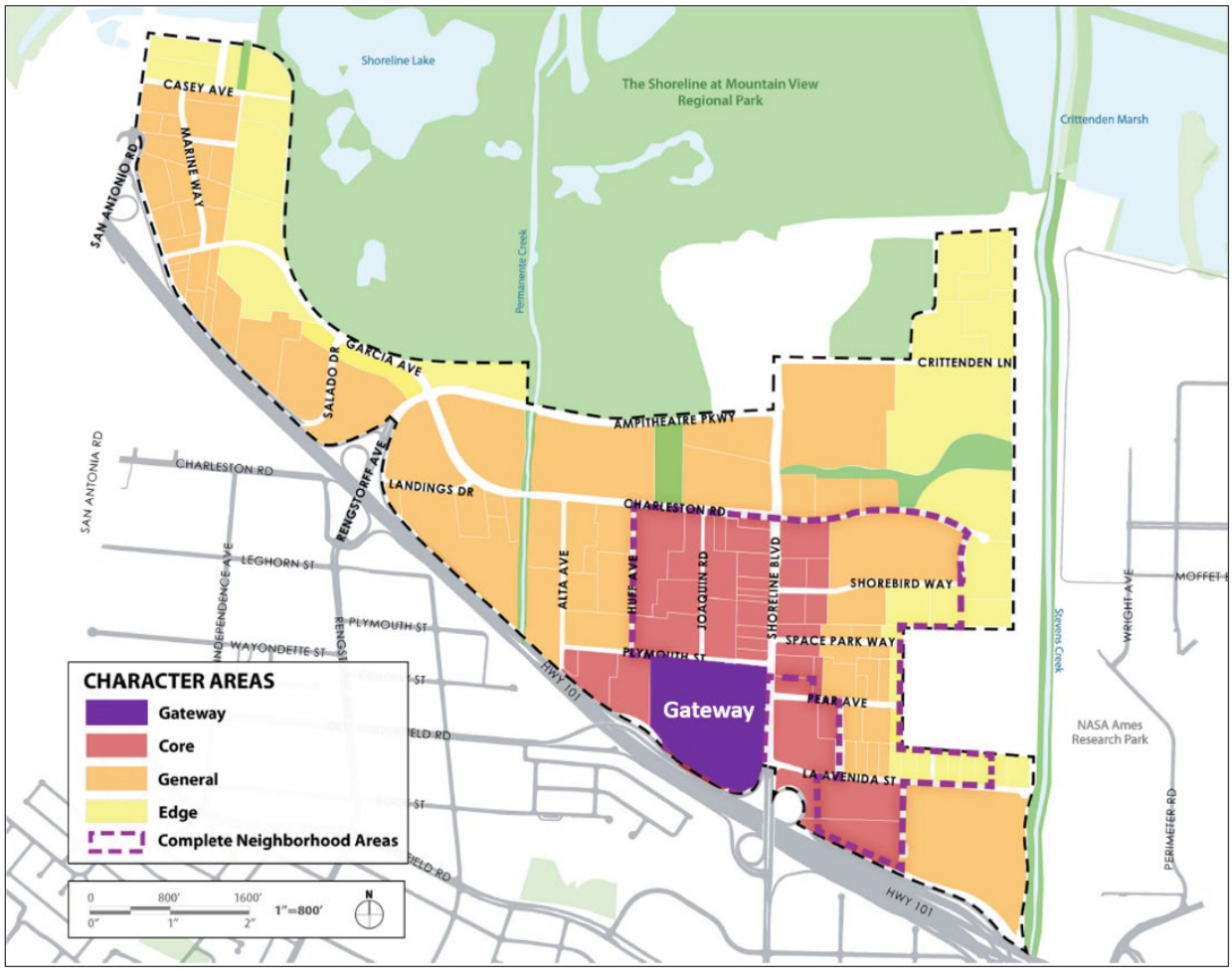
1. Introduction

A. Purpose and Authority

The 2030 General Plan and North Bayshore Precise Plan ("Precise Plan") include a vision, goals, and policies for the Gateway Character Area in North Bayshore. The Precise Plan identifies this area as a key 'gateway' into North Bayshore with a diverse mix of residential, office, other commercial uses, and public open space areas. This City-initiated Gateway Master Plan ("Master Plan") implements this vision for the Gateway Character Area.

The Precise Plan's development standards, design guidelines, and policies apply to new development within the Master Plan area. The Gateway Master Plan also includes additional development and design standards specific to this area.

Figure 1.1 North Bayshore Precise Plan Character Area Map



B. Plan Location and Context

In 2012, the City adopted its 2030 General Plan to guide change and infrastructure investment through 2030. One of the "change areas" identified in the 2030 General Plan is the North Bayshore area. This approximately 636-acre area is located in the northern portion of the City, bordering Shoreline at Mountain View Regional Park to the north, Highway 101 to the south, City of Palo Alto to the west, and Stevens Creek to the east.

The Precise Plan is organized into four character areas, one of which is the Gateway Character Area (***Figure 1.1***). The Gateway Character Area, approximately 30 acres, is envisioned as a mixed-use urban center, and is located within the Joaquin Complete Neighborhood area which will include a broad range of office, residential, entertainment, retail, restaurant, service, and hotel uses. The Gateway Character Area allows the highest intensities of development and greatest building heights within the Precise Plan area, including minimal setbacks for new buildings, active ground floor retail uses, and human-scale, pedestrian-oriented frontages.

To implement the 2030 General Plan for this area, the City adopted the North Bayshore Precise Plan in 2014, and later updated it in 2017 to include residential uses. The Precise Plan provides a vision and guiding principles, development standards, and design guidelines for the area, in conformance with the General Plan's North Bayshore Mixed-Use Center land use designation for the Gateway Character Area. The Precise Plan allows up to 3.6 million square feet of net new commercial uses (including office and commercial building uses, and 400 hotel rooms), and 9,850 residential units (with a goal of 20 percent of the units being affordable). The Precise Plan also includes strategies for new and enhanced parks, bike and pedestrian improvements, and public streets.

The Precise Plan facilitates:

- Development of complete neighborhoods and character areas within North Bayshore;
- Development of affordable housing;
- Protection and enhancement of area ecosystems and habitat;
- Improved transportation connections; and
- Expanded and improved public spaces in the area.

C. Purpose of Master Plan

This document establishes the land use, development standards, and other requirements that will govern future development within the Gateway Area, and includes:

1. Urban design character and form
2. Street and block network
3. Gateway subdistrict areas
4. Land use program
5. Open space locations and standards
6. Development and design standards
7. Street standards
8. Infrastructure standards
9. Administration

2. Urban Design

A. Overview

The North Bayshore Precise Plan envisions the Gateway Character Area as a mixed-use urban center within the Joaquin Complete Neighborhood. The Master Plan identifies a diverse range of uses to create a vibrant district with activity throughout the day, oriented around a central public open space area. This open space area will act as a civic plaza with places for people to gather and socialize, and will be ringed by restaurant, service, and entertainment uses. The mix of uses across the entire Gateway Master Plan area will include several smaller "subdistricts", including a new residential neighborhood and open space, a high-density mixed-use neighborhood with a retail "main street," and a mixed-use entertainment district with office, residential, hospitality, retail, and entertainment uses. The Master Plan area will be designed to focus on the pedestrian experience with inter-connected blocks and new connections to surrounding neighborhoods and streets. New buildings will include minimal setbacks, active ground floor retail uses, and human-scale, pedestrian-oriented frontages.

The following images provide general examples of the desired building form and character of future development envisioned for the Master Plan area.

Mixed-Use

Entertainment

Residential

Office

B. Vision

The Master Plan's vision builds on the existing and future adjacent land uses and street network, establishes a destination gathering place, and helps create a complete neighborhood. The following describes the key elements of this vision.

1. A vibrant mixed-use urban center

The Master Plan establishes a vibrant mixed-use urban center by complementing existing commercial retail uses along Pear Avenue and creating a new "main street" that connects Plymouth Street to a new central open space/plaza that will serve as a primary gathering place within North Bayshore. This new main street will be pedestrian only north of Pear Avenue. The central open space/plaza is envisioned to be ringed by retail and restaurants, and a mix of land uses including entertainment venues, high-density housing, offices, and hotel/hospitality uses. The following images provide general examples of the desired character of future publicly accessible areas within the Master Plan area.

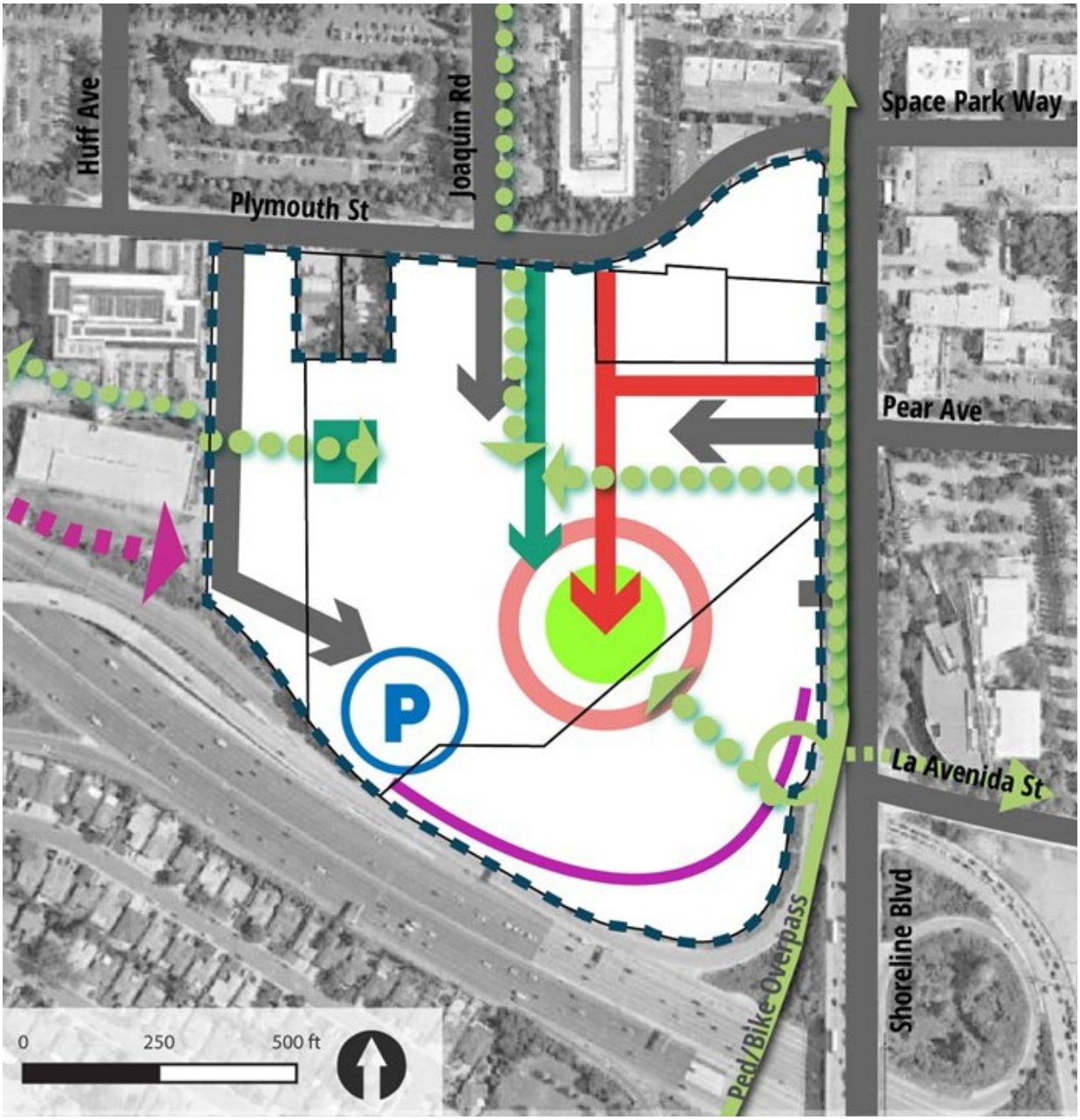
Central Plaza


Retail "Main Street"


Neighborhood Park



Figure 2.A Urban Design Diagram



Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- Proposed Bike Facility
- Central Open Space/Plaza
- Linear Park
- Neighborhood Park
- District Parking
- Ground Floor Retail/Restaurants
- Freeway Frontage
- Street Connections
- Potential Street Connection

2. A connected and walkable neighborhood

The Master Plan establishes a walkable network of streets and greenways that connect to the surrounding neighborhood. Pear Avenue extends across the site, connecting to the existing ped/bike path to the west of the plan area. Joaquin Road extends south into the Gateway area with a linear park to connect planned and existing greenways in the larger area to the planned Highway 101 ped/bike overpass. A new "main street" will connect the heart of the Gateway area to the Joaquin and Shorebird neighborhoods. All streets within the area will be connected with a walkable block structure.

3. A network of new open spaces

The Master Plan proposes an open space network with a variety of open space types to complement a diverse mix of land uses. A central plaza will anchor the Gateway area as a central gathering place surrounded by retail, restaurants, and entertainment venues and an extension of the "main street" that may function as both a street and open space. A neighborhood park is envisioned as the core of a high-density residential neighborhood in the northwest corner of the area. A linear park will also run parallel to the "main street", and in contrast to the active ground floor restaurant and retail experience will include several small green spaces lined with residential uses.

4. Land Uses

The Master Plan envisions a mix of land uses, including new residential; office; entertainment/retail uses; a hotel; and a combination of ground floor neighborhood-serving retail such as restaurants and personal services. The land uses include a mix of mid-rise and high-rise building types.

The land uses are divided into three subdistricts as shown on Figure 2.B and described below. The goal of these subdistricts is to strategically locate future land uses within the Gateway area while also allowing land use flexibility.

The **residential subdistrict** is located closer to future residential uses in the Joaquin neighborhood to the north. The **mixed-use subdistrict** is located adjacent to Shoreline Boulevard to provide visibility and accessibility for retail uses, and complements existing retail uses at Pear and Shoreline Boulevard. The **entertainment/mixed use subdistrict** is located adjacent to Highway 101 to provide visibility, serve as a buffer for adjacent residential land uses, and provide vehicular access from Plymouth Street.

1. **Residential Area** – This subdistrict is intended to locate the majority of the residential uses away from the freeway. The subdistrict allows residential land uses with 7 to 8 story courtyard building types, residential towers, and active ground floors with residential unit stoops opening directly to the sidewalk. The subdistrict will be focused on a neighborhood scaled park. Streets will have a residential character with landscaping and street trees.

2. **Mixed-use Area** - This subdistrict is intended to link the Gateway "main street" to other North Bayshore neighborhoods and allows predominately residential land uses with ground floor retail. The district is focused around ground floor retail uses along Pear Avenue and the new north/south "main street" connecting from the Central Open Space to Pear Street. The district is linked to the Residential Area by a wide greenway extension of Joaquin Road into the Gateway area.

3. **Entertainment Mixed-use Area** - This subdistrict is intended to be the center of activity in the Gateway and buffer residential uses from the freeway. The prominent freeway frontage allows for visibility of office and entertainment uses. The subdistrict also serves as the entrance for pedestrians and cyclists coming from the south across the proposed ped/bike overpass. Unlike the other subdistricts, this area may include large floorplate buildings and parking structures. Allowed land uses include office, hotel, entertainment, retail, and residential. The area will create the future heart of the Gateway district, with a Central Open Space plaza lined with ground floor retail uses.

Figure 2.B Sub-District Map

Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- Proposed Bike Facility
- Residential Area
- Mixed-Use Area
- Entertainment Mixed-use Area
- Open Space
- Retail Frontage
- Streets or Greenways

5. Transportation

The North Bayshore Precise Plan establishes guidelines and requirements for access and mobility. These include restrictions on vehicle trips at the three gateways into North Bayshore and compliance with Transportation Demand Management (TDM) programs to reduce single-occupant vehicle (SOV) travel and encourage alternative travel modes. Development in the Gateway Master Plan area will comply with Precise Plan transportation requirements, including any vehicle trip cap policies, but may also require additional TDM programs and higher SOV reductions.

The North Bayshore Circulation Feasibility Study (Circulation Study) identifies potential modifications to the North Bayshore Precise Plan that may be needed to ensure that transportation strategies are sufficient to meet the full build-out of the Precise Plan. Development in the Master Plan area will comply with Precise Plan amendments identified by the Circulation Study.

The Precise Plan also envisions a highly walkable community that, in part, minimizes parking demand and maximizes shared parking. The Master Plan includes a requirement for shared parking, as detailed later in this document.

3. Development Standards

The North Bayshore Precise Plan lists the development standards and guidelines that apply to new development within the Gateway Character Area. The following section outlines *additional* standards and guidelines unique to new development within the Gateway Character Area and are denoted by "**GMP.x**" (Gateway Master Plan). Where Gateway Master Plan development standards deviate from North Bayshore Precise Plan standards, the Gateway Master Plan standard shall take precedent.

A. Land Use and Block Structure

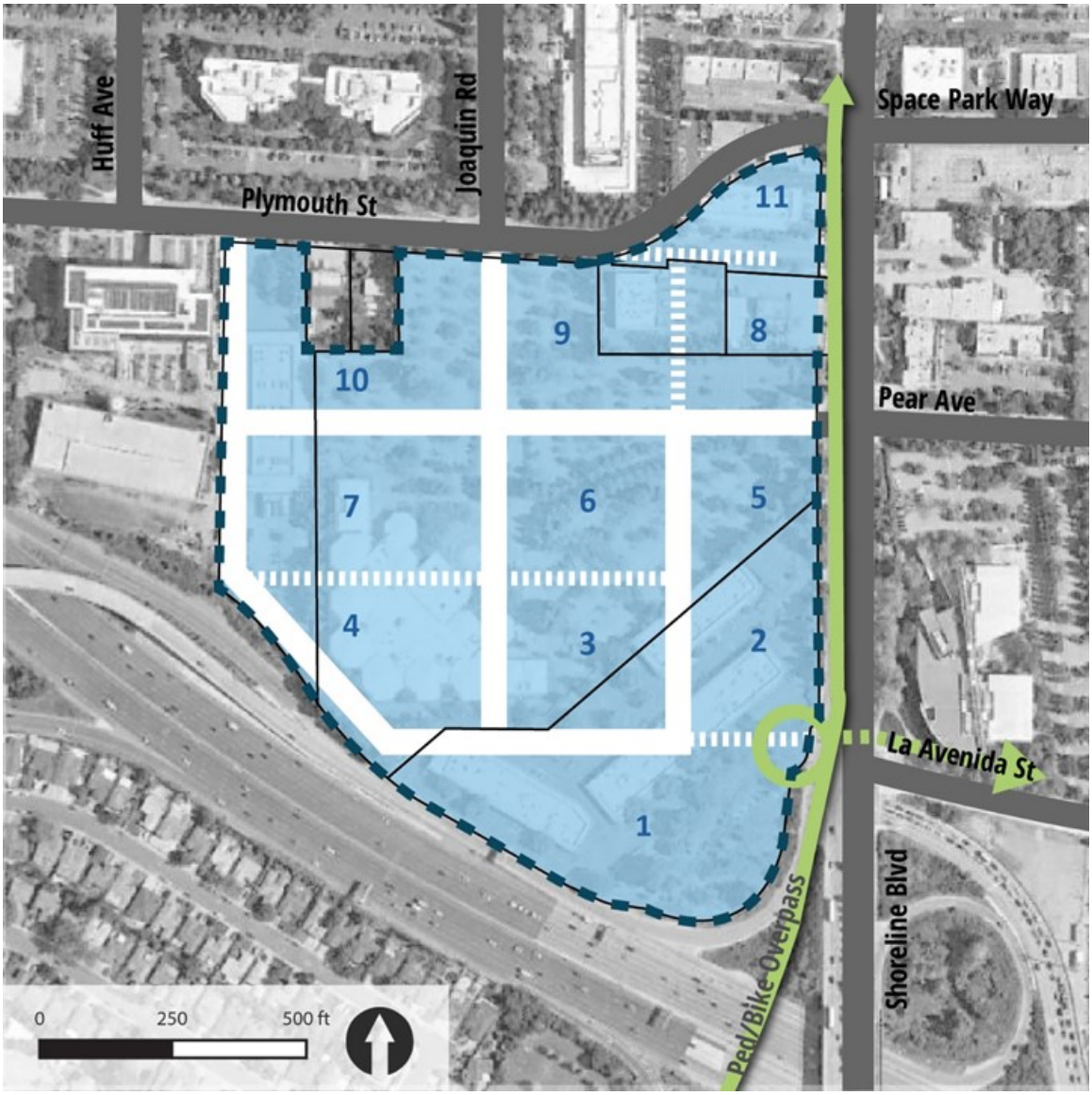
1. Block Structure

The Gateway Master Plan establishes a walkable block structure to create continuity and connections across all properties within the plan area. Due to site constraints and the inability of some Gateway Area parcels to connect to the existing street network, the Precise Plan 400-foot maximum block length standard cannot be met. Therefore, the following block structure standard establishes a walkable grid of publicly accessible streets and paths that meets the intent of the Precise Plan. Landowners are encouraged to exchange land and adjust parcel lines to facilitate the most efficient organization of land uses and streets within the Master Plan area.

GMP.1 **Block Structure**

Development in the Gateway Master Plan area shall include a block structure as identified in ***Figure 3.1***.

Figure 3.1 Block Structure



Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- 1 - 11 Block Number
- New Streets
- New Streets or Greenways

2. Land Use Program

GMP.2 **Land Use Locations**

Proposed land uses shall be located within the applicable land use subdistrict as shown on Figure 2.B and described in ***Section 2.4 Land Uses***.

GMP.3 **Land Uses**

Table 3.A lists the allowable land uses within the Gateway Master Plan area by parcel. More specific allowed land uses for the Gateway area are listed in the North Bayshore Precise Plan under the Gateway Character Area. ***Table 3.A*** also lists minimum and maximum amounts of building square footage or units per parcel or group of parcels as identified in ***Figure 3.2 Gateway Area Property Line Map***.

GMP.4 **Office Locations**

Office buildings shall be located on blocks 1, 2, 3, 4, or 5.

GMP.5 **Land Use and Infrastructure Phasing**

To facilitate new residential development in the Gateway area as envisioned by the Precise Plan, prior to occupation of any new office floor area, a minimum of 500 residential units shall obtain an occupancy permit, and all necessary street rights-of-way, public infrastructure, and public open spaces shall be completed or have a phasing plan approved by the City.

Table 3.A Land Uses by Parcel

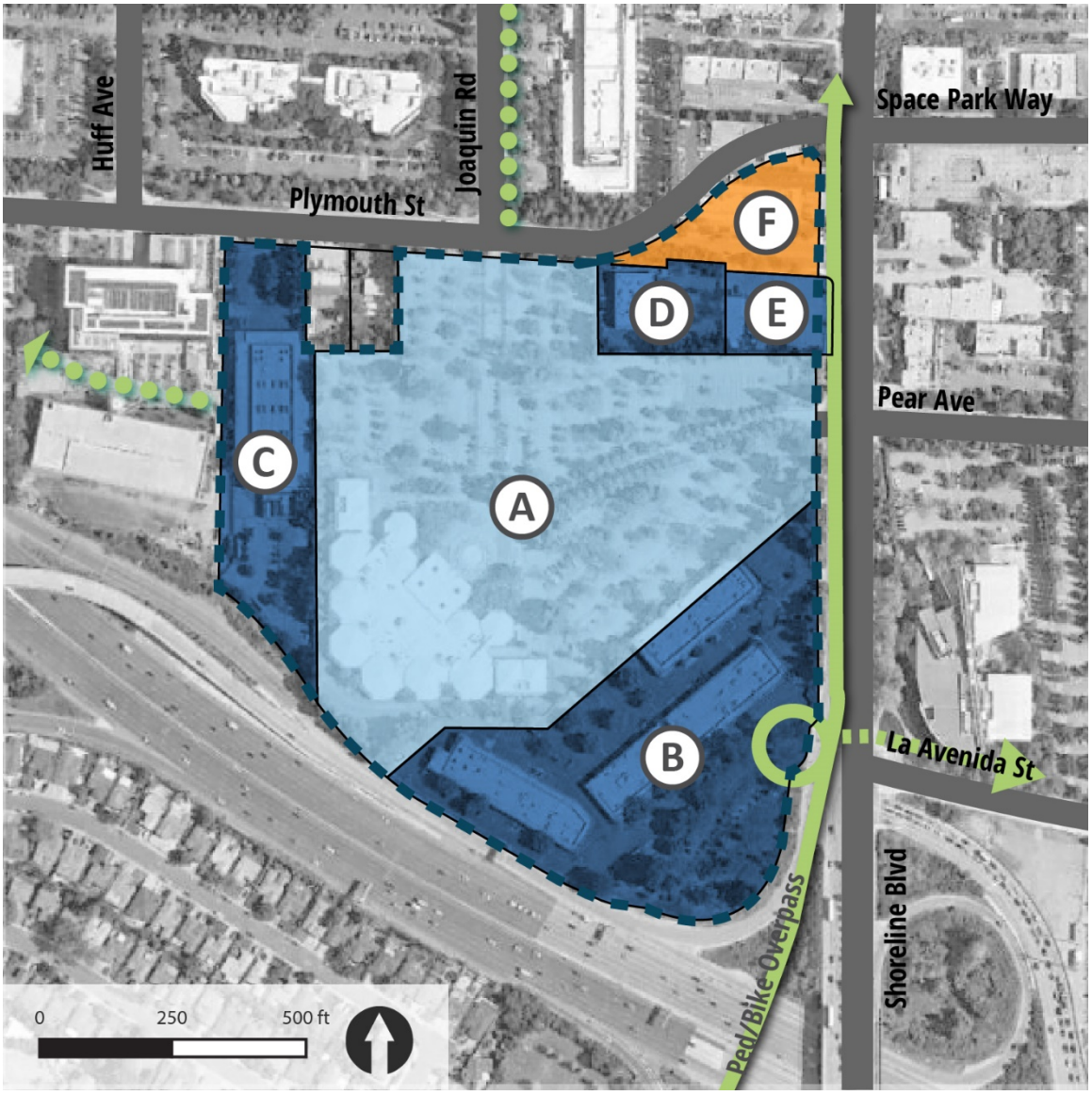
	Parcel Area (acres)	**Residential** (minimum)	**Office** (maximum)	**Open Space** (minimum)	**Ground Floor Retail** (minimum)	**Retail/ Entertainment/ Hospitality** (maximum)
Parcel A	**15.36**	**655 units**	**Up to 250,000 sf subject to availability***	**50,000 sf**	**25,000 sf**	**Up to 275,000 sf + one hotel****
Parcel B	7.78	545 units	Up to 250,000 sf subject to availability*	20,000 sf	25,000 sf	Up to 275,000 sf + one hotel**
Parcel C	3.13					
Parcel D	0.99		-			
Parcel E	0.87		-			
SUB TOTAL	**12.77**	**545 units**	**Up to 250,000***	**20,000 sf**	**25,000 sf**	**Up to 275,000 sf + one hotel****
Parcel F***	1.25	-	n/a	-	-	-
TOTAL	29.38 acres	1,200 (min.) to 2,800 units	Up to 500,000 sf	70,000 sf (min.)	50,000 sf (min.)	Up to 300,000 sf + one hotel

* As determined by any City Council Precise Plan Bonus FAR allocation

** Total number of hotel rooms or floor area may not exceed the cumulative maximum for the Gateway Area

*** Owned by the City of Mountain View; land uses for this parcel, including minimum and maximum building square feet, subject to City Council approval and compliance with Precise Plan and Gateway Master Plan objectives and standards

Figure 3.2 Gateway Area Parcel Ownership Map



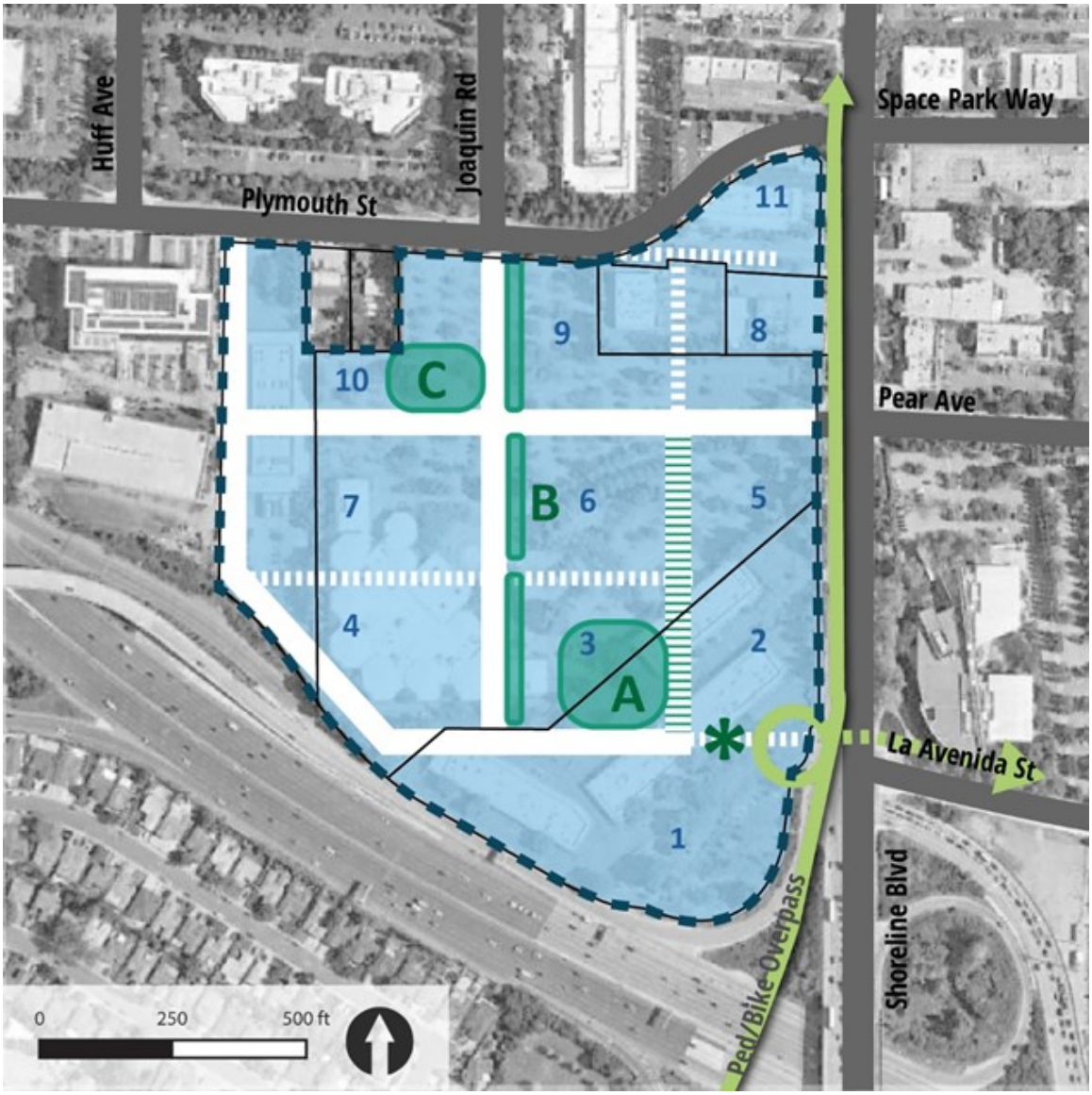
Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- Proposed Bike Facility
- A — 1 Land Owner
- B–E — 1 Land Owner
- F — City of Mountain View

B. Open Space

The following section outlines the publicly accessible open space plan and requirements.

Figure 3.4 Open Space Plan



Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- Open Space
- New Streets
- New Streets or Greenways
- "Main Street"
- A Central Open Space
- B Linear Open Space
- C Neighborhood Open Space
- * Ped/Bike Connection

GMP.6 **Publicly Accessible Open Spaces**

(a) A **Central Open Space**, as identified in the Precise Plan, shall be located in the general area shown in Figure 3.4, and shall meet the following requirements:

   a. Be contained within Blocks 3 and 6.

   b. Include a minimum area of 30,000 square feet.

   c. Include a minimum of 16,000 contiguous square feet located on Block 3 with a minimum dimension of 60 feet.

(b) A **Linear Open Space**, as identified in the Precise Plan, shall be located in the general area shown in Figure 3.4, and shall meet the following requirements:

   a. Be located along the west side of Blocks 3, 6, and 9.

   b. Include a combined minimum area of 15,000 square feet.

   c. Include an average width greater than 30 feet, and a minimum width of 10 feet.

(c) A **Neighborhood Park** shall be located in the general area shown in Figure 3.4, and shall meet the following requirements:

   a. Be contained within Blocks 7 and 10, and located at the intersection of Pear Avenue and Joaquin Road.

   b. Include a minimum area of 20,000 square feet.

   c. Include a minimum dimension of 100 feet.

C. Site and Building Design Standards

The following section outlines ground floor commercial design standards, special frontage requirements, and other site and building requirements.

Figure 3.5 Key Frontages

GMP.7 **Retail Frontage**

(a) Retail frontage is intended to create an active pedestrian-oriented environment along the ground floor of buildings and may include, but is not limited to, the following permitted land uses: indoor recreation and fitness centers; retail stores and accessory retail uses; restaurants; banks and financial services; business support services; dry cleaners; medical services less than 3,000 square feet; and personal services. Additional permitted and provisionally permitted land uses, are listed in the North Bayshore Precise Plan for the Gateway Character Area.

(b) Retail frontage shall be located along a minimum of 70% of all building facades or portions of facades identified in Figure 3.5. Retail frontages shall be located on a minimum of two sides of the Central Open Space, with a minimum 70% length of retail frontage along each building façade. (Depending on size and extents of the Central Open Space, retail located on the west side of the plaza may be located within block 3 or on the eastern edge of block 4).

(c) Retail frontage shall include a minimum 60 feet interior building depth along a minimum 50% length of all retail facades. All other retail frontages shall include a minimum 30 feet interior building depth.

GMP.8 **Shoreline Boulevard Frontages**

(a) Ground floor office or residential building frontages along Shoreline Boulevard in Blocks 2, 5, 8 and 11 as shown in ***Figure 3.5*** shall include active spaces such as public plazas, pedestrian entries connecting to open space, and entry lobbies, common recreation rooms, gyms, and cafes.

(b) Buildings shall be set back a minimum 15 feet from the western edge of the Shoreline Boulevard sidewalk.

(c) Setback areas shall include a row of trees with a minimum average of one tree per every 30 feet of linear frontage.

GMP.9 **Key Corners**

(a) Key corners are identified in ***Figure 3.5***. Buildings located on key corners shall meet one or more of the following elements to create a special design feature. All other design standards and guidelines are still applicable.

a. A tower building element greater than 120 feet in height and 30 feet in width with an architectural element that extends to the ground floor level (***Figure 3.6***).

b. A distinctive corner building element with both (***Figure 3.7***):

i. A fenestration pattern and material change that is different from main building.

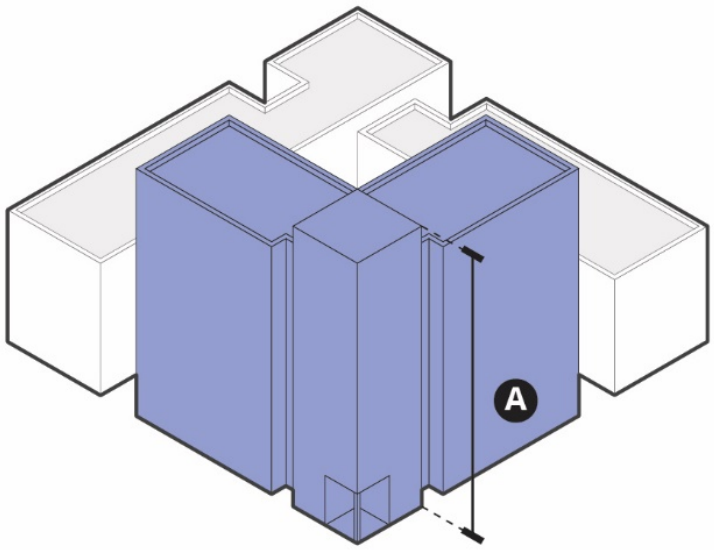
ii. A distinctive roof plane and minimum change in building height of one story from the rest of the building.

c. A chamfered or rounded corner with a corner entry that creates a plaza with a minimum area of 500 square feet. (***Figure 3.8***).

d. A publicly accessible plaza or restaurant seating area with a minimum area of 1500 square feet in (***Figure 3.9***).

(b) Key corners shall include a main building entry or a publicly accessible plaza leading to a main building entry or retail entry.

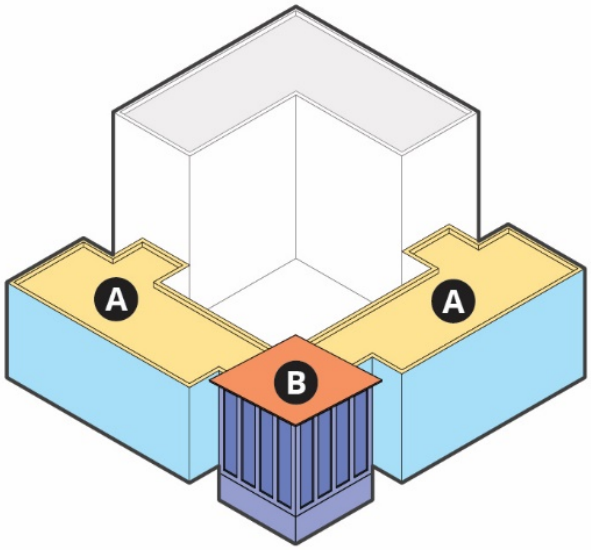
Figure 3.6



A Tower minimum 120′ in height

Architectural element extending to ground-floor level

Figure 3.7



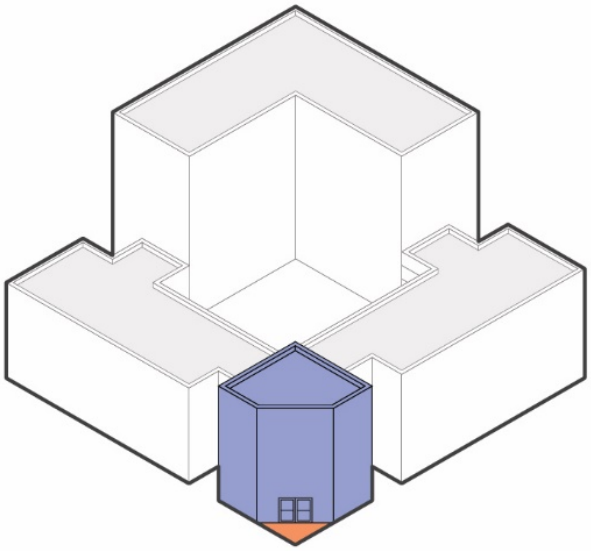
Building fenestration pattern and material change

Corner fenestration pattern and material change

A Building roof plane

B Corner change in roof plane +/- one story of A

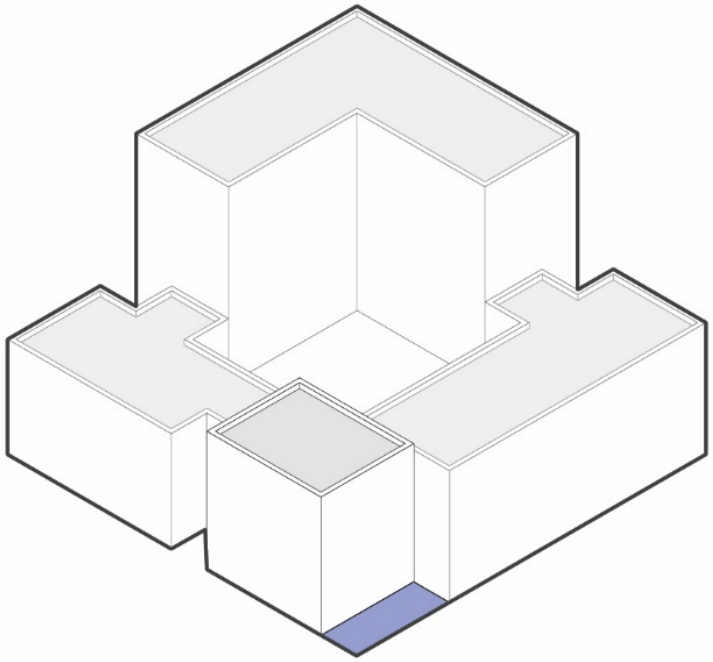
Figure 3.8



Chamfered or rounded corner feature with ground-floor entry

Corner plaza minimum 500 sf

Figure 3.9



Publicly accessible plaza or seating area minimum 1,500 sf

GMP.10 Building Massing

(a) Buildings greater than 65 feet in height shall provide a variety in building heights and reduce the massing of upper floors through one or more of the following techniques:

a. Interior courtyard with one side open to the street at courtyard level for 80% of the interior courtyard width. (***Figure 3.10***).

b. Building floorplates greater than 65 feet in height shall include a floor area less than 75% of the ground floor area or the building floor area of the podium level, whichever is less (***Figure 3.11***); or

c. Stepped back façade of floors above 65' for a minimum 60% of dimension of all street facing facades. (***Figure 3.12***).

Figure 3.10

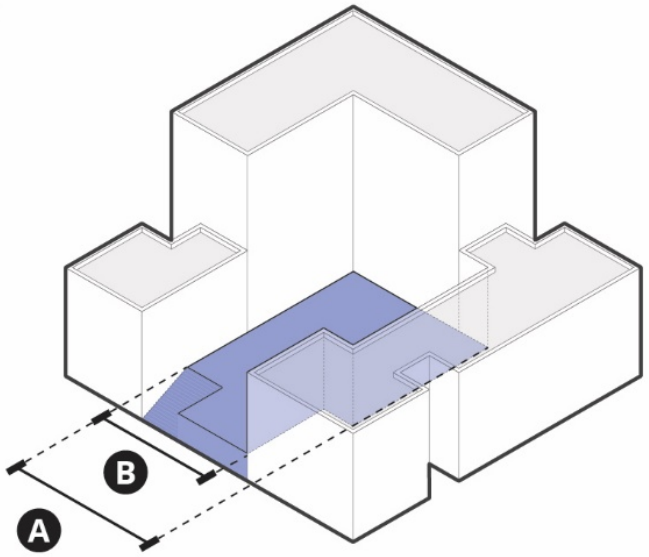
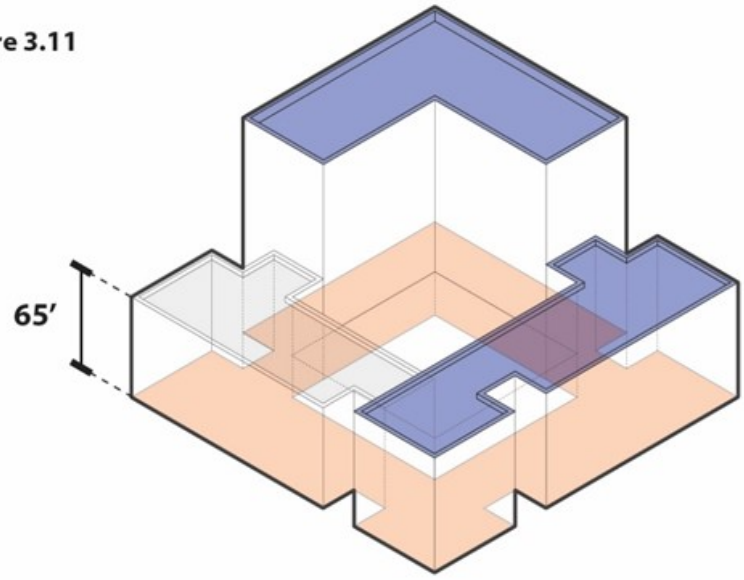


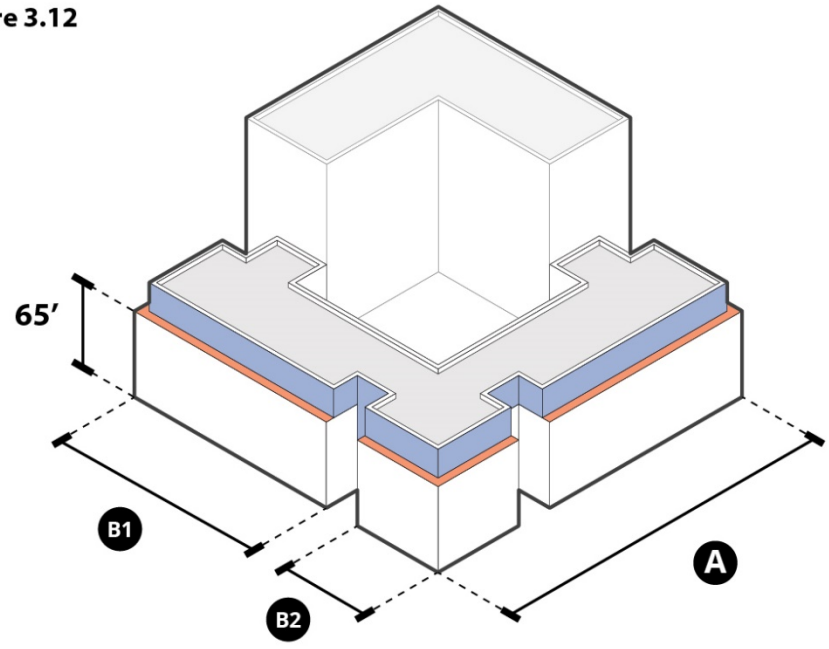
Figure 3.11



Ground floor area **or** buidling floor area at podium level

Floorplate above 65′ height ≤ 75% of

Figure 3.12



Floors above 65′ height step backed

Step back minimum 6′ deep

A Street facing facade dimension

B Stepped back facade of floors above 65′ for a minimum 60% length of A

GMP.11 Paving Area

Paving areas shall not exceed 10% of the total parcel area, excluding any areas for new streets and paths as identified in the Gateway Master Plan.

GMP.12 Landscaping/Open Area

A minimum 20% of Landscape/Open Area is required for each parcel.

D. Parking

GMP.13 District Parking

(a) A shared parking plan shall be submitted for any development that includes a mix of office, entertainment, retail, and/or hotel uses. An example of a shared parking plan for Gateway Master Plan land uses is included in Table 3.B. The shared parking plan will be based on the mix of land uses within a proposed development. Parking shall be provided in one or more structures, which could be integrated with other commercial or entertainment uses. A portion of the shared parking plan's total parking spaces may be set aside for valet services. Office uses shall be limited to 2 spaces per 1000 gross building sq. ft.

(b) Maximum parking for the entire Gateway Master Plan area shall not exceed 2,100 spaces with a shared parking plan.

(c) The shared parking plan shall include AM peak period parking access from Plymouth Street (both east and west directions), unless determined otherwise through an approved TDM Plan.

(d) Residential-only projects with on-site parking spaces are not subject to the shared parking plan requirement. Residential guest parking spaces may be included within a shared parking plan for other land uses as noted above in (a).

Table 3.B Example of a Shared Parking Plan (Gateway Master Plan Land Uses)

				Estimated % Use			Spaces Required		
Use	**Sq. Ft. / Units**	**Spaces per 1,000 sq. ft.**	**Base Need**	**AM**	**PM**	**Evening**	**AM**	**PM**	**Evening**
Office	500,000	2.0	1,000	100%	100%	10%	1,000	1,000	100
Theater	100,000		760	0%	50%	100%	0	380	760
Fitness	100,000		550	0%	60%	90%	200	330	495
Residential Off-Site Guest Spaces			300	20%	20%	100%	60	60	300
Hotel	Valet								
Retail / Restaurant	100,000		300	10%	40%	80%	30	120	240
Total			2,910				1,290	1,890	1,895
Circulation Factor (10%)		10%	291				129	189	190
Total Maximum							**1,419**	**2,079**	**2,085**

E. Street Design

The following tables and figures include standards for the design of streets within the Gateway Master Plan area. Where a Precise Plan street type is identified, the design of the street shall follow all Precise Plan standards. Street designs shall also meet City design requirements.

1. Location Requirements

Figure 3.13 outlines the general location of future connections and of bike facilities in the Gateway Master Plan area. ***Table 3.C*** identifies the minimum rights-of-way, allowed street types, and design notes for each future street connection.

GMP.14 Location, Dedication, and Easement Requirements

(a) Streets, pedestrian connections, and bike facilities shall be located as defined in ***Figure 3.13***. Design options for each street/pedestrian connection are identified in ***Table 3.C***.

(b) The following streets shall be dedicated to the City of Mountain View as public rights-of-way: (J), (P), (C), (B1), (B2), (A1), and (A2).

(c) All identified street connections, if not public rights-of-way identified in **GMP.13 (b)**, shall include a permanent public access easement for a minimum right-of-way dimension identified in ***Table 3.C***.

(d) Street connection (A2) and (D1) shall include at least one segment that allows regular circulation of vehicles.

(e) A Traffic Signal Warrant at the intersection of Joaquin Road and Plymouth Street may be required.

Figure 3.13 Street Map

Legend

- Master Plan Boundary
- Property Line
- Planned Shoreline Blvd Bike Facility and Overpass
- 1 - 11 Block Number
- Neighborhood Street
- "Main Street"
- Greenway
- Greenway or Service Street
- E2 Street Type (Table 3.C)

Table 3.C Street Type Summary

Street	Ownership	Design Notes	Allowed Street Types	Minimum R.O.W. Width
(J) Joaquin Rd	Public	• Key street connection from Joaquin neighborhood into the Gateway area • Linear park provides open spaces for residents and a green connection to retail district	• NBSPP Neighborhood Street with Stormwater Treatment + additional Linear Park (GMP.15.(b))	78 feet + 30 feet public access easement for Linear Park
(P) Pear Ave	Public	• Key connection from Shoreline Boulevard into Gateway area • Retail street on the north side	• NBSPP Neighborhood Street with Stormwater Treatment	78 feet
(A1) (A2) "Main Street"	Public	• Ground floor commercial focused street • Quality materials with special paving • Special paving materials may be allowed with a public street maintenance agreement • Potential for street configuration that may be closed for special events	• GMP.17 "Main Street" Typical	56 feet
(A3) "Main Street"	Private	• Ground floor commercial focused street • Pedestrian only Paseo with outdoor dining if access to blocks 8 and 9 can have vehicle access from Pear and/or Joaquin	• GMP.17 "Main Street" Typical • GMP.18 "Main Street" Paseo	56 feet 34 feet
(B1)	Public	• Neighborhood street connecting Joaquin Rd to Gateway "Main Street"	• NBSPP Neighborhood Street with Stormwater Treatment	78 feet
(B2)	Public	• Service Street connecting (C) street to Joaquin • May be designed as an open space buffer to freeway if (D1) and (D2) are open to vehicle traffic and designed as a NBSPP Neighborhood Street	• NBSPP Neighborhood Street with Stormwater Treatment	78 feet
(C)	Public	• (C) Street is located on the property line of two parcels: 1555 and 1625 Plymouth Streets • An access easement is currently located along part of each parcel	• NBSPP Neighborhood Street with Stormwater Treatment • Curb space is not required on the west side	56 - 62 feet
(D1) (D2)	Public or Private	• (D1) and (D2) may be designed as service streets or greenways depending on adjacent uses and open space locations. • (D1) may only be closed to vehicle access if (A2) is open to vehicle access. • Greenways shall be privately owned but publicly accessible	• NBSPP Service Street • GMP.20 Green Way • (D1) Main Street Paseo	56 - 62 feet 36 feet
(E1)(E2)	Private	• (E1) connects the 101 ped/bike overpass to the Master Plan area • (E2) is an optional private greenway connection between (P) and (D2) • Greenways shall be privately owned but publicly accessible	• GMP.20 Green Way	36 feet
(F)	Public or Private	• (F) Street is defined by the existing Plymouth St ROW • May be needed as an alley with vehicle access to serve blocks 8 and 11, • Alley does not connect to Shoreline Blvd.	• Other	To be decided by Public Works

2. Street Design and Building Setbacks

The following section outlines the street design requirements in the Gateway Master Plan area. Standards are provided for all street types and specifically as necessary for individual streets.

GMP.15 General Street Design

(f) The street designs represent approved dimensions for each street element. Additional designs may be approved by the Public Works Department.

(g) Setbacks shown in each street section shall be the minimum building setback required unless otherwise noted.

(h) Street connection (E) shall be designed by the Public Works Department.

GMP.16 Joaquin Road (J)

(a) Joaquin Road shall be designed to NBSPP Neighborhood Street with Stormwater Treatment standards.

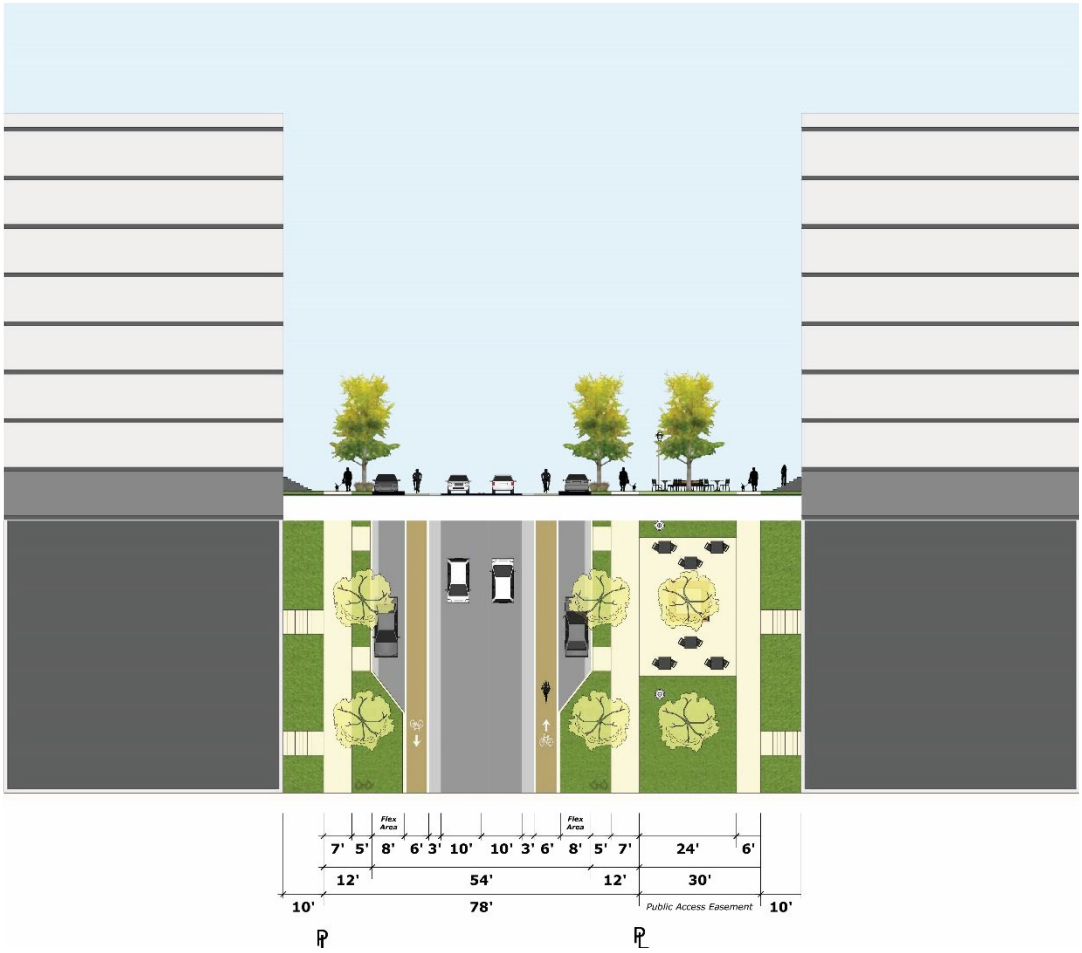
(b) A linear park shall be located on the entire east side of Joaquin Road.

a. The linear park shall be publicly accessible and include an access easement.

b. The linear park shall be privately owned/maintained and publicly accessible

c. If the linear park is greater than 16 feet in width, it shall include a second sidewalk on the east side with a minimum width of six feet.

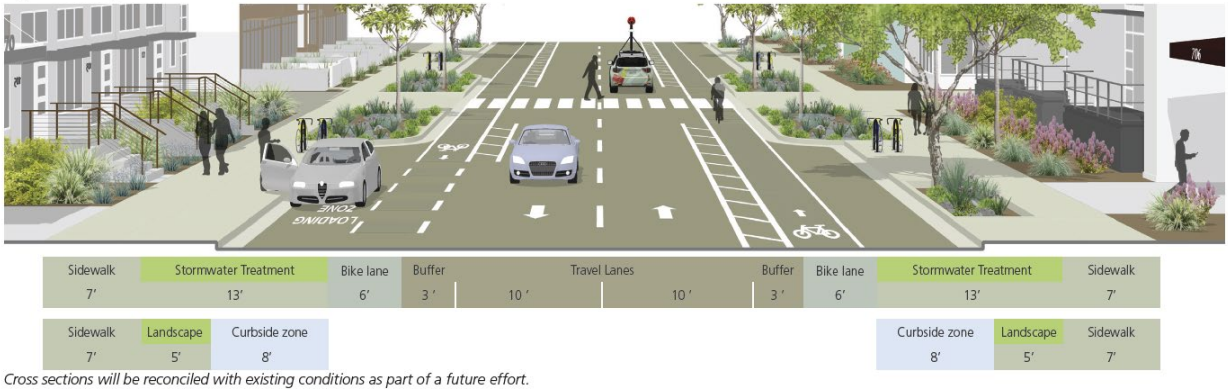
Joaquin Rd (J)


Flex Area
Flex Area
7' 5' 8' 6' 3' 10' 10' 3' 6' 8' 5' 7'
24' 6'
12' 54' 12' 30'
10' 78' Public Access Easement 10'

Neighborhood Street (P) (B1) (B2) (C)

Section below is from Precise Plan, p. 153.

Figure 34: Neighborhood Street 1 with Stormwater Treatment: Potential Cross Section



Cross sections will be reconciled with existing conditions as part of a future effort.

Service Street (D1) (D2)

Section below is from Precise Plan, p. 156

Figure 38: Service Street with Stormwater Treatment: Potential Cross Section

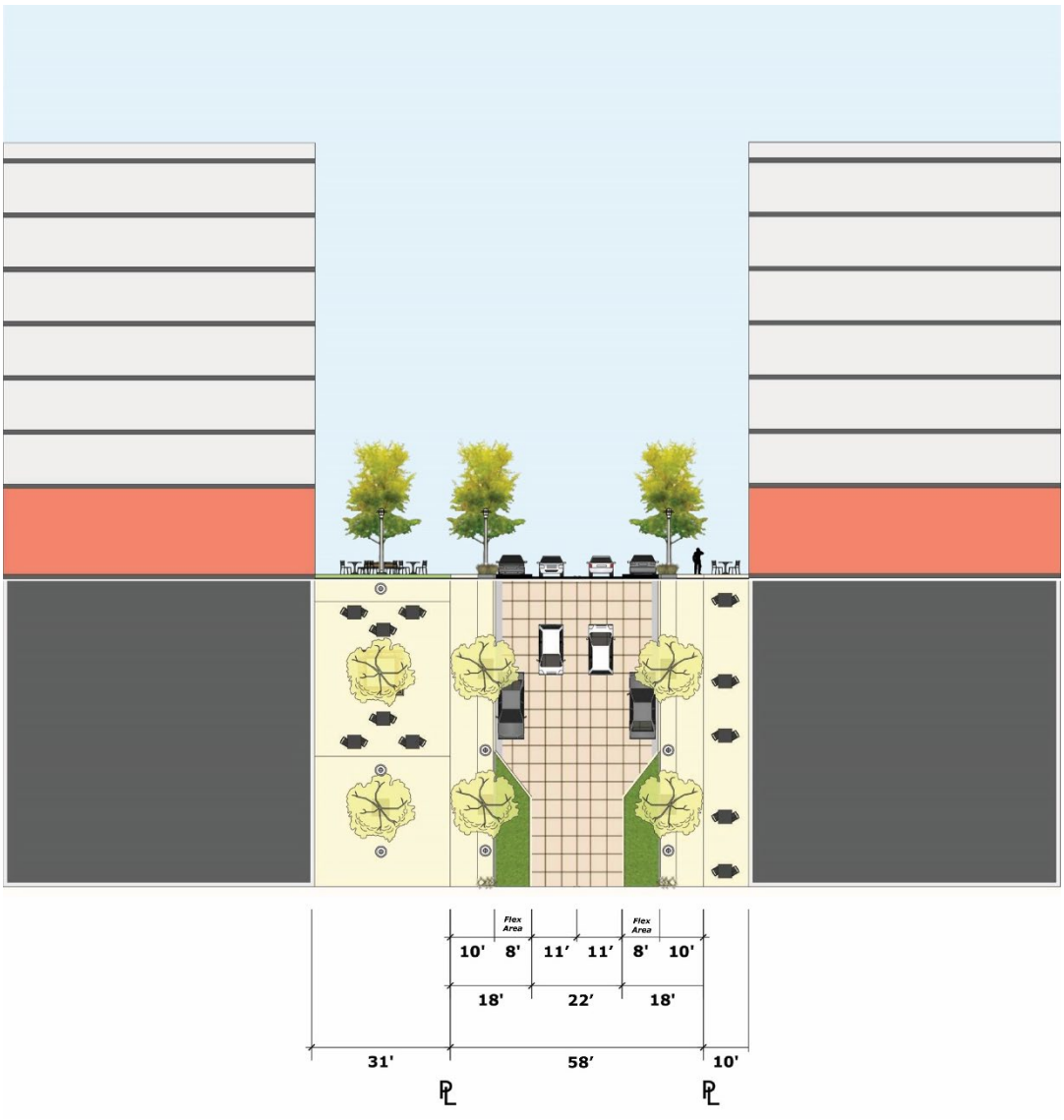
Cross sections will be reconciled with existing conditions as part of a future effort.

GMP.17 "Main Street" Typical (A1)(A2)(A3)

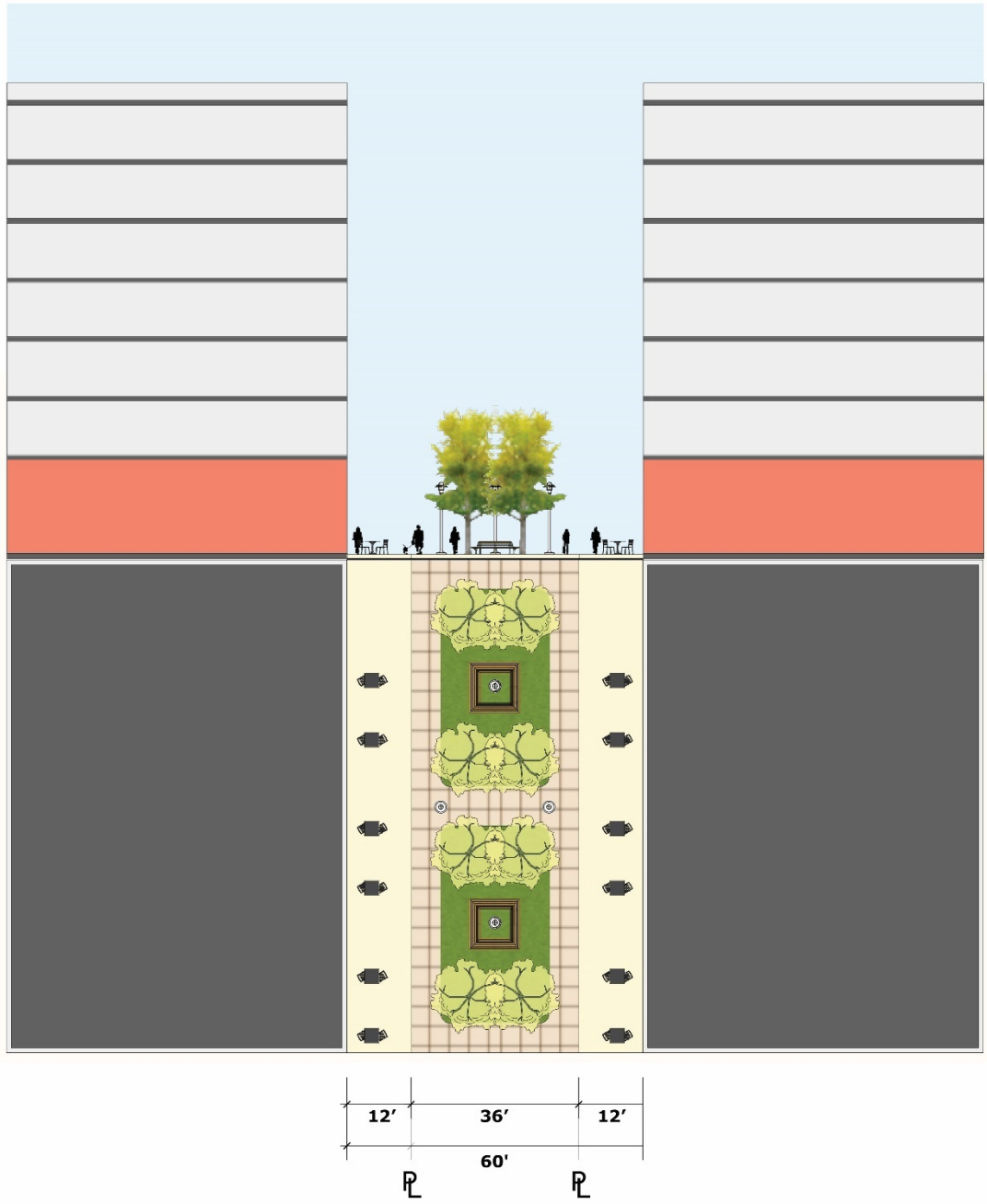
(a) If segment (A3) is designed as "Main Street" typical, a minimum 10-foot building setback is required.

(b) An expanded building setback shall have a minimum average width of 30 feet and a minimum width of 10 feet between blocks 5 and 6 (***Figure 3.4***).

(c) Special paving materials may be allowed with a public street maintenance agreement


Flex Area
Flex Area
10'
8'
11'
11'
8'
10'
18'
22'
18'
31'
58'
10'
PL
PL

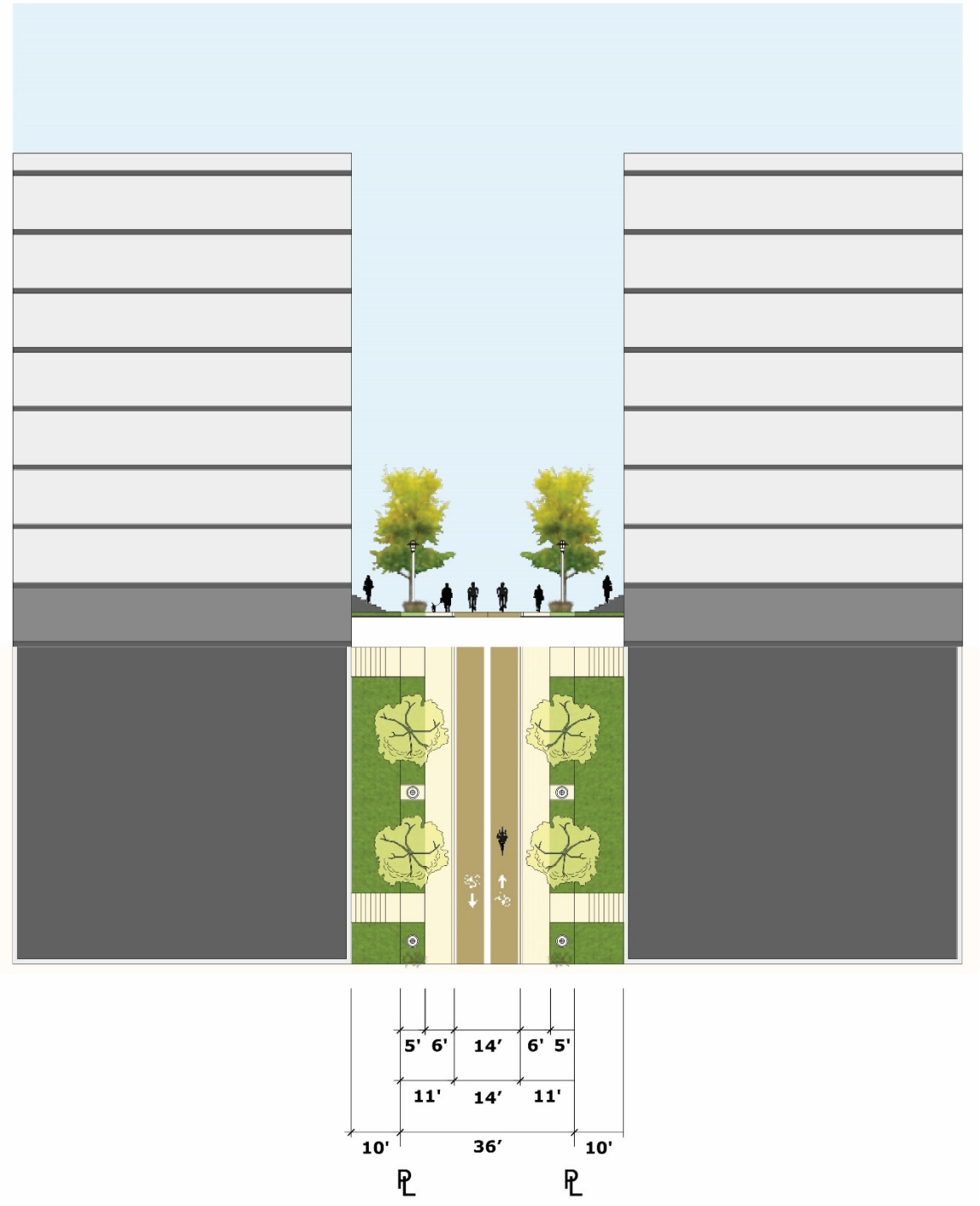
GMP.18 “Main Street” Paseo (A3)(D1)



GMP.19 Greenways (D1)(D2)(E1)(E2)

(a) All Greenways shall be Public Access Easements that are privately owned/maintained and publicly accessible.

GMP.20 Greenways (D1)(D2)(E1)(E2)



F. Infrastructure

The following section outlines infrastructure requirements for development within new public rights-of-way.

GMP.21 Required Infrastructure

(a) The following infrastructure improvements are required as shown in ***Figure 3.14*** and are subject to review by the Public Works Department.

(b) Developers shall dedicate an easement and provide access to allow the City to maintain existing public utilities. Public utilities can be relocated at the developer's sole cost, but City access shall be maintained.

(c) Existing 12-inch sanitary sewer (SS) main "A" as shown in ***Figure 3.14*** shall be relocated in-tract as needed and shall connect to Plymouth Street as identified as point "B" in ***Figure 3.14.***

(d) The Developer shall be fully responsible for all costs associated with relocating the existing sewer main "A" and dedicating any required easements to the City to accommodate the new alignment, which shall run along Lone Lonesome Road as identified in ***Figure 3.14***.

(e) New sewer mains shall connect to the existing system as shown in ***Figure 3.14*** at the "C" connection points.

(f) New water mains shall connect to the existing system as shown in ***Figure 3.14*** at the "D" connection point on 12-inch water main for in-tract water and the "E" connection point on 8-inch water main for in-tract water.

(g) New recycled water mains shall connect to the existing system as shown in ***Figure 3.14*** at the "F" connection points.

(h) Utilities located within the old Plymouth ROW shall be relocated along the new alignment of Plymouth St.

Figure 3.14 Infrastructure Map

Legend

- Master Plan Boundary
- Property Line
- New Street
- New Street or Greenway
- Existing Water Main
- New Water Main
- Existing Sewer Main
- New Sewer Main
- Existing Recycled Water
- New Recycled Water
- A — GMP.20 Standards
- Planned Shoreline Blvd Bike Facility and Overpass

4. Administration

A. Bonus FAR Requirements

Section 3.3.4 of the North Bayshore Precise Plan lists the Bonus Floor Area Ratio requirements for the Gateway Character Area for both residential and non-residential development.

B. Application Requirements

In addition to the City's standard development application requirements, applications for new development (Planned Community Permits) shall submit the following information:

1. Signed City development applications from property owners.
2. Proposed land uses including a table of total building square footage, and information on how the proposal meets the Precise Plan's Complete Neighborhood strategy and all Gateway Master Plan requirements.
3. Trip Cap Strategy with information on how the proposal complies with the Precise Plan's Trip Cap policies.
4. Materials such as maps, surrounding and proposed uses, proposed building locations, circulation plan, open space, and other materials that demonstrate compliance with the purpose and intent of the Precise Plan and the Gateway Master Plan.
5. Urban design strategy, including how the location, intensity, and uses of planned and future buildings function and relate to each other, the project site, and adjacent parcels in the Gateway Master Plan area.
6. A mutual access agreement strategy between property owners within the Gateway Master Plan area. As a condition of approval, a recorded mutual access agreement between property owners shall be required to ensure proposed and future vehicular, bicycle, and pedestrian access across all properties within the Gateway Master Plan area.
7. Phasing and implementation strategy, including the timing and plans for any public improvements. Proposed development shall identify an initial, intermediate, and final phase. The phasing and implementation strategy shall include a plan for integrating other properties within the plan area including providing temporary and future access, utility connections, and location of streets and connection to adjacent parcels.

C. Development Review Process

Section 3.5.1 of the North Bayshore Precise Plan establishes the development review process for new development, including the process for minor improvements.

FEHR PEERS

Memorandum

Date: July 6, 2021

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

From: Daniel Rubins, Mackenzie Watten, Richard Brockmyer, and Julie Morgan, Fehr & Peers

Subject: Vehicle Miles Traveled Assessment for the Gateway Master Plan Alternatives in Mountain View, California

SJ21-2087

This memorandum summarizes an informational vehicle miles traveled (VMT) assessment for the Gateway Master Plan Alternatives in Mountain View, California.

Project Description

The Mountain View Gateway Master Plan (the Project) site is in the North Bayshore planning area of Mountain View, California. The project site is generally bounded by Shoreline Boulevard to the east, Plymouth Street to the north, adjacent office buildings to the west, and US 101 to the south. The project includes the buildings at 1431, 1477 and 1555 Plymouth Street, and 1400 and 1500 Shoreline Boulevard. The City of Mountain View intends to increase development intensity at this site to include a mix of land uses in **Table 1**. In addition to the land use program, the project will include new development with the following transportation demand management strategies:

- **New Office Development**: Offices are expected to achieve a driveway vehicle trip target during the morning peak period that does not exceed a 45 percent single-occupancy mode share.
- **New Residential Development**: The residential development includes smaller units with an average household size of 1.75 persons per dwelling unit and a reduced parking ratio of approximately 0.60 spaces per unit.

Table 1: Project Land Use Program and Service Population

Scenario	Building Size	Service Population[1,2]
Preferred Land Use Alternative		
Residential Development	2,100 dwelling units	3,680
Office Development	500,000 square feet	2,000
Retail/Entertainment Development	300,000 square feet	800
Hotel Development	200 rooms	80
	Service Population Total	**6,560**
No-Office Land Use Alternative		
New Residential Development	2,800 dwelling units	4,900
New Retail/Entertainment Development	300,000 square feet	800
New Hotel Development	200 rooms	80
	Service Population Total	**5,780**

Notes:
1. Service population is the sum of the residents and employees for each land use scenario. The service population rounded to the nearest 10.
2. For the project land use program, the residential and employee densities utilized were 1.75 residents per dwelling unit, 4.00 employees per 1,000 square feet for office, 2.67 employees per 1,000 square feet for retail/entertainment, and 0.4 employees per room for a hotel.

Source: Fehr & Peers, 2021.

Overview of Methods

How transportation impacts under the California Environmental Quality Act (CEQA) are analyzed was changed with Senate Bill (SB) 743. SB 743 removed the use of automobile delay or traffic congestion for determining transportation impacts in environmental review. Instead, the latest *CEQA Statute & Guidelines* now specify that vehicle miles traveled, or 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 VMT assessment is being provided for informational purposes to support the environmental analysis for this project.

This VMT assessment calculates VMT using the following steps and methods consistent with the North Bayshore Precise Plan 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). 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 for each project alternative.
- **Vehicle Miles Traveled**: The project-generated 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.[1] The project-generated VMT metric and calculation methods are consistent with the North Bayshore Precise Plan (NBPP) VMT assessment described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017). While the boundary VMT is a new VMT metric to evaluate the North Bayshore area, it has been used for the East Whisman Precise Plan transportation analysis.

As a cumulative VMT assessment of the North Bayshore Precise Plan (NBPP) is described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017) memorandum, this VMT assessment conducts an Existing with Project Conditions VMT assessment to quantify and the order of magnitude and direction of the Project's effect on VMT. Using the project-generated VMT and boundary VMT metrics, this VMT assessment shows the benefits of adding housing to North Bayshore, smaller-than-typical parking supply ratios, a shared parking strategy for the non-residential land uses, and increased transportation demand management effectiveness for new office development. These direct benefits are expressed using the project-generated VMT metric, while the boundary VMT metric is used to express the indirect benefits of the Project on the nearby streets.

Daily Trip Generation

The project driveway trip generation and North Bayshore volumes described below use the trip generation methods described in detail in 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).

[1] 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.

Driveway Trip Generation

The existing building demolition credit and daily driveway trip generation is show in **Tables 2** and **3**, respectively. The project driveway vehicle trip generation is based on the following assumptions:

- **Existing Building Demolition Credit**: The existing building demolition credit is based on the occupied buildings described in **Table 2**. The existing daily trip generation rate is 6.75 total vehicle trips per employee for entertainment uses and for industrial uses, while the rate is 3.12 total vehicle trips per employee for all other uses.

Table 2: Existing Building Driveway Trip Generation

Land Use	Building Size[1]	Daily Trips[2]
Entertainment (Movie Theater)	100,000 square feet	1,800
Industrial Use	39,105 square feet	270
Restaurant Use	11,056 square feet	230
Office Use	3,657 square feet	50
	Total	***2,350***

Note:
1. Summary of occupied buildings. The vacant portions (e.g., approximately 43,140 square feet of retail land use, and 48,250 square feet of service land use.) of the project site are not summarized in this table.
2. Employees and daily trips rounded to the nearest 10.

Source: Fehr & Peers, 2021.

- **New Residential Development**: The new residential units are assumed to be a mix of market rate units, with an average size of 1.75 persons per household and the smaller-than-typical parking ratio per the North Bayshore Precise Plan Update of 0.60 parking spaces per dwelling unit. This results in an estimate of approximately 3,680 residents for the preferred land use alternative, and approximately 4,900 residents for the no-office land use alternative. The proposed residential uses would have a combined effective daily trip generation rate of approximately 3.67 daily vehicle trips per dwelling unit.
- **New Office Development**: The proposed office space is assumed to be 100 percent occupied at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of approximately 2,000 employees on-site upon full occupancy of the preferred land use alternative. The daily trip generation rate for new office uses in the North Bayshore Precise Plan area is 2.06 daily vehicle trips per employee.
- **New Retail and Entertainment Development**: The proposed retail space is assumed to be 100 percent occupied at a density of 2.67 employees per 1,000 square feet gross floor

area. This results in an estimate of approximately 801 employees on-site upon full occupancy of the project. The Daily trip generation rate for new retail/entertainment uses in the North Bayshore Precise Plan is 6.66 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 approximately 80 employees on-site upon full occupancy of the project. The Daily trip generation rates for new hotel uses in the North Bayshore Precise Plan are 8.17 daily vehicle trips per room.

Table 3: Driveway Trip Generation with Project

Scenario	Building Size	Service Population	Daily Trips
Preferred Land Use Alternative			
New Residential Development	2,100 dwelling units	3,680	7,710
New Office Development	500,000 square feet	2,000	4,120
New Retail/Entertainment Development	300,000 square feet	800	5,330
New Hotel Development	200 rooms	80	1,630
	Total (A)	**6,560**	**18,790**
	Existing Building Demolition Trip Credit (B)		*-2,350*
	Net Increase (A-B=C)		**16,440**
No-Office Land Use Alternative			
New Residential Development	2,800 dwelling units	4,900	10,280
New Retail/Entertainment Development	300,000 square feet	800	5,330
New Hotel Development	200 rooms	80	1,630
	Total (A)	5,780	17,240
	Existing Building Demolition Trip Credit (B)		*-2,350*
	Net Increase (A-B=C)		**14,890**

Note: Service population and daily trips rounded to the nearest 10.
Source: Fehr & Peers, 2021.

North Bayshore Gateway Volumes

The daily North Bayshore Gateway volume is shown in **Table 4**. The North Bayshore Gateway vehicle volume is based on the following assumptions. (Detailed trip generation results for each of the three scenarios (Existing Conditions, Existing with Preferred Land Use Alternative Conditions, and Existing with No-Office Land Use Alternative Conditions) are presented in the attached tables **A-1** to **A-3**.)

- **Existing Gateway Volumes**: This represents existing gateway volumes calculated from the counts conducted at the North Bayshore gateways during the Spring 2020 traffic monitoring, with an estimated 24,295 employees (assuming a ½ percent vacancy rate) and 762 residents. Expressed as a rate, this equates to a daily rate of 3.12 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 Gateway 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 in North Bayshore creates a mode shift by allowing people who currently drive in to NBS 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 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 of the factors listed above. As described earlier, for the full buildout of the NBPP, the total number of trips at the gateway equals the trip target.

Table 4: North Bayshore Gateway Volume with Project

Scenario	Daily Trips
Preferred Land Use Alternative	
Existing Gateway Volumes	78,370
New Project Traffic	18,790
Existing Building Demolition Credit	-2,350
Mixed-Use Trip Reduction	-2,010
Gateway Total Volume	92,800
Net New Gateway Traffic	14,430
No-Office Land Use Alternative	
Existing Gateway Volumes	78,370
New Project Traffic	17,240
Existing Building Demolition Credit	-2,350
Mixed-Use Vehicle Trip Reduction	-3,470
Gateway Total Volume	89,790
Net New Gateway Traffic	11,420

Note: Daily trips rounded to the nearest 10.
Source: Fehr & Peers, 2021.

Service Population

Service population is the sum of the number of employees plus residents. **Table 5** shows the service population for the project site, North Bayshore area, the City of Mountain View, and Santa Clara County for each project alternative.

Table 5: Service Populations

Land Use	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
Project Site			
Employees[1,2] (A)	N/A	2,880	880
Residents[1,2] (B)	N/A	3,680	4,900
Service Population[1,2,3] (A + B = C)	N/A	6,560	5,780
North Bayshore			
Employees[1] (A)	24,300	26,780	24,780
Residents[1] (B)	760	4,440	5,660
Service Population[1,3] (A + B = C)	25,060	31,220	30,440
City of Mountain View			
Employees[1] (A)	72,700	75,180	73,180
Residents[1] (B)	74,820	78,500	79,720
Service Population (A + B = C)	147,520	153,680	152,900
Santa Clara County			
Employees[1] (A)	951,020	953,500	951,500
Residents[1] (B)	1,782,400	1,786,080	1,787,300
Service Population[1,3] (A + B = C)	2,733,420	2,739,580	2,738,800

Notes:

1. Rounded employees, residents, and service population to nearest 10.
2. The existing site service population is omitted under Existing Conditions because the existing land uses are too small and specialized that the Mountain View travel model is not an appropriate tool for evaluating the project sites Existing Conditions VMT.
3. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2021.

Vehicle Miles Travel Estimation 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:

- **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)**: An evaluation of the change in total vehicle travel within a defined geographic area boundary, compared between the no project and with project conditions. The boundary for a project's analysis will be selected based on project characteristics such as size and location.

Project-generated 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. Project-generated 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.[2] The Project's effect on VMT compares the changes in boundary VMT per service population between the Existing Conditions and Existing with Project Conditions. The analysis presented in this memorandum focuses on the VMT for all trip purposes and vehicle types (i.e., there is no separation of VMT by land use).

Project-Generated VMT per Service Population Estimation Method

The project-generated VMT is the VMT from all vehicle trips for all trip purposes and types. It is calculated by summing the "VMT from" and "VMT to" a specified area, as follows:

[2] 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 a grocery store to that neighborhood will shorten many of the grocery shopping trips and reduce the total amount of VMT to/from the neighborhood. This concept is likely to occur with the addition of campus housing.

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

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

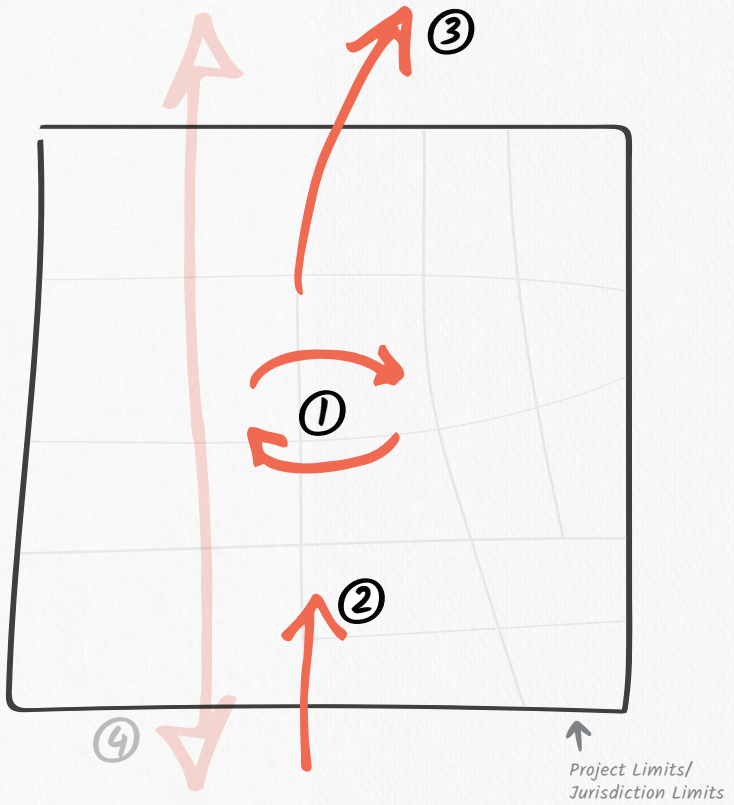
The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are in the study area causes some double counting, which is an expected result when summing the trip end based VMT. To ensure a VMT rate is expressed properly (i.e., that the numerator and denominator include the generators of both trip ends of the VMT), the project-generated VMT is divided by the service population (residential population, employment population, plus student population), the generators 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.

Project's Effect on VMT Estimation Method (Using Boundary VMT)

As noted earlier, 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 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, shifting 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, employees, and students) 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 1 presents a representation of both project-generated VMT and boundary VMT. Both metrics are needed for a comprehensive evaluation of a project's VMT effects.

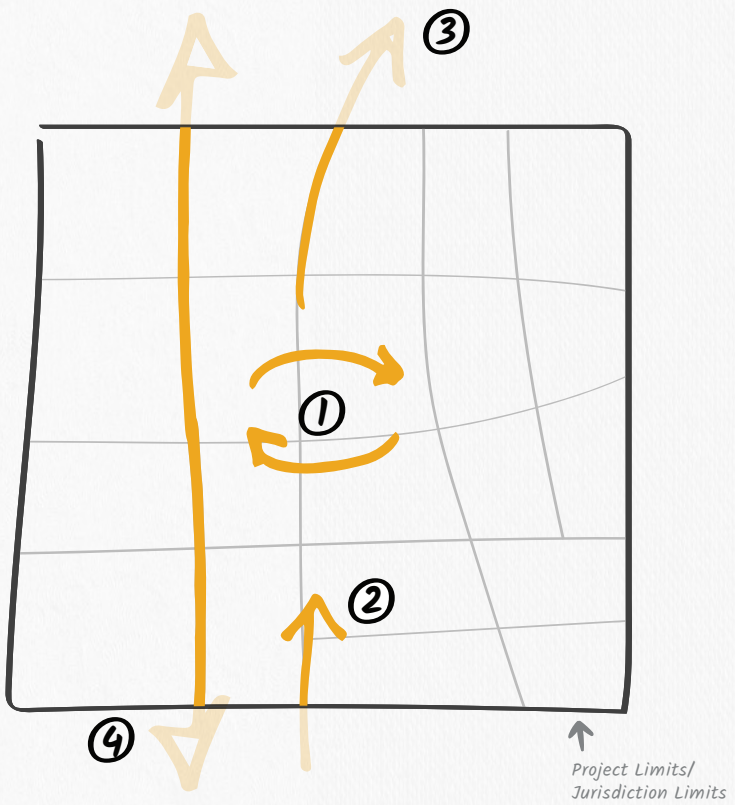
Project Generated VMT



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 project generated 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)

Vehicle Miles Traveled

The results of the project-generated VMT and project's effect on VMT are presented in **Table 6** and **Table 7**, respectively, for the three scenarios.

Project-Generated VMT

The project-generated VMT per service population trends show that for each geographic scale (e.g., North Bayshore, City of Mountain View, and Santa Clara County) the rate is decreasing. This reduction in the project-generated VMT rate demonstrates the combined benefit of adding housing to North Bayshore, smaller-than-typical parking ratio per the North Bayshore Precise Plan, and increased transportation demand management effectiveness for office development. In North Bayshore, the project-generated VMT rate would be reduced by 28.7% from Existing Conditions to the Existing Conditions with the Preferred Project Alternative Conditions. The Existing with No-Office Land Use Alternative Conditions shows an even greater reduction in the project-generated VMT rate of 32.7%. This reduction in project-generated VMT rates is less pronounced (smaller percent reduction from Existing Conditions) at the City of Mountain View, and Santa Clara County levels.

Table 6: Project-Generated VMT Assessment

Item	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
Project Site			
Vehicle Miles Traveled[1,2] (A)	N/A	136,280	108,920
Service Population[1,2] (B)	N/A	6,560	5,780
VMT per Service Population[1,2,3] (A/B = C)	N/A	20.8	18.8
North Bayshore			
Vehicle Miles Traveled[1] (A)	1,019,420	905,960	835,410
Service Population[1,3] (B)	25,060	31,220	30,440
VMT per Service Population (A/B = C) (Percent Change)[4]	40.7	29.0 (-28.7%)	27.4 (-32.7%)
City of Mountain View			
Vehicle Miles Traveled[1] (A)	5,073,560	4,951,520	4,876,380
Service Population[1,3] (B)	147,520	153,680	152,900
VMT per Service Population (A/B = C) (Percent Change)[4]	34.4	32.2 (-6.4%)	31.9 (-7.3%)
Santa Clara County			
Vehicle Miles Traveled[1] (A)	55,564,530	55,463,160	55,401,120
Service Population[1,3] (B)	2,733,420	2,739,580	2,738,800
VMT per Service Population (A/B = C) (Percent Change)[4]	20.3	20.2 (-0.5%)	20.2 (-0.5%)

Notes:

1. Rounded service population and VMT to nearest 10.
2. The existing site land uses are omitted under Existing Conditions because the existing land uses are too small and specialized that the Mountain View travel model is not an appropriate tool for evaluating the project site Existing Conditions VMT.
3. Service population is defined as the sum of all residents and employees.
4. Percent change = (Project Scenario – Existing Conditions)/Existing Conditions * 100%.

Source: Fehr & Peers, 2021.

Project's Effect on VMT

Citywide and Countywide project effect on VMT shows that the project would reduce VMT on the roadway system within the City of Mountain View and Santa Clara County. The boundary VMT per service population reduction from Existing Conditions for the Existing with Preferred Land Use Alternative Conditions is 5.0 % and for the Existing with No-Office Land Use Alternative Conditions the reduction is 4.3%. With the addition of this project, the total amount of VMT occurring within the City boundaries would decline slightly.

Table 7: Project's Effect (Boundary) VMT Assessment

Item	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
City of Mountain View			
Boundary Vehicle Miles Traveled[1] (A)	2,047,700	2,034,070	2,026,360
Service Population[1,2] (B)	147,520	153,680	152,900
Boundary VMT per Service Population (A/B = C) (Percent Change)[3]	13.9	13.2 (-5.0%)	13.3 (-4.3%)
Santa Clara County			
Boundary Vehicle Miles Traveled[1] (A)	37,552,290	37,500,380	37,434,070
Service Population[1,2] (B)	2,733,420	2,739,580	2,738,800
Boundary VMT per Service Population (A/B = C) (Percent Change)[3]	13.7	13.7 (-0.0%)	13.7 (-0.0%)

Notes:

1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.
3. Percent change = (Project Scenario – Existing Conditions)/Existing Conditions * 100%.

Source: Fehr & Peers, 2021.

Summary of the NBPP VMT Assessment

A North Bayshore Precise Plan (NBPP) VMT assessment described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017) memorandum used the project-generated VMT metric (referred to as total VMT in the previous memorandum) to describe the effects of adding housing in North Bayshore.[3] The results of the NBPP VMT assessment showed that the NBPP increased absolute VMT for all geographies analyzed, but decreased the VMT rate within the North Bayshore area. 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. Further they help us to understand the cumulative change in NBPP VMT once this project and the rest of the North Bayshore Precise Plan is constructed.

The Gateway Master Plan described in this memo is predominantly residential. Over time, there will be even more residential and more office uses added to the NBPP area is developed. This will likely cause an increase in the overall amount of VMT generated in the North Bayshore area; however, the rate of VMT generated per service population should still be reduced as compared to Existing Conditions, due to the added housing, smaller-than-typical parking ratios, and increased TDM effectiveness.

Attachments

Tables

[3] The NBPP VMT assessment assumed roughly equal distribution of the 9,850 residential units among Joaquin, Shorebird, and Pear neighborhood areas. The Gateway Master Plan shifts most of the residential from the Pear to the Joaquin neighborhood area. This move of the residential would not have a substantive effect on the NBPP VMT assessment because the vehicle travel from either neighborhood is equidistant.

Table A-1: Existing (Spring 2020)							
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 Employment Trips (24,295 Employees)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (0,000 Employees)	0	0	0	0	0	0	0
Total Person Trips	102,093	10,821	1,697	12,518	2,032	9,258	11,290
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 5.0%, AM: 8.1%, PM: 9.9%)							
Residential (Daily: 21.2%, AM: 49.1%, PM: 33.9%)	-578	-20	-76	-96	-49	-30	-79
Employment (Daily: 4.6%, AM: 7.4%, PM: 9.4%)	-4,527	-798	-114	-912	-177	-862	-1,039
External Person Trips							
External Residential Person Trips	2,148	21	78	99	96	57	153
External Employment Person Trips	94,840	9,982	1,429	11,411	1,710	8,309	10,019
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: 74.1%, AM: 59.9%, PM: 56.9%)	70,276	5,670	1,169	6,839	1,115	4,587	5,702
HOV (Daily: 11.4%, AM: 10.8%, PM: 16.2%)	10,812	1,138	95	1,233	400	1,221	1,621
Transit/Shuttle (Daily: 12.5%, AM: 25.4%, PM: 22.2%)	11,855	2,765	136	2,901	139	2,086	2,225
Active (Daily: 2.0%, AM: 3.8%, PM: 4.7%)	1,897	409	29	438	56	415	471
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**70,276**	**5,670**	**1,169**	**6,839**	**1,115**	**4,587**	**5,702**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.15)	**5,406**	**517**	**48**	**565**	**200**	**555**	**755**
External Employment Vehicle Trips [B]	***75,682***	***6,187***	***1,217***	***7,404***	***1,315***	***5,142***	***6,457***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 18.3, PM: 14.5)							
External Transit Vehicles [C]	***793***	***104***	***55***	***159***	***60***	***94***	***154***
Gateway Total Vehicles [A+B+C]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-670**	**217**	**-453**	**-324**	**-874**	**-1,198**
Percent Over Capacity (%)	N/A	-10%	19%	-6%	-18%	-14%	-15%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**10**	**-653**	**-643**	**-854**	**-434**	**-1,288**
Percent Over Capacity (%)	N/A	0%	-33%	-8%	-37%	-8%	-16%
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 A-2: Preferred Land Use Alternative							
Table A-2: Preferred Land Use Alternative							
	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 (2,100 DUs)	13,797	210	861	1,071	819	462	1,281
Existing Employment Trips (24,295 Employees plus 100 KSF retail/entertainment)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (1,946 Employees plus 200 KSF retail/entertainment)	13,255	978	187	1,165	344	1,000	1,344
Total Person Trips	129,145	12,009	2,745	14,754	3,195	10,720	13,915
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 8.6%, AM: 12.6%, PM: 14.2%)							
Residential (Daily: 23.3%, AM: 43.2%, PM: 36.4%)	-3,850	-108	-439	-547	-351	-200	-551
Employment (Daily: 6.5%, AM: 9.8%, PM: 11.5%)	-7,320	-1,146	-169	-1,315	-257	-1,169	-1,426
External Person Trips							
External Residential Person Trips	12,673	143	576	719	613	349	962
External Employment Person Trips	105,302	10,612	1,561	12,173	1,974	9,002	10,976
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 70.8%, AM: 61.1%, PM: 65.3%)	8,974	110	329	439	360	268	628
HOV (Daily: 13.5%, AM: 14.5%, PM: 15.5%)	1,709	26	78	104	85	64	149
Transit/Shuttle (Daily: 6.1%, AM: 10.8%, PM: 9.7%)	773	3	75	78	85	8	93
Active (Daily: 9.6%, AM: 13.6%, PM: 9.6%)	1,217	4	94	98	83	9	92
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**8,974**	**110**	**329**	**439**	**360**	**268**	**628**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.07)	**855**	**12**	**39**	**51**	**43**	**29**	**72**
External Residential Vehicle Trips [A]	***9,829***	***122***	***368***	***490***	***403***	***297***	***700***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 71.8%, AM: 58.1%, PM: 55.6%)	75,594	5,864	1,213	7,077	1,244	4,857	6,101
HOV (Daily: 12.0%, AM: 11.1%, PM: 16.8%)	12,679	1,240	117	1,357	487	1,357	1,844
Transit/Shuttle (Daily: 14.1%, AM: 26.6%, PM: 23.1%)	14,836	3,062	178	3,240	176	2,363	2,539
Active (Daily: 2.1%, AM: 4.1%, PM: 4.5%)	2,193	446	53	499	67	425	492
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**75,594**	**5,864**	**1,213**	**7,077**	**1,244**	**4,857**	**6,101**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.14)	**6,340**	**564**	**59**	**623**	**244**	**617**	**861**
External Employment Vehicle Trips [B]	***81,934***	***6,428***	***1,272***	***7,700***	***1,488***	***5,474***	***6,962***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.5, PM: 12.2)							
External Transit Vehicles [C]	***1,041***	***115***	***99***	***214***	***108***	***107***	***215***
Gateway Total Vehicles [A+B+C]	***92,804***	***6,665***	***1,739***	***8,404***	***1,999***	***5,878***	***7,877***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-315**	**619**	**304**	**219**	**-282**	**-63**
Percent Over Capacity (%)	N/A	-5%	55%	4%	12%	-5%	-1%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**365**	**-251**	**114**	**-311**	**158**	**-153**
Percent Over Capacity (%)	N/A	6%	-13%	1%	-13%	3%	-2%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**7,932**	**103**	**303**	**406**	**322**	**247**	**569**
External Employment Vehicle Trips Growth	**6,252**	**241**	**55**	**296**	**173**	**332**	**505**
External Transit Vehicle Growth	**248**	**11**	**44**	**55**	**48**	**13**	**61**
All Vehicle Growth	***14,432***	***355***	***402***	***757***	***543***	***592***	***1,135***

Bold values indicate units of **VEHICLE** trips

Table A-3: No-Office Land Use Alternative							
Table A-3: No-Office Land Use Alternative							
	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 (2,800 DUs)	18,396	280	1,148	1,428	1,092	616	1,708
Existing Employment Trips (24,295 Employees plus 100 KSF retail/entertainment)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (-0,054 Employees plus 200 KSF retail/entertainment)	5,127	92	61	153	189	245	434
Total Person Trips	125,616	11,193	2,906	14,099	3,313	10,119	13,432
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 10.2%, AM: 14.3%, PM: 15.9%)							
Residential (Daily: 23.9%, AM: 42.4%, PM: 35.9%)	-5,048	-136	-552	-688	-444	-252	-696
Employment (Daily: 7.4%, AM: 10.7%, PM: 12.5%)	-7,733	-1,158	-171	-1,329	-260	-1,177	-1,437
External Person Trips							
External Residential Person Trips	16,074	185	750	935	793	451	1,244
External Employment Person Trips	96,761	9,714	1,433	11,147	1,816	8,239	10,055
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 70.8%, AM: 61.1%, PM: 65.4%)	11,382	142	429	571	466	347	813
HOV (Daily: 13.5%, AM: 14.3%, PM: 15.4%)	2,168	34	100	134	110	81	191
Transit/Shuttle (Daily: 6.1%, AM: 10.9%, PM: 9.7%)	981	4	98	102	110	11	121
Active (Daily: 9.6%, AM: 13.7%, PM: 9.6%)	1,543	5	123	128	107	12	119
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**11,382**	**142**	**429**	**571**	**466**	**347**	**813**
HOV Occupancy (Daily: 2.00, AM: 2.06, PM: 2.08)	**1,084**	**15**	**50**	**65**	**55**	**37**	**92**
External Residential Vehicle Trips [A]	***12,466***	***157***	***479***	***636***	***521***	***384***	***905***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 73.1%, AM: 59.7%, PM: 56.5%)	70,767	5,502	1,151	6,653	1,161	4,521	5,682
HOV (Daily: 11.7%, AM: 10.9%, PM: 16.5%)	11,290	1,111	100	1,211	438	1,219	1,657
Transit/Shuttle (Daily: 13.2%, AM: 25.5%, PM: 22.4%)	12,736	2,702	146	2,848	156	2,093	2,249
Active (Daily: 2.0%, AM: 3.9%, PM: 4.6%)	1,968	399	36	435	61	406	467
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**70,767**	**5,502**	**1,151**	**6,653**	**1,161**	**4,521**	**5,682**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.14)	**5,645**	**505**	**50**	**555**	**219**	**554**	**773**
External Employment Vehicle Trips [B]	***76,412***	***6,007***	***1,201***	***7,208***	***1,380***	***5,075***	***6,455***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.0, PM: 11.6)							
External Transit Vehicles [C]	***914***	***102***	***95***	***197***	***110***	***95***	***205***
Gateway Total Vehicles [A+B+C]	***89,792***	***6,266***	***1,775***	***8,041***	***2,011***	***5,554***	***7,565***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-714**	**655**	**-59**	**231**	**-606**	**-375**
Percent Over Capacity (%)	N/A	-10%	58%	-1%	13%	-10%	-5%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**-34**	**-215**	**-249**	**-299**	**-166**	**-465**
Percent Over Capacity (%)	N/A	-1%	-11%	-3%	-13%	-3%	-6%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**10,569**	**138**	**414**	**552**	**440**	**334**	**774**
External Employment Vehicle Trips Growth	**730**	**-180**	**-16**	**-196**	**65**	**-67**	**-2**
External Transit Vehicle Growth	**121**	**-2**	**40**	**38**	**50**	**1**	**51**
All Vehicle Growth	***11,420***	***-44***	***438***	***394***	***555***	***268***	***823***

Bold values indicate units of **VEHICLE** trips

North Bayshore Gateway Master Plan
Utility Impact Study

Prepared for
Raimi & Associates

and

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Table of Contents

List of Figures

List of Tables

Executive Summary

Schaaf & Wheeler has been retained by Raimi & Associates to determine impacts from the North Bayshore Gateway Master Plan, MV Gateway Development (Project) on the City of Mountain View's (City) water, sanitary sewer, recycled water, and storm drain systems. The Project is located within the North Bayshore Precise Plan Area and is bordered by Long Lonesome Road to the west, Plymouth Street to the north, North Shoreline Boulevard to the east, and US Highway 101 to the south. The Project includes multiple buildings with different types of land use which include residential, office, retail, entertainment, restaurants, retail, and hotel.

Project impacts to the water system are analyzed for both Existing (2010) and Future Cumulative (2030) Conditions. Hydraulic models simulating pre- and post-Project development scenarios are performed to examine hydraulic deficiencies. The Existing Condition is based on the updated models prepared during the North Bayshore Precise Plan II (NBPP II), (Schaaf & Wheeler, 2016), which is based on the *2010 Water Master Plan* (WMP; IEC, August 2010); the Future Cumulative Condition model is created from the *General Plan Update Utility Impact Study* (GPUUIS; IEC, October 2011), which was also updated as part of NBPP II. The Future Cumulative Condition model includes CIPs from the GP-UWSM and CIPs from the NBPP II, as well as recent City approved projects not accounted for or in exceedance of the 2030 GPUUIS projections.

Project impacts to the sewer system are also analyzed for Existing (2010) and Future Cumulative (2030) Conditions. Hydraulic models simulating pre- and post-Project development scenarios are performed to examine hydraulic deficiencies. The Existing Condition is based on the updated models prepared during the North Bayshore Precise Plan II Utility Impact Study (NBPP II), (Schaaf & Wheeler, 2016), which are based on the *2010 Sewer Master Plan* (SMP). The Future Cumulative Condition sewer model is created from the General Plan Update Utility Impact Study (GPUUIS) model, which was also updated as part of the NBPP II. The Future Cumulative Condition model includes all sewer system CIPs recommended in the GPUUIS and the NBPP II, as well as recent City-approved projects not accounted for or in exceedance of the 2030 GPUUIS projections.

The Project impacts to the recycled water system have been assessed using the hydraulic model developed as part of the Recycled Water Feasibility Study (Carollo, October 2012). Irrigation demands based on project landscaping were calculated to evaluate potential impacts from the Project development.

Impacts to the storm drain system resulting from Project development are assessed using the *2019 Storm Drain Master Plan* (SDMP; Schaaf & Wheeler, September 2019) hydrologic and hydraulic model. Impacts based on potential changes to the runoff characteristics of the site are summarized.

Water System Project Impacts

The Project development does not significantly impact the water system during Existing Condition or Future Cumulative Condition. The Future Cumulative Condition assumes all the recommended CIPs in the NBPP II have been constructed. The Project will add new in-tract water main piping that increases the looping and provides additional conveyance between N. Shoreline Blvd. and Plymouth Street. The anticipated Project-specific fire flow requirement of 3,500 gpm for the Project site is met during Existing Condition and Future Cumulative Condition. The Project fire flow requirement is based on the planning level fire flow from the NBPP II. The actual fire flow requirement may change as the planning process continues and Project-specific requirements are determined

by the City Fire Marshal. If Project conditions require higher fire flow than what is analyzed, revised modeling should be conducted.

Sewer System Project Impacts

The sewer system has sufficient capacity in the Existing Condition pre-project, but does not have sufficient capacity with the estimated increase in incremental Project flow. In the Future Cumulative Condition, there is sufficient capacity for the system pre-Project with CIP projects identified in the NBPP II. Several pipes do not meet the d/D performance criteria post-Project along Joaquin Road and Charleston Road. CIP 104 is recommended in the NBPP II and must be additionally upsized from 12-inch diameter pipes(recommended in NBPP II), to 15-inch diameter pipes to meet d/D performance criteria post-Project.

There is an existing sewer main that bisects the Project site that serves parcels south of US-101. As part of the Project, a realignment of the existing sewer main to Long Lonesome Road is analyzed. Long Lonesome Road Project realignment is also included as part of the post-Project analyses (existing condition and future cumulative condition), with a 12-inch diameter pipe along Plymouth Street through Joaquin Road as shown on Figure B-11. The existing sewer can be rerouted within new in-tract streets if preferred, as long as the sewer terminates at Joaquin and Plymouth, the sewer analysis will remain valid.

Recycled Water Project Impacts

Based on the provided recycled water system model, there is sufficient capacity to supply the additional irrigation demands for the Project development. However, the City has indicated that the existing system operations may not match the modelled system. Previous modeling efforts by S&W indicate that changes to the system operations can provide enough storage to supply existing recycled water users without constructing costly CIPs identified in the Recycled Water Feasibility Study. However, operational changes can only provide enough supply for a small number of users, and additional storage and pumps identified in the Feasibility Study will need to be constructed to maintain pressures as more users are added.

It is recommended that the City investigate the ongoing operations of the recycled water system to determine if operational changes are feasible. It may be prudent for the City to begin planning the construction of Recycled Water CIPs to meet existing and new user demands.

As recycled water demands keep increasing, it may become necessary for the City to curtail the golf course pond (Shoreline Pond) supply to maintain pressures during peak hour demands. Without modifying the golf course demands, the City's existing issues will continue to worsen as more customers are added or until the capital improvements with storage and booster pump station are constructed.

Storm System Project Impacts

Based on the 2019 SDMP, there is no existing flooding near the Project Site during the 10-year design storm. The existing site imperviousness is assumed to be 84% impervious based on the land use used in the SDMP analysis. If the site impervious percentage is maintained or decreased, the impacts on the storm drain system are expected to be negligible.

There are no CIP projects adjacent to the Project site or necessary to increase the storm drain capacity. There are two CIPs identified in the vicinity: one CIP on Plymouth Street to add a flap gate at the Permanente Creek outfall, as well as another CIP to remove the Charleston Pump Station.

Chapter 1. Introduction

1.1. Project Description

The MV Gateway (Project) encompasses approximately thirty acres within five parcels located in North Bayshore. The Project is located between Long Lonesome Road, Plymouth Street, North Shoreline Boulevard, and US Highway 101. The Project location is identified in Figure B-1. The Project proposes removing nine existing office buildings and constructing 14 new buildings with mixed land uses, including: residential, office, hotel, and entertainment (retail/restaurant/theatre). The Project impacts are based on the new buildings having 2,800 multi-family residential units, 500,000 SF of office space, 300,000 SF of entertainment (split between 37,500 SF of restaurant and 262,500 SF of retail), and 200 Hotel rooms.

1.2. Water System Analysis Approach

Project impacts are analyzed using the City's water model for two conditions: Existing (2010) and Future Cumulative (2030). As a baseline for system performance, each condition is evaluated pre-Project for existing hydraulic deficiencies. The estimated incremental water demand resulting from Project development is added to the model and post-Project deficiencies are examined. In total, four model simulations of the water system are performed, as shown in Figure 1.

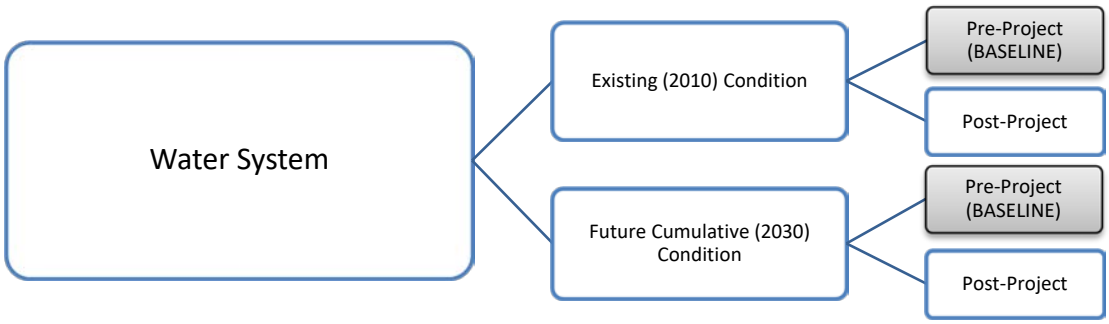

Figure 1. Water Model Simulations

The Existing Condition model consists of the existing distribution system and operating parameters along with water demands based on the 2010 Water Master Plan (WMP), further refined as part of the NBPP II. The Future Cumulative Condition water demand is based on WMP model with updates completed as part of the *2030 General Plan Update (GPU) – Updated Water System Modeling* (GP-UWSM; Schaaf & Wheeler, June 2014) and the NBPP II. The model has since been revised to include recent City approved projects not accounted for or in exceedance of the 2030 GPU projections. Table A-1 in Appendix A provides a list of the considered development projects for the Existing and Future Cumulative Conditions. The Future Cumulative Condition model assumes all of the recommended CIPs from the GPU and NBPP II studies have been constructed.

1.3. Sewer System Analysis Approach

Project impacts to the sewer system are analyzed using the City's sewer model for two conditions: Existing (2010) and Future Cumulative (2030). As a baseline for system performance, each condition is evaluated pre-Project for existing hydraulic deficiencies. The estimated incremental sewer flow resulting from Project development is added to the model and post-Project deficiencies are examined. In total, four model simulations of the sewer system are performed, as shown in Figure 2.

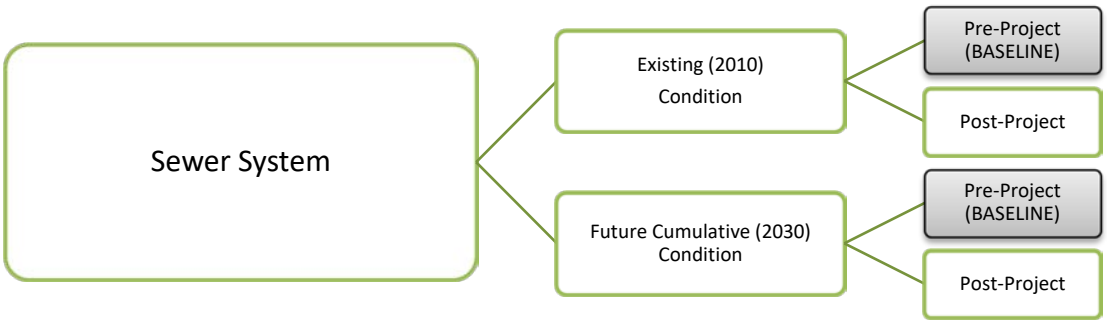

Figure 2. Sewer Model Simulations

The Existing Condition model consists of the existing distribution system and operating parameters along with water demands based on the 2010 Sewer Master Plan, further refined as part of the NBPP II. The Future Cumulative Condition water demand is based on the GPUUIS, with updates completed as part of NBPP II. The model has since been revised to include recent City approved projects not accounted for or in exceedance of the 2030 GPUUIS projections. Table A-1 in Appendix A provides a list of the considered development projects for the Existing and Future Cumulative Conditions. The Future Cumulative Condition model also assumes all of the recommended CIPs from the GPUUIS and NBPP II studies have been constructed.

1.4. Recycled Water System Analysis Approach

Project impacts were evaluated using the City's existing recycled water system model, developed as part of the *Recycled Water Feasibility Study* (RWFS), (Carollo, March 2014). Potential inconsistencies with the modelled system and the existing system operations are discussed. Recommendations are made to alleviate existing system deficiencies. It should also be noted that the City is currently working on updates to the RWFS, the updated model is anticipated to include updated storage configurations and operations.

1.5. Storm Drain System Analysis Approach

The storm drain system is evaluated for anticipated drainage pattern changes at the Project site after development. Pre-Project conditions are assumed to match the site conditions modeled as part of the *2019 Storm Drain Master Plan* (2019 SDMP; Schaaf & Wheeler, April 2019). Percent impervious area on the Project

site after development is estimated and compared to the percent impervious area assumed in the 2019 SDMP. Project development potential impacts are summarized.

1.6. Report Organization

This report is organized into six following sections. Chapter 2 discusses the water demand estimates for the Project and Chapter 3 covers the impacts and capital improvement recommendations for the water system. Chapter 4 discusses the sewer flow estimates and Chapter 5 covers the capital improvements recommendations for the sewer system. Chapter 6 covers the Project impacts to the recycled water system, and Chapter 7 covers the storm drainage impacts.

Chapter 2. Water Demand Projections

This chapter discusses the estimated water demand and required fire flow for the Project development. Water demand from the existing buildings and proposed Project are estimated with water unit duty factors taken from previous technical studies to remain consistent with the City-wide demand projections used in the hydraulic models. The incremental difference in estimated demand between the proposed Project and the existing demand at the site is evaluated to determine Project impact on the system.

Water demand in this section represents Average Daily Demand (ADD). The ADD is an estimated daily average of water use patterns that varies by season and customer type.

2.1. Project Water Demand

Project water demand is estimated from the North Bayshore Gateway Master Plan Administrative Draft, (Raimi & Associates, December 11 2020). The duty factors applied were developed for the City as part of the North Bayshore Precise Plan Phase II from water meter records of recent developments throughout the City. Table 2-1 provides the demand estimation for the Project.

Table 2-1: Project Estimated Water Demand

Address	Land Use Type	Total Area (SF) / Units	Water Duty Factor (gpd / 1000 SF or gpd / Unit)	Water Demand (gpd)
MV Gateway	Residential	2,800	100	280,000
	Hotel	200	100	20,000
	High Intensity Office	500,000	130	65,000
	Restaurant	37,500	1,200	45,000
	Retail	262,500	130	34,125
Total				444,125

2.1.1. Project Required Fire Flow

The anticipated project-specific fire flow is typically based on building square footage and construction type. For this Project the construction type has not been provided. The planning level fire flow for the Project is assumed based on the NBPPII (Schaaf & Wheeler, 2016) requirements. The fire flow requirement for High Intensity Office is 3,500 and is assumed as the Project required fire flow.

Existing Condition (2010)

2.1.2. Pre-Project (Baseline) Land Use and Demand

The pre-Project (baseline) condition includes parcel-level demand adopted from the City's InfoWater model, developed as part of the 2010 WMP. The demand in the model is calibrated against water billings records from

2005 and 2006, as further explained in the 2010 WMP. Table 2-2 details the model demand at the parcels, which were zoned as P(3) North Shoreline Blvd.

Table 2-2: Baseline Demand for Existing Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	1,872
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	369
1555 Plymouth St	116-13-027	Limited Industrial	2.9	1,056
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	645
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	970
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	18,014
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	9,662
Total	-	-	**29.1**	**32,588**

2.1.3. Post-Project Incremental Demand

Total Project demand is added to the hydraulic model as an incremental difference from the pre-Project estimated demand, as shown in Table 2-3. The Project is anticipated to incrementally increase water demand by *411,537* gpd above pre-Project demand.

Table 2-3: Incremental Project Demand for Existing Condition

	Water Demand (gpd)
Pre-Project Demand	32,588
Project Demand	444,125
Incremental Project Demand	***+ 411,537***

2.2. Future Cumulative Condition (2030)

2.2.1. Pre-Project (Baseline) Land Use and Demand

Future Cumulative (baseline) demand for the Project is adopted from the City's InfoWater model developed as part of the 2030 GPUUIS and updated as part of the NBPP II. In the updated model from NBPP II, water demands are based on the 2030 General Plan Update (GPU) land use with additional projects; these demands have since been updated to include projects from the NBPP II and additional projects not accounted for in the original GPUUIS. Table 2-4 presents the parcel level pre-project demand from the model.

Table 2-4: Baseline Demand for Future Cumulative Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	8,359
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	6,688
1555 Plymouth St	116-13-027	Limited Industrial	2.9	24,242
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	5,852
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	7,523
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	131,242
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	58,515
Total	-	-	**29.1**	**242,421**

2.2.2. Post-Project Incremental Demand

Project demand is added to the model as an incremental difference from the pre-Project demand. The incremental Project demand in the Future Cumulative Condition is given in Table 2-5. The project exceeds the assumed future demand by an additional 201,704 gpd.

Table 2-5: Incremental Project Demand for Future Cumulative Condition

	Water Demand (gpd)
Pre-Project Demand	242,421
Project Demand	444,125
Incremental Project Demand	***+ 201,704***

The overall water demand within NBPP II is not increased above the precise plan cap. Therefore, other areas within the NBPP II with similar land use as the Project are adjusted to be consistent with approved NBPP II area allocations.

Chapter 3. Water System Impact

Project impacts to water supply, water storage, hydraulic conveyance, and fire flow requirements are evaluated in this chapter to ensure the Project demand can be adequately met. Hydraulic conveyance and available fire flow are assessed for both Existing (2010) and Future Cumulative (2030) Condition. Water supply and water storage are evaluated for the Future Cumulative Condition.

3.1. Demand Scenarios and Performance Criteria

Hydraulic deficiencies within the water system are evaluated under two demand scenarios: Peak Hour Demand (PHD) and Maximum Day Demand with Fire Flow (MDD + FF). The MDD and PHD peaking factors from the 2010 Water Mater Plan (WMP) are used for this analysis. As detailed in the 2010 WMP, MDD and PHD peaking factors are developed using SCADA data from peak usage months in 2006 and 2007. The peak hour occurred on the day with the largest daily demand, which was observed to be August 8, 2007. The calculated peaking factors, presented in Table 3-1, are applied to Average Day Demand (ADD).

Table 3-1: Peaking Factors

Category	Peaking Factor
Maximum Day	1.71
Peak Hour	2.79

Established design criteria used to evaluate the Project impact for all scenarios are summarized in Table 3-2.

Table 3-2: Water System Performance Criteria

Criteria	PHD	MDD + FF
Minimum Allowable Pressure (psi)	40	20

3.2. Water Supply Analysis

The increased water demand from Project development in the Future Cumulative Condition is compared with the City's supply turnouts and groundwater well capacities to ensure demand can be met. The Mountain View water system is divided into three pressure zones to maintain reasonable pressures throughout the City's rising topography moving south, further from the Bay. The Project site is in Pressure Zone 1, which is at this time, supplied by only one San Francisco Public Utilities Commission (SFPUC) turnout (Turnout #5).

Water demand versus supply capacity by Pressure Zone is given in Table 3-3. Total capacity for Pressure Zone 1 includes peak hour turnout capacity from SFPUC Turnout #5 and additional supply supplemented from Wells #22 and #23. Demand in Pressure Zone 1 cannot be sufficiently supplied by the current supply operation; however, as discussed in the *2030 General Plan Update Utility Impact Study* (IEC, 2011), surplus supply in Pressure Zone 2 could be routed to Pressure Zone 1 to make up the supply deficiency in the Pressure Zone 1. A pressure reducing valve (PRV) moving water from Pressure Zone 2 to Pressure Zone 1 at North Whisman Road, between Walker Drive and Whisman Court, is included in the *North Bayshore Precise Plan II Utility Impact Study*

(NBPPII UIS; Schaaf & Wheeler, October 2016). The ability of the system to meet Project demand and the fire flow requirement at Future Cumulative Condition assumes this CIP has been constructed. If the CIP is not constructed, the City will have a considerable deficit of supply vs projected peak demand for Zone 1. The City will not be able to adequately supply Zone 1 demands in the Future Cumulative Condition. The additional Project demand does not impact the City's ability to meet total system demand.

Table 3-3: Future Cumulative Condition Demand Versus Supply

Pressure Zone	2030 Future Cumulative Demand			Total Capacity (mgd)*
	Pre-Project		Post-Project	
	ADD (mgd)	PHD (mgd)	PHD (mgd)	
1	7.98	22.26	22.26	16.56
2	8.41	23.46	23.46	30.53
3	1.62	4.52	4.52	5.10
Total	**18.01**	**50.25**	**50.25**	**52.19**

** Total Capacity from Table 3-8 in the General Plan Update Utility Impact Study (IEC, 2011)*

3.3. Water Storage Analysis

Project impact to water storage volume requirements is evaluated according to the State Water Resources Control Board Division of Drinking Water (DDW). DDW requires storage equal to 8 hours of Maximum Day Demand (MDD) plus fire flow storage in each pressure zone. The required storage versus active storage in the City is detailed in Table 3-4 pre- and post-Project. The maximum active storage in the City is 17 MG. However, the City currently operates with only the operational active storage of 14.3 MG.

The fire flow volume in Table 3-4 revises the requirement in the 2010 WMP and is estimated from the largest fire flow requirement in each pressure zone. Based on CFC requirements, the fire flow volume is calculated as 5,000 gpm for 4 hours. Pressure Zone 3 has the potential for a reduction in required fire flow volume since the controlling fire flow requirement is the hospital along Grant Road, which has a planning-level fire flow requirement of 3,500 for 4 hours.

Since the City has the storage volume available to meet DDW requirements in the Future Cumulative Condition pre- and post-Project, no additional storage improvements are recommended. In the future when City demand and storage requirements exceed the current operating storage, the City may need to alter reservoir operation schemes.

Table 3-4: DDW Storage Requirements

Pressure Zone	Maximum Active Storage* (MG)	Operational Active Storage (MG)	Fire Flow (MG)	Future Cumulative Condition Demand					
				Pre-Project			Post-Project		
				ADD (mgd)	8 Hours of MDD (MG)	DDW Requirement (MG)	ADD (mgd)	8 Hours of MDD (MG)	DDW Requirement (MG)
1	6.00	5.1	1.2	7.98	4.55	5.25	7.98	4.55	5.25
2	8.00	6.5	1.2	8.41	4.79	6.30	8.41	4.79	6.30
3	3.00	2.7	1.2	1.62	0.92	2.12	1.62	0.92	2.12
Total	**17.00**	**14.3**	**3.6**	**18.01**	**10.27**	**13.67**	**18.01**	**10.27**	**13.67**

** Maximum Active Storage from Table 4-2 in the General Plan Update Utility Impact Study (IEC, 2011)*

3.4. Existing Condition (2010) Results

3.4.1. Hydraulic Model Information

Existing water system performance is analyzed with the demands and land use type in the City's InfoWater model developed for the City's 2010 WMP. According to the North Bayshore Gateway Master Plan Draft (Raimi & Associates, December 11, 2020), the Project will install new 8-inch water mains within the project site to provide additional conveyance and looping of the City's public water system. These additional pipes were utilized in the post-Project hydraulic models.

The Existing Condition pre-Project fire flow requirement is taken from the 2010 WMP model. The existing (non-reduced) fire flow requirement for the pre-Project land use classification of the MV Gateway site, North Shoreline Blvd (P3) is 5,000 gpm. After Project development, the Project specific required fire flow at the site is anticipated to be 3,500 gpm based on the NBPP II planning level fire flow.

The fire flow requirements for Existing Condition are based on general landuse type and planning fire flow requirements used during the 2010 WMP. The existing deficient nodes are deficient based on the updated fire flow requirements and not the actual fire flows required for individual buildings at the time they were approved.

3.4.2. Peak Hour Demand (PHD) – Pre and Post Project

System pressures are evaluated under Peak Hour Demand (PHD) pre-Project (Figure B-2) and post-Project (Figure B-3). At Existing Condition the system meets performance criteria system-wide. The additional in-tract piping helps alleviate existing deficiencies on-site and near the site. The Project development does not negatively impact the system hydraulic performance under PHD.

3.4.3. Maximum Day Demand with Fire Flow (MDD+FF) – Pre and Post Project

The pre-Project required fire flow of 5,000 gpm is not met at multiple existing hydrant locations. After Project development, the anticipated project-specific fire flow requirement of 3,500 can be met.

The existing deficiencies in Pressure Zone 1 shown on Figures B-4 and B-5 are independent of the Project. These deficiencies may be due to higher planning level fire flow requirements and are considered to be conservative.

Table 3-5: Existing Condition Evaluated Project Fire Flow Nodes

Model Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2924	Project Location – Within Project Site	Pre-Project: 5,000 Post-Project: 3,500	3,685	5,818
J-2952	Project Location – Plymouth Street	Pre-Project: 5,000 Post-Project: 3,500	4,258	5,469
J-2946	Project Location – Plymouth	Pre-Project: 5,000 Post-Project: 3,500	4,536	4,612

3.4.4. Deficiencies – Pre and Post Project

With Existing Condition demand, the water system meets system design criteria at PHD and is able to adequately supply the increased Project demand. Existing fire flow deficient nodes are evaluated within the Project Pressure Zone (Zone 1) for Project impact. Available fire flow pre- and post-Project at selected deficient nodes is presented in Table 3-6. The Project reduces and in some cases eliminates existing fire flow deficiencies as a result of the in-tract looping, providing additional conveyance capacity.

Table 3-6: Selected Existing Condition Fire Flow Deficient Nodes Pre- and Post-Project

Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2974	Huff Avenue	5,000	3,655	3,747
J-1564	Charleston Road	5,000	4,450	4,490
J-2977	Joaquin Road	5,000	3,649	3705

3.5. Future Cumulative Condition (2030) Results

3.5.1. Hydraulic Model Information

The Future Cumulative Condition model is created using the NBPP II model. System performance is analyzed under the assumption that all recommended CIPs in the NBPP II have been constructed.

Domestic and fire services for the Project will connect to the existing 12-inch diameter water main in North Shoreline Boulevard, new 8-inch in-tract water lines, and existing 8-inch water lines in Plymouth Street.

The Future Cumulative Condition fire demands are based on the NBSPPPII UIS. The pre-Project fire flow requirement for the two project sites is 3,500 gpm. After Project development, the Project specific assumed required fire flow at the site is 3,500 gpm.

3.5.2. Peak Hour Demand (PHD) – Pre and Post Project

The system has adequate pressures pre-Project (Figure B-6) and is able to satisfy post-Project demands while meeting the design criteria at PHD (Figure B-7).

3.5.3. Maximum Day Demand with Fire Flow (MDD+FF) – Pre and Post Project

In the Future Cumulative Condition, the system has a deficient node within the project site. The addition of in-tract pipes provides additional looping and increases the available fire flow within the project site and at adjacent fire nodes. Within Pressure Zone 1, there are several deficient nodes; the nodes identified as deficient are deficient prior to the project, with no new nodes identified as deficient post-project. Pre-and post-Project conditions assume all NBPP II CIPs have been constructed, results are shown on Figures B-8 and B-9.

Table 3-7: Future Cumulative Condition Evaluated Project Fire Flow (FF) Nodes

Model Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2924	Project Location – Within Project Site	Pre-Project: 3,500 Post-Project: 3,500	3,396	5,574

3.5.4. Deficiencies – Pre and Post Project

The fire flow deficient nodes within Pressure Zone 1 are evaluated for Project impact. Table 3-8 compares the available fire flow before and after Project development and shows the fire flow deficiencies in Pressure Zone 1. Available Fire Flow increases due to in-tract piping providing additional conveyance capacity to the local water system. The nodes identified in Table 3-8 were identified as deficient pre-Project and two continue to be deficient post-project.

Table 3-8: Future Cumulative Condition Fire Flow Deficient Nodes Pre- and Post-Project

Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2974	Huff Ave	Pre-Project: 3,500 Post-Project: 3,500	3,430	3,495
J-2977	Joaquin Rd	Pre-Project: 3,500 Post-Project: 3,500	3,486	3,530
J-4216	Space Park Way	Pre-Project: 3,500 Post-Project: 3,500	3,305	3,315

Chapter 4. Sewer Flow Projections

This chapter discusses the sewer flow estimate for Project development and provides a comparison to pre-Project baseline condition. The incremental Project flow is determined for both Existing (2010) and Future Cumulative (2030) Condition, as discussed in the following sections. The sewer generation factor for estimating Project sewer flow is taken from previous technical studies (2010 WMP, 2030 GPUUIS, and NBPPII) to remain consistent with the City-wide flow projections used in the hydraulic models.

Three types of sewer flow loading are used to model the sewer system: base wastewater flow, groundwater infiltration (GWI), and rainfall-dependent infiltration/inflow (RDI/I). GWI includes base infiltration (BI) and pumped groundwater discharged to the sewer system. RDI/I is stormwater that enters the sewer system. GWI and RDI/I values are modeled as constant flows.

Base wastewater flow (BWF) is from residential, commercial, institutional, office, and industrial sources. As described in the 2010 Sewer Master Plan (SMP), BWF is developed on an individual parcel level using the 2005 and 2006 water billing records and applying a return-to-sewer (RTS) ratio calculated for land use type. Change in BWF throughout the day due to daily use patterns is known as diurnal variation and is accounted for by applying residential and non-residential diurnal curves. BWF and diurnal curves used in this analysis are taken from the 2010 SMP to remain consistent with previous City-wide modeling. The sewer flows discussed in this section are the BWF values representing average flows and are not peaked.

4.1. Project Sewer Flow

Project generated sewer flow is estimated from the square footage provided in the North Bayshore Gateway Master Plan Administrative Draft, December 11, 2020. A Return-to-Sewer (RTS) ratio of 0.75 is applied to all land use types based on the NBSPPII study. Table 4-1 provides the estimated Project sewer flow.

Table 4-1: Project Estimated Sewer Flow

Address	Land Use Type	Total Area (SF) / Units	Sewer Duty Factor (gpd / 1000 SF or gpd / Unit)	Project Sewer Flow (gpd)
MV Gateway	Residential	2,800	75	210,000
	Hotel	200	75	15,000
	High Intensity Office	500,000	100	50,000
	Restaurant	37,500	900	33,750
	Retail	262,500	100	26,250
Total				335,000

4.2. Existing Condition (2010)

4.2.1. Pre-Project (Baseline)

The pre-Project (baseline) condition includes parcel-level sewer flow adopted from the City's InfoSWMM model, developed as part of the 2010 SMP. Table 4-2 details the parcel-level sewer flow in the model, which was calculated with an RTS ratio of the Existing Condition water demand. The RTS ratios for office P(1)-Shoreline West, and P(2)-Charleston South Industrial were taken from the 2010 SMP (Table 3-2).

Table 4-2: Baseline Flow for Existing Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	1,404
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	277
1555 Plymouth St	116-13-027	Limited Industrial	2.9	792
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	450
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	680
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	13,511
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	7,247
Total	-	-	**29.1**	**24,361**

4.2.2. Post-Project Incremental Demand

For the Project impact analysis in the Existing Condition, Project sewer flow is added to the Existing Condition model as an incremental difference from pre-Project flow. The Project incremental sewer flow is given in Table 4-3.

Table 4-3: Incremental Project Flow for Existing Condition

	Sewer Flow (gpd)
Pre-Project (Baseline) Flow	24,361
Project Flow	335,000
Incremental Project Flow	***+ 310,639***

4.3. Future Cumulative Condition (2030)

4.3.1. Pre-Project (Baseline)

Future Cumulative (baseline) flow for the Project is adopted from the City's InfoSWMM model, updated as part of the NBPP II. In the model, sewer flows are based on the 2030 General Plan Update (GPU) land use; these flows have since been updated to include recent City approved projects outlined in Table A-1 in Appendix A, which were not accounted for or were in exceedance of the 2030 GPU projections. Table 4-4 presents parcel-level pre-Project demand from the model.

Table 4-4: Baseline Flow for Future Cumulative Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	6,457
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	5,165
1555 Plymouth St	116-13-027	Limited Industrial	2.9	18,724
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	4,520
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	5811
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	101,368
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	45,196
Total	-	-	**29.1**	**187,241**

4.3.2. Post-Project Incremental Demand

Project flow is added to the Future Cumulative Condition model as an incremental difference from pre-Project flow. The incremental Project flow is given in Table 4-5.

Table 4-5: Incremental Project Flow for Future Cumulative Condition

	Sewer Flow (gpd)
Pre-Project (Baseline) Flow	187,241
Project Flow	335,000
Incremental Project Flow	***+ 147,759***

The overall sewer generation within NBPP II is not increased above the precise plan cap. Therefore, other areas within the NBPP II with similar land use as the Project are adjusted to be consistent with approved NBPP II area allocations.

Chapter 5. Sewer System Impact

The impact of Project development on the sewer system is analyzed under both Existing (2010) and Future Cumulative (2030) Conditions. Two conveyance paths of the gravity system are evaluated for Project impact, the fist begins at Plymouth Street, north side of the site, and flows north along Joaquin Road, east along Charleston toward North Shoreline Blvd. The other begins at North Shoreline Boulevard just north of US Highway 101, both conveyance paths combine at North Shoreline Boulevard and Charleston Road. Post-Project conditions assume the sewer line through the Project site has been realigned through Long Lonesome Road as a 12-inch diameter pipe to maintain its existing diameter, through Long Lonesome Road, Plymouth Street, Joaquin Road, and to Charleston Road.

5.1. Scenarios and Performance Criteria

Sewer capacity is analyzed under Peak Wet Weather Flow (PWWF) and Average Dry Weather Flow (ADWF). PWWF is used to determine hydraulic deficiencies according to the performance criteria in Table 5-1. ADWF is used to determine adequacy of treatment capacity.

The ADWF scenario is developed in the model by adding BWF and GWI. Since the ADWF scenario models average daily flows, BWF and GWI are not peaked. The PWWF scenario applies the diurnal peaking curves for residential and non-residential flows and simulates system response to rainfall dependent inflow and infiltration. The diurnal peaking curves are adopted from the City's 2010 SMP. Groundwater Infiltration (GWI) and rainfall-dependent infiltration/inflow (RDI/I) are included but are not peaked.

Table 5-1: Sewer System Performance Criteria

Criteria	Pipe Diameter ≤ 12 inch	Pipe Diameter > 12 inch
Maximum Flow Depth/Pipe Diameter (d/D)	0.50	0.75

5.2. Sewer Treatment, Joint Interceptor, and San Antonio Interceptor Capacity

Sewage generated within the City is treated at the Regional Water Quality Control Plant (RWQCP) in Palo Alto. The sewer collection system is a gravity system with the majority of flow discharging into three main trunk lines that convey flow from the south to the north and terminate at the Shoreline Pump Station (SPS) located within the City's Shoreline Park. Flow is then pumped to the gravity Joint Interceptor Sewer that conveys flow to the RWQCP. The remaining flow not received at the SPS is discharged to the Los Altos' San Antonio Interceptor that also conveys flow into the Joint Interceptor.

The City entered into a joint agreement, referred to as the Basic Agreement, with the cities of Palo Alto and Los Altos in 1968 for the construction and maintenance of the joint sewer system addressing the need for conveyance, treatment, and disposal of wastewater to meet Regional Board requirements. In accordance with the Basic Agreement, Palo Alto owns the RWQCP and administers the Basic Agreement with the partnering agencies purchasing individual capacity rights in terms of an average annual flow that can be discharged to the RWQCP. Capacity rights of the three cities can be rented or purchased from other neighboring agencies and each partnering agency can sell their capacity to others. Contractual capacity is based upon the 1985 Addendum

No. 3 of the 1968 Joint Sewer System agreement that revised capacity rates in relationship to facility expansion and is based upon Average Annual Flow (defined as 1.05 times Average Dry Weather Flow). Separate service agreements with the RWQCP have since reallocated current capacity rights to include six partnering agencies. Table 5-2 presents the current capacity rights for each agency.

Table 5-2: RWQCP Joint Facilities Capacity Rights

Partner Agency	Treatment Capacity	72-inch Joint Interceptor Capacity
	Average Annual Flow (MGD)	Peak Wet Weather Flow (MGD)
Palo Alto	15.3	14.59
East Palo Alto Sanitary District	3.06	0
Los Altos Hills	0.63	3.41
Stanford University	2.11	0
Mountain View	15.1	50
Los Altos	3.8	12
Total	***40***	***80***

Source: Long Range Facilities Plan for the Regional Water Quality Control Plant (Carollo, May 2012)

The City's total capacity rights include flow leaving the City through the SPS and the amount of flow that the City discharges into the Los Altos' San Antonio Interceptor, per the 1970 Los Altos San Antonio Trunk Sewer Capacity Agreement between the two cities. The total system-wide contractual capacity for Mountain View is evaluated in the Existing and Future Cumulative Conditions with increased Project flow. Table 5-3 shows the City's projected flows compared to the RWQCP Joint Facilities capacity rights.

Per the Basic Agreement, the partnering agencies agree to conduct an engineering study when their respective service area reaches 80% of their contractual capacity rights. The Future Cumulative Condition estimates that the projected demand pre-Project and post-Project will exceed the 80% capacity threshold. The required engineering study when the City reaches 80% of their capacity shall redefine the anticipated future needs of the treatment plant.

Table 5-3: Capacity Rights Comparison

RWQCP Joint Facility	Mountain View Contractual Capacity (MGD)	Pre-Project		Post-Project	
		2010 Existing (MGD)	2030 Future Cumulative (MGD)	2010 Existing (MGD)	2030 Future Cumulative (MGD)
Treatment	15.1	10.16	14.15	10.51	14.15
Joint Interceptor	50.0	16.98	21.91	17.31	21.91

* *Treatment = Average Annual Flow (AAF), Joint Interceptor = PWWF*

5.3. Existing Condition (2010) Results

5.3.1. Hydraulic Model Information

The Existing Condition sewer system is modeled using the City's InfoSWMM model developed as part of the *2010 Sewer Master Plan* (SMP). Project sewer flow is assumed to discharge to two sewer mains, a new 12-inch line within Joaquin Road and to the existing 12-inch diameter sewer main within North Shoreline Blvd. The new 12-inch diameter sewer main within Joaquin Road is assumed to be completed as part of this Project and is identified as the Long Lonesome Road Sewer Realignment.

5.3.1.1. Long Lonesome Road Sewer Realignment

As part of the post-Project condition, it is assumed the 12-inch sewer crossing through the Project site is realigned west and then north along Long Lonesome Road. The inverts along this conveyance pathway appear to provide adequate slopes. Additional difficulties with maintaining the existing sewer alignment, or providing a new sewer alignment to the N Shoreline Blvd including crossing the proposed bike path bridge footings while maintaining appropriate sewer slopes are eliminated with the Long Lonesome Road Realignment.

The revised alignment would also utilize the existing alignment of sewer mains from Plymouth through Joaquin, a portion of which would require upsizing to meet Project sewer flow demands. The realignment is shown on Figure B-11.

The existing sewer can be rerouted within new in-tract streets if preferred, as long as the sewer terminates at Joaquin and Plymouth, the sewer analysis will remain valid.

5.3.2. Peak Wet Weather Flow (PWWF) Scenario – Pre and Post Project

The sewer system has sufficient capacity downstream of the Project with the pre-Project condition but does not have capacity for the post-Project flows in the Existing Condition as shown in Figures B-10 and B-11. The post-Project condition assumes the 12-inch Long Lonesome Road Sewer Realignment has been completed. A portion of the 12-inch diameter sewer mains on Joaquin Road and Charleston Road do not meet the d/D criteria post-Project.

5.3.3. Deficiencies – Pre and Post Project

Existing Condition model results comparing pre- and post-Project d/D are presented in Table 5-4. In the pre-Project condition, the existing pipes meet d/D performance criteria downstream of the project. Post-Project, 3 pipes do not meet d/D performance criteria downstream of project. The pipes are flowing between 65% and 89% full during PWWF. The three pipes overlap with pipes identified for upsizing as part of NBPP II CIP# 103 and CIP# 104

5.4. Future Cumulative Condition (2030) Results

5.4.1. Hydraulic Model Information

The Future Cumulative Condition model is created using sewer flows based on the NBPP II model. System performance is analyzed under the assumption that all recommended CIPs in the 2030 GPUUIS, as well as those from the NBPP II, have been constructed. Project sewer flow from the Project are assumed to discharge into the 12-inch sewer at the intersection of Plymouth and Joaquin and to the 18- inch sanitary sewer line within North Shoreline Blvd.

Six recommended CIPs identified in the NBPP II are downstream of the Project as shown on Figure B-12. CIP NB-1 includes upsizing 435 feet of 21-inch diameter pipe to 27-inch diameter pipe along N Shoreline Blvd. CIP # 100 includes upsizing 2,700 feet of 18-inch diameter pipe to 21-inch diameter pipe. CIP # 101 includes upsizing 95-feet of 12-inch diameter pipe to 15-inch diameter pipe along N Shoreline Blvd, from La Avenida to Charleston Rd. CIP # 103 includes upsizing 337 feet of 12-inch diameter pipe to 18-inch diameter pipe, 688 feet of 15-inch diameter pipe to 15-inch diameter pipe, 51-feet of 21-inch diameter pipe to 27-inch diameter pipe, and 336 feet of 12-inch diameter pipe to 21-inch diameter pipe. CIP 103 spans from Huff Avenue to the parking lot entrance east of N Shoreline Blvd. CIP #104 includes upsizing 367 feet of 8-inch diameter pipe to 12-inch diameter pipe along Joaquin Road, this CIP is revised as part of the Lonesome Road improvement as part of the realignment. CIP #108 includes upsizing 241 feet of 21-inch diameter pipe to 24-inch diameter pipe along N. Shoreline Blvd. north of Crittenden Ln.

5.4.2. Peak Wet Weather Flow (PWWF) Scenario – Pre and Post Project

The system near the Project site meets d/D performance criteria in the Future Cumulative Condition pre-Project, but one pipe on Joaquin Road does not meet d/D performance criteria post-Project. The 12-inch diameter pipe along Joaquin Avenue (identified as CIP # 104 in the NBPP II) experiences a d/D greater than 50% as shown in Figures B-13. This pipe should be upsized to a 15-inch diameter pipe.

With the post-Project flows, Pipe 193 it is flowing 57% full during PWWF. To meet d/D performance criteria for all pipes downstream of the Project, it is recommended that Pipe Model ID 193 be further upsized to a 15-inch diameter pipe. Following this improvement, the system meets d/D performance criteria downstream of the Project in the Future Cumulative Condition post-Project.

5.4.3. Deficiencies – Pre and Post Project

Table 5-5 presents the comparison of d/D criteria pre- and post-Project for pipes downstream of the Project development. The system meets d/D performance criteria downstream of the Project in the pre-Project condition. In the post-Project condition, one pipe does not meet d/D performance criteria. The NBPP II recommended CIP pipe diameter is indicated by bold green font. The Schaaf & Wheeler recommended pipe diameter for Pipe ID 193 is 15-inches. The d/D performance criteria is indicated by bold blue font in Table 5-5. The Long Lonesome Road Realignment Project pipes are indicated with purple font.

5.5. Project Contribution to Deficient Sewer Pipes

Pipe ID 193 should be upsized from an 12-inch pipe to a 15-inch pipe to convey new sewer flows from the Project. With this improvement, along with the recommended NBPP II CIPs, the system meets the performance criteria post-Project in the Future Cumulative Condition. The Long Lonesome Road sewer realignment project is not included in the NBPP II and is primarily benefiting the Project development by removing conflicts with building layouts. As such, the Project should be fully responsible for the costs associated with the Long Lonesome Road CIP realignment or the realignment within in-tract streets if the Project pipes directing flows from south of US-101 require relocation.

Table 5-6 provides a comparison of ADWF to determine the Project contribution for the recommended pipe improvement projects. Flow contribution is based upon Future Cumulative Condition ADWF. Percentage of Project contribution to the recommended CIPs is provided and can be used to determine impact fees for fair share impact to the sewer system.

Table 5-4: Existing Condition Model Results – Pre and Post Project

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
227	D4-030	D4-028	8	366	0.439	0.059	0.2267	0.349	0.3130	0.099	0.2950	0.581	0.4237	15
289	D4-017	D4-015	8	225	0.441	0.001	0.0935	0.011	0.2709	0.001	0.1214	0.017	0.3338	33
282	D4-019	D4-015	8	360	0.736	0.002	0.1025	0.006	0.2548	0.004	0.1313	0.009	0.3244	35
177	D4-006	C4-021	30	420	0.100	1.944	0.3173	2.257	0.3426	3.134	0.4072	3.545	0.4352	42
144	C4-017	C4-016	30	244	0.113	1.945	0.3201	2.258	0.3471	3.136	0.4221	3.546	0.4538	39
156	C4-021	C4-017	30	396	0.135	1.944	0.3103	2.257	0.3357	3.135	0.4024	3.545	0.4314	42
103	C4-010	C4-008	30	59	0.340	2.124	0.3493	2.437	0.3788	3.392	0.4618	3.803	0.4945	34
113	C4-012	C4-010	30	323	0.031	2.123	0.3567	2.436	0.3853	3.391	0.4662	3.803	0.4985	34
118	C4-016	C4-012	30	160	0.182	2.123	0.3621	2.436	0.3898	3.390	0.4687	3.802	0.5009	33
72	B4-017	B4-007	21	216	0.760	2.164	0.3345	2.477	0.3593	3.460	0.4312	3.870	0.4594	39
83	B4-019	B4-017	21	445	0.438	2.150	0.3674	2.463	0.3954	3.437	0.4769	3.848	0.5095	32
88	C4-004	B4-019	30	323	0.029	2.142	0.3660	2.455	0.3904	3.425	0.4600	3.836	0.4876	35
96	C4-008	C4-004	30	292	0.098	2.142	0.4198	2.455	0.4482	3.424	0.5274	3.835	0.5584	26
50	B4-024	B4-022	27	75	1.036	2.166	0.2671	2.479	0.2871	3.480	0.3472	3.891	0.3706	51
52	B4-026	B4-022	8	120	0.147	0.000	0.0002	0.000	0.0002	0.004	0.1844	0.004	0.1844	63
56	B4-001	B4-024	27	347	0.115	2.166	0.3140	2.479	0.3355	3.477	0.3976	3.888	0.4211	44
58	B4-003	B4-001	27	64	1.256	2.166	0.3089	2.479	0.3299	3.473	0.3908	3.884	0.4139	45
19	B4-016	B4-014	42	556	0.189	4.880	0.2725	5.198	0.2814	8.477	0.3623	8.874	0.3712	51
21	B4-014	B4-012	42	368	0.272	4.880	0.2719	5.198	0.2807	8.481	0.3616	8.877	0.3704	51

Table 5-4: Existing Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
22	B4-012	B4-010	42	450	0.222	4.880	0.2292	5.198	0.2366	8.484	0.3035	8.881	0.3107	59
20	B4-010	B4-003	42	86	1.388	4.880	0.1955	5.198	0.2017	8.488	0.2579	8.885	0.2639	65
24	B4-003	B4-001	42	200	0.500	4.880	0.2309	5.198	0.2379	8.491	0.3017	8.888	0.3085	59
25	B4-001	B4-006	42	338	0.444	4.880	0.2088	5.198	0.2165	8.495	0.2867	8.892	0.2944	61
45	B4-022	B4-016	21	432	0.398	2.166	0.3918	2.479	0.4216	3.487	0.5104	3.898	0.5446	27
60	B4-005	B4-003	21	98	0.001	2.166	0.4094	2.479	0.4372	3.470	0.5182	3.881	0.5497	27
64	B4-007	B4-005	21	143	0.782	2.166	0.4409	2.479	0.4717	3.466	0.5618	3.877	0.5973	20
209	D4-068	JCT-14	18	509	0.440	1.445	0.4130	1.468	0.4164	2.471	0.5519	2.424	0.5461	27
241	D4-050	D4-068	18	364	0.434	1.442	0.3901	1.465	0.3934	2.466	0.5296	2.420	0.5236	30
260	D4-021	D4-050	18	341	0.429	1.438	0.3909	1.461	0.3943	2.460	0.5309	2.413	0.5248	30
290	D4-033	JCT-12	21	296	0.422	1.421	0.3344	1.444	0.3372	2.443	0.4469	2.398	0.4423	41
306	D4-035	D4-033	18	166	0.423	1.419	0.3806	1.394	0.3796	2.439	0.5143	2.351	0.5054	33
331	E4-002	D4-035	18	375	0.377	1.405	0.3982	1.371	0.3929	2.417	0.5441	2.321	0.5309	29
CDT-17	JCT-14	JCT-16	18	40	0.083	1.445	0.4063	1.468	0.4096	2.471	0.5366	2.424	0.5313	29
CDT-13	JCT-12	D4-021	21	121	0.277	1.436	0.3451	1.459	0.3480	2.456	0.4649	2.410	0.4598	39
173	D4-002	D4-034	12/**15**	356	0.100	0.177	0.3839	0.467	0.4544/	0.284	0.4879	0.765	**0.8984/0.5940**	0/**21**
176	D4-034	D4-004	12/**15**	332	0.066	0.180	0.3242	0.470	0.3820/	0.290	0.4093	0.770	**0.6814/0.4874**	**0**/**35**
178	D4-004	JCT-16	21	12	0.646	0.180	0.2788	0.470	0.3071	0.291	0.4120	0.772	0.4595	39
CDT-19	JCT-16	D4-006	21	15	0.650	1.625	0.3873	1.938	0.4204	2.747	0.5201	3.154	0.5646	25
193	D4-028	D4-002	**12**/**15**	5	0.490	0.060	0.3632	0.350	0.3222/	0.101	0.4710	0.582	**0.6547/0.5558**	**0**/**26**
277	D4-011	D4-013	**12**	248	0.260	0.011	0.1121	0.193	0.2821	0.015	0.1374	0.319	0.3670	51
281	D4-013	D4-015	**12**	237	0.210	0.010	0.1400	0.194	0.2920	0.016	0.1666	0.320	0.3806	49

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-4: Existing Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
249	D4-032	D4-030	**12**	381	0.258	0.053	0.2444	0.343	0.3613	0.089	0.3170	0.570	0.4758	37
280	D4-015	D4-032	**12**	354	0.557	0.034	0.2108	0.324	0.3413	0.054	0.2700	0.536	0.4515	40
LLR-1	E4-006	E4-004	**12**	148	0.347			0.092	0.1844			0.154	0.2376	52
LLR-2	E4-008	E4-006	**12**	282	0.227			0.091	0.1562			0.152	0.1991	60
LLR-3	E4-010	E4-008	**12**	223	0.126			0.091	0.2233			0.151	0.2873	43
LLR-4	E4-046	E4-010	**12**	312	0.110			0.090	0.2312			0.150	0.2993	40
LLR-5	E4-004	E4-002	**12**	95	0.317			0.003	0.2437			0.003	0.4524	10

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
227	D4-030	D4-028	12	366	0.439	0.252	0.2725	0.358	0.3266	0.287	0.2912	0.581	0.4236	15
289	D4-017	D4-015	8	225	0.441	0.005	0.1924	0.005	0.2364	0.001	0.1667	0.013	0.3219	36
282	D4-019	D4-015	8	360	0.736	0.003	0.1810	0.003	0.2250	0.001	0.1610	0.006	0.2943	41
177	D4-006	C4-021	30	420	0.100	3.298	0.4185	3.228	0.4137	5.103	0.5355	5.220	0.5430	28
144	C4-017	C4-016	30	244	0.105	3.299	0.4306	3.229	0.4252	4.918	0.5517	5.028	0.5598	25
156	C4-021	C4-017	30	396	0.135	3.299	0.4157	3.229	0.4107	4.931	0.5280	5.041	0.5355	29
103	C4-010	C4-008	30	59	0.340	3.503	0.4723	3.433	0.4667	5.111	0.5952	5.220	0.6033	20
113	C4-012	C4-010	30	323	0.031	3.503	0.4760	3.433	0.4705	5.111	0.5989	5.219	0.6071	19
118	C4-016	C4-012	30	160	0.182	3.502	0.4779	3.432	0.4724	5.111	0.6010	5.219	0.6093	19
72	B4-017	B4-007	21	216	0.760	3.649	0.4358	3.579	0.4311	5.305	0.5414	5.413	0.5481	27
83	B4-019	B4-017	21	445	0.438	3.573	0.4928	3.503	0.4872	5.188	0.6250	5.296	0.6340	15
88	C4-004	B4-019	30	323	0.029	3.557	0.4678	3.487	0.4631	5.164	0.5748	5.272	0.5822	22
96	C4-008	C4-004	30	292	0.098	3.557	0.5373	3.487	0.5320	5.163	0.6534	5.271	0.6611	12
50	B4-024	B4-022	27	75	1.036	3.650	0.3283	3.580	0.3250	5.326	0.4031	5.434	0.4077	46
52	B4-026	B4-022	8	120	0.147	0.000	0.0002	0.000	0.0002	0.004	0.1844	0.004	0.1972	61
56	B4-001	B4-024	27	347	0.115	3.650	0.4076	3.580	0.4036	5.323	0.4979	5.431	0.5035	33
58	B4-003	B4-001	27	64	1.256	3.650	0.4007	3.580	0.3968	5.319	0.4892	5.427	0.4946	34
19	B4-016	B4-014	42	556	0.189	7.638	0.3430	7.568	0.3414	11.777	0.4326	11.885	0.4348	42
21	B4-014	B4-012	42	368	0.272	7.638	0.3422	7.568	0.3406	11.780	0.4311	11.888	0.4333	42

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
22	B4-012	B4-010	42	450	0.222	7.638	0.2875	7.568	0.2861	11.783	0.3603	11.891	0.3621	52
20	B4-010	B4-003	42	86	1.388	7.638	0.2445	7.568	0.2433	11.787	0.3052	11.895	0.3067	59
24	B4-003	B4-001	42	200	0.500	7.638	0.2864	7.568	0.2852	11.790	0.3551	11.899	0.3568	52
25	B4-001	B4-006	42	338	0.444	7.638	0.2696	7.568	0.2682	11.794	0.3472	11.902	0.3490	53
45	B4-022	B4-016	**27**	432	0.398	3.650	0.3650	3.580	0.3612	5.333	0.4480	5.441	0.4529	40
60	B4-005	B4-003	**24**	98	0.001	3.650	0.4465	3.580	0.4422	5.315	0.5417	5.424	0.5476	27
64	B4-007	B4-005	**24**	143	0.782	3.650	0.4748	3.580	0.4702	5.312	0.5786	5.420	0.5851	22
209	D4-068	JCT-14	**21**	509	0.340	2.260	0.4131	2.154	0.4024	3.574	0.5352	3.511	0.5297	29
241	D4-050	D4-068	**21**	364	0.434	2.256	0.4180	2.150	0.4070	3.593	0.5479	3.530	0.5419	28
260	D4-021	D4-050	**21**	341	0.429	2.180	0.3952	2.073	0.3848	3.476	0.5150	3.414	0.5095	32
290	D4-033	JCT-12	**21**	296	0.299	2.180	0.4401	2.074	0.4282	3.475	0.5764	3.414	0.5702	24
306	D4-035	D4-033	**21**	166	0.423	2.160	0.4124	2.054	0.4012	3.459	0.5408	3.371	0.5338	29
331	E4-002	D4-035	**21**	375	0.377	2.080	0.3943	1.974	0.3835	3.394	0.5191	3.287	0.5099	32
CDT-17	JCT-14	JCT-16	**21**	24	0.250	2.260	0.4133	2.154	0.4031	3.574	0.5263	3.511	0.5215	30
CDT-13	JCT-12	D4-021	**21**	121	0.277	2.180	0.4195	2.074	0.4083	3.475	0.5466	3.414	0.5408	28
173	D4-002	D4-034	**15**	356	0.100	0.467	0.3853	0.513	0.4043	0.603	0.4395	0.791	0.5085	32
176	D4-034	D4-004	**15**	332	0.274	0.476	0.3014	0.522	0.3163	0.611	0.3432	0.799	0.3960	47
178	D4-004	JCT-16	**21**	12	0.646	0.476	0.4346	0.523	0.4271	0.672	0.6476	0.851	0.6591	12
CDT-19	JCT-16	D4-006	**27**	40	0.650	2.737	0.4198	2.677	0.4142	4.427	0.5712	4.533	0.5808	23
193	D4-028	D4-002	**12/15**	367	0.490	0.253	0.4062	0.359	0.4462	0.288	0.4540	0.582	**0.5674/0.4391**	**0/24**
277	D4-011	D4-013	**12**	248	0.260	0.042	0.1296	0.146	0.2447	0.005	0.0526	0.272	0.3376	55
281	D4-013	D4-015	**12**	237	0.210	0.040	0.1727	0.146	0.2610	0.125	0.1246	0.274	0.3526	53

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
249	D4-032	D4-030	**12**	381	0.258	0.170	0.2675	0.276	0.3317	0.148	0.2684	0.473	0.4399	41
280	D4-015	D4-032	**12**	354	0.557	0.169	0.2348	0.275	0.3007	0.147	0.2191	0.471	0.4028	46
342	E4-006	E4-004	**12**	148	0.347	0.106		0.106		0.171	0.3304	0.171	0.1855	63
355	E4-008	E4-006	**12**	282	0.227	0.095		0.095		0.158	0.2524	0.158	0.2249	55
365	E4-010	E4-008	**12**	223	0.126	0.095		0.094		0.157	0.2882	0.157	0.2032	59
366	E4-046	E4-010	**12**	312	0.110	0.094		0.094		0.155	0.3086	0.155	0.1892	62
334	E4-004	E4-002	**12**	95	0.317	0.106		0.106		0.174	0.4586	0.173	0.1242	83

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-6: Pipes Recommended for Upsizing and Percentage of Contributed Flow

Sewer Main ID	CIP #	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Proposed Diameter (in)	Total Future Cumulative ADWF Flow With Project (MGD)	Project Incremental Contribution		City of Mountain View Contribution	
							ADWF Flow (MGD)	Percentage of Total Flow (%)	ADWF Flow (MGD)	Percentage of Total Flow (%)
173	103	D4-002	D4-034	12	**15**	0.5134	0.0461	9	0.4674	91
176	103	D4-034	D4-004	12	**15**	0.5221	0.0461	9	0.4760	91
193	104/LLR	D4-028	D4-002	8	**15**	0.3588	0.1061	30	0.2528	70
277	LLR	D4-011	D4-013	8	**12**	0.1457	0.1035	71	0.0423	29
281	LLR	D4-013	D4-015	8	**12**	0.1464	0.1061	72	0.0404	28
249	LLR	D4-032	D4-030	8	**12**	0.2761	0.1061	38	0.1700	62
280	LLR	D4-015	D4-032	8	**12**	0.2753	0.1061	39	0.1692	61

*Note: NBPP II recommended pipe is bold **green**, Long Lonesome Road CIP recommended pipe is bold **purple***

Chapter 6. Recycled Water

The Project site is within the service area of the existing recycled water system. The Project may connect to the existing recycled water pipelines within Plymouth Street. Recycled water may be used for irrigation of landscaping as well as for non-potable uses in non-residential buildings. Non-residential buildings within North Bayshore are required to be dual plumbed to utilizes recycled water for non-potable uses.

The existing recycled water system configuration, limitations, and potential Project impacts on the recycled water system are described herein.

6.1. Existing System

The existing Palo Alto Recycled Water Quality Control Plant receives and treats sanitary sewer water from the City of Mountain View, as well Los Altos, Los Altos Hills, Palo Alto, Stanford University, and East Palo Alto Sanitation District. The Palo Alto Water Quality Control Plant (RWQCP) and the City of Mountain View have entered an agreement wherein the RWQCP supplies up to 3 MGD (2083 gpm) of recycled water per day, to the City of Mountain View, for use in irrigation or other non-potable applications such as toilets in buildings that are dual-plumbed. The RWQCP provides recycled water to the City of Mountain View with a single pump utilizing a VFD, intended maintains pressures through the recycled water network.

The existing recycled water system configuration and operations were discussed as part of the *Sub-Alternatives Development Memorandum*, (Carollo, November 2013). The existing system configuration is intended to function as two separate pressure zones, one being the Primary Recycled Water System or Primary Zone, and the other being the Shoreline Irrigation System. The existing system including the two pressure zones are shown in Figure B-14. The Primary Zone is supplied directly from the RWQCP, and the Shoreline Irrigation System is supplied from the Shoreline Irrigation Pump Station, which supplies irrigation water to the golf course from water stored in the golf course pond (Shoreline Pond).

The existing Mountain View recycled water system has 177 recycled water meters in place (Mountain View Recycled Water Feasibilty Study, Carollo), with 59 inactive meters corresponding to sites under development or sites which have not yet converted from potable water to recycled water. New developments are required to provide dual plumbing to toilets and to connect to the recycled water system for irrigation. There are currently 58 active meters as part of the existing recycled water system.

6.1.1. Existing Model

The recycled water model consists of two scenarios, Average Day Demand (ADD) and Maximum Day Demand (MDD). The ADD scenario is based on water meter records collected from 2009, through 2012. The annual demands were estimated based on 2011 meter data due to completeness of available records. The demands are from active accounts and do not identify if the usage is for irrigation or usage from dual-plumbed buildings. The ADD and MDD from the recycled water model are shown in Table 6-1. The system also utilizes a diurnal curve based on water usage records to distribute the recycled water demands. The existing modeled recycled water system performance is shown on Figure B-14.

Table 6-1: Existing Average Day Demand and Maximum Day Demand

	Recycled Water Demand (mgd)
Average Day Demand (ADD)	0.46
Maximum Day Demand (MDD)	1.06

The Primary Zone and the Shoreline Irrigation System operate on two similar, but different diurnal curves, the diurnal curves for the two zones are shown on Figure 3.

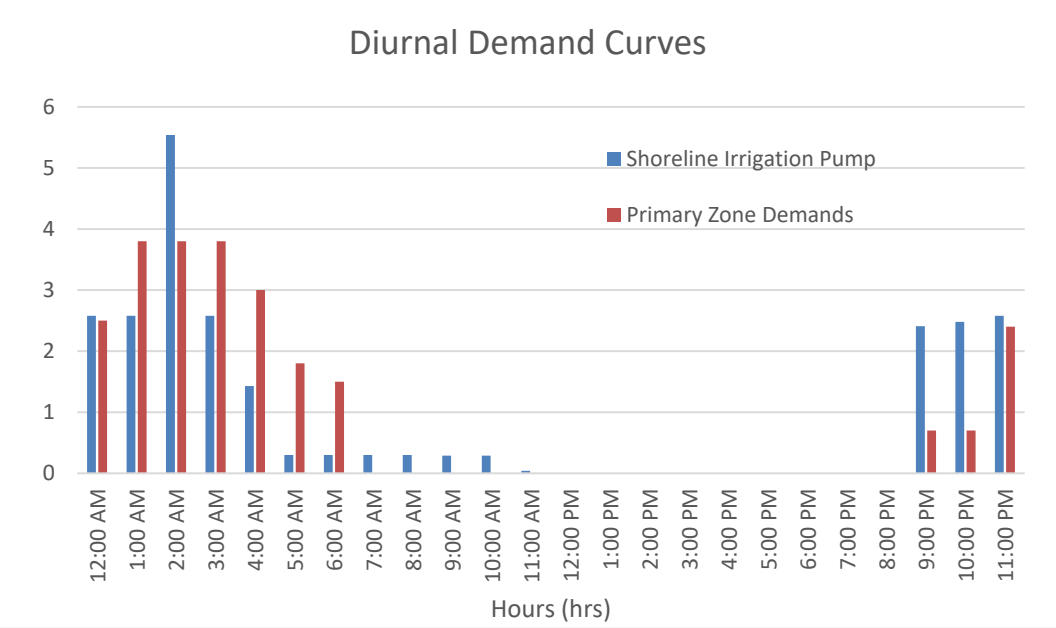

Figure 3: Recycled Water Diurnal Curves

In the existing model the Shoreline Pond is filled at a constant rate of 600 gpm through a connection from the Primary Zone. The additional storage within the Shoreline Pond is intended to offset the peak hour demand (PHD) in the system. The relationship between available supply, Shoreline Irrigation flows, Primary Zone flows, and Shoreline Pond inflow is shown in Figure 4.

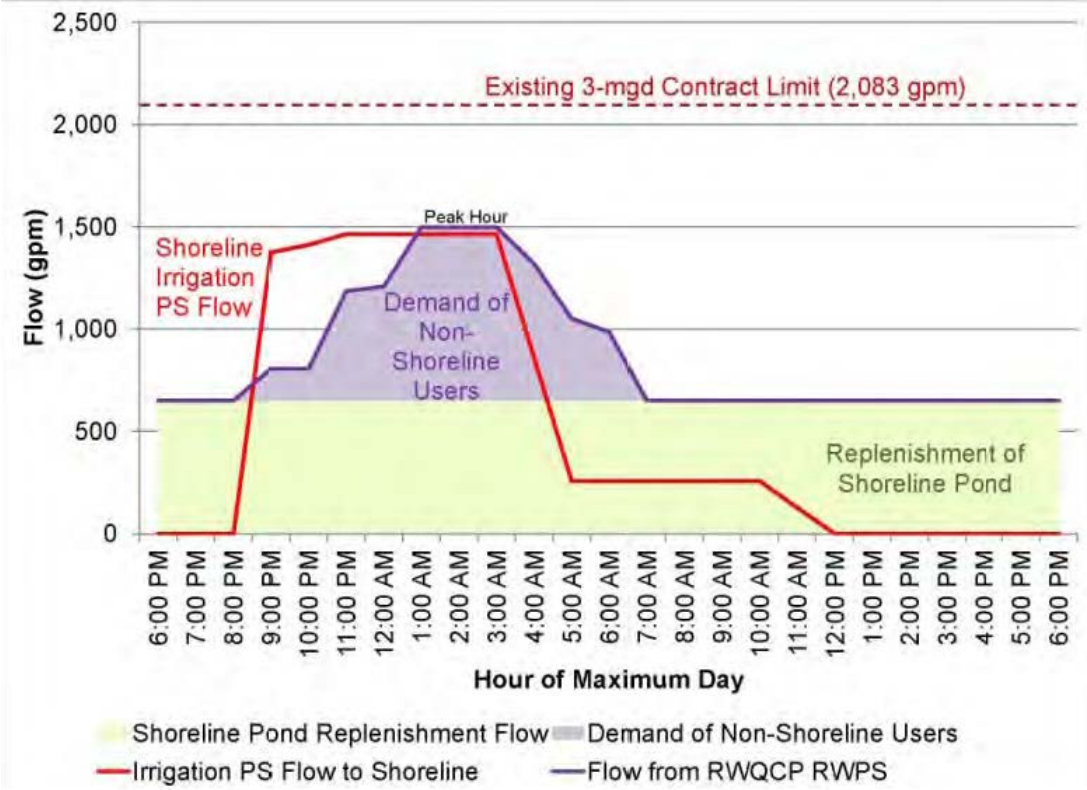

Figure 4: Recycled Water Usage

Based on the model data and modelled system operations, the recycled water system can adequately supply water to users throughout the service area. However, this assumes that storage from the Shoreline Pond is used as a buffer to supply water to the golf course irrigation system during the Peak Hour Demand (PHD). If the Shoreline Pond cannot be used as storage to buffer demands, the system demands exceed the total available demand from the RWQCP, as shown on Figure 5.

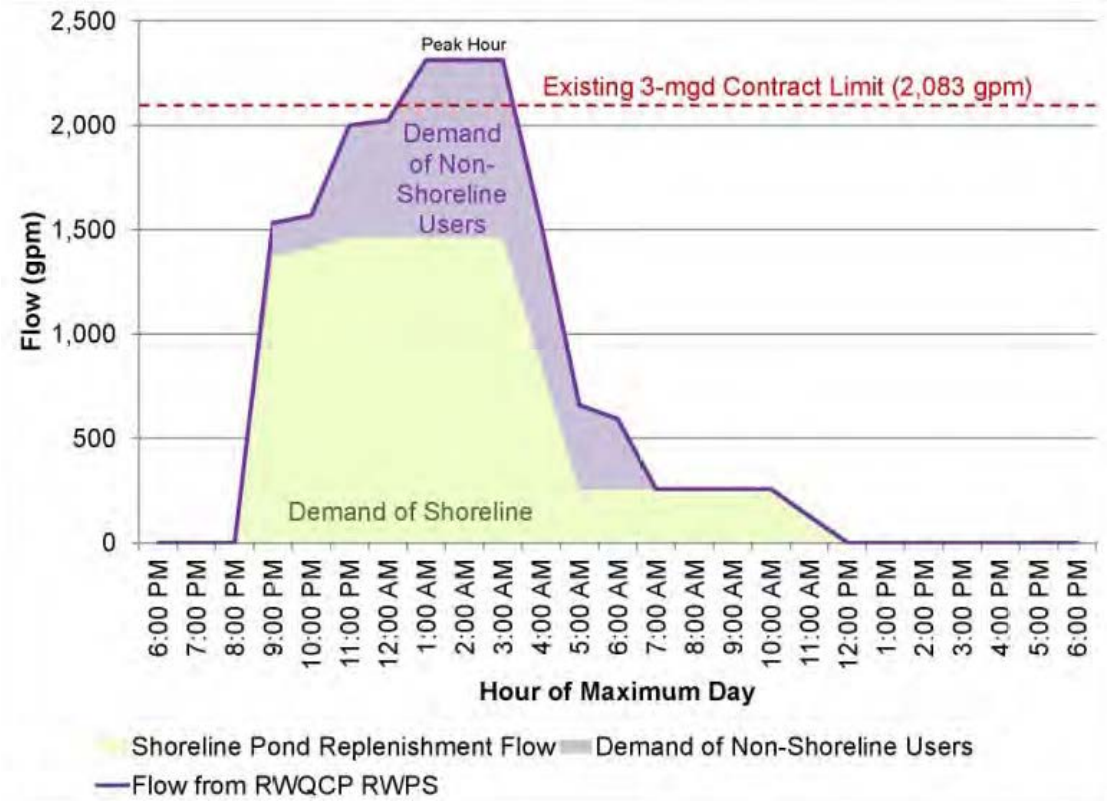

Figure 5: Recycled Water Usage – Without Shoreline Pond Storage

Without the Shoreline Ponds buffering the PHD, the system experiences low pressures throughout the recycled water system. The deficient system nodes without utilizing the Shoreline Pond storage is shown on Figure B-14. City staff has noted that the system experiences variable pressures, including low pressures that disrupt service to users throughout the service area. The City should verify that current operations match the modelled system.

The RWQCP pump provides the recycled water supply and maintains pressures throughout the Primary Zone, this is done with a pump utilizing a VFD to adjust its speed to meet demand and maintain pressures. This configuration inherently lends itself to the limitations of the pump and its ability to speed up and slow down to maintain pressures in the system. Utilizing pumps instead of a static water level in a storage tank to maintain pressure leaves opportunities for pressure fluctuations as the pumps try to accommodate changes in user demand. It is recommended that the City incorporate system storage as outlined in the Recycled Water Feasibility Study to reduce the frequency of pressure fluctuations throughout the system.

6.1.2. Project Impacts

The Project irrigation demands have been estimated using the MAWA methodology and the total irrigation demand for the Project site is based on the "open space" identified in the MV Gateway Master Plan Administrative Draft and are summarized in Table 6-2.

Table 6-2: Project Irrigation Demands

Project Site	Total Open Space Area (sf)	Irrigation Demand (gpm)
MV Gateway	65,000*	0.22

**Estimated from open space square footage*

6.2. Project Contribution to Existing Deficiencies

As currently modelled, the existing Recycled water system does not exhibit deficiencies, and the Project site can be supplied with recycled water; however, this is dependent on using Shoreline Ponds to supply water to the shoreline irrigation network. Without utilizing storage in the Shoreline Pond to buffer the golf course demands, the system experiences deficient pressures across the system. City staff has indicated that the existing system pressures vary significantly throughout the service area. This may be due to the shoreline pond not operating as modelled, or due to the RWQCP not being able to adapt to changes in system pressure fast enough. Based on the existing modeled system configuration, the Project site irrigation demands should not have any impacts on the City system. Based on discussions with City staff, the existing system experiences deficiencies with only the current active users; therefore, the Project would only exacerbate the existing system deficiencies.

6.2.1. Recommended Improvements

City staff has indicated that the existing system experiencing low pressures, it is recommended that the City begin implementing improvements recommended in the Recycled Water Feasibility Study. Expanding the existing storage capacity for the recycled water system should take priority. Additional system storage will provide a buffer during the PHD, when system demand exceeds the RWQCP capacity. The addition of system storage will help alleviate pressure fluctuations currently experienced. Additional pipe improvements may be needed to implement the Charleston Park Storage Tank, the City should begin efforts to start the planning process associated with implementing the CIP. Additional recycled water CIPs identified as part of the Recycled Water Feasibility Study are included in Figure B-15. Improvements include adding loops to the system to add redundancy and increase reliability of the system, as well as system build-out projects to expand the service area and provide storage for the system.

The City is currently working on updating the RWFS with Carollo Engineering Consultants. The updated study may have different results for existing system performance and may have revised recommended system improvements.

Chapter 7. Storm System Impact

The storm drain system analysis for Project impact is based on the MIKE URBAN (MU) model developed as part of the *2019 Storm Drain Master Plan* (Schaaf & Wheeler, 2019). The Project site drainage flows in two main directions, north to the Plymouth St storm drain line and east to the N Shoreline Blvd storm drain line. Plymouth St storm drain flows by gravity to Permanente Creek, and the N Shoreline Blvd storm drain flows north to the Charleston Rd Pump Station, which pumps storm drain flows into Stevens Creek. The Project will maintain approximately the same drainage patterns, draining to the north and east, connecting to the 30-inch storm drain within Plymouth St. and the 48-inch diameter storm drain within N Shoreline Blvd.

7.1. Stormwater Runoff Analysis

The Project impervious percentage is currently unknown, to complete this analysis the proposed site should be incorporated into the SDMP model with any site drainage patterns and impervious percent changes incorporated into the catchment runoff (hydrology) calculation. The pipe hydraulic calculation will indicate if any changes in the configuration affect the storm drain performance. In general, if the impervious percentage is maintained equal to the existing site or reduced, the impact should be negligible. SDMP is compared to stormwater runoff under the Project impervious area conditions.

7.1.1. Existing Site

The Project site is classified as "High Intensity Office" and has a corresponding overall assumed percent impervious area of 84.2% (Table 2-3, 2019 SDMP). Catchment delineation for the 2019 SDMP was performed in GIS and used 1-foot elevation contour data, aerial imagery, street and pipe network layouts, and catch basin locations. The site is split into 7 catchments, with three catchments draining to the Plymouth St storm drain line and four draining to the N Shoreline Blvd storm drain line.

7.1.2. Proposed Project Impact

The estimated impervious area is not provided, however, impacts to the existing system should be negligible so long as the impervious percentage of the site does not the existing site impervious (approximately 84%). The proposed Project site drainage configuration should be incorporated into the SDMP model to verify.

7.2. Project Contribution to Existing Deficiencies

Model results from the 2019 SDMP show no flooding near the Project site. There are no capacity Capital Improvement Projects (CIPs) identified in the 2019 SDMP near the Project site. One project is located between the Project and the outfall at Stevens Creek. The downstream CIP is along Shoreline Boulevard, this CIP is a high priority project and would re-direct flows to the Crittenden Pump Station from the Charleston Pump Station. The Charleston Pump Station is nearing the end of its useful life and this CIP project would eliminate the need to rehabilitate or replace the existing pump station at the Charleston Pond. An additional CIP is located at the outfall of Plymouth St, at Permanente Creek. This project includes adding a new flap gate to reduce backflow into the system, which in turn reduces the run-time for the Charleston Pump Station because the systems are interconnected. The Project is not anticipated to contribute flows greater than the existing site and is not anticipated to result in deficiencies downstream of the Project.

The Project site, existing modelled 10-year deficiencies, and SDMP CIPs within the NBPPII study are shown on Figure 16.

7.3. Additional Considerations

Site dewatering operations during construction are dependent on the volume of water to be removed, conditions of the site, and contractor methods. If the contractor intends to discharge to the storm drain system or the sanitary sewer system, a hydraulic analysis is recommended to ensure the system has sufficient capacity for the time of year of anticipated construction. The City should determine what restrictions to impose on construction site dewatering during rainy periods to avoid exacerbating the existing system deficiencies.

APPENDIX A:

Additional Considered Projects

Table A-1: Additional Considered Projects

	Project	Change Area/Planning Area	Address	Status*
1	Mountain View Co-Housing Community	Central Neighborhood	445 Calderon Ave	Completed
2	Hope Street Investors	Downtown/Evelyn Corridor	231-235 Hope St	Approved
3	Downtown Mixed Use Building	Downtown/Evelyn Corridor	605 Castro St	Completed
4	Residential Condominium Project	Downtown/Evelyn Corridor	325, 333, 339 Franklin St	Under Review
5	St Joseph's Church	Downtown/Evelyn Corridor	599 Castro St	Completed
6	Fairmont Mixed Use	Downtown/Evelyn Corridor	881 Castro Street	Completed
7	Bryant/Dana Office	Downtown/Evelyn Corridor	250 Bryant St	Completed
8	Quad/Lovewell	East Whisman	369 N Whisman Rd	Approved but Inactive
9	Renault & Handley	East Whisman	625-685 Clyde Ave	Completed
10	Symantec	East Whisman	575 E Middlefield Rd	On Hold
11	LinkedIn	East Whisman	700 E Middlefield Rd	Under Construction
12	National Avenue Partners	East Whisman	600 National Ave	Completed
13	2700 West El Camino Real	El Camino Real	2700 El Camino Real W	Under Construction
14	SummerHill Apt	El Camino Real	2650 El Camino Real W	Completed
15	Hotel Expansion	El Camino Real	2300 W El Camino Real	Completed
16	Lennar Multi-Family Communities	El Camino Real	2268 El Camino Real W	Completed
17	UDR	El Camino Real	1984 El Camino Real W	Completed
18	Residence Inn Gatehouse	El Camino Real	1854 El Camino Real W	Completed
19	Residence Inn	El Camino Real	1740 El Camino Real W	Completed
20	Tropicana Lodge - Prometheus	El Camino Real	1720 El Camino Real W	Completed
21	Austin's - Prometheus	El Camino Real	1616 El Camino Real W	Completed
22	1701 W El Camino Real	El Camino Real	1701 El Camino Real W	Completed
23	First Community Housing	El Camino Real	1585 El Camino Real W	Completed
24	Harv's Car Wash - Regis House	El Camino Real	1101 El Camino Real W	Completed
25	Greystar	El Camino Real	801 El Camino Real W	Completed
26	Medical Building	El Camino Real	412 El Camino Real W	Completed
27	Lennar Apartments	El Camino Real	865 El Camino Real E	Completed

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
28	Wonder Years Preschool	El Camino Real	86 El Camino Real	Completed
29	Evelyn Family Apartments	Grant/Sylvan	779 East Evelyn Ave	Completed
30	344 Bryant Ave	Grant/Sylvan	344 Bryant Ave	Under Building Review
31	Adachi Project	Grant/Sylvan	1991 Sun Mor Ave	Completed
32	840 E El Camino Real	Grant/Sylvan	840 El Camino Real E	Approved
33	Loop Convenience Store	Grant/Sylvan	790 El Camino Real E	Completed
34	El Camino Real Hospital Campus	Miramonte/Springer	2500 Grant Ave	Completed
35	City Sports	Miramonte/Springer	1040 Grant Ave	Completed
36	Prometheus	Moffett/Whisman	100 Moffett Blvd	Completed
37	Hampton Inn Addition	Moffett/Whisman	390 Moffett Blvd	Completed
38	Calvano Development	Moffett/Whisman	1075 Terra Bella Avenue	Under Construction
39	Moffett Gateway	Moffett/Whisman	750 Moffett Blvd	Under Construction
40	Holiday Inn Express	Moffett/Whisman	870 Leong Dr	Approved
41	Warmington Residential	Moffett/Whisman	660 Tyrella Avenue	Completed
42	Dividend Homes	Moffett/Whisman	111 and 123 Fairchild Dr	Completed
43	133-149 Fairchild Dr	Moffett/Whisman	133-149 Fairchild Dr	Completed
44	Warmington Residential	Moffett/Whisman	277 Fairchild Dr	Under Construction
45	Hetch-Hetchy Property	Moffett/Whisman	450 N Whisman Dr	Completed
46	DeNardi Homes	Moffett/Whisman	186 East Middlefield Road	Under Construction
47	Tripointe Homes	Moffett/Whisman	135 Ada Ave	Completed
48	Tripointe Homes	Moffett/Whisman	129 Ada Ave	Completed
49	Robson Homes	Moffett/Whisman	137 Easy St	Completed
50	167 N Whisman Rd	Moffett/Whisman	167 N Whisman Rd	Completed
51	Antenna Farm (Pacific Dr)	Moffett/Whisman	Pacific Dr	Completed
52	Pulte Homes	Moffett/Whisman	100, 420-430 Ferguson Dr	Completed
53	EFL Development	Moffett/Whisman	500 Ferguson Dr	Completed
54	Shenandoah Square Precise Plan	Moffett/Whisman	500 Moffett Blvd	On Hold

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
55	1185 Terra Bella Ave	Moffett/Whisman	1185 Terra Bella Ave	Approved
56	Linde Hydrogen Fueling Station	Moffett/Whisman	830 Leong Dr	Completed
57	Windsor Academy	Monta Loma/Farley/Rock	908 N Rengstorff Ave	Completed
58	D.R. Horton	Monta Loma/Farley/Rock	827 N Rengstorff Ave	Completed
59	ROEM/Eden	Monta Loma/Farley/Rock	819 N Rengstorff Ave	Completed
60	Paul Ryan	Monta Loma/Farley/Rock	858 Sierra Vista Ave	Under Construction
61	William Lyon Homes	Monta Loma/Farley/Rock	1951 Colony St	Completed
62	Dividend Homes	Monta Loma/Farley/Rock	1958 Rock St	Completed
63	Paul Ryan	Monta Loma/Farley/Rock	2392 Rock St	Completed
64	San Antonio Station	Monta Loma/Farley/Rock	100 & 250 Mayfield Ave	Completed
65	Northpark Apartments	Monta Loma/Farley/Rock	111 N Rengstorff Ave	Completed
66	333 N Rengstorff Ave	Monta Loma/Farley/Rock	333 N Rengstorff Ave	Under Construction
67	Classic Communities	Monta Loma/Farley/Rock	1946 San Luis Ave	Completed
68	1998-2024 Montecitio Ave	Monta Loma/Farley/Rock	1998-2024 Montecito Ave	Under Construction
69	Classic Communities	Monta Loma/Farley/Rock	647 Sierra Vista Ave	Completed
70	Dividend Homes	Monta Loma/Farley/Rock	1968 Hackett Ave & 208-210 Sierra Vista Ave	Completed
71	California Communities	Monta Loma/Farley/Rock	2025 & 2065 San Luis Ave	Completed
72	2044 and 2054 Montecito Ave	Monta Loma/Farley/Rock	2044 & 2054 Montecito Ave	Under Construction
73	Shorebreeze Apartments	Monta Loma/Farley/Rock	460 North Shoreline Blvd	Under Construction
74	Intuit	North Bayshore	2600 Marine Way	Completed
75	Sobrato Organization	North Bayshore	1255 Pear Ave	Approved
76	Charleston East	North Bayshore	2000 North Shoreline Blvd	Under Construction
77	LinkedIn and Sywest	North Bayshore	1400 North Shoreline Blvd	On Hold
78	Broadreach	North Bayshore	1625 Plymouth Street	Completed
79	Microsoft	North Bayshore	1045-1085 La Avenida St	Under Construction
80	Shashi Hotel	North Bayshore	1625 North Shoreline Blvd	Under Construction

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
81	Community School of Music and Art	San Antonio	250 San Antonio Circle	Approved
82	Prometheus	San Antonio	400 San Antonio Rd	Completed
83	Octane Fayette	San Antonio	2645 & 2655 Fayette Dr	Under Review
84	Merlone Geier Partners (MGP)	San Antonio	405 San Antonio Rd	Completed
85	Anton Calega	San Antonio/Rengstorff/ Del Medio	394 Ortega Ave	Completed
86	Barry Swenson Builder	San Antonio/Rengstorff/ Del Medio	1958 Latham St	Approved
87	2296 Mora Drive	San Antonio/Rengstorff/ Del Medio	2296 Mora Dr	Completed
88	St Francis High School	Miramonte/Springer	1885 Miramonte Ave	Under Review
89	Franklin	Central/Downtown	325 Franklin Street	Under Review
90	California	Central/Downtown	756 California Street	Under Review
91	North Shorelin	Moffett/Whisman	1001 North Shorelin Boulevard	Under Review
92	555 West Middlefield Road	Moffett/Whisman	555 West Middlefield Road	Under Review
93	Mountain View Academy	Central/Downtown	360 South Shoreline Boulevard	Under Review
94	DeNardini	San Antonio	1933 Gamel Way, 574 Escuela Ave	Under Review
95	Tyrella	Moffett/Whisman	294-296 Tyrella Avenue	Under Review
96	Logue	Moffett/Whisman	400 Logue Avenue	Under Review
97	Sobrato	Moffett/Whisman	465 Fairchild Drive	Under Review
98	Google Landings	North Bayshore	1860-2159 Landings Dr., 1014-1058 Huff Ave, 900 Alta Avenue, 2000 North Shoreline	Under Review
99	Phan	Moffett/Whisman	198 Easy Street	Under Review

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
100	Cosma	El Camino Real	1510 West El Camino Real	Under Review
101	Dana Street	Downtown	676 West Dana Street	Under Review
102	Summer Hill	Monta Loma/Farley/Rock	1555 West Middlefield Road	Under Review
103	Ambrosio	El Camino Real	855-1023 West El Camino Real	Under Review
104	BPR	El Camino Real	2300 West El Camino Real	Under Review
105	Dutchints	San Antonio	570 South Rengstorff Avenue	Under Review
106	GPRV	Central/Downtown	881 Castro Street	Under Review
107	Ambra	Monta Loma/Farley/Rock	901-987 N. Rengstorff Avenue	Under Review
108	Hylan	Monta Loma/Farley/Rock	410-414 Sierra Vista Avenue	Under Review
109	Maston	Miramonte/Springer	982 Bonita Avenue	Under Review
110	McKim	Monta Loma/Farley/Rock	2019 Leghorn Street	Under Review
111	Sand Hill	Moffett/Whisman	1989 North Bernardo Avenue	Under Review
112	Maston	El Camino Real	1313 and 1347 West El Camino Real	Under Review
113	Anderson	El Camino Real	601 Escuela Ave and 1873 Latham Street	Under Review
114	SummerHill	Moffett/Whisman	355-418 E Middlefield Road	Approved
115	Prometheus	Monta Loma/Farley/Rock	1950 Montecito Avenue	Under Construction
116	Dividend Homes	Monta Loma/Farley/Rock	2310 Rock Street	Under Construction
117	Insight Realty	Downtown	701 W. Evelyn Avenue	Approved
118	Prometheus	Downtown	1720 Villa Street	Under Construction
119	Fortbay	Moffett/Whisman	777 West Middlefield Road	Approved

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
120	Buddhist Temple	Moffett/Whisman	759 W. Middlefield Road	Approved
121	Green Company	Downtown	Hope Street Lots 4 & 8	Approved
122	Dividend Homes	Monta Loma/Farley/Rock	2005 Rock Street	Under Construction
123	Classic Communities	Monta Loma/Farley/Rock	315 & 319 Sierra Vista	Under Construction
124	SummerHill	Downtown	257-279 Calderon Ave	Under Construction
125	SummerHill	Moffett/Whisman	535 and 555 Walker Drive	Under Construction
126	Google	-	Nasa Research Park	Under Construction
127	Renault & Handly	Moffett/Whisman	580-620 Clyde Avenue	Under Construction

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

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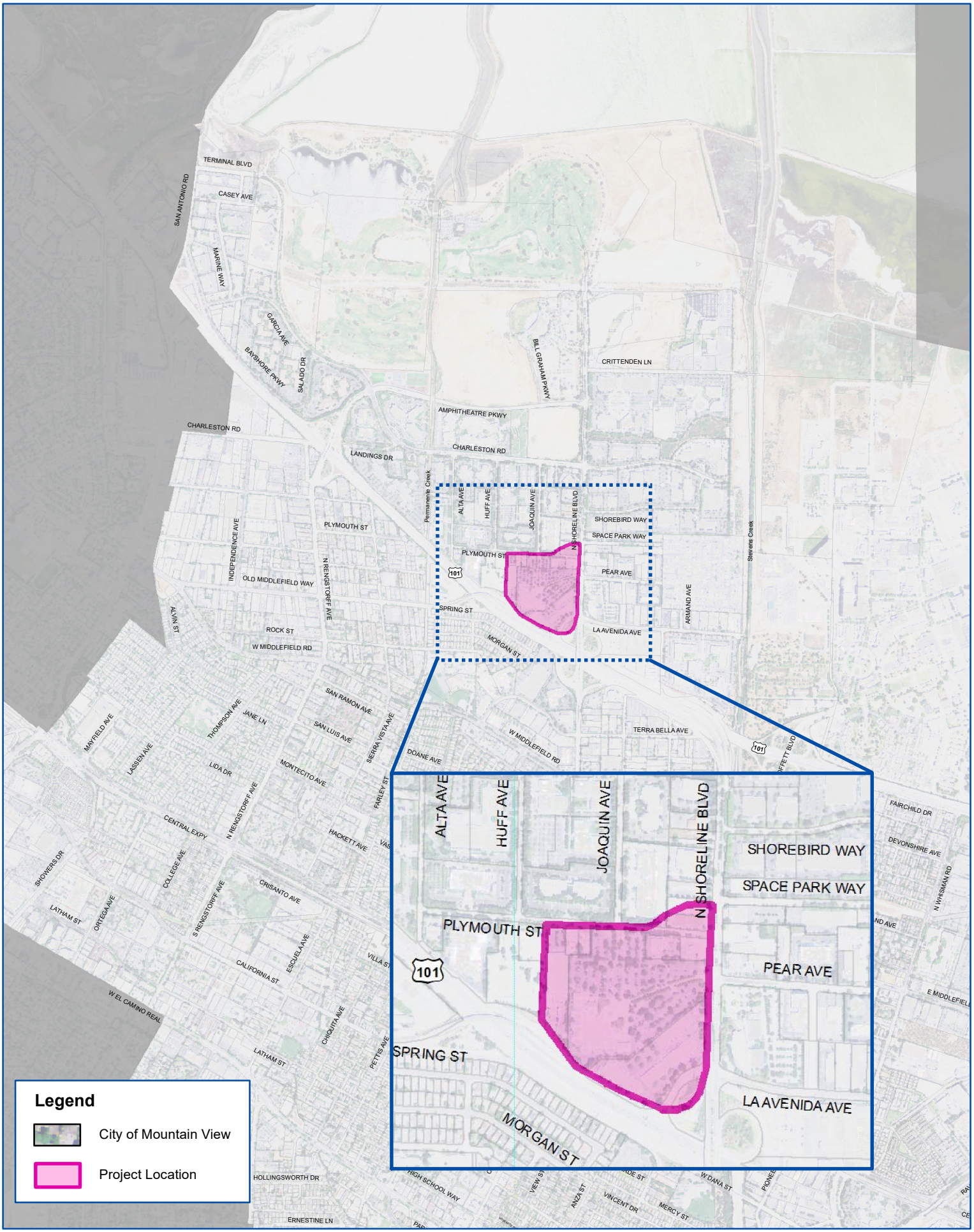
APPENDIX B:

Figures



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

0 260 520 Feet

FIGURE B-1: **Project Location**

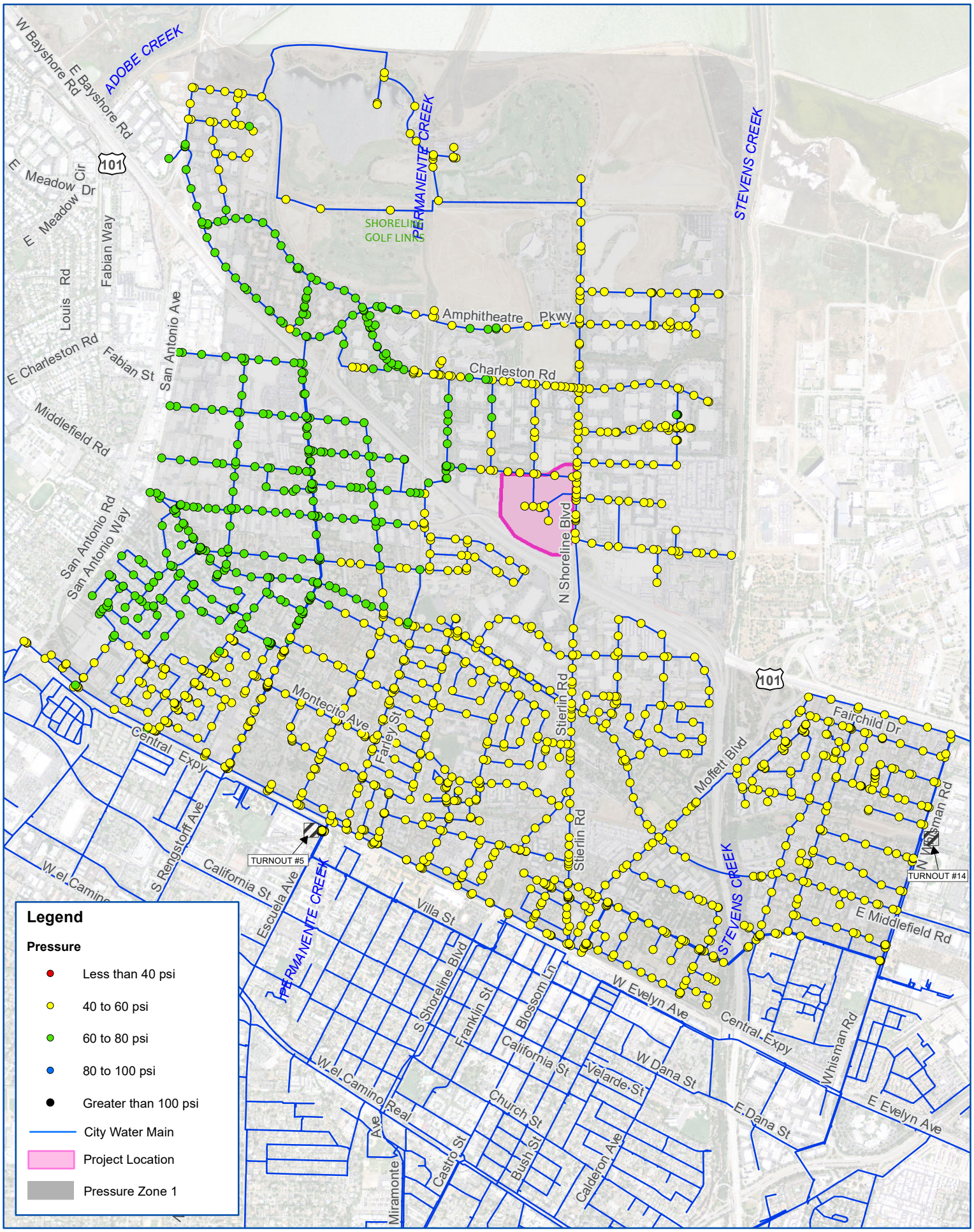


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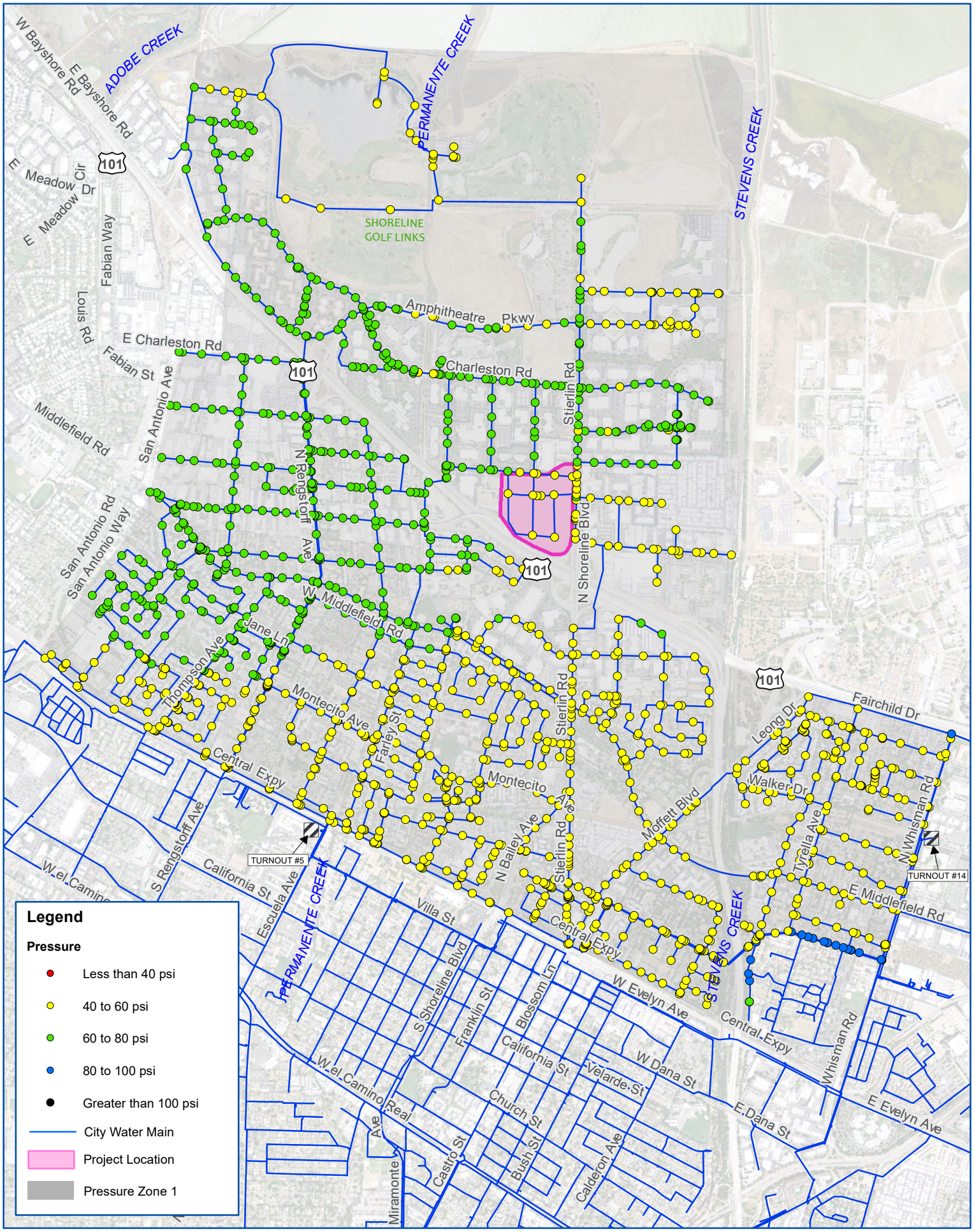
FIGURE B-2: **Peak Hour Demand (PHD) - Without Project**

Water System Model - Existing Condition



Legend

Pressure

- Less than 40 psi
- 40 to 60 psi
- 60 to 80 psi
- 80 to 100 psi
- Greater than 100 psi
- City Water Main
- Project Location
- Pressure Zone 1

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0 1,000 2,000 Feet

N

Figure B-3

Peak Hour Demand (PHD) - With Project

Water System Model - Existing Condition

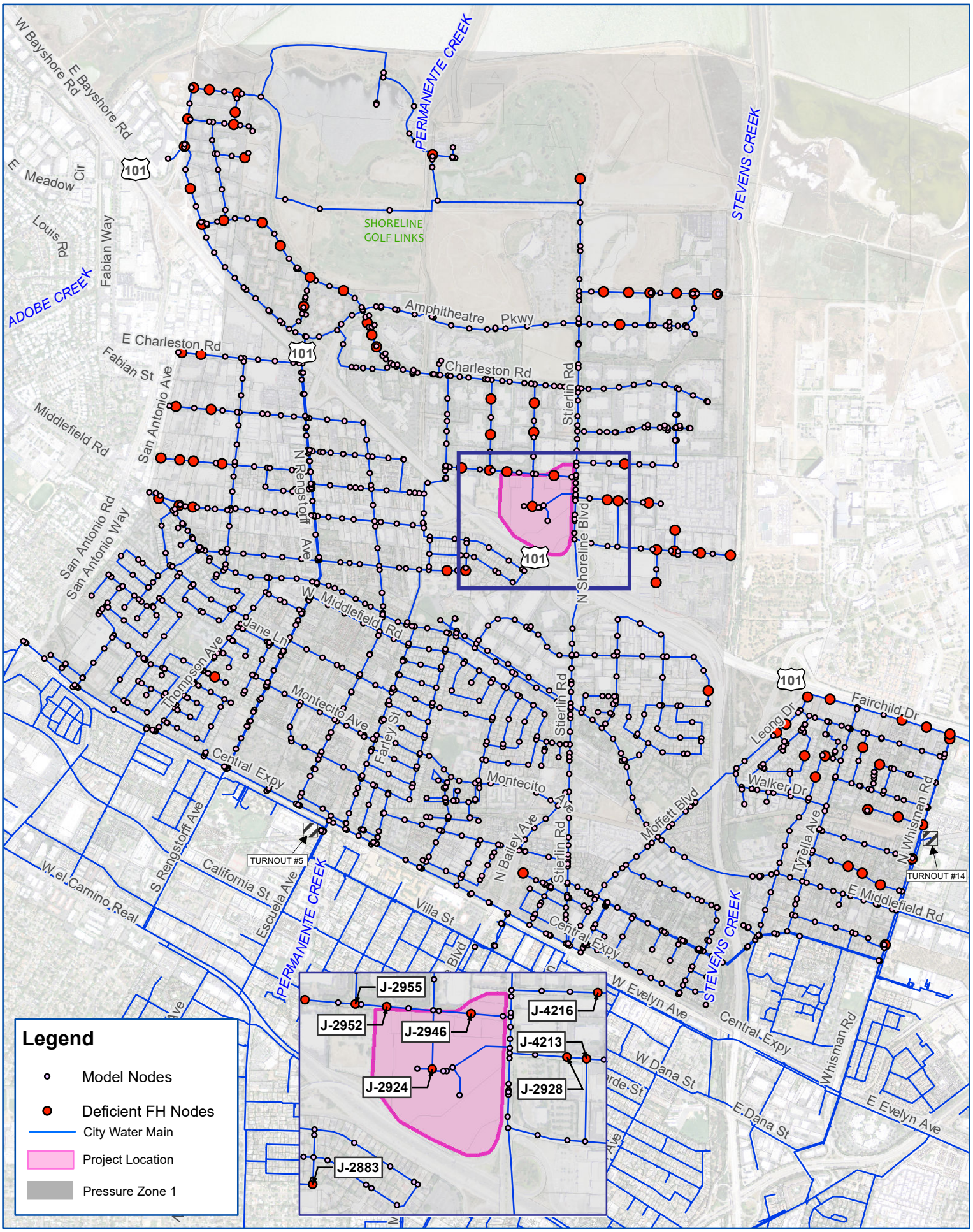

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FIGURE B-4: **Fire Flow Analysis - Without Project**

Water System Model - Existing Condition

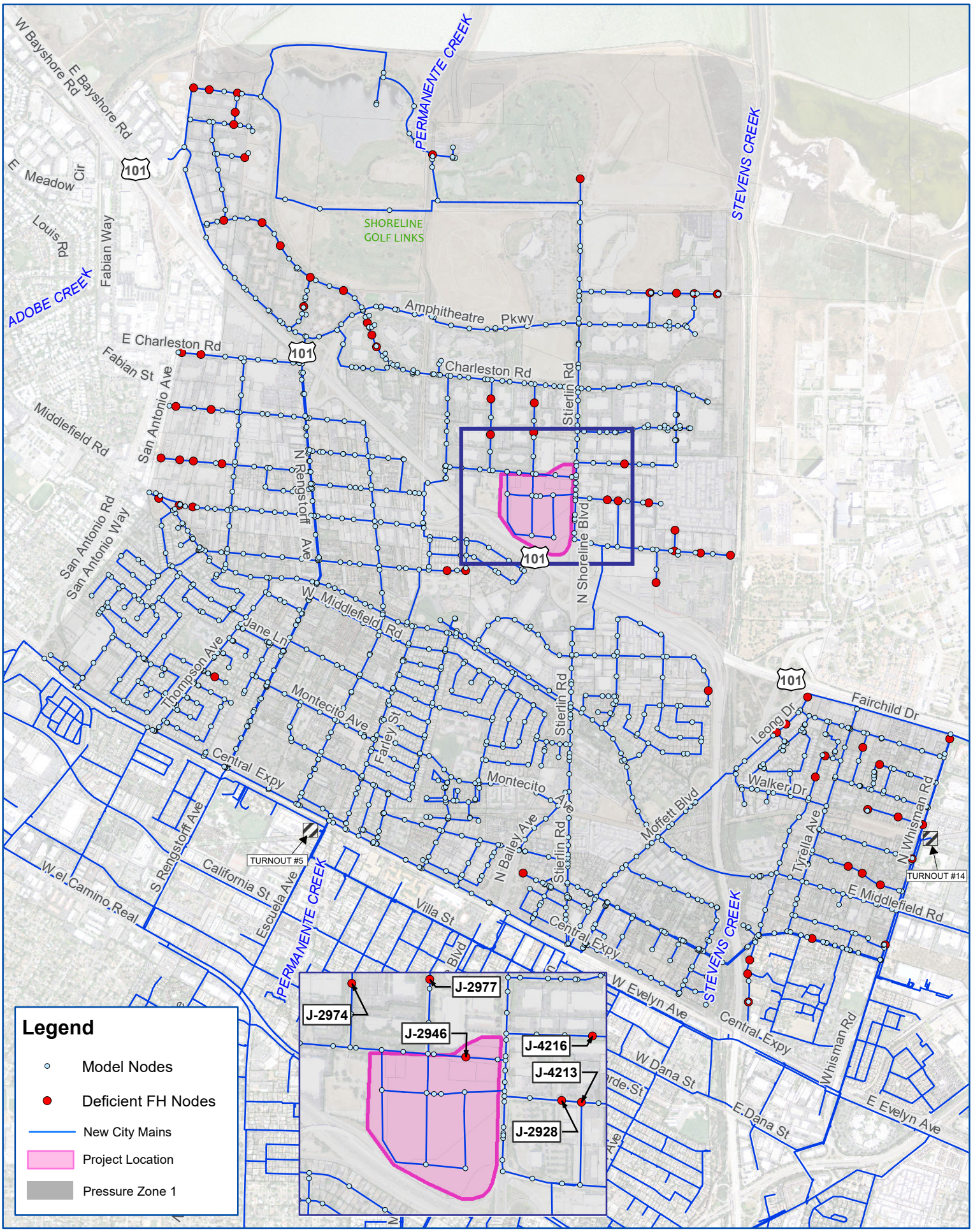

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FIGURE B-5: **Fire Flow Analysis - With Project**

Water System Model - Existing Condition

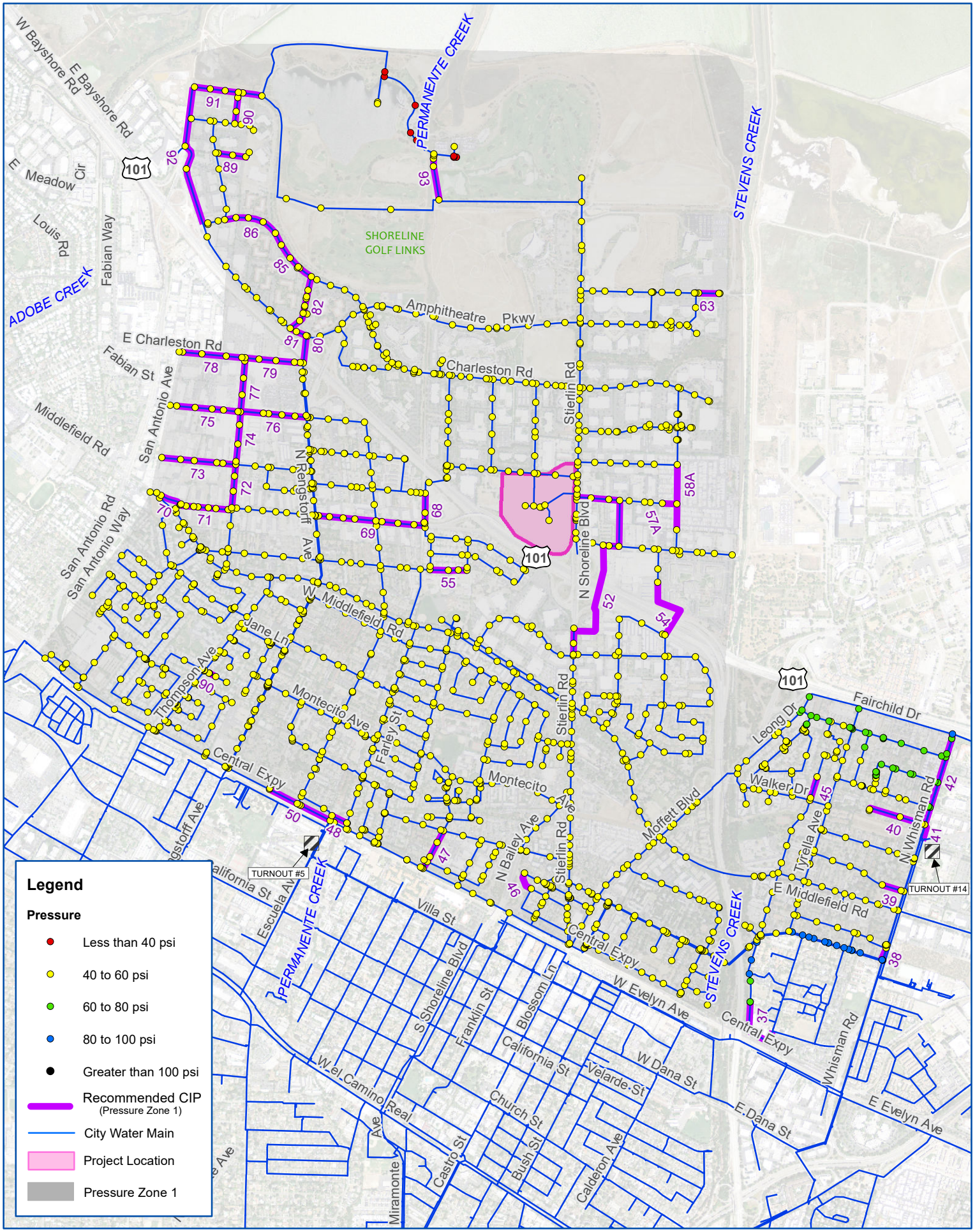

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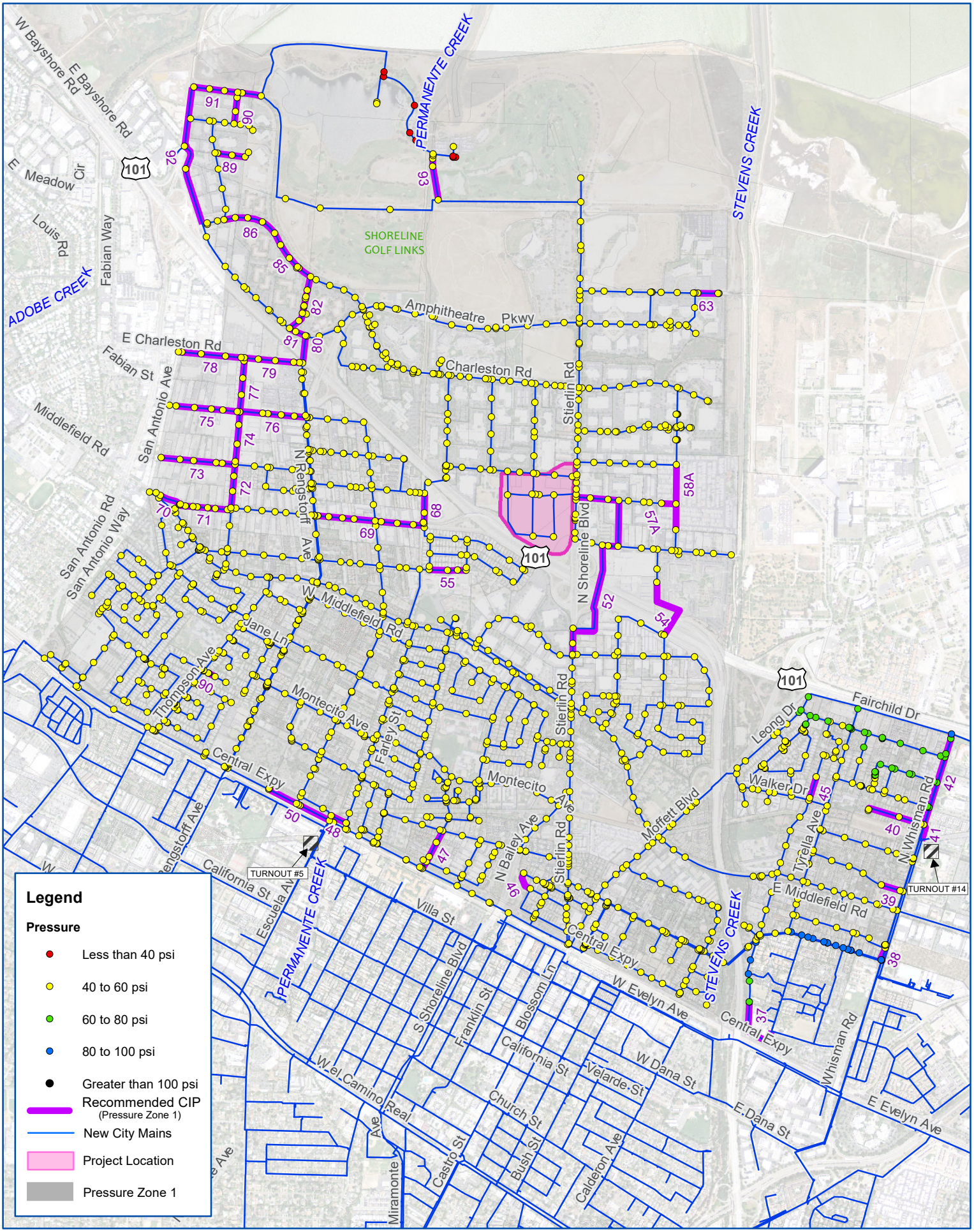
FIGURE B-6: **Peak Hour Demand (PHD) - Without Project**

Water System Model - Future Cumulative Condition



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0 1,000 2,000 Feet

FIGURE B-7: **Peak Hour Demand (PHD) - With Project**

Water System Model - Future Cumulative Condition

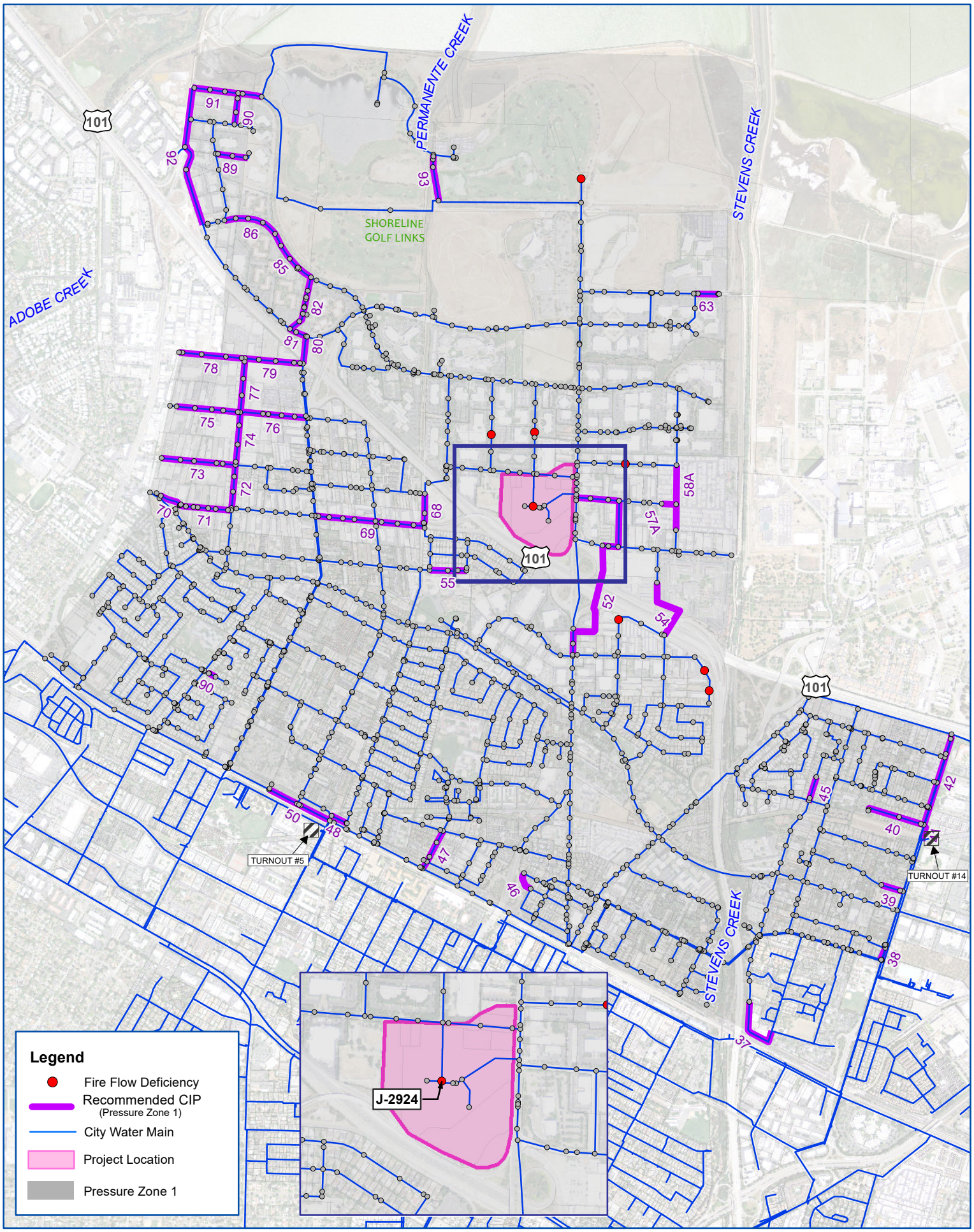

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FIGURE B-8: **Fire Flow Analysis - Without Project**

Water System Model - Future Cumulative Condition

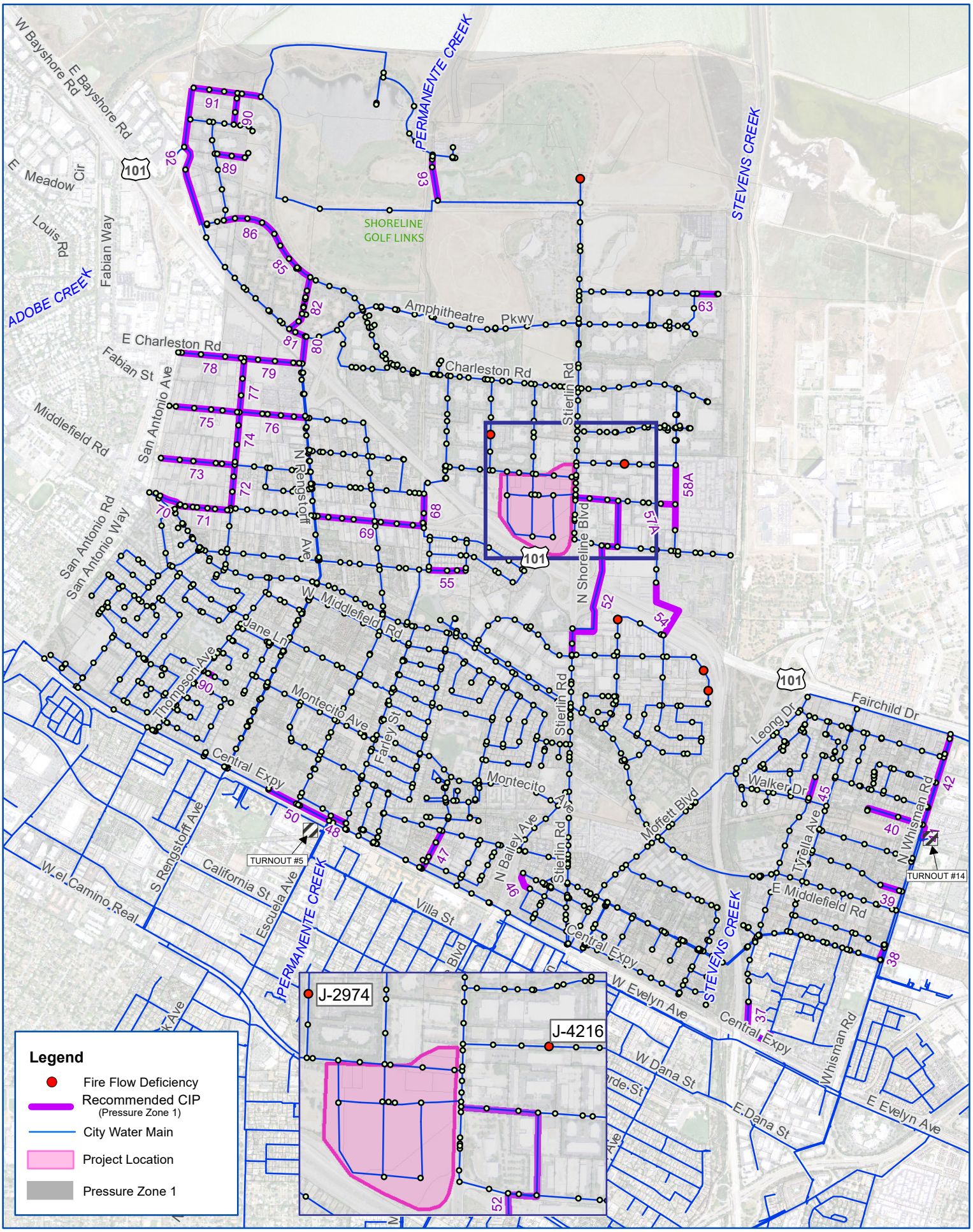

FIGURE B-9: **Fire Flow Analysis - With Project**

Water System Model - Future Cumulative Condition

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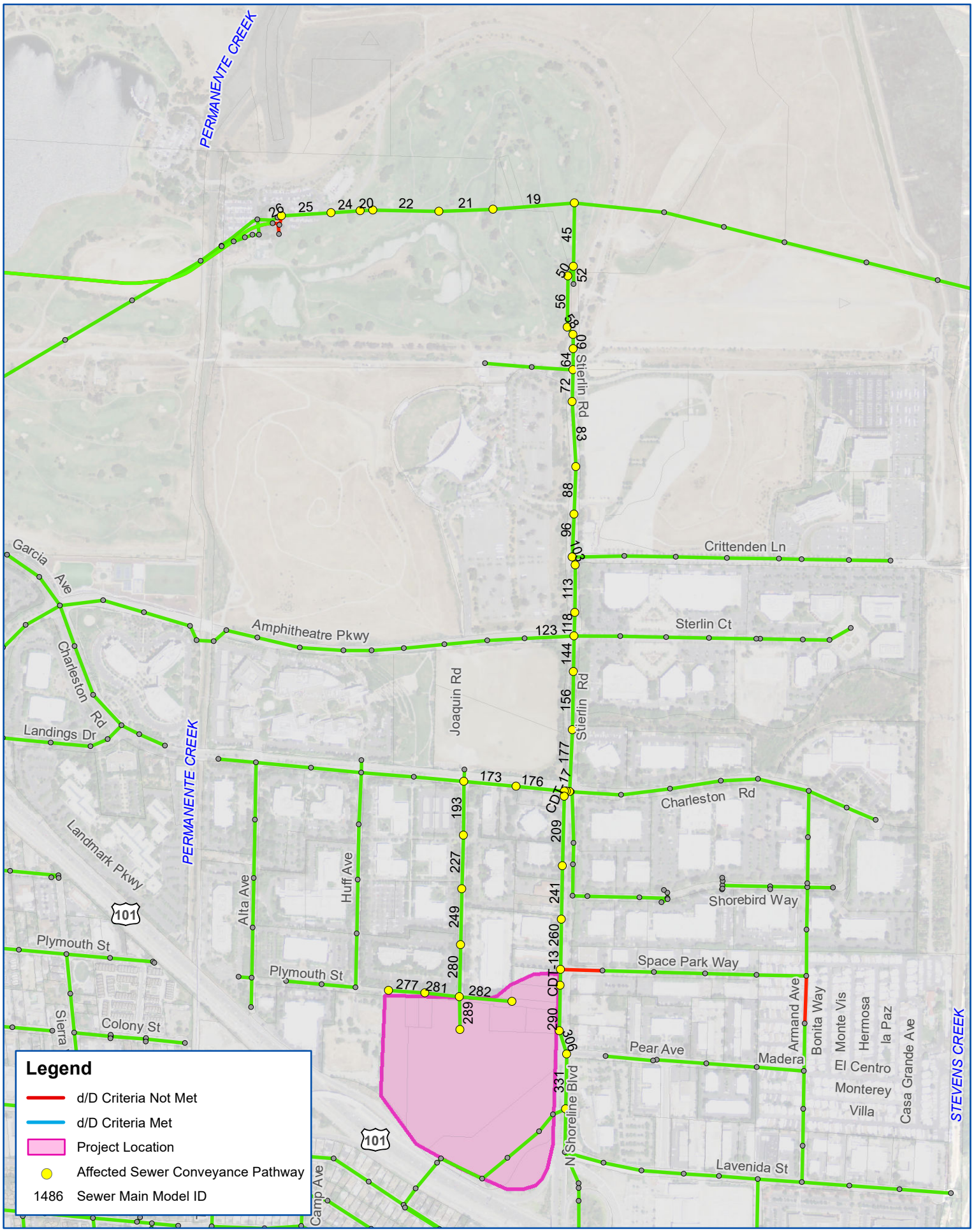

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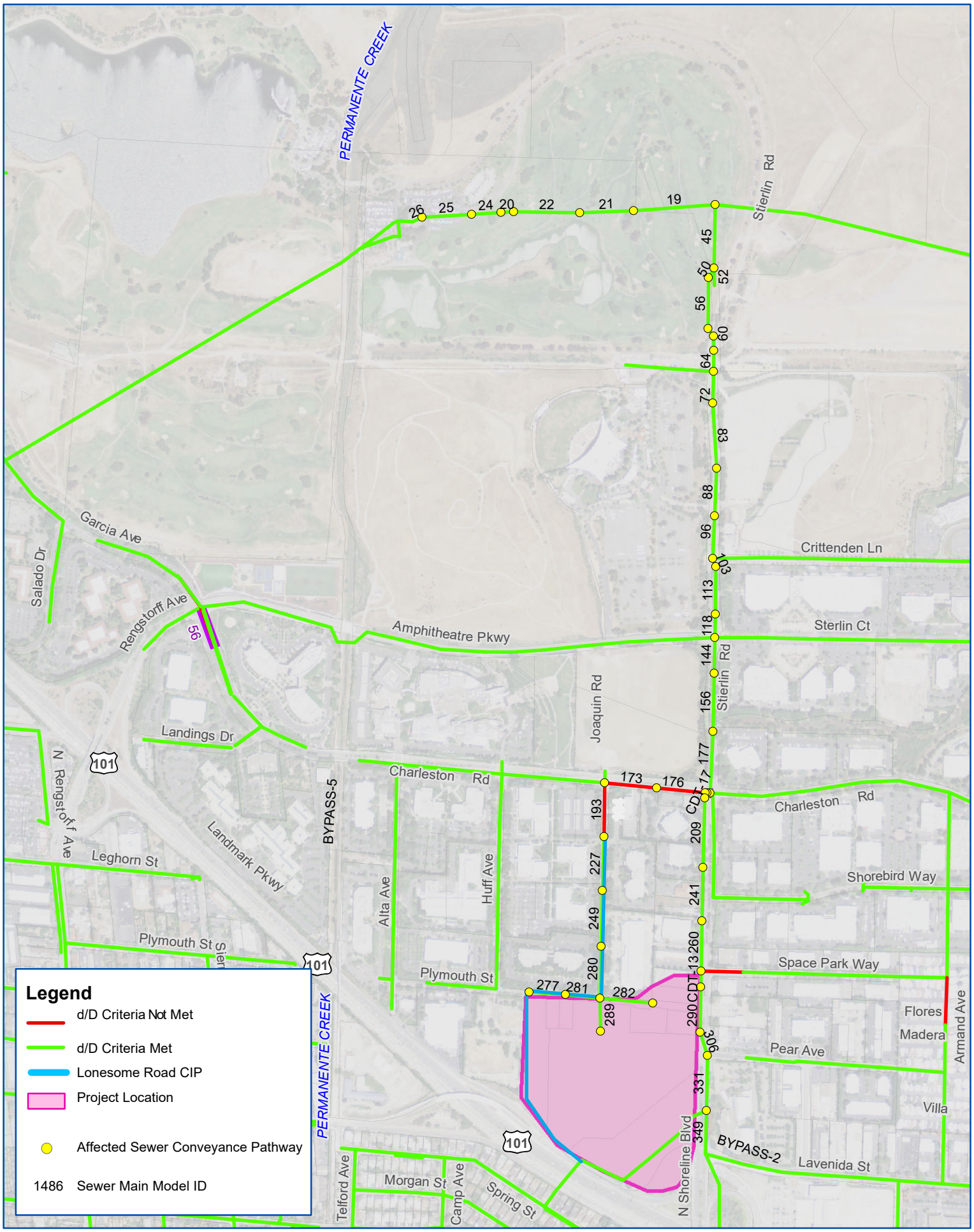
FIGURE B-10:

PWWF - Without Project

Sewer System Model - Existing Condition



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Colony St

FIGURE B-11:

PWWF - With Project

Sewer System Model - Existing Condition

Gateway Master Plan Utility Impact Study | February 2021

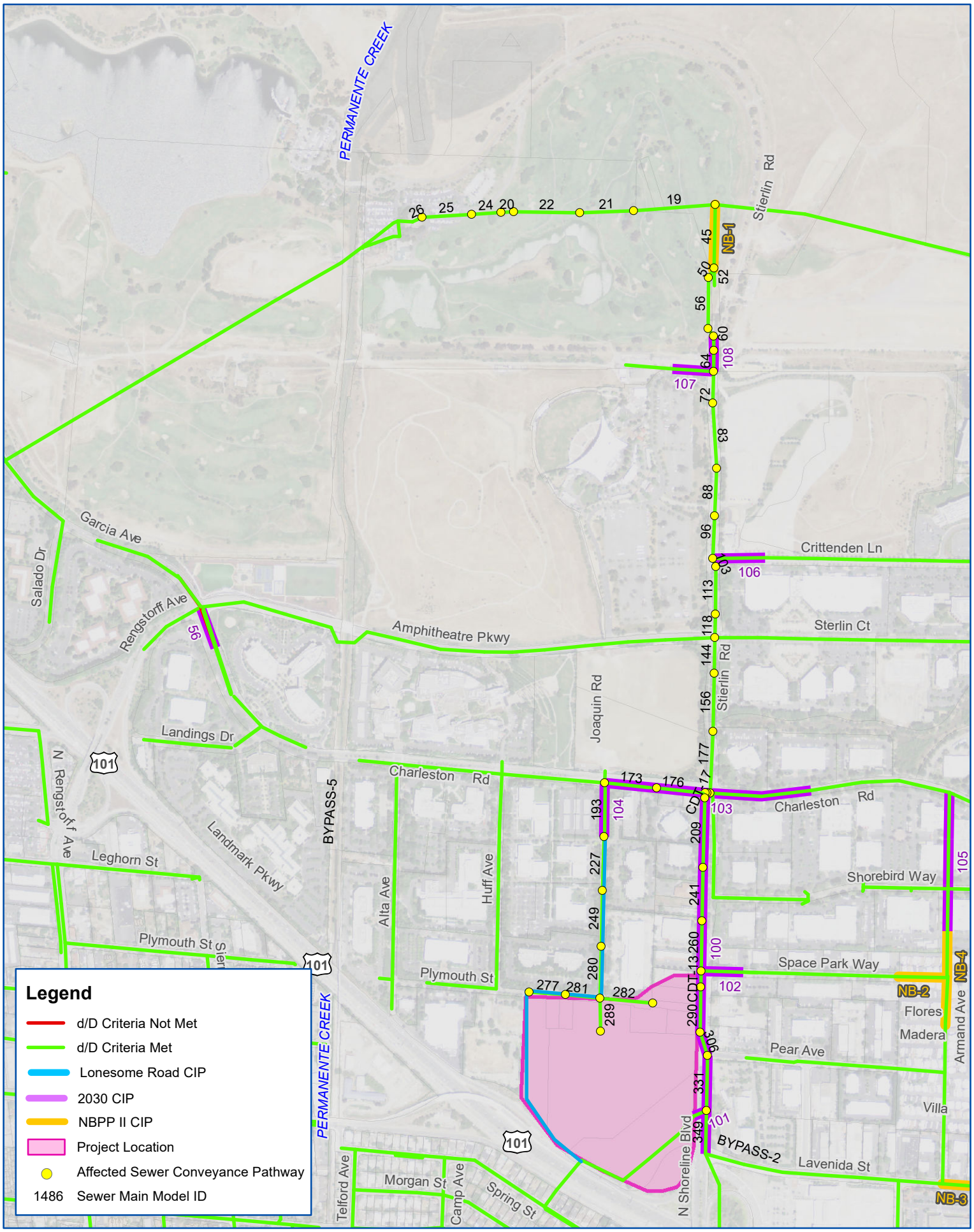

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FIGURE B-12:

PWWF - Without Project

Sewer System Model - Existing Condition

Gateway Master Plan Utility Impact Study | February 2021

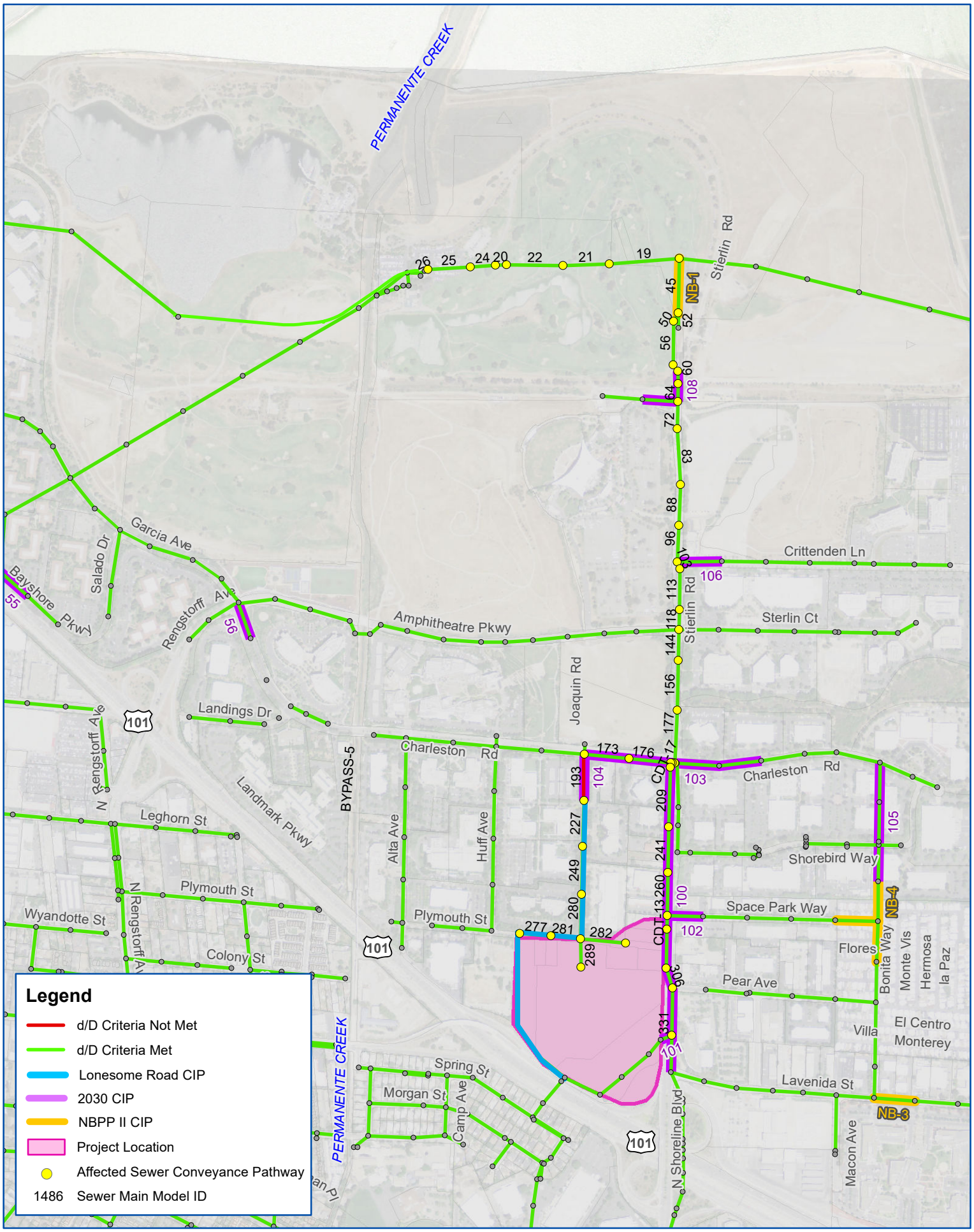

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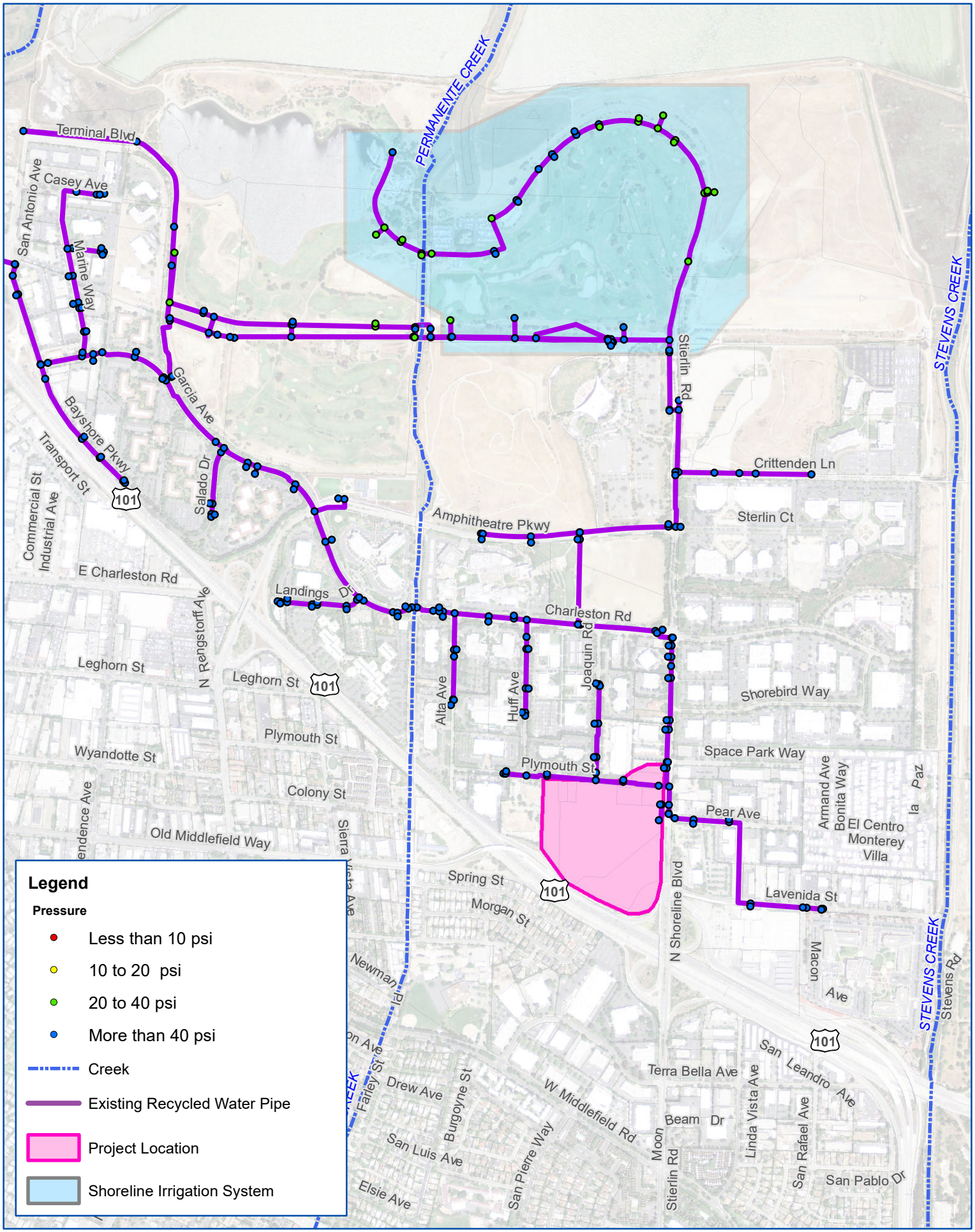
FIGURE B-13:

PWWF - With Project

Sewer System Model - Future Cumulative Condition

Google Landings Utility Impact Study | February 2021



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0 550 1,100 Feet

FIGURE B-14: **Existing Recycled Water Pressure**

Recycled Water Feasibility Model - With Shoreline Pond Storage

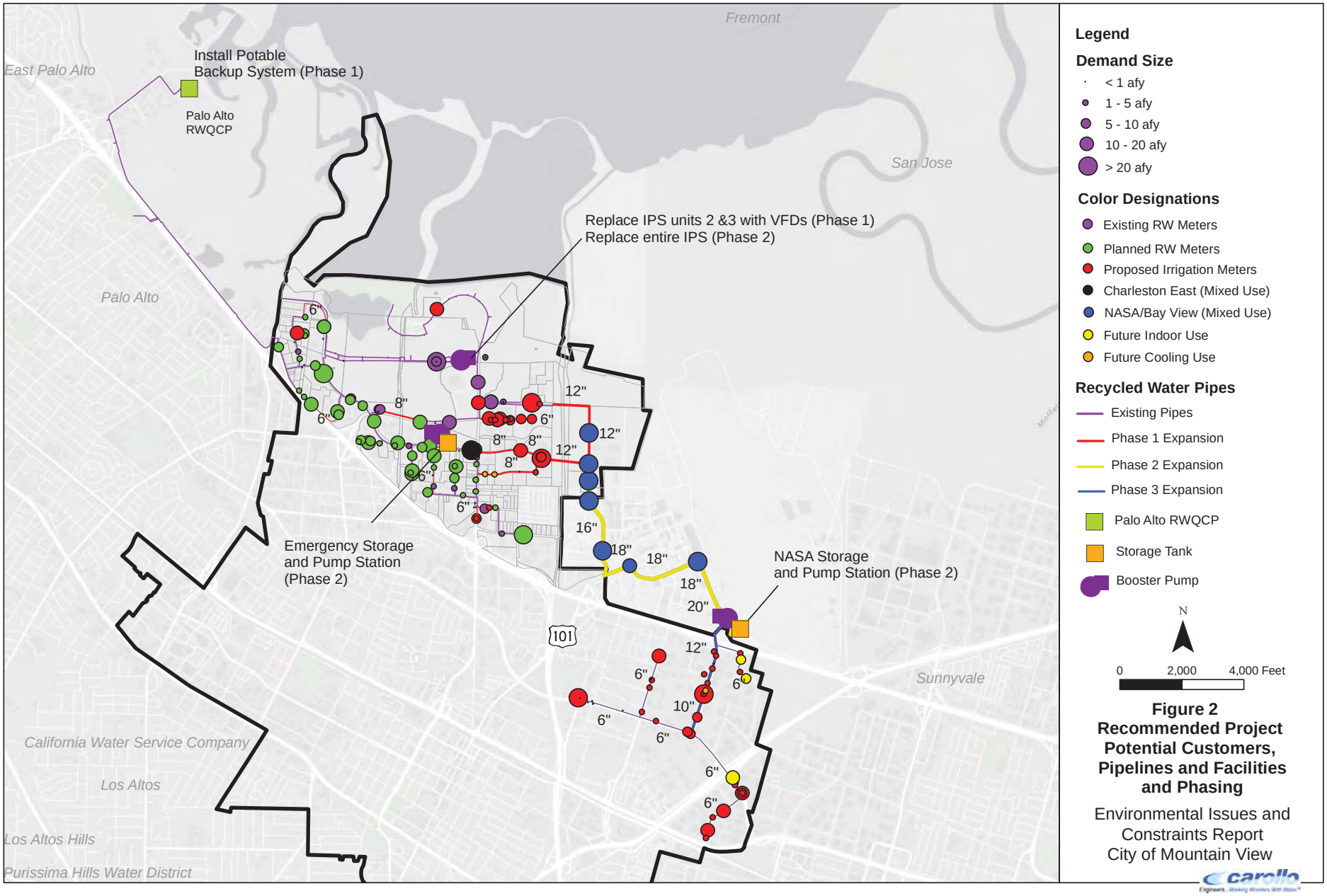
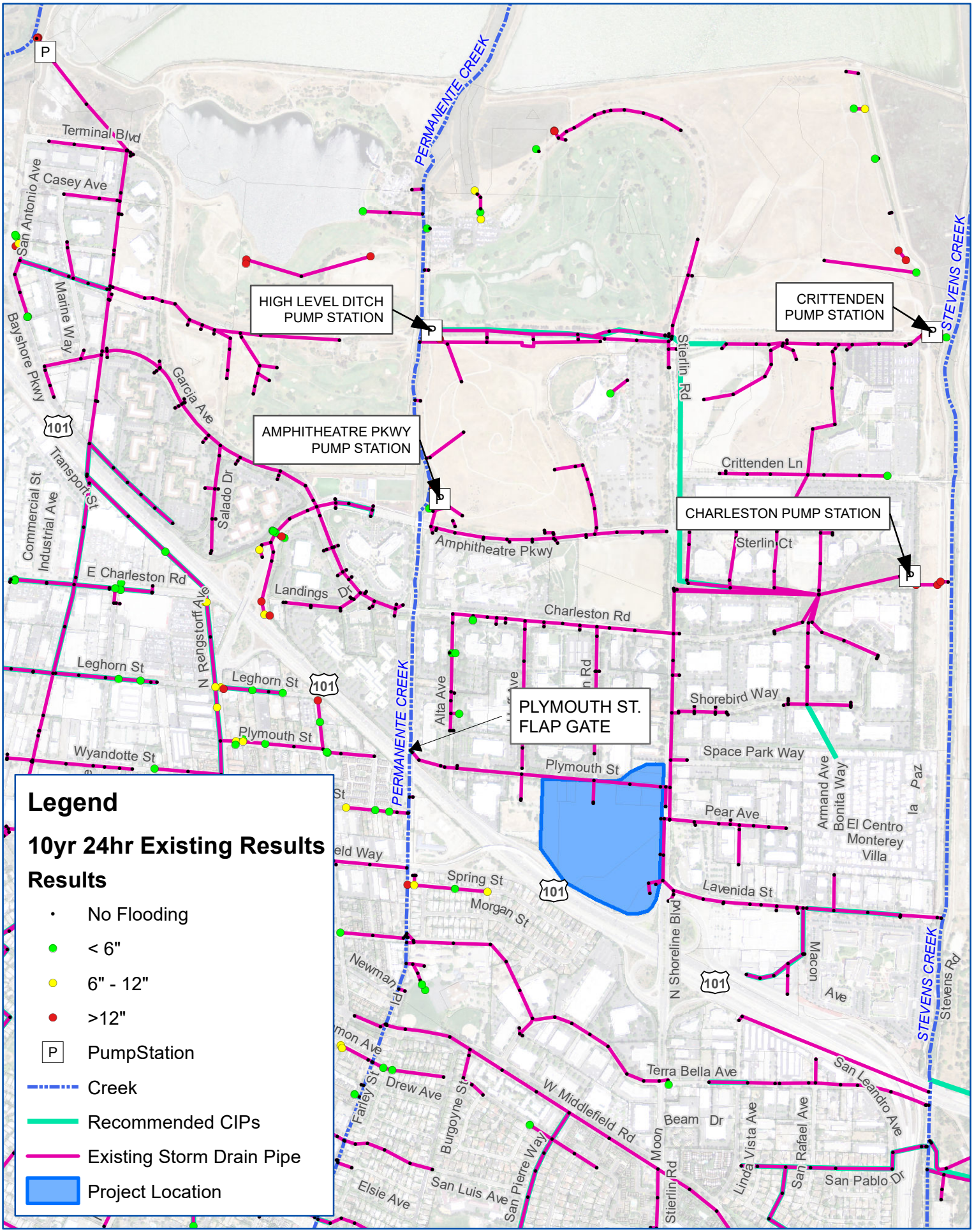


Figure 2
Recommended Project Potential Customers, Pipelines and Facilities and Phasing

Environmental Issues and Constraints Report
City of Mountain View

Figure B-15: Recycled Water Feasibility Study Recommended Projects (Carollo, 2012)



Schaaf & Wheeler
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0 550 1,100 Feet

FIGURE B-16: **Storm Drain Existing 10yr Results**

CIPs From 2019 Storm Drain Master Plan

Table 1: Project Land Use Program and Service Population

Scenario	Building Size	Service Population[1,2]
Preferred Land Use Alternative		
Residential Development	2,100 dwelling units	3,680
Office Development	500,000 square feet	2,000
Retail/Entertainment Development	300,000 square feet	800
Hotel Development	200 rooms	80
	Service Population Total	**6,560**
No-Office Land Use Alternative		
New Residential Development	2,800 dwelling units	4,900
New Retail/Entertainment Development	300,000 square feet	800
New Hotel Development	200 rooms	80
	Service Population Total	**5,780**

Notes:
1. Service population is the sum of the residents and employees for each land use scenario. The service population rounded to the nearest 10.
2. For the project land use program, the residential and employee densities utilized were 1.75 residents per dwelling unit, 4.00 employees per 1,000 square feet for office, 2.67 employees per 1,000 square feet for retail/entertainment, and 0.4 employees per room for a hotel.

Source: Fehr & Peers, 2021.

Overview of Methods

How transportation impacts under the California Environmental Quality Act (CEQA) are analyzed was changed with Senate Bill (SB) 743. SB 743 removed the use of automobile delay or traffic congestion for determining transportation impacts in environmental review. Instead, the latest *CEQA Statute & Guidelines* now specify that vehicle miles traveled, or 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 VMT assessment is being provided for informational purposes to support the environmental analysis for this project.

This VMT assessment calculates VMT using the following steps and methods consistent with the North Bayshore Precise Plan 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). 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 for each project alternative.
- **Vehicle Miles Traveled**: The project-generated 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.[1] The project-generated VMT metric and calculation methods are consistent with the North Bayshore Precise Plan (NBPP) VMT assessment described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017). While the boundary VMT is a new VMT metric to evaluate the North Bayshore area, it has been used for the East Whisman Precise Plan transportation analysis.

As a cumulative VMT assessment of the North Bayshore Precise Plan (NBPP) is described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017) memorandum, this VMT assessment conducts an Existing with Project Conditions VMT assessment to quantify and the order of magnitude and direction of the Project's effect on VMT. Using the project-generated VMT and boundary VMT metrics, this VMT assessment shows the benefits of adding housing to North Bayshore, smaller-than-typical parking supply ratios, a shared parking strategy for the non-residential land uses, and increased transportation demand management effectiveness for new office development. These direct benefits are expressed using the project-generated VMT metric, while the boundary VMT metric is used to express the indirect benefits of the Project on the nearby streets.

Daily Trip Generation

The project driveway trip generation and North Bayshore volumes described below use the trip generation methods described in detail in 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).

[1] 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.

Driveway Trip Generation

The existing building demolition credit and daily driveway trip generation is show in **Tables 2** and **3**, respectively. The project driveway vehicle trip generation is based on the following assumptions:

- **Existing Building Demolition Credit**: The existing building demolition credit is based on the occupied buildings described in **Table 2**. The existing daily trip generation rate is 6.75 total vehicle trips per employee for entertainment uses and for industrial uses, while the rate is 3.12 total vehicle trips per employee for all other uses.

Table 2: Existing Building Driveway Trip Generation

Land Use	Building Size[1]	Daily Trips[2]
Entertainment (Movie Theater)	100,000 square feet	1,800
Industrial Use	39,105 square feet	270
Restaurant Use	11,056 square feet	230
Office Use	3,657 square feet	50
	Total	***2,350***

Note:
1. Summary of occupied buildings. The vacant portions (e.g., approximately 43,140 square feet of retail land use, and 48,250 square feet of service land use.) of the project site are not summarized in this table.
2. Employees and daily trips rounded to the nearest 10.

Source: Fehr & Peers, 2021.

- **New Residential Development**: The new residential units are assumed to be a mix of market rate units, with an average size of 1.75 persons per household and the smaller-than-typical parking ratio per the North Bayshore Precise Plan Update of 0.60 parking spaces per dwelling unit. This results in an estimate of approximately 3,680 residents for the preferred land use alternative, and approximately 4,900 residents for the no-office land use alternative. The proposed residential uses would have a combined effective daily trip generation rate of approximately 3.67 daily vehicle trips per dwelling unit.
- **New Office Development**: The proposed office space is assumed to be 100 percent occupied at a density of 4.0 employees per 1,000 square feet gross floor area. This results in an estimate of approximately 2,000 employees on-site upon full occupancy of the preferred land use alternative. The daily trip generation rate for new office uses in the North Bayshore Precise Plan area is 2.06 daily vehicle trips per employee.
- **New Retail and Entertainment Development**: The proposed retail space is assumed to be 100 percent occupied at a density of 2.67 employees per 1,000 square feet gross floor

area. This results in an estimate of approximately 801 employees on-site upon full occupancy of the project. The Daily trip generation rate for new retail/entertainment uses in the North Bayshore Precise Plan is 6.66 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 approximately 80 employees on-site upon full occupancy of the project. The Daily trip generation rates for new hotel uses in the North Bayshore Precise Plan are 8.17 daily vehicle trips per room.

Table 3: Driveway Trip Generation with Project

Scenario	Building Size	Service Population	Daily Trips
Preferred Land Use Alternative			
New Residential Development	2,100 dwelling units	3,680	7,710
New Office Development	500,000 square feet	2,000	4,120
New Retail/Entertainment Development	300,000 square feet	800	5,330
New Hotel Development	200 rooms	80	1,630
	Total (A)	**6,560**	**18,790**
	Existing Building Demolition Trip Credit (B)		*-2,350*
	Net Increase (A-B=C)		**16,440**
No-Office Land Use Alternative			
New Residential Development	2,800 dwelling units	4,900	10,280
New Retail/Entertainment Development	300,000 square feet	800	5,330
New Hotel Development	200 rooms	80	1,630
	Total (A)	5,780	17,240
	Existing Building Demolition Trip Credit (B)		*-2,350*
	Net Increase (A-B=C)		**14,890**

Note: Service population and daily trips rounded to the nearest 10.
Source: Fehr & Peers, 2021.

North Bayshore Gateway Volumes

The daily North Bayshore Gateway volume is shown in **Table 4**. The North Bayshore Gateway vehicle volume is based on the following assumptions. (Detailed trip generation results for each of the three scenarios (Existing Conditions, Existing with Preferred Land Use Alternative Conditions, and Existing with No-Office Land Use Alternative Conditions) are presented in the attached tables **A-1** to **A-3**.)

- **Existing Gateway Volumes**: This represents existing gateway volumes calculated from the counts conducted at the North Bayshore gateways during the Spring 2020 traffic monitoring, with an estimated 24,295 employees (assuming a ½ percent vacancy rate) and 762 residents. Expressed as a rate, this equates to a daily rate of 3.12 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 Gateway 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 in North Bayshore creates a mode shift by allowing people who currently drive in to NBS 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 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 of the factors listed above. As described earlier, for the full buildout of the NBPP, the total number of trips at the gateway equals the trip target.

Table 4: North Bayshore Gateway Volume with Project

Scenario	Daily Trips
Preferred Land Use Alternative	
Existing Gateway Volumes	78,370
New Project Traffic	18,790
Existing Building Demolition Credit	-2,350
Mixed-Use Trip Reduction	-2,010
Gateway Total Volume	92,800
Net New Gateway Traffic	14,430
No-Office Land Use Alternative	
Existing Gateway Volumes	78,370
New Project Traffic	17,240
Existing Building Demolition Credit	-2,350
Mixed-Use Vehicle Trip Reduction	-3,470
Gateway Total Volume	89,790
Net New Gateway Traffic	11,420

Note: Daily trips rounded to the nearest 10.
Source: Fehr & Peers, 2021.

Service Population

Service population is the sum of the number of employees plus residents. **Table 5** shows the service population for the project site, North Bayshore area, the City of Mountain View, and Santa Clara County for each project alternative.

Table 5: Service Populations

Land Use	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
Project Site			
Employees[1,2] (A)	N/A	2,880	880
Residents[1,2] (B)	N/A	3,680	4,900
Service Population[1,2,3] (A + B = C)	N/A	6,560	5,780
North Bayshore			
Employees[1] (A)	24,300	26,780	24,780
Residents[1] (B)	760	4,440	5,660
Service Population[1,3] (A + B = C)	25,060	31,220	30,440
City of Mountain View			
Employees[1] (A)	72,700	75,180	73,180
Residents[1] (B)	74,820	78,500	79,720
Service Population (A + B = C)	147,520	153,680	152,900
Santa Clara County			
Employees[1] (A)	951,020	953,500	951,500
Residents[1] (B)	1,782,400	1,786,080	1,787,300
Service Population[1,3] (A + B = C)	2,733,420	2,739,580	2,738,800

Notes:

1. Rounded employees, residents, and service population to nearest 10.
2. The existing site service population is omitted under Existing Conditions because the existing land uses are too small and specialized that the Mountain View travel model is not an appropriate tool for evaluating the project sites Existing Conditions VMT.
3. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2021.

Vehicle Miles Travel Estimation 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:

- **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)**: An evaluation of the change in total vehicle travel within a defined geographic area boundary, compared between the no project and with project conditions. The boundary for a project's analysis will be selected based on project characteristics such as size and location.

Project-generated 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. Project-generated 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.[2] The Project's effect on VMT compares the changes in boundary VMT per service population between the Existing Conditions and Existing with Project Conditions. The analysis presented in this memorandum focuses on the VMT for all trip purposes and vehicle types (i.e., there is no separation of VMT by land use).

Project-Generated VMT per Service Population Estimation Method

The project-generated VMT is the VMT from all vehicle trips for all trip purposes and types. It is calculated by summing the "VMT from" and "VMT to" a specified area, as follows:

[2] 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 a grocery store to that neighborhood will shorten many of the grocery shopping trips and reduce the total amount of VMT to/from the neighborhood. This concept is likely to occur with the addition of campus housing.

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

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

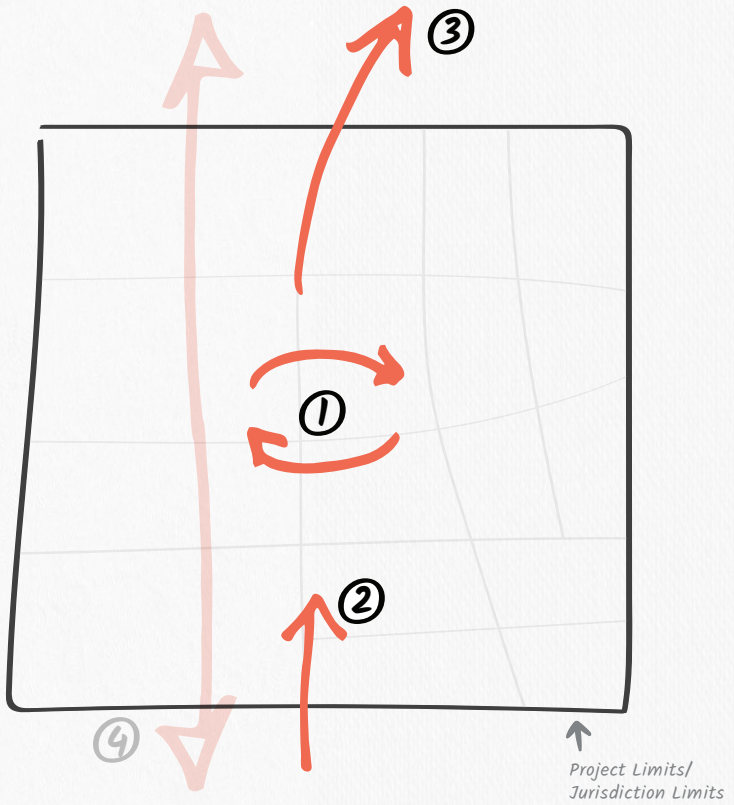
The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are in the study area causes some double counting, which is an expected result when summing the trip end based VMT. To ensure a VMT rate is expressed properly (i.e., that the numerator and denominator include the generators of both trip ends of the VMT), the project-generated VMT is divided by the service population (residential population, employment population, plus student population), the generators 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.

Project's Effect on VMT Estimation Method (Using Boundary VMT)

As noted earlier, 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 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, shifting 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, employees, and students) 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 1 presents a representation of both project-generated VMT and boundary VMT. Both metrics are needed for a comprehensive evaluation of a project's VMT effects.

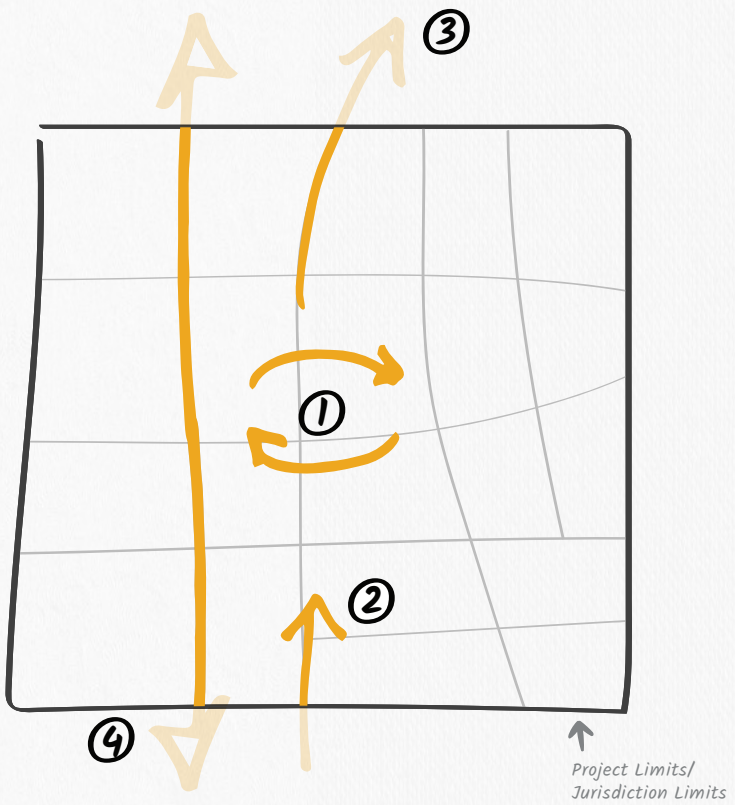
Project Generated VMT



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 project generated 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)

Vehicle Miles Traveled

The results of the project-generated VMT and project's effect on VMT are presented in **Table 6** and **Table 7**, respectively, for the three scenarios.

Project-Generated VMT

The project-generated VMT per service population trends show that for each geographic scale (e.g., North Bayshore, City of Mountain View, and Santa Clara County) the rate is decreasing. This reduction in the project-generated VMT rate demonstrates the combined benefit of adding housing to North Bayshore, smaller-than-typical parking ratio per the North Bayshore Precise Plan, and increased transportation demand management effectiveness for office development. In North Bayshore, the project-generated VMT rate would be reduced by 28.7% from Existing Conditions to the Existing Conditions with the Preferred Project Alternative Conditions. The Existing with No-Office Land Use Alternative Conditions shows an even greater reduction in the project-generated VMT rate of 32.7%. This reduction in project-generated VMT rates is less pronounced (smaller percent reduction from Existing Conditions) at the City of Mountain View, and Santa Clara County levels.

Table 6: Project-Generated VMT Assessment

Item	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
Project Site			
Vehicle Miles Traveled[1,2] (A)	N/A	136,280	108,920
Service Population[1,2] (B)	N/A	6,560	5,780
VMT per Service Population[1,2,3] (A/B = C)	N/A	20.8	18.8
North Bayshore			
Vehicle Miles Traveled[1] (A)	1,019,420	905,960	835,410
Service Population[1,3] (B)	25,060	31,220	30,440
VMT per Service Population (A/B = C) (Percent Change)[4]	40.7	29.0 (-28.7%)	27.4 (-32.7%)
City of Mountain View			
Vehicle Miles Traveled[1] (A)	5,073,560	4,951,520	4,876,380
Service Population[1,3] (B)	147,520	153,680	152,900
VMT per Service Population (A/B = C) (Percent Change)[4]	34.4	32.2 (-6.4%)	31.9 (-7.3%)
Santa Clara County			
Vehicle Miles Traveled[1] (A)	55,564,530	55,463,160	55,401,120
Service Population[1,3] (B)	2,733,420	2,739,580	2,738,800
VMT per Service Population (A/B = C) (Percent Change)[4]	20.3	20.2 (-0.5%)	20.2 (-0.5%)

Notes:

1. Rounded service population and VMT to nearest 10.
2. The existing site land uses are omitted under Existing Conditions because the existing land uses are too small and specialized that the Mountain View travel model is not an appropriate tool for evaluating the project site Existing Conditions VMT.
3. Service population is defined as the sum of all residents and employees.
4. Percent change = (Project Scenario – Existing Conditions)/Existing Conditions * 100%.

Source: Fehr & Peers, 2021.

Project's Effect on VMT

Citywide and Countywide project effect on VMT shows that the project would reduce VMT on the roadway system within the City of Mountain View and Santa Clara County. The boundary VMT per service population reduction from Existing Conditions for the Existing with Preferred Land Use Alternative Conditions is 5.0 % and for the Existing with No-Office Land Use Alternative Conditions the reduction is 4.3%. With the addition of this project, the total amount of VMT occurring within the City boundaries would decline slightly.

Table 7: Project's Effect (Boundary) VMT Assessment

Item	Existing Conditions	Existing with Preferred Land Use Alternative Conditions	Existing with No-Office Land Use Alternative Conditions
City of Mountain View			
Boundary Vehicle Miles Traveled[1] (A)	2,047,700	2,034,070	2,026,360
Service Population[1,2] (B)	147,520	153,680	152,900
Boundary VMT per Service Population (A/B = C) (Percent Change)[3]	13.9	13.2 (-5.0%)	13.3 (-4.3%)
Santa Clara County			
Boundary Vehicle Miles Traveled[1] (A)	37,552,290	37,500,380	37,434,070
Service Population[1,2] (B)	2,733,420	2,739,580	2,738,800
Boundary VMT per Service Population (A/B = C) (Percent Change)[3]	13.7	13.7 (-0.0%)	13.7 (-0.0%)

Notes:

1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.
3. Percent change = (Project Scenario – Existing Conditions)/Existing Conditions * 100%.

Source: Fehr & Peers, 2021.

Summary of the NBPP VMT Assessment

A North Bayshore Precise Plan (NBPP) VMT assessment described in the *North Bayshore Precise Plan with Residential – Vehicle Miles Traveled Estimates* (May 2017) memorandum used the project-generated VMT metric (referred to as total VMT in the previous memorandum) to describe the effects of adding housing in North Bayshore.[3] The results of the NBPP VMT assessment showed that the NBPP increased absolute VMT for all geographies analyzed, but decreased the VMT rate within the North Bayshore area. 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. Further they help us to understand the cumulative change in NBPP VMT once this project and the rest of the North Bayshore Precise Plan is constructed.

The Gateway Master Plan described in this memo is predominantly residential. Over time, there will be even more residential and more office uses added to the NBPP area is developed. This will likely cause an increase in the overall amount of VMT generated in the North Bayshore area; however, the rate of VMT generated per service population should still be reduced as compared to Existing Conditions, due to the added housing, smaller-than-typical parking ratios, and increased TDM effectiveness.

Attachments

Tables

[3] The NBPP VMT assessment assumed roughly equal distribution of the 9,850 residential units among Joaquin, Shorebird, and Pear neighborhood areas. The Gateway Master Plan shifts most of the residential from the Pear to the Joaquin neighborhood area. This move of the residential would not have a substantive effect on the NBPP VMT assessment because the vehicle travel from either neighborhood is equidistant.

Table A-1: Existing (Spring 2020)							
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 Employment Trips (24,295 Employees)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (0,000 Employees)	0	0	0	0	0	0	0
Total Person Trips	102,093	10,821	1,697	12,518	2,032	9,258	11,290
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 5.0%, AM: 8.1%, PM: 9.9%)							
Residential (Daily: 21.2%, AM: 49.1%, PM: 33.9%)	-578	-20	-76	-96	-49	-30	-79
Employment (Daily: 4.6%, AM: 7.4%, PM: 9.4%)	-4,527	-798	-114	-912	-177	-862	-1,039
External Person Trips							
External Residential Person Trips	2,148	21	78	99	96	57	153
External Employment Person Trips	94,840	9,982	1,429	11,411	1,710	8,309	10,019
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: 74.1%, AM: 59.9%, PM: 56.9%)	70,276	5,670	1,169	6,839	1,115	4,587	5,702
HOV (Daily: 11.4%, AM: 10.8%, PM: 16.2%)	10,812	1,138	95	1,233	400	1,221	1,621
Transit/Shuttle (Daily: 12.5%, AM: 25.4%, PM: 22.2%)	11,855	2,765	136	2,901	139	2,086	2,225
Active (Daily: 2.0%, AM: 3.8%, PM: 4.7%)	1,897	409	29	438	56	415	471
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**70,276**	**5,670**	**1,169**	**6,839**	**1,115**	**4,587**	**5,702**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.15)	**5,406**	**517**	**48**	**565**	**200**	**555**	**755**
External Employment Vehicle Trips [B]	***75,682***	***6,187***	***1,217***	***7,404***	***1,315***	***5,142***	***6,457***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 18.3, PM: 14.5)							
External Transit Vehicles [C]	***793***	***104***	***55***	***159***	***60***	***94***	***154***
Gateway Total Vehicles [A+B+C]	***78,372***	***6,310***	***1,337***	***7,647***	***1,456***	***5,286***	***6,742***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-670**	**217**	**-453**	**-324**	**-874**	**-1,198**
Percent Over Capacity (%)	N/A	-10%	19%	-6%	-18%	-14%	-15%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**10**	**-653**	**-643**	**-854**	**-434**	**-1,288**
Percent Over Capacity (%)	N/A	0%	-33%	-8%	-37%	-8%	-16%
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 A-2: Preferred Land Use Alternative							
Table A-2: Preferred Land Use Alternative							
	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 (2,100 DUs)	13,797	210	861	1,071	819	462	1,281
Existing Employment Trips (24,295 Employees plus 100 KSF retail/entertainment)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (1,946 Employees plus 200 KSF retail/entertainment)	13,255	978	187	1,165	344	1,000	1,344
Total Person Trips	129,145	12,009	2,745	14,754	3,195	10,720	13,915
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 8.6%, AM: 12.6%, PM: 14.2%)							
Residential (Daily: 23.3%, AM: 43.2%, PM: 36.4%)	-3,850	-108	-439	-547	-351	-200	-551
Employment (Daily: 6.5%, AM: 9.8%, PM: 11.5%)	-7,320	-1,146	-169	-1,315	-257	-1,169	-1,426
External Person Trips							
External Residential Person Trips	12,673	143	576	719	613	349	962
External Employment Person Trips	105,302	10,612	1,561	12,173	1,974	9,002	10,976
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 70.8%, AM: 61.1%, PM: 65.3%)	8,974	110	329	439	360	268	628
HOV (Daily: 13.5%, AM: 14.5%, PM: 15.5%)	1,709	26	78	104	85	64	149
Transit/Shuttle (Daily: 6.1%, AM: 10.8%, PM: 9.7%)	773	3	75	78	85	8	93
Active (Daily: 9.6%, AM: 13.6%, PM: 9.6%)	1,217	4	94	98	83	9	92
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**8,974**	**110**	**329**	**439**	**360**	**268**	**628**
HOV Occupancy (Daily: 2.00, AM: 2.04, PM: 2.07)	**855**	**12**	**39**	**51**	**43**	**29**	**72**
External Residential Vehicle Trips [A]	***9,829***	***122***	***368***	***490***	***403***	***297***	***700***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 71.8%, AM: 58.1%, PM: 55.6%)	75,594	5,864	1,213	7,077	1,244	4,857	6,101
HOV (Daily: 12.0%, AM: 11.1%, PM: 16.8%)	12,679	1,240	117	1,357	487	1,357	1,844
Transit/Shuttle (Daily: 14.1%, AM: 26.6%, PM: 23.1%)	14,836	3,062	178	3,240	176	2,363	2,539
Active (Daily: 2.1%, AM: 4.1%, PM: 4.5%)	2,193	446	53	499	67	425	492
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**75,594**	**5,864**	**1,213**	**7,077**	**1,244**	**4,857**	**6,101**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.14)	**6,340**	**564**	**59**	**623**	**244**	**617**	**861**
External Employment Vehicle Trips [B]	***81,934***	***6,428***	***1,272***	***7,700***	***1,488***	***5,474***	***6,962***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.5, PM: 12.2)							
External Transit Vehicles [C]	***1,041***	***115***	***99***	***214***	***108***	***107***	***215***
Gateway Total Vehicles [A+B+C]	***92,804***	***6,665***	***1,739***	***8,404***	***1,999***	***5,878***	***7,877***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-315**	**619**	**304**	**219**	**-282**	**-63**
Percent Over Capacity (%)	N/A	-5%	55%	4%	12%	-5%	-1%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**365**	**-251**	**114**	**-311**	**158**	**-153**
Percent Over Capacity (%)	N/A	6%	-13%	1%	-13%	3%	-2%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**7,932**	**103**	**303**	**406**	**322**	**247**	**569**
External Employment Vehicle Trips Growth	**6,252**	**241**	**55**	**296**	**173**	**332**	**505**
External Transit Vehicle Growth	**248**	**11**	**44**	**55**	**48**	**13**	**61**
All Vehicle Growth	***14,432***	***355***	***402***	***757***	***543***	***592***	***1,135***

Bold values indicate units of **VEHICLE** trips

Table A-3: No-Office Land Use Alternative							
Table A-3: No-Office Land Use Alternative							
	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 (2,800 DUs)	18,396	280	1,148	1,428	1,092	616	1,708
Existing Employment Trips (24,295 Employees plus 100 KSF retail/entertainment)	99,367	10,780	1,543	12,323	1,887	9,171	11,058
Additional Employment Trips (-0,054 Employees plus 200 KSF retail/entertainment)	5,127	92	61	153	189	245	434
Total Person Trips	125,616	11,193	2,906	14,099	3,313	10,119	13,432
All Land Uses: Mixed-Use Reduction							
Mixed-Use Reduction (Daily: 10.2%, AM: 14.3%, PM: 15.9%)							
Residential (Daily: 23.9%, AM: 42.4%, PM: 35.9%)	-5,048	-136	-552	-688	-444	-252	-696
Employment (Daily: 7.4%, AM: 10.7%, PM: 12.5%)	-7,733	-1,158	-171	-1,329	-260	-1,177	-1,437
External Person Trips							
External Residential Person Trips	16,074	185	750	935	793	451	1,244
External Employment Person Trips	96,761	9,714	1,433	11,147	1,816	8,239	10,055
Residential Land Use: Mode Choice							
External Residential - Mode Choice							
SOV+Trucks (Daily: 70.8%, AM: 61.1%, PM: 65.4%)	11,382	142	429	571	466	347	813
HOV (Daily: 13.5%, AM: 14.3%, PM: 15.4%)	2,168	34	100	134	110	81	191
Transit/Shuttle (Daily: 6.1%, AM: 10.9%, PM: 9.7%)	981	4	98	102	110	11	121
Active (Daily: 9.6%, AM: 13.7%, PM: 9.6%)	1,543	5	123	128	107	12	119
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**11,382**	**142**	**429**	**571**	**466**	**347**	**813**
HOV Occupancy (Daily: 2.00, AM: 2.06, PM: 2.08)	**1,084**	**15**	**50**	**65**	**55**	**37**	**92**
External Residential Vehicle Trips [A]	***12,466***	***157***	***479***	***636***	***521***	***384***	***905***
Employment Land Use: Mode Choice							
External Employment - Mode Choice							
SOV+Trucks (Daily: 73.1%, AM: 59.7%, PM: 56.5%)	70,767	5,502	1,151	6,653	1,161	4,521	5,682
HOV (Daily: 11.7%, AM: 10.9%, PM: 16.5%)	11,290	1,111	100	1,211	438	1,219	1,657
Transit/Shuttle (Daily: 13.2%, AM: 25.5%, PM: 22.4%)	12,736	2,702	146	2,848	156	2,093	2,249
Active (Daily: 2.0%, AM: 3.9%, PM: 4.6%)	1,968	399	36	435	61	406	467
Conversion to Vehicle Trips							
SOV+Trucks (Vehicle = 1 Person)	**70,767**	**5,502**	**1,151**	**6,653**	**1,161**	**4,521**	**5,682**
HOV Occupancy (Daily: 2.00, AM: 2.18, PM: 2.14)	**5,645**	**505**	**50**	**555**	**219**	**554**	**773**
External Employment Vehicle Trips [B]	***76,412***	***6,007***	***1,201***	***7,208***	***1,380***	***5,075***	***6,455***
All Land Uses: Final Vehicle Trip Calculations							
Transit/Shuttle Trips - Conversion to Vehicles - Occupancy (Daily: 15.0, AM: 15.0, PM: 11.6)							
External Transit Vehicles [C]	***914***	***102***	***95***	***197***	***110***	***95***	***205***
Gateway Total Vehicles [A+B+C]	***89,792***	***6,266***	***1,775***	***8,041***	***2,011***	***5,554***	***7,565***
Over Capacity Calculations (Adopted NBPP Capacity)							
Gateway Capacity	**N/A**	**6,980**	**1,120**	**8,100**	**1,780**	**6,160**	**7,940**
Number of Trips Over Capacity	**N/A**	**-714**	**655**	**-59**	**231**	**-606**	**-375**
Percent Over Capacity (%)	N/A	-10%	58%	-1%	13%	-10%	-5%
Over Capacity Calculations (NBPP With Residential Capacity)							
Gateway Capacity	**N/A**	**6,300**	**1,990**	**8,290**	**2,310**	**5,720**	**8,030**
Number of Trips Over Capacity	**N/A**	**-34**	**-215**	**-249**	**-299**	**-166**	**-465**
Percent Over Capacity (%)	N/A	-1%	-11%	-3%	-13%	-3%	-6%
External Vehicle Trips Growth Over Existing							
External Residential Vehicle Trips Growth	**10,569**	**138**	**414**	**552**	**440**	**334**	**774**
External Employment Vehicle Trips Growth	**730**	**-180**	**-16**	**-196**	**65**	**-67**	**-2**
External Transit Vehicle Growth	**121**	**-2**	**40**	**38**	**50**	**1**	**51**
All Vehicle Growth	***11,420***	***-44***	***438***	***394***	***555***	***268***	***823***

Bold values indicate units of **VEHICLE** trips

North Bayshore Gateway Master Plan
Utility Impact Study

Prepared for
Raimi & Associates

and

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Table of Contents

List of Figures

List of Tables

Executive Summary

Schaaf & Wheeler has been retained by Raimi & Associates to determine impacts from the North Bayshore Gateway Master Plan, MV Gateway Development (Project) on the City of Mountain View's (City) water, sanitary sewer, recycled water, and storm drain systems. The Project is located within the North Bayshore Precise Plan Area and is bordered by Long Lonesome Road to the west, Plymouth Street to the north, North Shoreline Boulevard to the east, and US Highway 101 to the south. The Project includes multiple buildings with different types of land use which include residential, office, retail, entertainment, restaurants, retail, and hotel.

Project impacts to the water system are analyzed for both Existing (2010) and Future Cumulative (2030) Conditions. Hydraulic models simulating pre- and post-Project development scenarios are performed to examine hydraulic deficiencies. The Existing Condition is based on the updated models prepared during the North Bayshore Precise Plan II (NBPP II), (Schaaf & Wheeler, 2016), which is based on the *2010 Water Master Plan* (WMP; IEC, August 2010); the Future Cumulative Condition model is created from the *General Plan Update Utility Impact Study* (GPUUIS; IEC, October 2011), which was also updated as part of NBPP II. The Future Cumulative Condition model includes CIPs from the GP-UWSM and CIPs from the NBPP II, as well as recent City approved projects not accounted for or in exceedance of the 2030 GPUUIS projections.

Project impacts to the sewer system are also analyzed for Existing (2010) and Future Cumulative (2030) Conditions. Hydraulic models simulating pre- and post-Project development scenarios are performed to examine hydraulic deficiencies. The Existing Condition is based on the updated models prepared during the North Bayshore Precise Plan II Utility Impact Study (NBPP II), (Schaaf & Wheeler, 2016), which are based on the *2010 Sewer Master Plan* (SMP). The Future Cumulative Condition sewer model is created from the General Plan Update Utility Impact Study (GPUUIS) model, which was also updated as part of the NBPP II. The Future Cumulative Condition model includes all sewer system CIPs recommended in the GPUUIS and the NBPP II, as well as recent City-approved projects not accounted for or in exceedance of the 2030 GPUUIS projections.

The Project impacts to the recycled water system have been assessed using the hydraulic model developed as part of the Recycled Water Feasibility Study (Carollo, October 2012). Irrigation demands based on project landscaping were calculated to evaluate potential impacts from the Project development.

Impacts to the storm drain system resulting from Project development are assessed using the *2019 Storm Drain Master Plan* (SDMP; Schaaf & Wheeler, September 2019) hydrologic and hydraulic model. Impacts based on potential changes to the runoff characteristics of the site are summarized.

Water System Project Impacts

The Project development does not significantly impact the water system during Existing Condition or Future Cumulative Condition. The Future Cumulative Condition assumes all the recommended CIPs in the NBPP II have been constructed. The Project will add new in-tract water main piping that increases the looping and provides additional conveyance between N. Shoreline Blvd. and Plymouth Street. The anticipated Project-specific fire flow requirement of 3,500 gpm for the Project site is met during Existing Condition and Future Cumulative Condition. The Project fire flow requirement is based on the planning level fire flow from the NBPP II. The actual fire flow requirement may change as the planning process continues and Project-specific requirements are determined

by the City Fire Marshal. If Project conditions require higher fire flow than what is analyzed, revised modeling should be conducted.

Sewer System Project Impacts

The sewer system has sufficient capacity in the Existing Condition pre-project, but does not have sufficient capacity with the estimated increase in incremental Project flow. In the Future Cumulative Condition, there is sufficient capacity for the system pre-Project with CIP projects identified in the NBPP II. Several pipes do not meet the d/D performance criteria post-Project along Joaquin Road and Charleston Road. CIP 104 is recommended in the NBPP II and must be additionally upsized from 12-inch diameter pipes(recommended in NBPP II), to 15-inch diameter pipes to meet d/D performance criteria post-Project.

There is an existing sewer main that bisects the Project site that serves parcels south of US-101. As part of the Project, a realignment of the existing sewer main to Long Lonesome Road is analyzed. Long Lonesome Road Project realignment is also included as part of the post-Project analyses (existing condition and future cumulative condition), with a 12-inch diameter pipe along Plymouth Street through Joaquin Road as shown on Figure B-11. The existing sewer can be rerouted within new in-tract streets if preferred, as long as the sewer terminates at Joaquin and Plymouth, the sewer analysis will remain valid.

Recycled Water Project Impacts

Based on the provided recycled water system model, there is sufficient capacity to supply the additional irrigation demands for the Project development. However, the City has indicated that the existing system operations may not match the modelled system. Previous modeling efforts by S&W indicate that changes to the system operations can provide enough storage to supply existing recycled water users without constructing costly CIPs identified in the Recycled Water Feasibility Study. However, operational changes can only provide enough supply for a small number of users, and additional storage and pumps identified in the Feasibility Study will need to be constructed to maintain pressures as more users are added.

It is recommended that the City investigate the ongoing operations of the recycled water system to determine if operational changes are feasible. It may be prudent for the City to begin planning the construction of Recycled Water CIPs to meet existing and new user demands.

As recycled water demands keep increasing, it may become necessary for the City to curtail the golf course pond (Shoreline Pond) supply to maintain pressures during peak hour demands. Without modifying the golf course demands, the City's existing issues will continue to worsen as more customers are added or until the capital improvements with storage and booster pump station are constructed.

Storm System Project Impacts

Based on the 2019 SDMP, there is no existing flooding near the Project Site during the 10-year design storm. The existing site imperviousness is assumed to be 84% impervious based on the land use used in the SDMP analysis. If the site impervious percentage is maintained or decreased, the impacts on the storm drain system are expected to be negligible.

There are no CIP projects adjacent to the Project site or necessary to increase the storm drain capacity. There are two CIPs identified in the vicinity: one CIP on Plymouth Street to add a flap gate at the Permanente Creek outfall, as well as another CIP to remove the Charleston Pump Station.

Chapter 1. Introduction

1.1. Project Description

The MV Gateway (Project) encompasses approximately thirty acres within five parcels located in North Bayshore. The Project is located between Long Lonesome Road, Plymouth Street, North Shoreline Boulevard, and US Highway 101. The Project location is identified in Figure B-1. The Project proposes removing nine existing office buildings and constructing 14 new buildings with mixed land uses, including: residential, office, hotel, and entertainment (retail/restaurant/theatre). The Project impacts are based on the new buildings having 2,800 multi-family residential units, 500,000 SF of office space, 300,000 SF of entertainment (split between 37,500 SF of restaurant and 262,500 SF of retail), and 200 Hotel rooms.

1.2. Water System Analysis Approach

Project impacts are analyzed using the City's water model for two conditions: Existing (2010) and Future Cumulative (2030). As a baseline for system performance, each condition is evaluated pre-Project for existing hydraulic deficiencies. The estimated incremental water demand resulting from Project development is added to the model and post-Project deficiencies are examined. In total, four model simulations of the water system are performed, as shown in Figure 1.

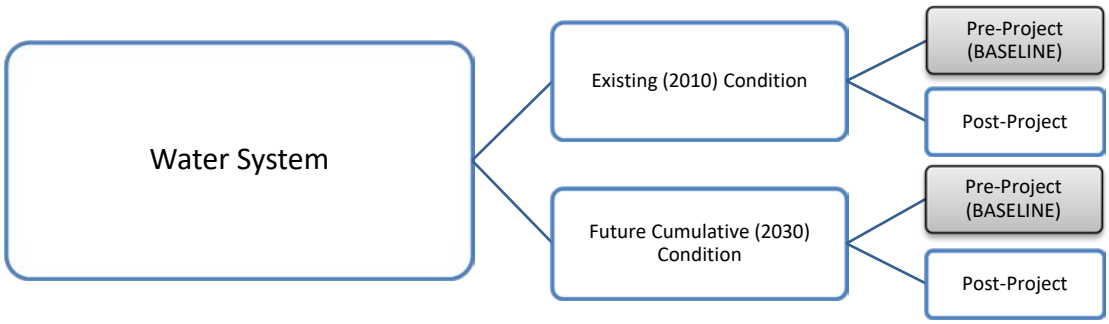

Figure 1. Water Model Simulations

The Existing Condition model consists of the existing distribution system and operating parameters along with water demands based on the 2010 Water Master Plan (WMP), further refined as part of the NBPP II. The Future Cumulative Condition water demand is based on WMP model with updates completed as part of the *2030 General Plan Update (GPU) – Updated Water System Modeling* (GP-UWSM; Schaaf & Wheeler, June 2014) and the NBPP II. The model has since been revised to include recent City approved projects not accounted for or in exceedance of the 2030 GPU projections. Table A-1 in Appendix A provides a list of the considered development projects for the Existing and Future Cumulative Conditions. The Future Cumulative Condition model assumes all of the recommended CIPs from the GPU and NBPP II studies have been constructed.

1.3. Sewer System Analysis Approach

Project impacts to the sewer system are analyzed using the City's sewer model for two conditions: Existing (2010) and Future Cumulative (2030). As a baseline for system performance, each condition is evaluated pre-Project for existing hydraulic deficiencies. The estimated incremental sewer flow resulting from Project development is added to the model and post-Project deficiencies are examined. In total, four model simulations of the sewer system are performed, as shown in Figure 2.

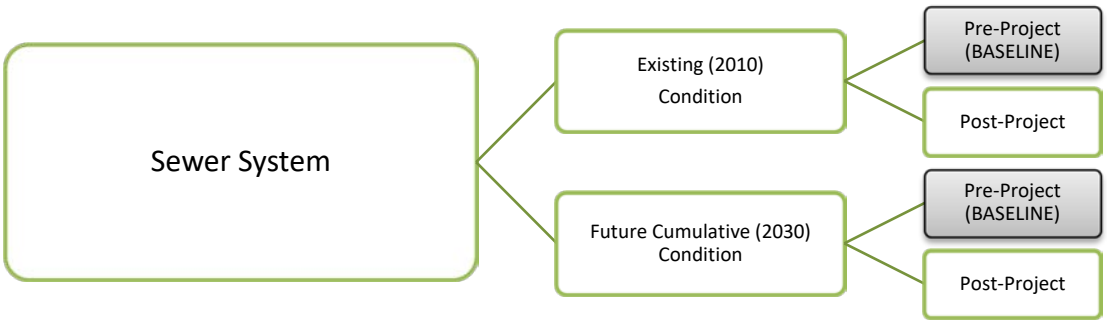

Figure 2. Sewer Model Simulations

The Existing Condition model consists of the existing distribution system and operating parameters along with water demands based on the 2010 Sewer Master Plan, further refined as part of the NBPP II. The Future Cumulative Condition water demand is based on the GPUUIS, with updates completed as part of NBPP II. The model has since been revised to include recent City approved projects not accounted for or in exceedance of the 2030 GPUUIS projections. Table A-1 in Appendix A provides a list of the considered development projects for the Existing and Future Cumulative Conditions. The Future Cumulative Condition model also assumes all of the recommended CIPs from the GPUUIS and NBPP II studies have been constructed.

1.4. Recycled Water System Analysis Approach

Project impacts were evaluated using the City's existing recycled water system model, developed as part of the *Recycled Water Feasibility Study* (RWFS), (Carollo, March 2014). Potential inconsistencies with the modelled system and the existing system operations are discussed. Recommendations are made to alleviate existing system deficiencies. It should also be noted that the City is currently working on updates to the RWFS, the updated model is anticipated to include updated storage configurations and operations.

1.5. Storm Drain System Analysis Approach

The storm drain system is evaluated for anticipated drainage pattern changes at the Project site after development. Pre-Project conditions are assumed to match the site conditions modeled as part of the *2019 Storm Drain Master Plan* (2019 SDMP; Schaaf & Wheeler, April 2019). Percent impervious area on the Project

site after development is estimated and compared to the percent impervious area assumed in the 2019 SDMP. Project development potential impacts are summarized.

1.6. Report Organization

This report is organized into six following sections. Chapter 2 discusses the water demand estimates for the Project and Chapter 3 covers the impacts and capital improvement recommendations for the water system. Chapter 4 discusses the sewer flow estimates and Chapter 5 covers the capital improvements recommendations for the sewer system. Chapter 6 covers the Project impacts to the recycled water system, and Chapter 7 covers the storm drainage impacts.

Chapter 2. Water Demand Projections

This chapter discusses the estimated water demand and required fire flow for the Project development. Water demand from the existing buildings and proposed Project are estimated with water unit duty factors taken from previous technical studies to remain consistent with the City-wide demand projections used in the hydraulic models. The incremental difference in estimated demand between the proposed Project and the existing demand at the site is evaluated to determine Project impact on the system.

Water demand in this section represents Average Daily Demand (ADD). The ADD is an estimated daily average of water use patterns that varies by season and customer type.

2.1. Project Water Demand

Project water demand is estimated from the North Bayshore Gateway Master Plan Administrative Draft, (Raimi & Associates, December 11 2020). The duty factors applied were developed for the City as part of the North Bayshore Precise Plan Phase II from water meter records of recent developments throughout the City. Table 2-1 provides the demand estimation for the Project.

Table 2-1: Project Estimated Water Demand

Address	Land Use Type	Total Area (SF) / Units	Water Duty Factor (gpd / 1000 SF or gpd / Unit)	Water Demand (gpd)
MV Gateway	Residential	2,800	100	280,000
	Hotel	200	100	20,000
	High Intensity Office	500,000	130	65,000
	Restaurant	37,500	1,200	45,000
	Retail	262,500	130	34,125
Total				444,125

2.1.1. Project Required Fire Flow

The anticipated project-specific fire flow is typically based on building square footage and construction type. For this Project the construction type has not been provided. The planning level fire flow for the Project is assumed based on the NBPPII (Schaaf & Wheeler, 2016) requirements. The fire flow requirement for High Intensity Office is 3,500 and is assumed as the Project required fire flow.

Existing Condition (2010)

2.1.2. Pre-Project (Baseline) Land Use and Demand

The pre-Project (baseline) condition includes parcel-level demand adopted from the City's InfoWater model, developed as part of the 2010 WMP. The demand in the model is calibrated against water billings records from

2005 and 2006, as further explained in the 2010 WMP. Table 2-2 details the model demand at the parcels, which were zoned as P(3) North Shoreline Blvd.

Table 2-2: Baseline Demand for Existing Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	1,872
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	369
1555 Plymouth St	116-13-027	Limited Industrial	2.9	1,056
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	645
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	970
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	18,014
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	9,662
Total	-	-	**29.1**	**32,588**

2.1.3. Post-Project Incremental Demand

Total Project demand is added to the hydraulic model as an incremental difference from the pre-Project estimated demand, as shown in Table 2-3. The Project is anticipated to incrementally increase water demand by *411,537* gpd above pre-Project demand.

Table 2-3: Incremental Project Demand for Existing Condition

	Water Demand (gpd)
Pre-Project Demand	32,588
Project Demand	444,125
Incremental Project Demand	***+ 411,537***

2.2. Future Cumulative Condition (2030)

2.2.1. Pre-Project (Baseline) Land Use and Demand

Future Cumulative (baseline) demand for the Project is adopted from the City's InfoWater model developed as part of the 2030 GPUUIS and updated as part of the NBPP II. In the updated model from NBPP II, water demands are based on the 2030 General Plan Update (GPU) land use with additional projects; these demands have since been updated to include projects from the NBPP II and additional projects not accounted for in the original GPUUIS. Table 2-4 presents the parcel level pre-project demand from the model.

Table 2-4: Baseline Demand for Future Cumulative Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	8,359
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	6,688
1555 Plymouth St	116-13-027	Limited Industrial	2.9	24,242
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	5,852
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	7,523
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	131,242
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	58,515
Total	-	-	**29.1**	**242,421**

2.2.2. Post-Project Incremental Demand

Project demand is added to the model as an incremental difference from the pre-Project demand. The incremental Project demand in the Future Cumulative Condition is given in Table 2-5. The project exceeds the assumed future demand by an additional 201,704 gpd.

Table 2-5: Incremental Project Demand for Future Cumulative Condition

	Water Demand (gpd)
Pre-Project Demand	242,421
Project Demand	444,125
Incremental Project Demand	***+ 201,704***

The overall water demand within NBPP II is not increased above the precise plan cap. Therefore, other areas within the NBPP II with similar land use as the Project are adjusted to be consistent with approved NBPP II area allocations.

Chapter 3. Water System Impact

Project impacts to water supply, water storage, hydraulic conveyance, and fire flow requirements are evaluated in this chapter to ensure the Project demand can be adequately met. Hydraulic conveyance and available fire flow are assessed for both Existing (2010) and Future Cumulative (2030) Condition. Water supply and water storage are evaluated for the Future Cumulative Condition.

3.1. Demand Scenarios and Performance Criteria

Hydraulic deficiencies within the water system are evaluated under two demand scenarios: Peak Hour Demand (PHD) and Maximum Day Demand with Fire Flow (MDD + FF). The MDD and PHD peaking factors from the 2010 Water Mater Plan (WMP) are used for this analysis. As detailed in the 2010 WMP, MDD and PHD peaking factors are developed using SCADA data from peak usage months in 2006 and 2007. The peak hour occurred on the day with the largest daily demand, which was observed to be August 8, 2007. The calculated peaking factors, presented in Table 3-1, are applied to Average Day Demand (ADD).

Table 3-1: Peaking Factors

Category	Peaking Factor
Maximum Day	1.71
Peak Hour	2.79

Established design criteria used to evaluate the Project impact for all scenarios are summarized in Table 3-2.

Table 3-2: Water System Performance Criteria

Criteria	PHD	MDD + FF
Minimum Allowable Pressure (psi)	40	20

3.2. Water Supply Analysis

The increased water demand from Project development in the Future Cumulative Condition is compared with the City's supply turnouts and groundwater well capacities to ensure demand can be met. The Mountain View water system is divided into three pressure zones to maintain reasonable pressures throughout the City's rising topography moving south, further from the Bay. The Project site is in Pressure Zone 1, which is at this time, supplied by only one San Francisco Public Utilities Commission (SFPUC) turnout (Turnout #5).

Water demand versus supply capacity by Pressure Zone is given in Table 3-3. Total capacity for Pressure Zone 1 includes peak hour turnout capacity from SFPUC Turnout #5 and additional supply supplemented from Wells #22 and #23. Demand in Pressure Zone 1 cannot be sufficiently supplied by the current supply operation; however, as discussed in the *2030 General Plan Update Utility Impact Study* (IEC, 2011), surplus supply in Pressure Zone 2 could be routed to Pressure Zone 1 to make up the supply deficiency in the Pressure Zone 1. A pressure reducing valve (PRV) moving water from Pressure Zone 2 to Pressure Zone 1 at North Whisman Road, between Walker Drive and Whisman Court, is included in the *North Bayshore Precise Plan II Utility Impact Study*

(NBPPII UIS; Schaaf & Wheeler, October 2016). The ability of the system to meet Project demand and the fire flow requirement at Future Cumulative Condition assumes this CIP has been constructed. If the CIP is not constructed, the City will have a considerable deficit of supply vs projected peak demand for Zone 1. The City will not be able to adequately supply Zone 1 demands in the Future Cumulative Condition. The additional Project demand does not impact the City's ability to meet total system demand.

Table 3-3: Future Cumulative Condition Demand Versus Supply

Pressure Zone	2030 Future Cumulative Demand			Total Capacity (mgd)*
	Pre-Project		Post-Project	
	ADD (mgd)	PHD (mgd)	PHD (mgd)	
1	7.98	22.26	22.26	16.56
2	8.41	23.46	23.46	30.53
3	1.62	4.52	4.52	5.10
Total	**18.01**	**50.25**	**50.25**	**52.19**

** Total Capacity from Table 3-8 in the General Plan Update Utility Impact Study (IEC, 2011)*

3.3. Water Storage Analysis

Project impact to water storage volume requirements is evaluated according to the State Water Resources Control Board Division of Drinking Water (DDW). DDW requires storage equal to 8 hours of Maximum Day Demand (MDD) plus fire flow storage in each pressure zone. The required storage versus active storage in the City is detailed in Table 3-4 pre- and post-Project. The maximum active storage in the City is 17 MG. However, the City currently operates with only the operational active storage of 14.3 MG.

The fire flow volume in Table 3-4 revises the requirement in the 2010 WMP and is estimated from the largest fire flow requirement in each pressure zone. Based on CFC requirements, the fire flow volume is calculated as 5,000 gpm for 4 hours. Pressure Zone 3 has the potential for a reduction in required fire flow volume since the controlling fire flow requirement is the hospital along Grant Road, which has a planning-level fire flow requirement of 3,500 for 4 hours.

Since the City has the storage volume available to meet DDW requirements in the Future Cumulative Condition pre- and post-Project, no additional storage improvements are recommended. In the future when City demand and storage requirements exceed the current operating storage, the City may need to alter reservoir operation schemes.

Table 3-4: DDW Storage Requirements

Pressure Zone	Maximum Active Storage* (MG)	Operational Active Storage (MG)	Fire Flow (MG)	Future Cumulative Condition Demand					
				Pre-Project			Post-Project		
				ADD (mgd)	8 Hours of MDD (MG)	DDW Requirement (MG)	ADD (mgd)	8 Hours of MDD (MG)	DDW Requirement (MG)
1	6.00	5.1	1.2	7.98	4.55	5.25	7.98	4.55	5.25
2	8.00	6.5	1.2	8.41	4.79	6.30	8.41	4.79	6.30
3	3.00	2.7	1.2	1.62	0.92	2.12	1.62	0.92	2.12
Total	**17.00**	**14.3**	**3.6**	**18.01**	**10.27**	**13.67**	**18.01**	**10.27**	**13.67**

** Maximum Active Storage from Table 4-2 in the General Plan Update Utility Impact Study (IEC, 2011)*

3.4. Existing Condition (2010) Results

3.4.1. Hydraulic Model Information

Existing water system performance is analyzed with the demands and land use type in the City's InfoWater model developed for the City's 2010 WMP. According to the North Bayshore Gateway Master Plan Draft (Raimi & Associates, December 11, 2020), the Project will install new 8-inch water mains within the project site to provide additional conveyance and looping of the City's public water system. These additional pipes were utilized in the post-Project hydraulic models.

The Existing Condition pre-Project fire flow requirement is taken from the 2010 WMP model. The existing (non-reduced) fire flow requirement for the pre-Project land use classification of the MV Gateway site, North Shoreline Blvd (P3) is 5,000 gpm. After Project development, the Project specific required fire flow at the site is anticipated to be 3,500 gpm based on the NBPP II planning level fire flow.

The fire flow requirements for Existing Condition are based on general landuse type and planning fire flow requirements used during the 2010 WMP. The existing deficient nodes are deficient based on the updated fire flow requirements and not the actual fire flows required for individual buildings at the time they were approved.

3.4.2. Peak Hour Demand (PHD) – Pre and Post Project

System pressures are evaluated under Peak Hour Demand (PHD) pre-Project (Figure B-2) and post-Project (Figure B-3). At Existing Condition the system meets performance criteria system-wide. The additional in-tract piping helps alleviate existing deficiencies on-site and near the site. The Project development does not negatively impact the system hydraulic performance under PHD.

3.4.3. Maximum Day Demand with Fire Flow (MDD+FF) – Pre and Post Project

The pre-Project required fire flow of 5,000 gpm is not met at multiple existing hydrant locations. After Project development, the anticipated project-specific fire flow requirement of 3,500 can be met.

The existing deficiencies in Pressure Zone 1 shown on Figures B-4 and B-5 are independent of the Project. These deficiencies may be due to higher planning level fire flow requirements and are considered to be conservative.

Table 3-5: Existing Condition Evaluated Project Fire Flow Nodes

Model Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2924	Project Location – Within Project Site	Pre-Project: 5,000 Post-Project: 3,500	3,685	5,818
J-2952	Project Location – Plymouth Street	Pre-Project: 5,000 Post-Project: 3,500	4,258	5,469
J-2946	Project Location – Plymouth	Pre-Project: 5,000 Post-Project: 3,500	4,536	4,612

3.4.4. Deficiencies – Pre and Post Project

With Existing Condition demand, the water system meets system design criteria at PHD and is able to adequately supply the increased Project demand. Existing fire flow deficient nodes are evaluated within the Project Pressure Zone (Zone 1) for Project impact. Available fire flow pre- and post-Project at selected deficient nodes is presented in Table 3-6. The Project reduces and in some cases eliminates existing fire flow deficiencies as a result of the in-tract looping, providing additional conveyance capacity.

Table 3-6: Selected Existing Condition Fire Flow Deficient Nodes Pre- and Post-Project

Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2974	Huff Avenue	5,000	3,655	3,747
J-1564	Charleston Road	5,000	4,450	4,490
J-2977	Joaquin Road	5,000	3,649	3705

3.5. Future Cumulative Condition (2030) Results

3.5.1. Hydraulic Model Information

The Future Cumulative Condition model is created using the NBPP II model. System performance is analyzed under the assumption that all recommended CIPs in the NBPP II have been constructed.

Domestic and fire services for the Project will connect to the existing 12-inch diameter water main in North Shoreline Boulevard, new 8-inch in-tract water lines, and existing 8-inch water lines in Plymouth Street.

The Future Cumulative Condition fire demands are based on the NBSPPPII UIS. The pre-Project fire flow requirement for the two project sites is 3,500 gpm. After Project development, the Project specific assumed required fire flow at the site is 3,500 gpm.

3.5.2. Peak Hour Demand (PHD) – Pre and Post Project

The system has adequate pressures pre-Project (Figure B-6) and is able to satisfy post-Project demands while meeting the design criteria at PHD (Figure B-7).

3.5.3. Maximum Day Demand with Fire Flow (MDD+FF) – Pre and Post Project

In the Future Cumulative Condition, the system has a deficient node within the project site. The addition of in-tract pipes provides additional looping and increases the available fire flow within the project site and at adjacent fire nodes. Within Pressure Zone 1, there are several deficient nodes; the nodes identified as deficient are deficient prior to the project, with no new nodes identified as deficient post-project. Pre-and post-Project conditions assume all NBPP II CIPs have been constructed, results are shown on Figures B-8 and B-9.

Table 3-7: Future Cumulative Condition Evaluated Project Fire Flow (FF) Nodes

Model Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2924	Project Location – Within Project Site	Pre-Project: 3,500 Post-Project: 3,500	3,396	5,574

3.5.4. Deficiencies – Pre and Post Project

The fire flow deficient nodes within Pressure Zone 1 are evaluated for Project impact. Table 3-8 compares the available fire flow before and after Project development and shows the fire flow deficiencies in Pressure Zone 1. Available Fire Flow increases due to in-tract piping providing additional conveyance capacity to the local water system. The nodes identified in Table 3-8 were identified as deficient pre-Project and two continue to be deficient post-project.

Table 3-8: Future Cumulative Condition Fire Flow Deficient Nodes Pre- and Post-Project

Node ID	Location	Required Fire Flow Rate (gpm)	Available Flow Pre-Project (gpm)	Available Flow Post-Project (gpm)
J-2974	Huff Ave	Pre-Project: 3,500 Post-Project: 3,500	3,430	3,495
J-2977	Joaquin Rd	Pre-Project: 3,500 Post-Project: 3,500	3,486	3,530
J-4216	Space Park Way	Pre-Project: 3,500 Post-Project: 3,500	3,305	3,315

Chapter 4. Sewer Flow Projections

This chapter discusses the sewer flow estimate for Project development and provides a comparison to pre-Project baseline condition. The incremental Project flow is determined for both Existing (2010) and Future Cumulative (2030) Condition, as discussed in the following sections. The sewer generation factor for estimating Project sewer flow is taken from previous technical studies (2010 WMP, 2030 GPUUIS, and NBPPII) to remain consistent with the City-wide flow projections used in the hydraulic models.

Three types of sewer flow loading are used to model the sewer system: base wastewater flow, groundwater infiltration (GWI), and rainfall-dependent infiltration/inflow (RDI/I). GWI includes base infiltration (BI) and pumped groundwater discharged to the sewer system. RDI/I is stormwater that enters the sewer system. GWI and RDI/I values are modeled as constant flows.

Base wastewater flow (BWF) is from residential, commercial, institutional, office, and industrial sources. As described in the 2010 Sewer Master Plan (SMP), BWF is developed on an individual parcel level using the 2005 and 2006 water billing records and applying a return-to-sewer (RTS) ratio calculated for land use type. Change in BWF throughout the day due to daily use patterns is known as diurnal variation and is accounted for by applying residential and non-residential diurnal curves. BWF and diurnal curves used in this analysis are taken from the 2010 SMP to remain consistent with previous City-wide modeling. The sewer flows discussed in this section are the BWF values representing average flows and are not peaked.

4.1. Project Sewer Flow

Project generated sewer flow is estimated from the square footage provided in the North Bayshore Gateway Master Plan Administrative Draft, December 11, 2020. A Return-to-Sewer (RTS) ratio of 0.75 is applied to all land use types based on the NBSPPII study. Table 4-1 provides the estimated Project sewer flow.

Table 4-1: Project Estimated Sewer Flow

Address	Land Use Type	Total Area (SF) / Units	Sewer Duty Factor (gpd / 1000 SF or gpd / Unit)	Project Sewer Flow (gpd)
MV Gateway	Residential	2,800	75	210,000
	Hotel	200	75	15,000
	High Intensity Office	500,000	100	50,000
	Restaurant	37,500	900	33,750
	Retail	262,500	100	26,250
Total				335,000

4.2. Existing Condition (2010)

4.2.1. Pre-Project (Baseline)

The pre-Project (baseline) condition includes parcel-level sewer flow adopted from the City's InfoSWMM model, developed as part of the 2010 SMP. Table 4-2 details the parcel-level sewer flow in the model, which was calculated with an RTS ratio of the Existing Condition water demand. The RTS ratios for office P(1)-Shoreline West, and P(2)-Charleston South Industrial were taken from the 2010 SMP (Table 3-2).

Table 4-2: Baseline Flow for Existing Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	1,404
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	277
1555 Plymouth St	116-13-027	Limited Industrial	2.9	792
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	450
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	680
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	13,511
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	7,247
Total	-	-	**29.1**	**24,361**

4.2.2. Post-Project Incremental Demand

For the Project impact analysis in the Existing Condition, Project sewer flow is added to the Existing Condition model as an incremental difference from pre-Project flow. The Project incremental sewer flow is given in Table 4-3.

Table 4-3: Incremental Project Flow for Existing Condition

	Sewer Flow (gpd)
Pre-Project (Baseline) Flow	24,361
Project Flow	335,000
Incremental Project Flow	***+ 310,639***

4.3. Future Cumulative Condition (2030)

4.3.1. Pre-Project (Baseline)

Future Cumulative (baseline) flow for the Project is adopted from the City's InfoSWMM model, updated as part of the NBPP II. In the model, sewer flows are based on the 2030 General Plan Update (GPU) land use; these flows have since been updated to include recent City approved projects outlined in Table A-1 in Appendix A, which were not accounted for or were in exceedance of the 2030 GPU projections. Table 4-4 presents parcel-level pre-Project demand from the model.

Table 4-4: Baseline Flow for Future Cumulative Condition (Based on Model)

Address	APN	2010 Master Plan Land Use Designation	Acreage	Water Demand (gpd)
1435 Plymouth St	116-10-101	P(3) North Shoreline Blvd	1.0	6,457
1431 Plymouth St	116-10-088	P(3) North Shoreline Blvd	0.8	5,165
1555 Plymouth St	116-13-027	Limited Industrial	2.9	18,724
1600 N. Shoreline Blvd	116-10-070	P(3) North Shoreline Blvd	.7	4,520
1616 N. Shoreline Blvd	116-10-086	P(3) North Shoreline Blvd	.9	5811
1500 N. Shoreline Blvd	116-13-030	P(3) North Shoreline Blvd	15.8	101,368
1400 N. Shoreline Blvd	116-13-024	Limited Industrial	7.0	45,196
Total	-	-	**29.1**	**187,241**

4.3.2. Post-Project Incremental Demand

Project flow is added to the Future Cumulative Condition model as an incremental difference from pre-Project flow. The incremental Project flow is given in Table 4-5.

Table 4-5: Incremental Project Flow for Future Cumulative Condition

	Sewer Flow (gpd)
Pre-Project (Baseline) Flow	187,241
Project Flow	335,000
Incremental Project Flow	***+ 147,759***

The overall sewer generation within NBPP II is not increased above the precise plan cap. Therefore, other areas within the NBPP II with similar land use as the Project are adjusted to be consistent with approved NBPP II area allocations.

Chapter 5. Sewer System Impact

The impact of Project development on the sewer system is analyzed under both Existing (2010) and Future Cumulative (2030) Conditions. Two conveyance paths of the gravity system are evaluated for Project impact, the fist begins at Plymouth Street, north side of the site, and flows north along Joaquin Road, east along Charleston toward North Shoreline Blvd. The other begins at North Shoreline Boulevard just north of US Highway 101, both conveyance paths combine at North Shoreline Boulevard and Charleston Road. Post-Project conditions assume the sewer line through the Project site has been realigned through Long Lonesome Road as a 12-inch diameter pipe to maintain its existing diameter, through Long Lonesome Road, Plymouth Street, Joaquin Road, and to Charleston Road.

5.1. Scenarios and Performance Criteria

Sewer capacity is analyzed under Peak Wet Weather Flow (PWWF) and Average Dry Weather Flow (ADWF). PWWF is used to determine hydraulic deficiencies according to the performance criteria in Table 5-1. ADWF is used to determine adequacy of treatment capacity.

The ADWF scenario is developed in the model by adding BWF and GWI. Since the ADWF scenario models average daily flows, BWF and GWI are not peaked. The PWWF scenario applies the diurnal peaking curves for residential and non-residential flows and simulates system response to rainfall dependent inflow and infiltration. The diurnal peaking curves are adopted from the City's 2010 SMP. Groundwater Infiltration (GWI) and rainfall-dependent infiltration/inflow (RDI/I) are included but are not peaked.

Table 5-1: Sewer System Performance Criteria

Criteria	Pipe Diameter ≤ 12 inch	Pipe Diameter > 12 inch
Maximum Flow Depth/Pipe Diameter (d/D)	0.50	0.75

5.2. Sewer Treatment, Joint Interceptor, and San Antonio Interceptor Capacity

Sewage generated within the City is treated at the Regional Water Quality Control Plant (RWQCP) in Palo Alto. The sewer collection system is a gravity system with the majority of flow discharging into three main trunk lines that convey flow from the south to the north and terminate at the Shoreline Pump Station (SPS) located within the City's Shoreline Park. Flow is then pumped to the gravity Joint Interceptor Sewer that conveys flow to the RWQCP. The remaining flow not received at the SPS is discharged to the Los Altos' San Antonio Interceptor that also conveys flow into the Joint Interceptor.

The City entered into a joint agreement, referred to as the Basic Agreement, with the cities of Palo Alto and Los Altos in 1968 for the construction and maintenance of the joint sewer system addressing the need for conveyance, treatment, and disposal of wastewater to meet Regional Board requirements. In accordance with the Basic Agreement, Palo Alto owns the RWQCP and administers the Basic Agreement with the partnering agencies purchasing individual capacity rights in terms of an average annual flow that can be discharged to the RWQCP. Capacity rights of the three cities can be rented or purchased from other neighboring agencies and each partnering agency can sell their capacity to others. Contractual capacity is based upon the 1985 Addendum

No. 3 of the 1968 Joint Sewer System agreement that revised capacity rates in relationship to facility expansion and is based upon Average Annual Flow (defined as 1.05 times Average Dry Weather Flow). Separate service agreements with the RWQCP have since reallocated current capacity rights to include six partnering agencies. Table 5-2 presents the current capacity rights for each agency.

Table 5-2: RWQCP Joint Facilities Capacity Rights

Partner Agency	Treatment Capacity	72-inch Joint Interceptor Capacity
	Average Annual Flow (MGD)	Peak Wet Weather Flow (MGD)
Palo Alto	15.3	14.59
East Palo Alto Sanitary District	3.06	0
Los Altos Hills	0.63	3.41
Stanford University	2.11	0
Mountain View	15.1	50
Los Altos	3.8	12
Total	***40***	***80***

Source: Long Range Facilities Plan for the Regional Water Quality Control Plant (Carollo, May 2012)

The City's total capacity rights include flow leaving the City through the SPS and the amount of flow that the City discharges into the Los Altos' San Antonio Interceptor, per the 1970 Los Altos San Antonio Trunk Sewer Capacity Agreement between the two cities. The total system-wide contractual capacity for Mountain View is evaluated in the Existing and Future Cumulative Conditions with increased Project flow. Table 5-3 shows the City's projected flows compared to the RWQCP Joint Facilities capacity rights.

Per the Basic Agreement, the partnering agencies agree to conduct an engineering study when their respective service area reaches 80% of their contractual capacity rights. The Future Cumulative Condition estimates that the projected demand pre-Project and post-Project will exceed the 80% capacity threshold. The required engineering study when the City reaches 80% of their capacity shall redefine the anticipated future needs of the treatment plant.

Table 5-3: Capacity Rights Comparison

RWQCP Joint Facility	Mountain View Contractual Capacity (MGD)	Pre-Project		Post-Project	
		2010 Existing (MGD)	2030 Future Cumulative (MGD)	2010 Existing (MGD)	2030 Future Cumulative (MGD)
Treatment	15.1	10.16	14.15	10.51	14.15
Joint Interceptor	50.0	16.98	21.91	17.31	21.91

* *Treatment = Average Annual Flow (AAF), Joint Interceptor = PWWF*

5.3. Existing Condition (2010) Results

5.3.1. Hydraulic Model Information

The Existing Condition sewer system is modeled using the City's InfoSWMM model developed as part of the *2010 Sewer Master Plan* (SMP). Project sewer flow is assumed to discharge to two sewer mains, a new 12-inch line within Joaquin Road and to the existing 12-inch diameter sewer main within North Shoreline Blvd. The new 12-inch diameter sewer main within Joaquin Road is assumed to be completed as part of this Project and is identified as the Long Lonesome Road Sewer Realignment.

5.3.1.1. Long Lonesome Road Sewer Realignment

As part of the post-Project condition, it is assumed the 12-inch sewer crossing through the Project site is realigned west and then north along Long Lonesome Road. The inverts along this conveyance pathway appear to provide adequate slopes. Additional difficulties with maintaining the existing sewer alignment, or providing a new sewer alignment to the N Shoreline Blvd including crossing the proposed bike path bridge footings while maintaining appropriate sewer slopes are eliminated with the Long Lonesome Road Realignment.

The revised alignment would also utilize the existing alignment of sewer mains from Plymouth through Joaquin, a portion of which would require upsizing to meet Project sewer flow demands. The realignment is shown on Figure B-11.

The existing sewer can be rerouted within new in-tract streets if preferred, as long as the sewer terminates at Joaquin and Plymouth, the sewer analysis will remain valid.

5.3.2. Peak Wet Weather Flow (PWWF) Scenario – Pre and Post Project

The sewer system has sufficient capacity downstream of the Project with the pre-Project condition but does not have capacity for the post-Project flows in the Existing Condition as shown in Figures B-10 and B-11. The post-Project condition assumes the 12-inch Long Lonesome Road Sewer Realignment has been completed. A portion of the 12-inch diameter sewer mains on Joaquin Road and Charleston Road do not meet the d/D criteria post-Project.

5.3.3. Deficiencies – Pre and Post Project

Existing Condition model results comparing pre- and post-Project d/D are presented in Table 5-4. In the pre-Project condition, the existing pipes meet d/D performance criteria downstream of the project. Post-Project, 3 pipes do not meet d/D performance criteria downstream of project. The pipes are flowing between 65% and 89% full during PWWF. The three pipes overlap with pipes identified for upsizing as part of NBPP II CIP# 103 and CIP# 104

5.4. Future Cumulative Condition (2030) Results

5.4.1. Hydraulic Model Information

The Future Cumulative Condition model is created using sewer flows based on the NBPP II model. System performance is analyzed under the assumption that all recommended CIPs in the 2030 GPUUIS, as well as those from the NBPP II, have been constructed. Project sewer flow from the Project are assumed to discharge into the 12-inch sewer at the intersection of Plymouth and Joaquin and to the 18- inch sanitary sewer line within North Shoreline Blvd.

Six recommended CIPs identified in the NBPP II are downstream of the Project as shown on Figure B-12. CIP NB-1 includes upsizing 435 feet of 21-inch diameter pipe to 27-inch diameter pipe along N Shoreline Blvd. CIP # 100 includes upsizing 2,700 feet of 18-inch diameter pipe to 21-inch diameter pipe. CIP # 101 includes upsizing 95-feet of 12-inch diameter pipe to 15-inch diameter pipe along N Shoreline Blvd, from La Avenida to Charleston Rd. CIP # 103 includes upsizing 337 feet of 12-inch diameter pipe to 18-inch diameter pipe, 688 feet of 15-inch diameter pipe to 15-inch diameter pipe, 51-feet of 21-inch diameter pipe to 27-inch diameter pipe, and 336 feet of 12-inch diameter pipe to 21-inch diameter pipe. CIP 103 spans from Huff Avenue to the parking lot entrance east of N Shoreline Blvd. CIP #104 includes upsizing 367 feet of 8-inch diameter pipe to 12-inch diameter pipe along Joaquin Road, this CIP is revised as part of the Lonesome Road improvement as part of the realignment. CIP #108 includes upsizing 241 feet of 21-inch diameter pipe to 24-inch diameter pipe along N. Shoreline Blvd. north of Crittenden Ln.

5.4.2. Peak Wet Weather Flow (PWWF) Scenario – Pre and Post Project

The system near the Project site meets d/D performance criteria in the Future Cumulative Condition pre-Project, but one pipe on Joaquin Road does not meet d/D performance criteria post-Project. The 12-inch diameter pipe along Joaquin Avenue (identified as CIP # 104 in the NBPP II) experiences a d/D greater than 50% as shown in Figures B-13. This pipe should be upsized to a 15-inch diameter pipe.

With the post-Project flows, Pipe 193 it is flowing 57% full during PWWF. To meet d/D performance criteria for all pipes downstream of the Project, it is recommended that Pipe Model ID 193 be further upsized to a 15-inch diameter pipe. Following this improvement, the system meets d/D performance criteria downstream of the Project in the Future Cumulative Condition post-Project.

5.4.3. Deficiencies – Pre and Post Project

Table 5-5 presents the comparison of d/D criteria pre- and post-Project for pipes downstream of the Project development. The system meets d/D performance criteria downstream of the Project in the pre-Project condition. In the post-Project condition, one pipe does not meet d/D performance criteria. The NBPP II recommended CIP pipe diameter is indicated by bold green font. The Schaaf & Wheeler recommended pipe diameter for Pipe ID 193 is 15-inches. The d/D performance criteria is indicated by bold blue font in Table 5-5. The Long Lonesome Road Realignment Project pipes are indicated with purple font.

5.5. Project Contribution to Deficient Sewer Pipes

Pipe ID 193 should be upsized from an 12-inch pipe to a 15-inch pipe to convey new sewer flows from the Project. With this improvement, along with the recommended NBPP II CIPs, the system meets the performance criteria post-Project in the Future Cumulative Condition. The Long Lonesome Road sewer realignment project is not included in the NBPP II and is primarily benefiting the Project development by removing conflicts with building layouts. As such, the Project should be fully responsible for the costs associated with the Long Lonesome Road CIP realignment or the realignment within in-tract streets if the Project pipes directing flows from south of US-101 require relocation.

Table 5-6 provides a comparison of ADWF to determine the Project contribution for the recommended pipe improvement projects. Flow contribution is based upon Future Cumulative Condition ADWF. Percentage of Project contribution to the recommended CIPs is provided and can be used to determine impact fees for fair share impact to the sewer system.

Table 5-4: Existing Condition Model Results – Pre and Post Project

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
227	D4-030	D4-028	8	366	0.439	0.059	0.2267	0.349	0.3130	0.099	0.2950	0.581	0.4237	15
289	D4-017	D4-015	8	225	0.441	0.001	0.0935	0.011	0.2709	0.001	0.1214	0.017	0.3338	33
282	D4-019	D4-015	8	360	0.736	0.002	0.1025	0.006	0.2548	0.004	0.1313	0.009	0.3244	35
177	D4-006	C4-021	30	420	0.100	1.944	0.3173	2.257	0.3426	3.134	0.4072	3.545	0.4352	42
144	C4-017	C4-016	30	244	0.113	1.945	0.3201	2.258	0.3471	3.136	0.4221	3.546	0.4538	39
156	C4-021	C4-017	30	396	0.135	1.944	0.3103	2.257	0.3357	3.135	0.4024	3.545	0.4314	42
103	C4-010	C4-008	30	59	0.340	2.124	0.3493	2.437	0.3788	3.392	0.4618	3.803	0.4945	34
113	C4-012	C4-010	30	323	0.031	2.123	0.3567	2.436	0.3853	3.391	0.4662	3.803	0.4985	34
118	C4-016	C4-012	30	160	0.182	2.123	0.3621	2.436	0.3898	3.390	0.4687	3.802	0.5009	33
72	B4-017	B4-007	21	216	0.760	2.164	0.3345	2.477	0.3593	3.460	0.4312	3.870	0.4594	39
83	B4-019	B4-017	21	445	0.438	2.150	0.3674	2.463	0.3954	3.437	0.4769	3.848	0.5095	32
88	C4-004	B4-019	30	323	0.029	2.142	0.3660	2.455	0.3904	3.425	0.4600	3.836	0.4876	35
96	C4-008	C4-004	30	292	0.098	2.142	0.4198	2.455	0.4482	3.424	0.5274	3.835	0.5584	26
50	B4-024	B4-022	27	75	1.036	2.166	0.2671	2.479	0.2871	3.480	0.3472	3.891	0.3706	51
52	B4-026	B4-022	8	120	0.147	0.000	0.0002	0.000	0.0002	0.004	0.1844	0.004	0.1844	63
56	B4-001	B4-024	27	347	0.115	2.166	0.3140	2.479	0.3355	3.477	0.3976	3.888	0.4211	44
58	B4-003	B4-001	27	64	1.256	2.166	0.3089	2.479	0.3299	3.473	0.3908	3.884	0.4139	45
19	B4-016	B4-014	42	556	0.189	4.880	0.2725	5.198	0.2814	8.477	0.3623	8.874	0.3712	51
21	B4-014	B4-012	42	368	0.272	4.880	0.2719	5.198	0.2807	8.481	0.3616	8.877	0.3704	51

Table 5-4: Existing Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
22	B4-012	B4-010	42	450	0.222	4.880	0.2292	5.198	0.2366	8.484	0.3035	8.881	0.3107	59
20	B4-010	B4-003	42	86	1.388	4.880	0.1955	5.198	0.2017	8.488	0.2579	8.885	0.2639	65
24	B4-003	B4-001	42	200	0.500	4.880	0.2309	5.198	0.2379	8.491	0.3017	8.888	0.3085	59
25	B4-001	B4-006	42	338	0.444	4.880	0.2088	5.198	0.2165	8.495	0.2867	8.892	0.2944	61
45	B4-022	B4-016	21	432	0.398	2.166	0.3918	2.479	0.4216	3.487	0.5104	3.898	0.5446	27
60	B4-005	B4-003	21	98	0.001	2.166	0.4094	2.479	0.4372	3.470	0.5182	3.881	0.5497	27
64	B4-007	B4-005	21	143	0.782	2.166	0.4409	2.479	0.4717	3.466	0.5618	3.877	0.5973	20
209	D4-068	JCT-14	18	509	0.440	1.445	0.4130	1.468	0.4164	2.471	0.5519	2.424	0.5461	27
241	D4-050	D4-068	18	364	0.434	1.442	0.3901	1.465	0.3934	2.466	0.5296	2.420	0.5236	30
260	D4-021	D4-050	18	341	0.429	1.438	0.3909	1.461	0.3943	2.460	0.5309	2.413	0.5248	30
290	D4-033	JCT-12	21	296	0.422	1.421	0.3344	1.444	0.3372	2.443	0.4469	2.398	0.4423	41
306	D4-035	D4-033	18	166	0.423	1.419	0.3806	1.394	0.3796	2.439	0.5143	2.351	0.5054	33
331	E4-002	D4-035	18	375	0.377	1.405	0.3982	1.371	0.3929	2.417	0.5441	2.321	0.5309	29
CDT-17	JCT-14	JCT-16	18	40	0.083	1.445	0.4063	1.468	0.4096	2.471	0.5366	2.424	0.5313	29
CDT-13	JCT-12	D4-021	21	121	0.277	1.436	0.3451	1.459	0.3480	2.456	0.4649	2.410	0.4598	39
173	D4-002	D4-034	12/**15**	356	0.100	0.177	0.3839	0.467	0.4544/	0.284	0.4879	0.765	**0.8984/0.5940**	0/**21**
176	D4-034	D4-004	12/**15**	332	0.066	0.180	0.3242	0.470	0.3820/	0.290	0.4093	0.770	**0.6814/0.4874**	**0**/**35**
178	D4-004	JCT-16	21	12	0.646	0.180	0.2788	0.470	0.3071	0.291	0.4120	0.772	0.4595	39
CDT-19	JCT-16	D4-006	21	15	0.650	1.625	0.3873	1.938	0.4204	2.747	0.5201	3.154	0.5646	25
193	D4-028	D4-002	**12**/**15**	5	0.490	0.060	0.3632	0.350	0.3222/	0.101	0.4710	0.582	**0.6547/0.5558**	**0**/**26**
277	D4-011	D4-013	**12**	248	0.260	0.011	0.1121	0.193	0.2821	0.015	0.1374	0.319	0.3670	51
281	D4-013	D4-015	**12**	237	0.210	0.010	0.1400	0.194	0.2920	0.016	0.1666	0.320	0.3806	49

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-4: Existing Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
249	D4-032	D4-030	**12**	381	0.258	0.053	0.2444	0.343	0.3613	0.089	0.3170	0.570	0.4758	37
280	D4-015	D4-032	**12**	354	0.557	0.034	0.2108	0.324	0.3413	0.054	0.2700	0.536	0.4515	40
LLR-1	E4-006	E4-004	**12**	148	0.347			0.092	0.1844			0.154	0.2376	52
LLR-2	E4-008	E4-006	**12**	282	0.227			0.091	0.1562			0.152	0.1991	60
LLR-3	E4-010	E4-008	**12**	223	0.126			0.091	0.2233			0.151	0.2873	43
LLR-4	E4-046	E4-010	**12**	312	0.110			0.090	0.2312			0.150	0.2993	40
LLR-5	E4-004	E4-002	**12**	95	0.317			0.003	0.2437			0.003	0.4524	10

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
227	D4-030	D4-028	12	366	0.439	0.252	0.2725	0.358	0.3266	0.287	0.2912	0.581	0.4236	15
289	D4-017	D4-015	8	225	0.441	0.005	0.1924	0.005	0.2364	0.001	0.1667	0.013	0.3219	36
282	D4-019	D4-015	8	360	0.736	0.003	0.1810	0.003	0.2250	0.001	0.1610	0.006	0.2943	41
177	D4-006	C4-021	30	420	0.100	3.298	0.4185	3.228	0.4137	5.103	0.5355	5.220	0.5430	28
144	C4-017	C4-016	30	244	0.105	3.299	0.4306	3.229	0.4252	4.918	0.5517	5.028	0.5598	25
156	C4-021	C4-017	30	396	0.135	3.299	0.4157	3.229	0.4107	4.931	0.5280	5.041	0.5355	29
103	C4-010	C4-008	30	59	0.340	3.503	0.4723	3.433	0.4667	5.111	0.5952	5.220	0.6033	20
113	C4-012	C4-010	30	323	0.031	3.503	0.4760	3.433	0.4705	5.111	0.5989	5.219	0.6071	19
118	C4-016	C4-012	30	160	0.182	3.502	0.4779	3.432	0.4724	5.111	0.6010	5.219	0.6093	19
72	B4-017	B4-007	21	216	0.760	3.649	0.4358	3.579	0.4311	5.305	0.5414	5.413	0.5481	27
83	B4-019	B4-017	21	445	0.438	3.573	0.4928	3.503	0.4872	5.188	0.6250	5.296	0.6340	15
88	C4-004	B4-019	30	323	0.029	3.557	0.4678	3.487	0.4631	5.164	0.5748	5.272	0.5822	22
96	C4-008	C4-004	30	292	0.098	3.557	0.5373	3.487	0.5320	5.163	0.6534	5.271	0.6611	12
50	B4-024	B4-022	27	75	1.036	3.650	0.3283	3.580	0.3250	5.326	0.4031	5.434	0.4077	46
52	B4-026	B4-022	8	120	0.147	0.000	0.0002	0.000	0.0002	0.004	0.1844	0.004	0.1972	61
56	B4-001	B4-024	27	347	0.115	3.650	0.4076	3.580	0.4036	5.323	0.4979	5.431	0.5035	33
58	B4-003	B4-001	27	64	1.256	3.650	0.4007	3.580	0.3968	5.319	0.4892	5.427	0.4946	34
19	B4-016	B4-014	42	556	0.189	7.638	0.3430	7.568	0.3414	11.777	0.4326	11.885	0.4348	42
21	B4-014	B4-012	42	368	0.272	7.638	0.3422	7.568	0.3406	11.780	0.4311	11.888	0.4333	42

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
22	B4-012	B4-010	42	450	0.222	7.638	0.2875	7.568	0.2861	11.783	0.3603	11.891	0.3621	52
20	B4-010	B4-003	42	86	1.388	7.638	0.2445	7.568	0.2433	11.787	0.3052	11.895	0.3067	59
24	B4-003	B4-001	42	200	0.500	7.638	0.2864	7.568	0.2852	11.790	0.3551	11.899	0.3568	52
25	B4-001	B4-006	42	338	0.444	7.638	0.2696	7.568	0.2682	11.794	0.3472	11.902	0.3490	53
45	B4-022	B4-016	**27**	432	0.398	3.650	0.3650	3.580	0.3612	5.333	0.4480	5.441	0.4529	40
60	B4-005	B4-003	**24**	98	0.001	3.650	0.4465	3.580	0.4422	5.315	0.5417	5.424	0.5476	27
64	B4-007	B4-005	**24**	143	0.782	3.650	0.4748	3.580	0.4702	5.312	0.5786	5.420	0.5851	22
209	D4-068	JCT-14	**21**	509	0.340	2.260	0.4131	2.154	0.4024	3.574	0.5352	3.511	0.5297	29
241	D4-050	D4-068	**21**	364	0.434	2.256	0.4180	2.150	0.4070	3.593	0.5479	3.530	0.5419	28
260	D4-021	D4-050	**21**	341	0.429	2.180	0.3952	2.073	0.3848	3.476	0.5150	3.414	0.5095	32
290	D4-033	JCT-12	**21**	296	0.299	2.180	0.4401	2.074	0.4282	3.475	0.5764	3.414	0.5702	24
306	D4-035	D4-033	**21**	166	0.423	2.160	0.4124	2.054	0.4012	3.459	0.5408	3.371	0.5338	29
331	E4-002	D4-035	**21**	375	0.377	2.080	0.3943	1.974	0.3835	3.394	0.5191	3.287	0.5099	32
CDT-17	JCT-14	JCT-16	**21**	24	0.250	2.260	0.4133	2.154	0.4031	3.574	0.5263	3.511	0.5215	30
CDT-13	JCT-12	D4-021	**21**	121	0.277	2.180	0.4195	2.074	0.4083	3.475	0.5466	3.414	0.5408	28
173	D4-002	D4-034	**15**	356	0.100	0.467	0.3853	0.513	0.4043	0.603	0.4395	0.791	0.5085	32
176	D4-034	D4-004	**15**	332	0.274	0.476	0.3014	0.522	0.3163	0.611	0.3432	0.799	0.3960	47
178	D4-004	JCT-16	**21**	12	0.646	0.476	0.4346	0.523	0.4271	0.672	0.6476	0.851	0.6591	12
CDT-19	JCT-16	D4-006	**27**	40	0.650	2.737	0.4198	2.677	0.4142	4.427	0.5712	4.533	0.5808	23
193	D4-028	D4-002	**12/15**	367	0.490	0.253	0.4062	0.359	0.4462	0.288	0.4540	0.582	**0.5674/0.4391**	**0/24**
277	D4-011	D4-013	**12**	248	0.260	0.042	0.1296	0.146	0.2447	0.005	0.0526	0.272	0.3376	55
281	D4-013	D4-015	**12**	237	0.210	0.040	0.1727	0.146	0.2610	0.125	0.1246	0.274	0.3526	53

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-5: Future Cumulative Condition Model Results – Pre and Post Project Cont.

Sewer Main ID	Upstream MH ID	Downstream MH ID	Model Diameter (in)	Length (ft)	Slope (%)	ADWF				PWWF				
						Pre-Project		Post-Project		Pre-Project		Post-Project		
						Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Max Flow (MGD)	d/D	Pipe Capacity Remaining (% of Allowed d/D)
249	D4-032	D4-030	**12**	381	0.258	0.170	0.2675	0.276	0.3317	0.148	0.2684	0.473	0.4399	41
280	D4-015	D4-032	**12**	354	0.557	0.169	0.2348	0.275	0.3007	0.147	0.2191	0.471	0.4028	46
342	E4-006	E4-004	**12**	148	0.347	0.106		0.106		0.171	0.3304	0.171	0.1855	63
355	E4-008	E4-006	**12**	282	0.227	0.095		0.095		0.158	0.2524	0.158	0.2249	55
365	E4-010	E4-008	**12**	223	0.126	0.095		0.094		0.157	0.2882	0.157	0.2032	59
366	E4-046	E4-010	**12**	312	0.110	0.094		0.094		0.155	0.3086	0.155	0.1892	62
334	E4-004	E4-002	**12**	95	0.317	0.106		0.106		0.174	0.4586	0.173	0.1242	83

*Note: Model diameter in bold **green** represents NBPP II CIP upsized pipe utilized to accommodate post-Project flows, model diameter in bold **purple** represents the Long Lonesome Road Sewer Realignment Pipe diameters, d/D values in bold **red** text represents City performance criteria that is not met*

Table 5-6: Pipes Recommended for Upsizing and Percentage of Contributed Flow

Sewer Main ID	CIP #	Upstream MH ID	Downstream MH ID	Existing Diameter (in)	Proposed Diameter (in)	Total Future Cumulative ADWF Flow With Project (MGD)	Project Incremental Contribution		City of Mountain View Contribution	
							ADWF Flow (MGD)	Percentage of Total Flow (%)	ADWF Flow (MGD)	Percentage of Total Flow (%)
173	103	D4-002	D4-034	12	**15**	0.5134	0.0461	9	0.4674	91
176	103	D4-034	D4-004	12	**15**	0.5221	0.0461	9	0.4760	91
193	104/LLR	D4-028	D4-002	8	**15**	0.3588	0.1061	30	0.2528	70
277	LLR	D4-011	D4-013	8	**12**	0.1457	0.1035	71	0.0423	29
281	LLR	D4-013	D4-015	8	**12**	0.1464	0.1061	72	0.0404	28
249	LLR	D4-032	D4-030	8	**12**	0.2761	0.1061	38	0.1700	62
280	LLR	D4-015	D4-032	8	**12**	0.2753	0.1061	39	0.1692	61

*Note: NBPP II recommended pipe is bold **green**, Long Lonesome Road CIP recommended pipe is bold **purple***

Chapter 6. Recycled Water

The Project site is within the service area of the existing recycled water system. The Project may connect to the existing recycled water pipelines within Plymouth Street. Recycled water may be used for irrigation of landscaping as well as for non-potable uses in non-residential buildings. Non-residential buildings within North Bayshore are required to be dual plumbed to utilizes recycled water for non-potable uses.

The existing recycled water system configuration, limitations, and potential Project impacts on the recycled water system are described herein.

6.1. Existing System

The existing Palo Alto Recycled Water Quality Control Plant receives and treats sanitary sewer water from the City of Mountain View, as well Los Altos, Los Altos Hills, Palo Alto, Stanford University, and East Palo Alto Sanitation District. The Palo Alto Water Quality Control Plant (RWQCP) and the City of Mountain View have entered an agreement wherein the RWQCP supplies up to 3 MGD (2083 gpm) of recycled water per day, to the City of Mountain View, for use in irrigation or other non-potable applications such as toilets in buildings that are dual-plumbed. The RWQCP provides recycled water to the City of Mountain View with a single pump utilizing a VFD, intended maintains pressures through the recycled water network.

The existing recycled water system configuration and operations were discussed as part of the *Sub-Alternatives Development Memorandum*, (Carollo, November 2013). The existing system configuration is intended to function as two separate pressure zones, one being the Primary Recycled Water System or Primary Zone, and the other being the Shoreline Irrigation System. The existing system including the two pressure zones are shown in Figure B-14. The Primary Zone is supplied directly from the RWQCP, and the Shoreline Irrigation System is supplied from the Shoreline Irrigation Pump Station, which supplies irrigation water to the golf course from water stored in the golf course pond (Shoreline Pond).

The existing Mountain View recycled water system has 177 recycled water meters in place (Mountain View Recycled Water Feasibilty Study, Carollo), with 59 inactive meters corresponding to sites under development or sites which have not yet converted from potable water to recycled water. New developments are required to provide dual plumbing to toilets and to connect to the recycled water system for irrigation. There are currently 58 active meters as part of the existing recycled water system.

6.1.1. Existing Model

The recycled water model consists of two scenarios, Average Day Demand (ADD) and Maximum Day Demand (MDD). The ADD scenario is based on water meter records collected from 2009, through 2012. The annual demands were estimated based on 2011 meter data due to completeness of available records. The demands are from active accounts and do not identify if the usage is for irrigation or usage from dual-plumbed buildings. The ADD and MDD from the recycled water model are shown in Table 6-1. The system also utilizes a diurnal curve based on water usage records to distribute the recycled water demands. The existing modeled recycled water system performance is shown on Figure B-14.

Table 6-1: Existing Average Day Demand and Maximum Day Demand

	Recycled Water Demand (mgd)
Average Day Demand (ADD)	0.46
Maximum Day Demand (MDD)	1.06

The Primary Zone and the Shoreline Irrigation System operate on two similar, but different diurnal curves, the diurnal curves for the two zones are shown on Figure 3.

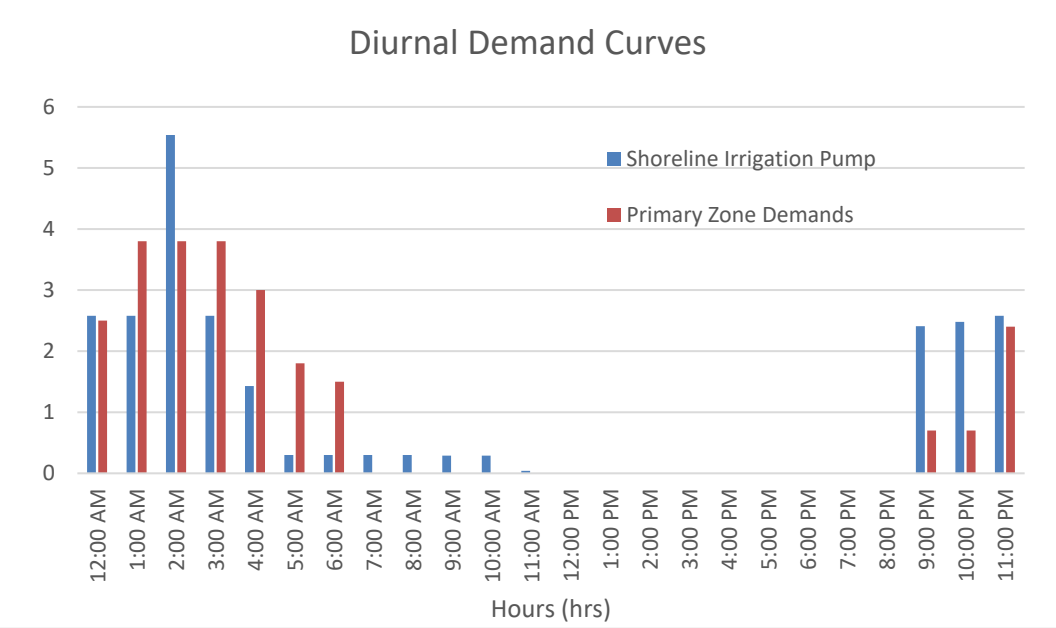

Figure 3: Recycled Water Diurnal Curves

In the existing model the Shoreline Pond is filled at a constant rate of 600 gpm through a connection from the Primary Zone. The additional storage within the Shoreline Pond is intended to offset the peak hour demand (PHD) in the system. The relationship between available supply, Shoreline Irrigation flows, Primary Zone flows, and Shoreline Pond inflow is shown in Figure 4.

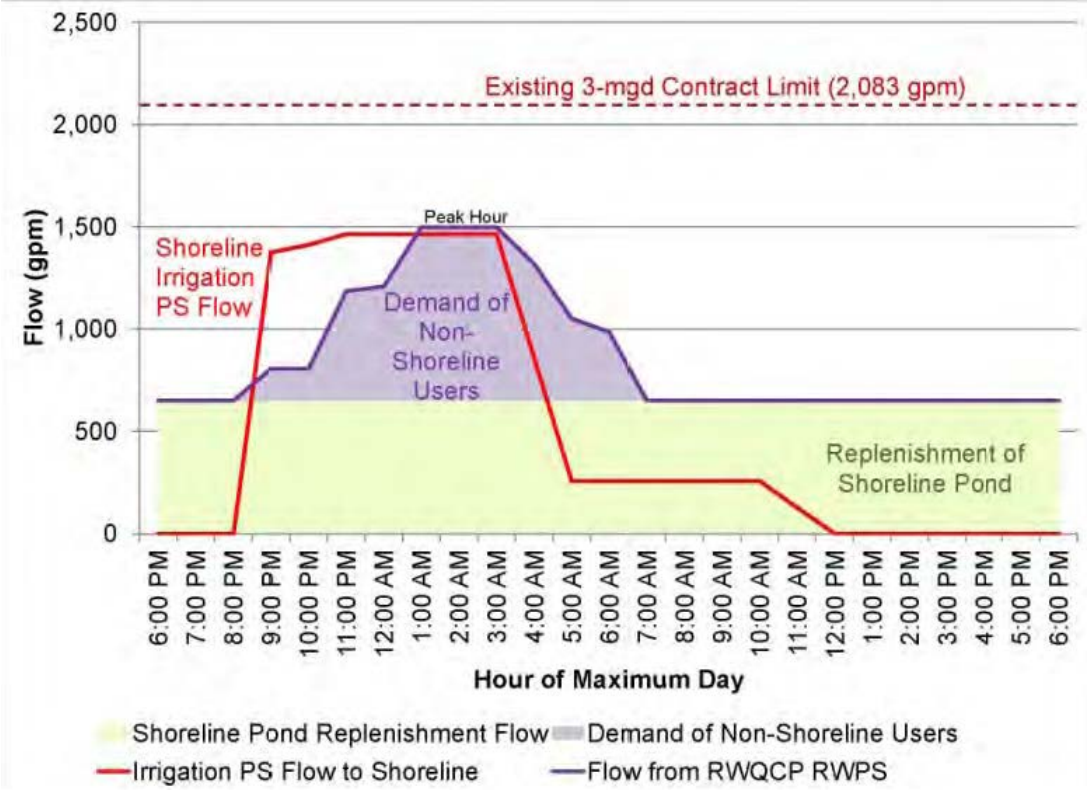

Figure 4: Recycled Water Usage

Based on the model data and modelled system operations, the recycled water system can adequately supply water to users throughout the service area. However, this assumes that storage from the Shoreline Pond is used as a buffer to supply water to the golf course irrigation system during the Peak Hour Demand (PHD). If the Shoreline Pond cannot be used as storage to buffer demands, the system demands exceed the total available demand from the RWQCP, as shown on Figure 5.

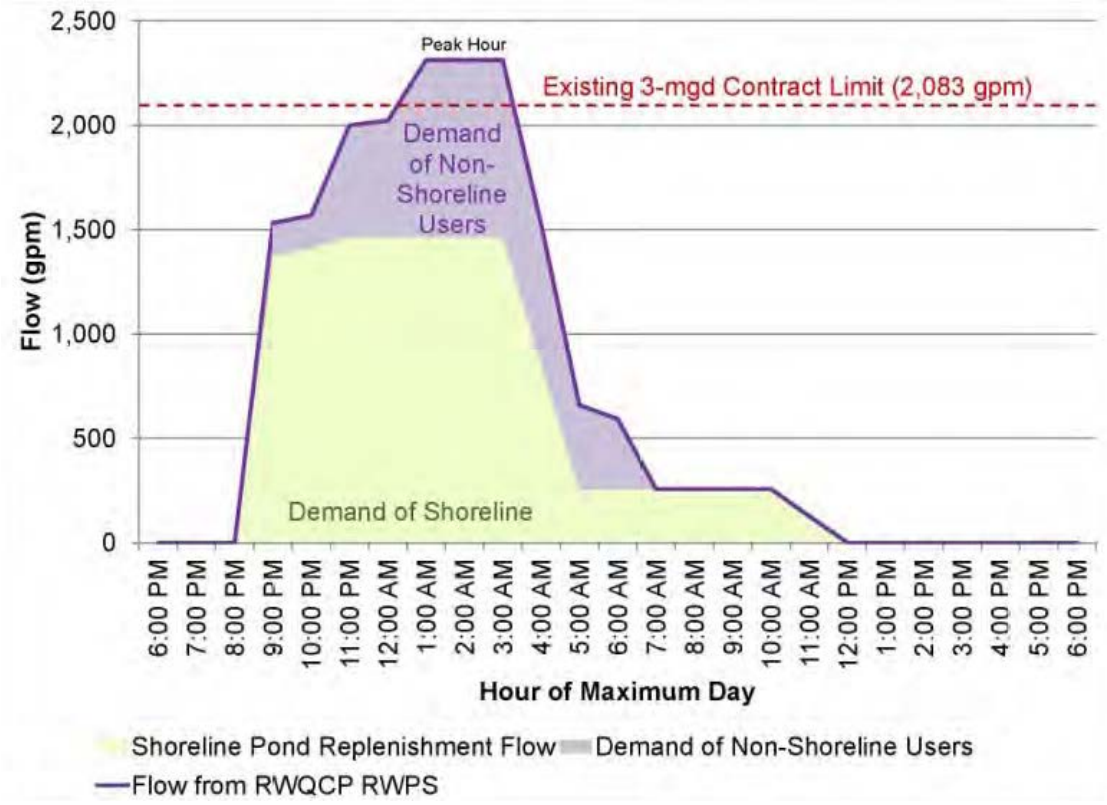

Figure 5: Recycled Water Usage – Without Shoreline Pond Storage

Without the Shoreline Ponds buffering the PHD, the system experiences low pressures throughout the recycled water system. The deficient system nodes without utilizing the Shoreline Pond storage is shown on Figure B-14. City staff has noted that the system experiences variable pressures, including low pressures that disrupt service to users throughout the service area. The City should verify that current operations match the modelled system.

The RWQCP pump provides the recycled water supply and maintains pressures throughout the Primary Zone, this is done with a pump utilizing a VFD to adjust its speed to meet demand and maintain pressures. This configuration inherently lends itself to the limitations of the pump and its ability to speed up and slow down to maintain pressures in the system. Utilizing pumps instead of a static water level in a storage tank to maintain pressure leaves opportunities for pressure fluctuations as the pumps try to accommodate changes in user demand. It is recommended that the City incorporate system storage as outlined in the Recycled Water Feasibility Study to reduce the frequency of pressure fluctuations throughout the system.

6.1.2. Project Impacts

The Project irrigation demands have been estimated using the MAWA methodology and the total irrigation demand for the Project site is based on the "open space" identified in the MV Gateway Master Plan Administrative Draft and are summarized in Table 6-2.

Table 6-2: Project Irrigation Demands

Project Site	Total Open Space Area (sf)	Irrigation Demand (gpm)
MV Gateway	65,000*	0.22

**Estimated from open space square footage*

6.2. Project Contribution to Existing Deficiencies

As currently modelled, the existing Recycled water system does not exhibit deficiencies, and the Project site can be supplied with recycled water; however, this is dependent on using Shoreline Ponds to supply water to the shoreline irrigation network. Without utilizing storage in the Shoreline Pond to buffer the golf course demands, the system experiences deficient pressures across the system. City staff has indicated that the existing system pressures vary significantly throughout the service area. This may be due to the shoreline pond not operating as modelled, or due to the RWQCP not being able to adapt to changes in system pressure fast enough. Based on the existing modeled system configuration, the Project site irrigation demands should not have any impacts on the City system. Based on discussions with City staff, the existing system experiences deficiencies with only the current active users; therefore, the Project would only exacerbate the existing system deficiencies.

6.2.1. Recommended Improvements

City staff has indicated that the existing system experiencing low pressures, it is recommended that the City begin implementing improvements recommended in the Recycled Water Feasibility Study. Expanding the existing storage capacity for the recycled water system should take priority. Additional system storage will provide a buffer during the PHD, when system demand exceeds the RWQCP capacity. The addition of system storage will help alleviate pressure fluctuations currently experienced. Additional pipe improvements may be needed to implement the Charleston Park Storage Tank, the City should begin efforts to start the planning process associated with implementing the CIP. Additional recycled water CIPs identified as part of the Recycled Water Feasibility Study are included in Figure B-15. Improvements include adding loops to the system to add redundancy and increase reliability of the system, as well as system build-out projects to expand the service area and provide storage for the system.

The City is currently working on updating the RWFS with Carollo Engineering Consultants. The updated study may have different results for existing system performance and may have revised recommended system improvements.

Chapter 7. Storm System Impact

The storm drain system analysis for Project impact is based on the MIKE URBAN (MU) model developed as part of the *2019 Storm Drain Master Plan* (Schaaf & Wheeler, 2019). The Project site drainage flows in two main directions, north to the Plymouth St storm drain line and east to the N Shoreline Blvd storm drain line. Plymouth St storm drain flows by gravity to Permanente Creek, and the N Shoreline Blvd storm drain flows north to the Charleston Rd Pump Station, which pumps storm drain flows into Stevens Creek. The Project will maintain approximately the same drainage patterns, draining to the north and east, connecting to the 30-inch storm drain within Plymouth St. and the 48-inch diameter storm drain within N Shoreline Blvd.

7.1. Stormwater Runoff Analysis

The Project impervious percentage is currently unknown, to complete this analysis the proposed site should be incorporated into the SDMP model with any site drainage patterns and impervious percent changes incorporated into the catchment runoff (hydrology) calculation. The pipe hydraulic calculation will indicate if any changes in the configuration affect the storm drain performance. In general, if the impervious percentage is maintained equal to the existing site or reduced, the impact should be negligible. SDMP is compared to stormwater runoff under the Project impervious area conditions.

7.1.1. Existing Site

The Project site is classified as "High Intensity Office" and has a corresponding overall assumed percent impervious area of 84.2% (Table 2-3, 2019 SDMP). Catchment delineation for the 2019 SDMP was performed in GIS and used 1-foot elevation contour data, aerial imagery, street and pipe network layouts, and catch basin locations. The site is split into 7 catchments, with three catchments draining to the Plymouth St storm drain line and four draining to the N Shoreline Blvd storm drain line.

7.1.2. Proposed Project Impact

The estimated impervious area is not provided, however, impacts to the existing system should be negligible so long as the impervious percentage of the site does not the existing site impervious (approximately 84%). The proposed Project site drainage configuration should be incorporated into the SDMP model to verify.

7.2. Project Contribution to Existing Deficiencies

Model results from the 2019 SDMP show no flooding near the Project site. There are no capacity Capital Improvement Projects (CIPs) identified in the 2019 SDMP near the Project site. One project is located between the Project and the outfall at Stevens Creek. The downstream CIP is along Shoreline Boulevard, this CIP is a high priority project and would re-direct flows to the Crittenden Pump Station from the Charleston Pump Station. The Charleston Pump Station is nearing the end of its useful life and this CIP project would eliminate the need to rehabilitate or replace the existing pump station at the Charleston Pond. An additional CIP is located at the outfall of Plymouth St, at Permanente Creek. This project includes adding a new flap gate to reduce backflow into the system, which in turn reduces the run-time for the Charleston Pump Station because the systems are interconnected. The Project is not anticipated to contribute flows greater than the existing site and is not anticipated to result in deficiencies downstream of the Project.

The Project site, existing modelled 10-year deficiencies, and SDMP CIPs within the NBPPII study are shown on Figure 16.

7.3. Additional Considerations

Site dewatering operations during construction are dependent on the volume of water to be removed, conditions of the site, and contractor methods. If the contractor intends to discharge to the storm drain system or the sanitary sewer system, a hydraulic analysis is recommended to ensure the system has sufficient capacity for the time of year of anticipated construction. The City should determine what restrictions to impose on construction site dewatering during rainy periods to avoid exacerbating the existing system deficiencies.

APPENDIX A:

Additional Considered Projects

Table A-1: Additional Considered Projects

	Project	Change Area/Planning Area	Address	Status*
1	Mountain View Co-Housing Community	Central Neighborhood	445 Calderon Ave	Completed
2	Hope Street Investors	Downtown/Evelyn Corridor	231-235 Hope St	Approved
3	Downtown Mixed Use Building	Downtown/Evelyn Corridor	605 Castro St	Completed
4	Residential Condominium Project	Downtown/Evelyn Corridor	325, 333, 339 Franklin St	Under Review
5	St Joseph's Church	Downtown/Evelyn Corridor	599 Castro St	Completed
6	Fairmont Mixed Use	Downtown/Evelyn Corridor	881 Castro Street	Completed
7	Bryant/Dana Office	Downtown/Evelyn Corridor	250 Bryant St	Completed
8	Quad/Lovewell	East Whisman	369 N Whisman Rd	Approved but Inactive
9	Renault & Handley	East Whisman	625-685 Clyde Ave	Completed
10	Symantec	East Whisman	575 E Middlefield Rd	On Hold
11	LinkedIn	East Whisman	700 E Middlefield Rd	Under Construction
12	National Avenue Partners	East Whisman	600 National Ave	Completed
13	2700 West El Camino Real	El Camino Real	2700 El Camino Real W	Under Construction
14	SummerHill Apt	El Camino Real	2650 El Camino Real W	Completed
15	Hotel Expansion	El Camino Real	2300 W El Camino Real	Completed
16	Lennar Multi-Family Communities	El Camino Real	2268 El Camino Real W	Completed
17	UDR	El Camino Real	1984 El Camino Real W	Completed
18	Residence Inn Gatehouse	El Camino Real	1854 El Camino Real W	Completed
19	Residence Inn	El Camino Real	1740 El Camino Real W	Completed
20	Tropicana Lodge - Prometheus	El Camino Real	1720 El Camino Real W	Completed
21	Austin's - Prometheus	El Camino Real	1616 El Camino Real W	Completed
22	1701 W El Camino Real	El Camino Real	1701 El Camino Real W	Completed
23	First Community Housing	El Camino Real	1585 El Camino Real W	Completed
24	Harv's Car Wash - Regis House	El Camino Real	1101 El Camino Real W	Completed
25	Greystar	El Camino Real	801 El Camino Real W	Completed
26	Medical Building	El Camino Real	412 El Camino Real W	Completed
27	Lennar Apartments	El Camino Real	865 El Camino Real E	Completed

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
28	Wonder Years Preschool	El Camino Real	86 El Camino Real	Completed
29	Evelyn Family Apartments	Grant/Sylvan	779 East Evelyn Ave	Completed
30	344 Bryant Ave	Grant/Sylvan	344 Bryant Ave	Under Building Review
31	Adachi Project	Grant/Sylvan	1991 Sun Mor Ave	Completed
32	840 E El Camino Real	Grant/Sylvan	840 El Camino Real E	Approved
33	Loop Convenience Store	Grant/Sylvan	790 El Camino Real E	Completed
34	El Camino Real Hospital Campus	Miramonte/Springer	2500 Grant Ave	Completed
35	City Sports	Miramonte/Springer	1040 Grant Ave	Completed
36	Prometheus	Moffett/Whisman	100 Moffett Blvd	Completed
37	Hampton Inn Addition	Moffett/Whisman	390 Moffett Blvd	Completed
38	Calvano Development	Moffett/Whisman	1075 Terra Bella Avenue	Under Construction
39	Moffett Gateway	Moffett/Whisman	750 Moffett Blvd	Under Construction
40	Holiday Inn Express	Moffett/Whisman	870 Leong Dr	Approved
41	Warmington Residential	Moffett/Whisman	660 Tyrella Avenue	Completed
42	Dividend Homes	Moffett/Whisman	111 and 123 Fairchild Dr	Completed
43	133-149 Fairchild Dr	Moffett/Whisman	133-149 Fairchild Dr	Completed
44	Warmington Residential	Moffett/Whisman	277 Fairchild Dr	Under Construction
45	Hetch-Hetchy Property	Moffett/Whisman	450 N Whisman Dr	Completed
46	DeNardi Homes	Moffett/Whisman	186 East Middlefield Road	Under Construction
47	Tripointe Homes	Moffett/Whisman	135 Ada Ave	Completed
48	Tripointe Homes	Moffett/Whisman	129 Ada Ave	Completed
49	Robson Homes	Moffett/Whisman	137 Easy St	Completed
50	167 N Whisman Rd	Moffett/Whisman	167 N Whisman Rd	Completed
51	Antenna Farm (Pacific Dr)	Moffett/Whisman	Pacific Dr	Completed
52	Pulte Homes	Moffett/Whisman	100, 420-430 Ferguson Dr	Completed
53	EFL Development	Moffett/Whisman	500 Ferguson Dr	Completed
54	Shenandoah Square Precise Plan	Moffett/Whisman	500 Moffett Blvd	On Hold

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
55	1185 Terra Bella Ave	Moffett/Whisman	1185 Terra Bella Ave	Approved
56	Linde Hydrogen Fueling Station	Moffett/Whisman	830 Leong Dr	Completed
57	Windsor Academy	Monta Loma/Farley/Rock	908 N Rengstorff Ave	Completed
58	D.R. Horton	Monta Loma/Farley/Rock	827 N Rengstorff Ave	Completed
59	ROEM/Eden	Monta Loma/Farley/Rock	819 N Rengstorff Ave	Completed
60	Paul Ryan	Monta Loma/Farley/Rock	858 Sierra Vista Ave	Under Construction
61	William Lyon Homes	Monta Loma/Farley/Rock	1951 Colony St	Completed
62	Dividend Homes	Monta Loma/Farley/Rock	1958 Rock St	Completed
63	Paul Ryan	Monta Loma/Farley/Rock	2392 Rock St	Completed
64	San Antonio Station	Monta Loma/Farley/Rock	100 & 250 Mayfield Ave	Completed
65	Northpark Apartments	Monta Loma/Farley/Rock	111 N Rengstorff Ave	Completed
66	333 N Rengstorff Ave	Monta Loma/Farley/Rock	333 N Rengstorff Ave	Under Construction
67	Classic Communities	Monta Loma/Farley/Rock	1946 San Luis Ave	Completed
68	1998-2024 Montecitio Ave	Monta Loma/Farley/Rock	1998-2024 Montecito Ave	Under Construction
69	Classic Communities	Monta Loma/Farley/Rock	647 Sierra Vista Ave	Completed
70	Dividend Homes	Monta Loma/Farley/Rock	1968 Hackett Ave & 208-210 Sierra Vista Ave	Completed
71	California Communities	Monta Loma/Farley/Rock	2025 & 2065 San Luis Ave	Completed
72	2044 and 2054 Montecito Ave	Monta Loma/Farley/Rock	2044 & 2054 Montecito Ave	Under Construction
73	Shorebreeze Apartments	Monta Loma/Farley/Rock	460 North Shoreline Blvd	Under Construction
74	Intuit	North Bayshore	2600 Marine Way	Completed
75	Sobrato Organization	North Bayshore	1255 Pear Ave	Approved
76	Charleston East	North Bayshore	2000 North Shoreline Blvd	Under Construction
77	LinkedIn and Sywest	North Bayshore	1400 North Shoreline Blvd	On Hold
78	Broadreach	North Bayshore	1625 Plymouth Street	Completed
79	Microsoft	North Bayshore	1045-1085 La Avenida St	Under Construction
80	Shashi Hotel	North Bayshore	1625 North Shoreline Blvd	Under Construction

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
81	Community School of Music and Art	San Antonio	250 San Antonio Circle	Approved
82	Prometheus	San Antonio	400 San Antonio Rd	Completed
83	Octane Fayette	San Antonio	2645 & 2655 Fayette Dr	Under Review
84	Merlone Geier Partners (MGP)	San Antonio	405 San Antonio Rd	Completed
85	Anton Calega	San Antonio/Rengstorff/ Del Medio	394 Ortega Ave	Completed
86	Barry Swenson Builder	San Antonio/Rengstorff/ Del Medio	1958 Latham St	Approved
87	2296 Mora Drive	San Antonio/Rengstorff/ Del Medio	2296 Mora Dr	Completed
88	St Francis High School	Miramonte/Springer	1885 Miramonte Ave	Under Review
89	Franklin	Central/Downtown	325 Franklin Street	Under Review
90	California	Central/Downtown	756 California Street	Under Review
91	North Shorelin	Moffett/Whisman	1001 North Shorelin Boulevard	Under Review
92	555 West Middlefield Road	Moffett/Whisman	555 West Middlefield Road	Under Review
93	Mountain View Academy	Central/Downtown	360 South Shoreline Boulevard	Under Review
94	DeNardini	San Antonio	1933 Gamel Way, 574 Escuela Ave	Under Review
95	Tyrella	Moffett/Whisman	294-296 Tyrella Avenue	Under Review
96	Logue	Moffett/Whisman	400 Logue Avenue	Under Review
97	Sobrato	Moffett/Whisman	465 Fairchild Drive	Under Review
98	Google Landings	North Bayshore	1860-2159 Landings Dr., 1014-1058 Huff Ave, 900 Alta Avenue, 2000 North Shoreline	Under Review
99	Phan	Moffett/Whisman	198 Easy Street	Under Review

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
100	Cosma	El Camino Real	1510 West El Camino Real	Under Review
101	Dana Street	Downtown	676 West Dana Street	Under Review
102	Summer Hill	Monta Loma/Farley/Rock	1555 West Middlefield Road	Under Review
103	Ambrosio	El Camino Real	855-1023 West El Camino Real	Under Review
104	BPR	El Camino Real	2300 West El Camino Real	Under Review
105	Dutchints	San Antonio	570 South Rengstorff Avenue	Under Review
106	GPRV	Central/Downtown	881 Castro Street	Under Review
107	Ambra	Monta Loma/Farley/Rock	901-987 N. Rengstorff Avenue	Under Review
108	Hylan	Monta Loma/Farley/Rock	410-414 Sierra Vista Avenue	Under Review
109	Maston	Miramonte/Springer	982 Bonita Avenue	Under Review
110	McKim	Monta Loma/Farley/Rock	2019 Leghorn Street	Under Review
111	Sand Hill	Moffett/Whisman	1989 North Bernardo Avenue	Under Review
112	Maston	El Camino Real	1313 and 1347 West El Camino Real	Under Review
113	Anderson	El Camino Real	601 Escuela Ave and 1873 Latham Street	Under Review
114	SummerHill	Moffett/Whisman	355-418 E Middlefield Road	Approved
115	Prometheus	Monta Loma/Farley/Rock	1950 Montecito Avenue	Under Construction
116	Dividend Homes	Monta Loma/Farley/Rock	2310 Rock Street	Under Construction
117	Insight Realty	Downtown	701 W. Evelyn Avenue	Approved
118	Prometheus	Downtown	1720 Villa Street	Under Construction
119	Fortbay	Moffett/Whisman	777 West Middlefield Road	Approved

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

Table A-1: Additional Considered Projects (Continued)

	Project	Change Area/Planning Area	Address	Status*
120	Buddhist Temple	Moffett/Whisman	759 W. Middlefield Road	Approved
121	Green Company	Downtown	Hope Street Lots 4 & 8	Approved
122	Dividend Homes	Monta Loma/Farley/Rock	2005 Rock Street	Under Construction
123	Classic Communities	Monta Loma/Farley/Rock	315 & 319 Sierra Vista	Under Construction
124	SummerHill	Downtown	257-279 Calderon Ave	Under Construction
125	SummerHill	Moffett/Whisman	535 and 555 Walker Drive	Under Construction
126	Google	-	Nasa Research Park	Under Construction
127	Renault & Handly	Moffett/Whisman	580-620 Clyde Avenue	Under Construction

**Source: City of Mountain View Planning Division Current Project List (City of Mountain View, November 2020)*

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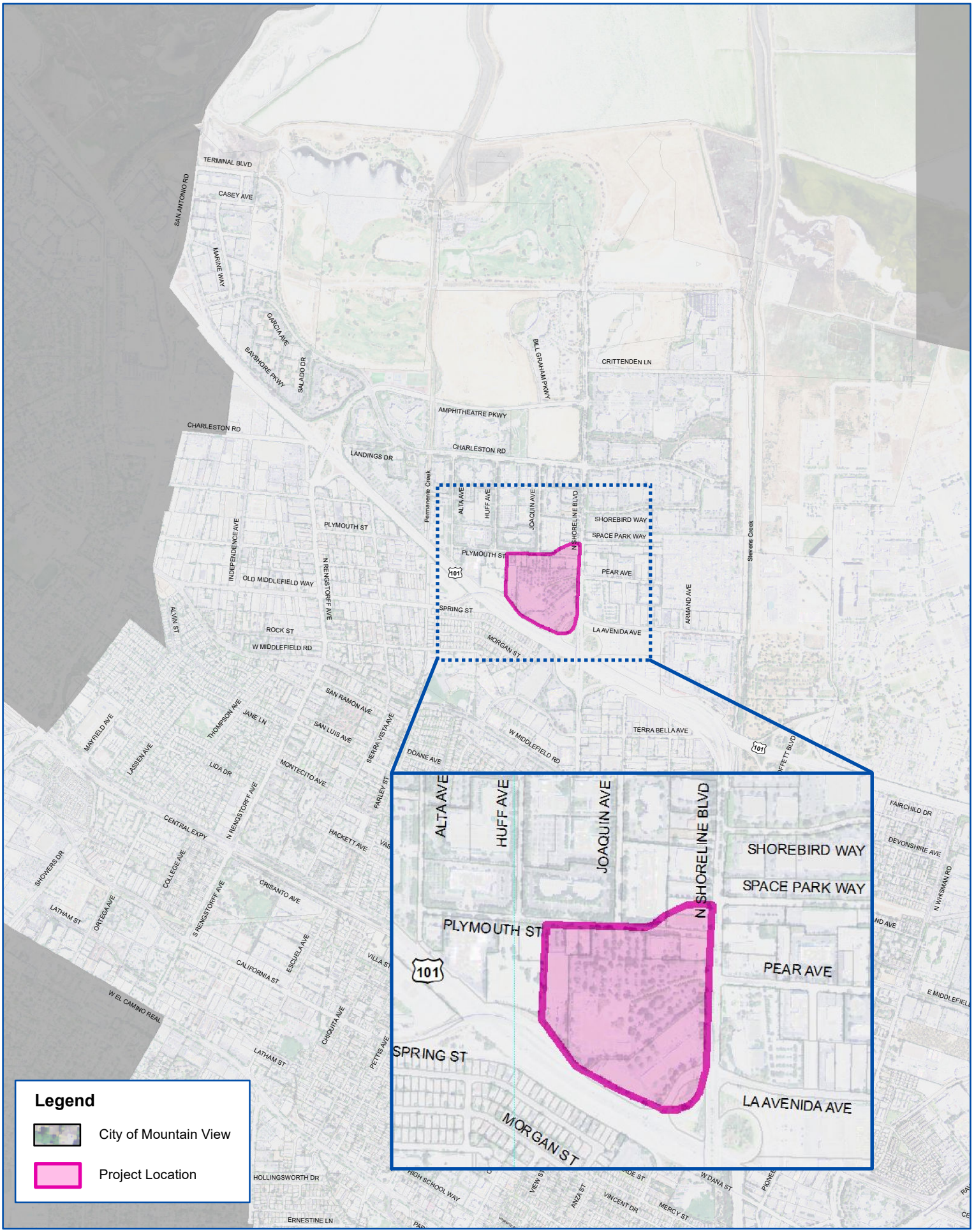
APPENDIX B:

Figures



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

0 260 520 Feet

FIGURE B-1: **Project Location**

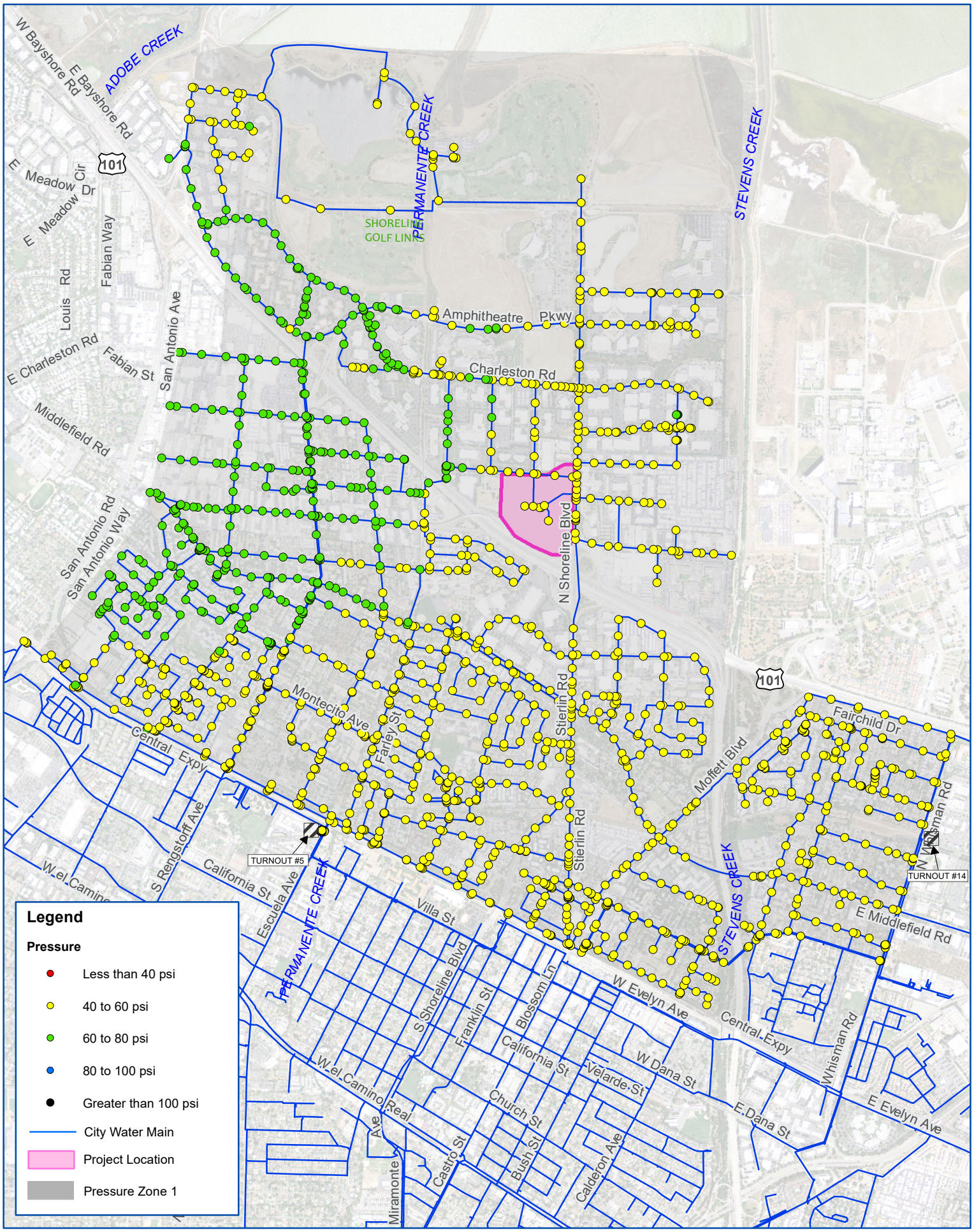


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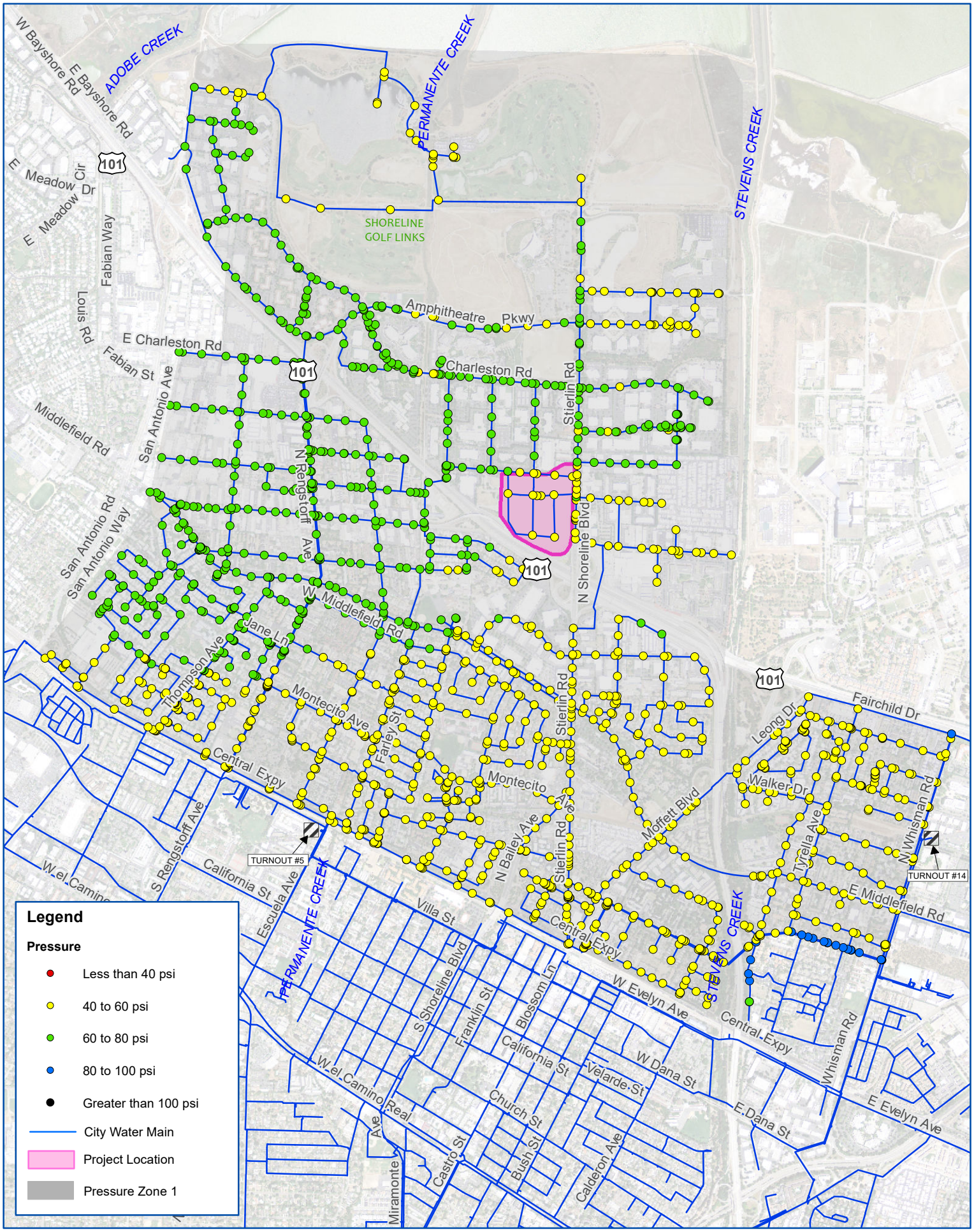
FIGURE B-2: **Peak Hour Demand (PHD) - Without Project**

Water System Model - Existing Condition



Legend

Pressure

- Less than 40 psi
- 40 to 60 psi
- 60 to 80 psi
- 80 to 100 psi
- Greater than 100 psi
- City Water Main
- Project Location
- Pressure Zone 1

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0 1,000 2,000 Feet

N

Figure B-3

Peak Hour Demand (PHD) - With Project

Water System Model - Existing Condition

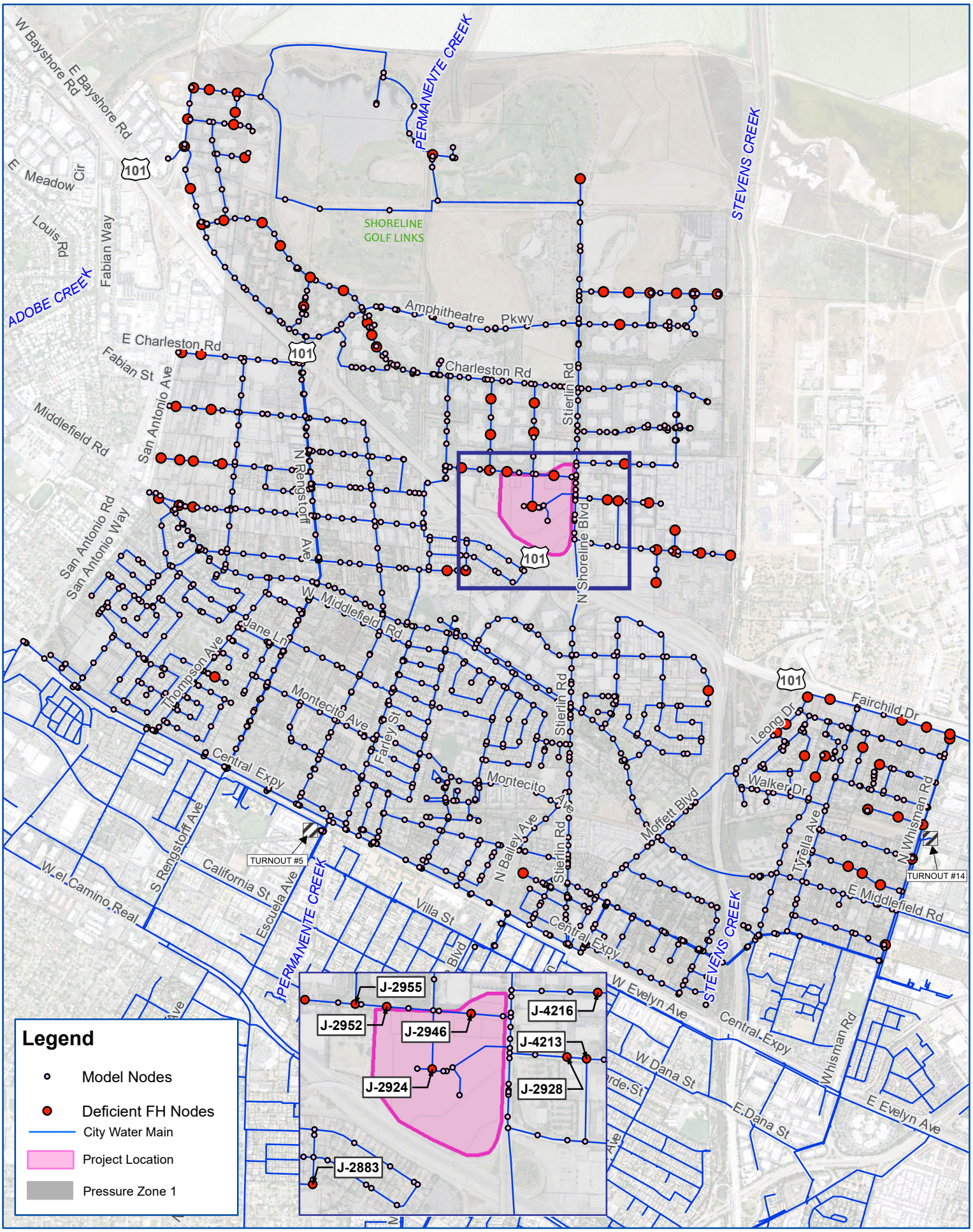

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FIGURE B-4: **Fire Flow Analysis - Without Project**

Water System Model - Existing Condition

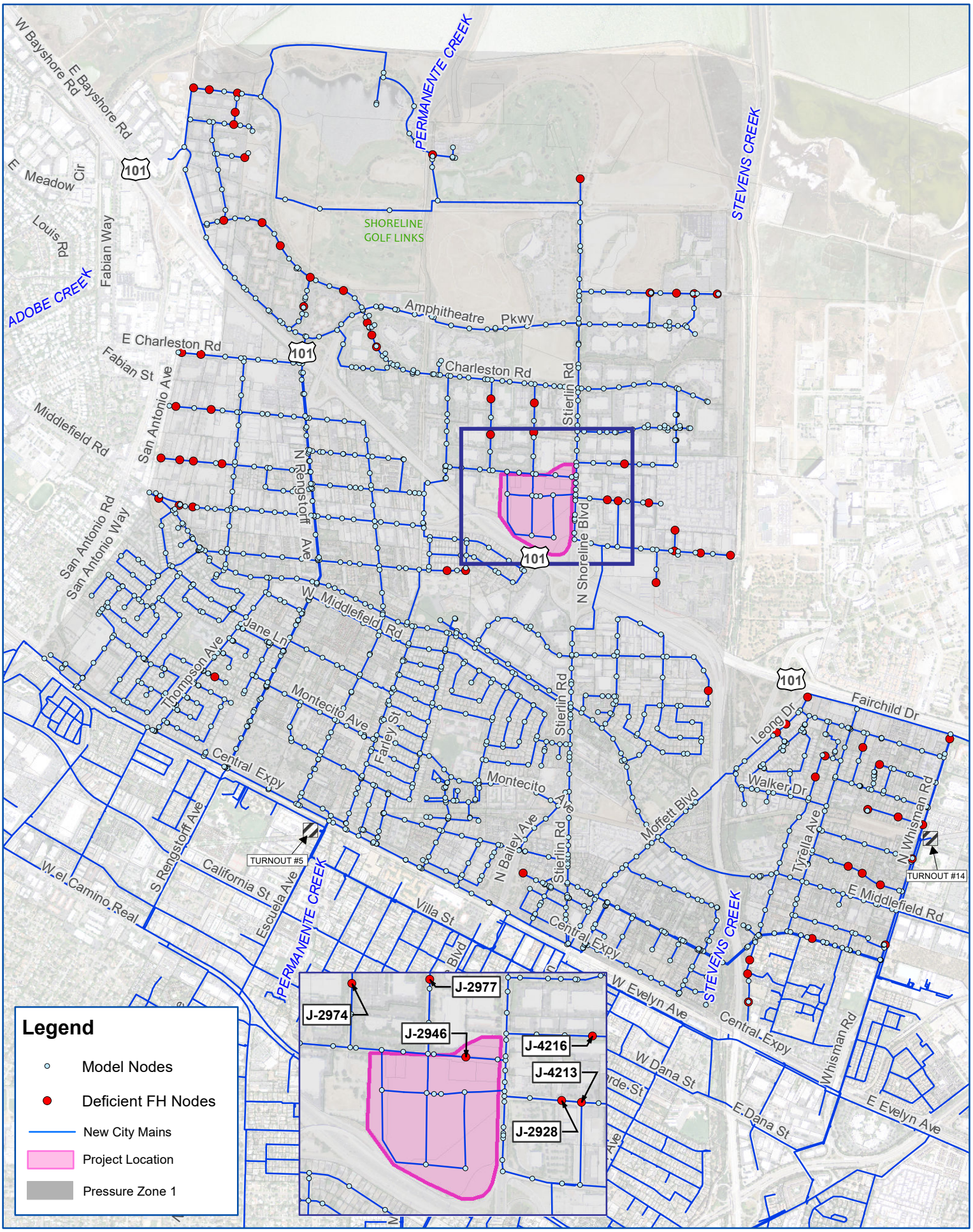

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FIGURE B-5: **Fire Flow Analysis - With Project**

Water System Model - Existing Condition

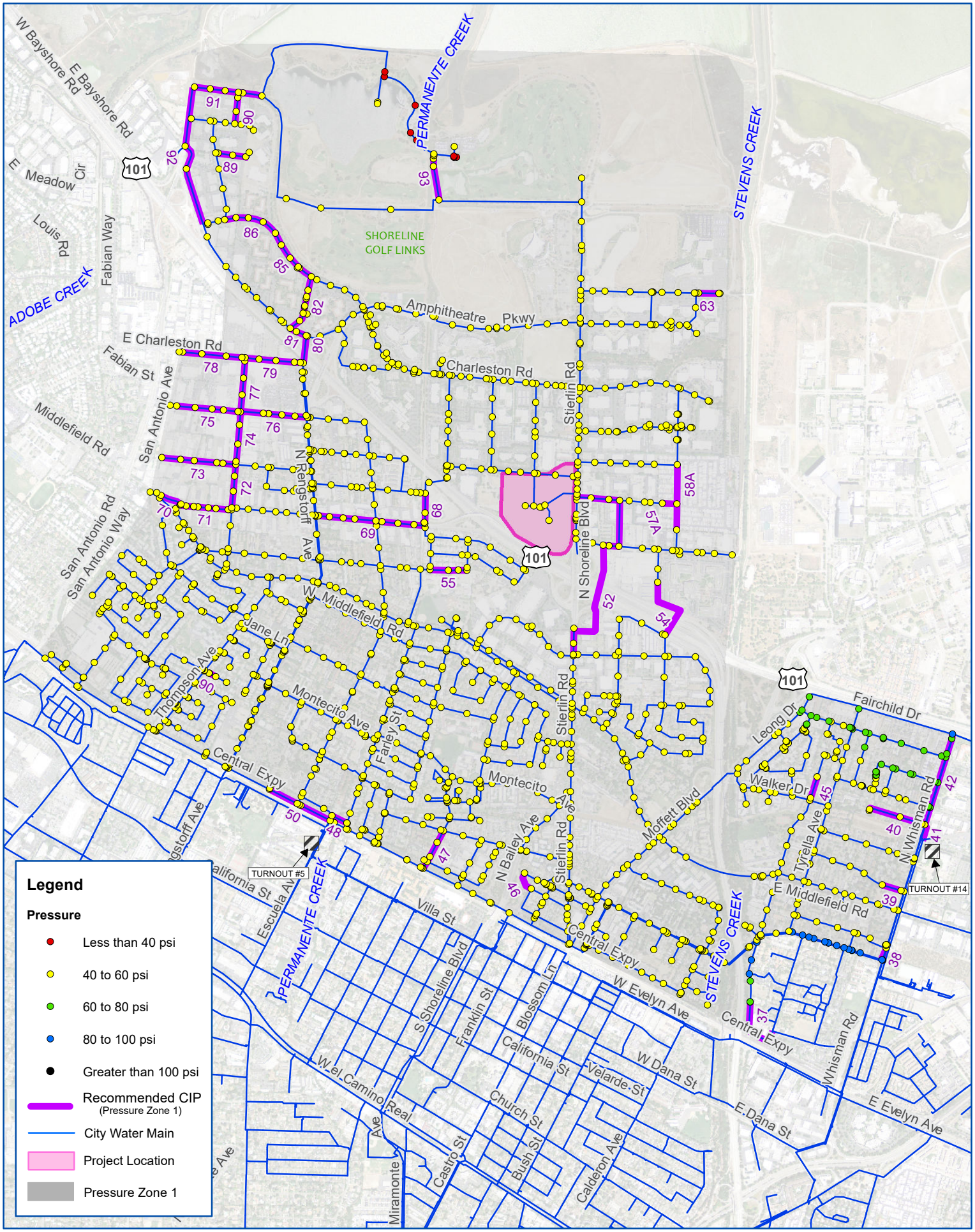

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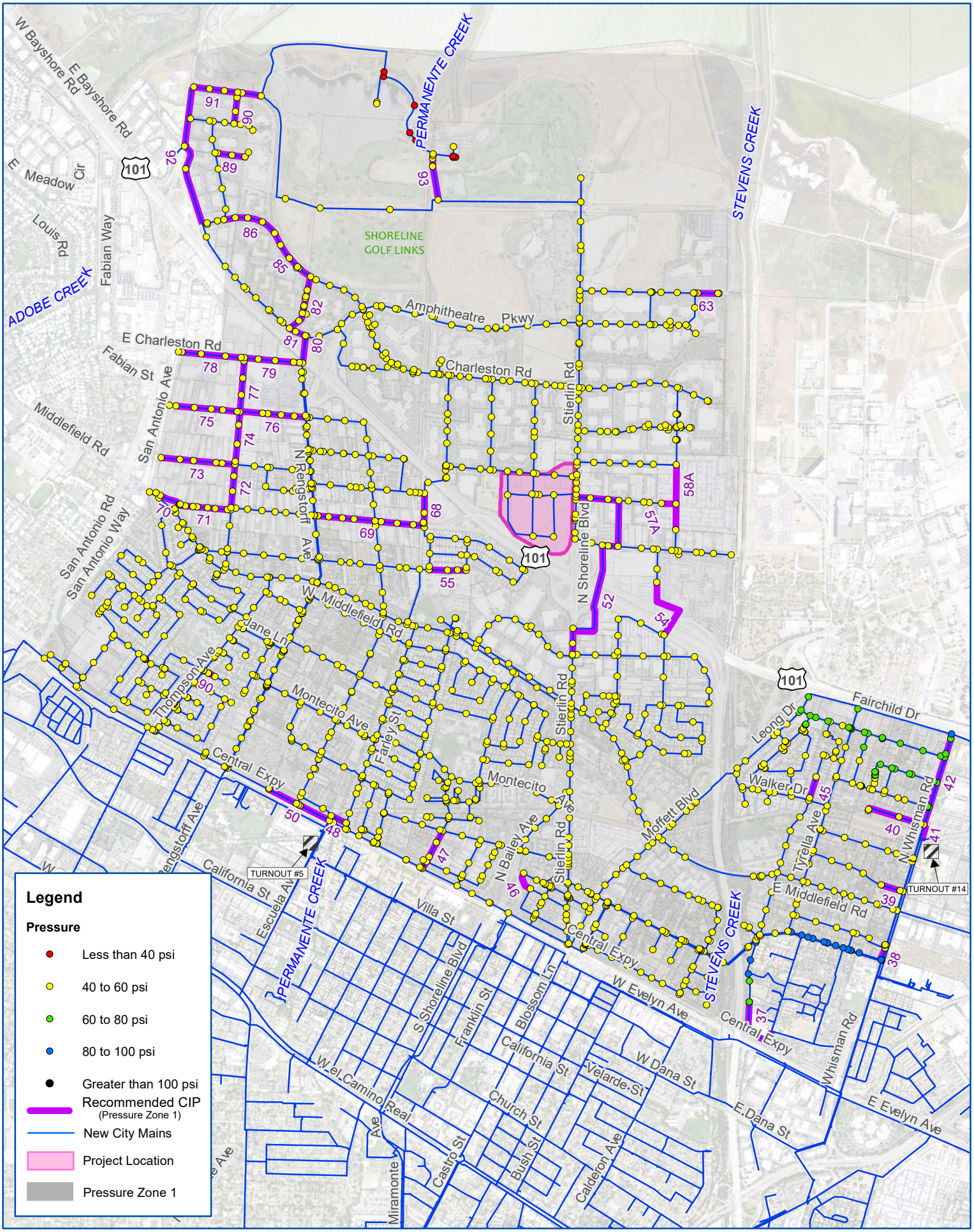
FIGURE B-6: **Peak Hour Demand (PHD) - Without Project**

Water System Model - Future Cumulative Condition



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0 1,000 2,000 Feet

FIGURE B-7: **Peak Hour Demand (PHD) - With Project**

Water System Model - Future Cumulative Condition

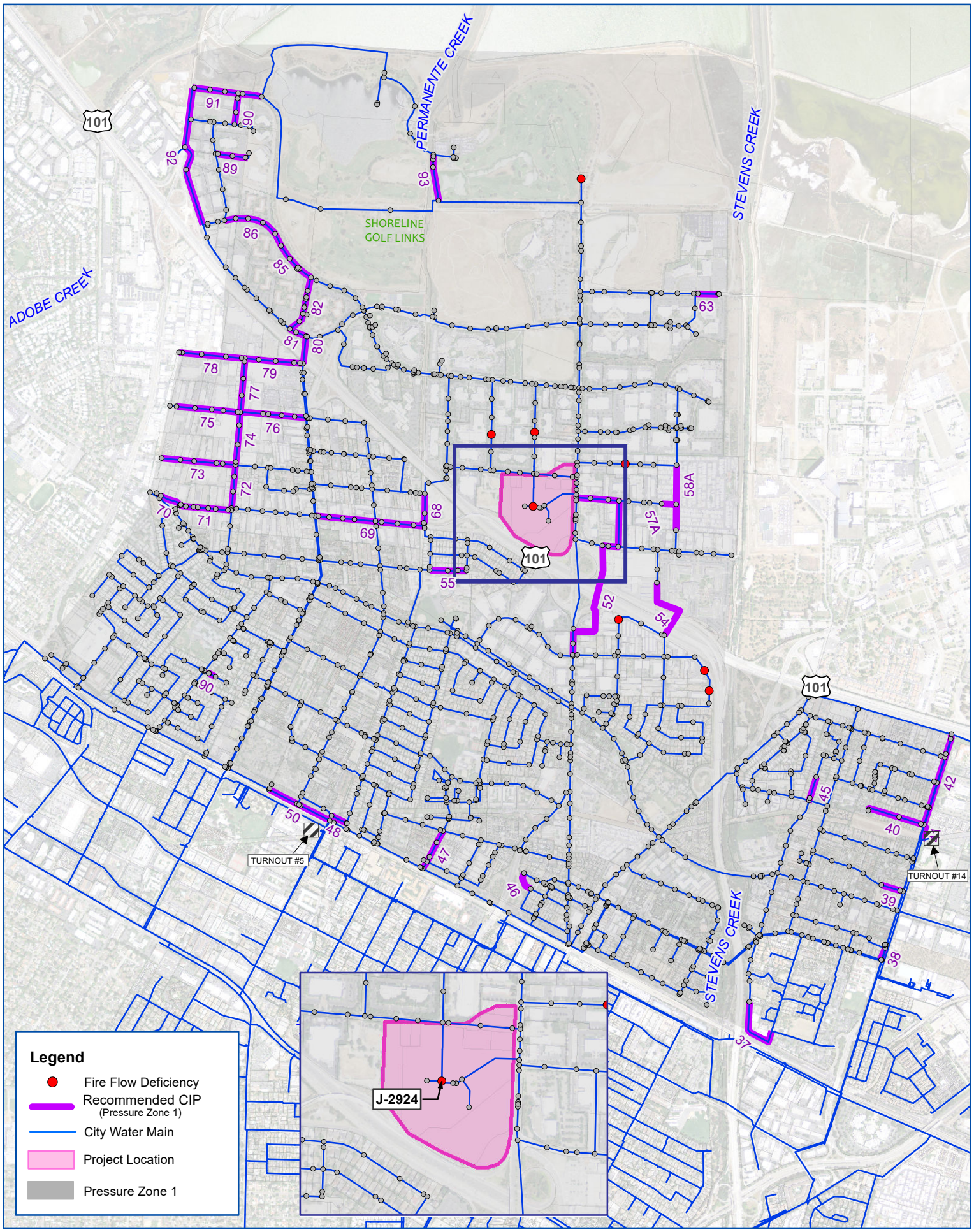

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FIGURE B-8: **Fire Flow Analysis - Without Project**

Water System Model - Future Cumulative Condition

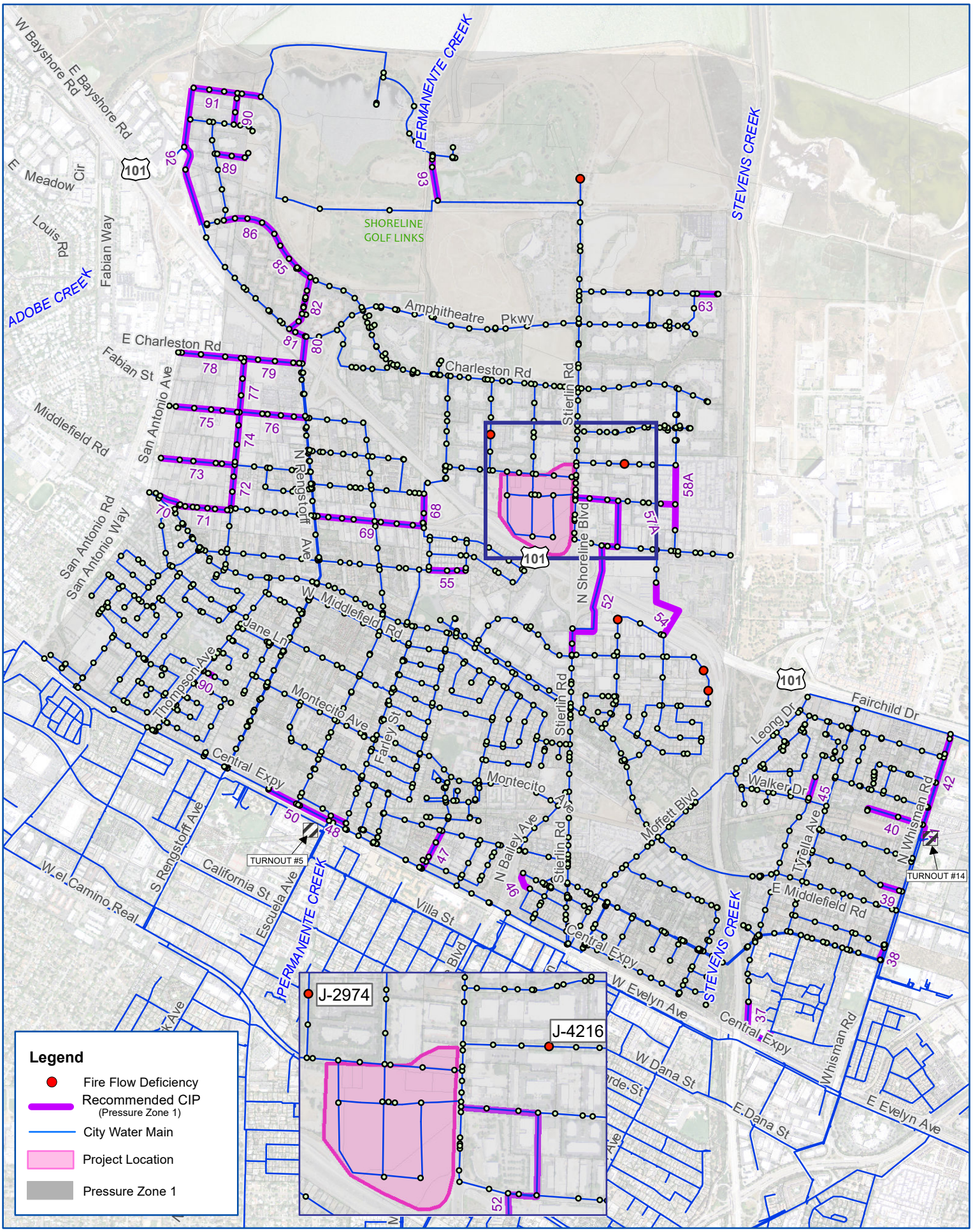

FIGURE B-9: **Fire Flow Analysis - With Project**

Water System Model - Future Cumulative Condition

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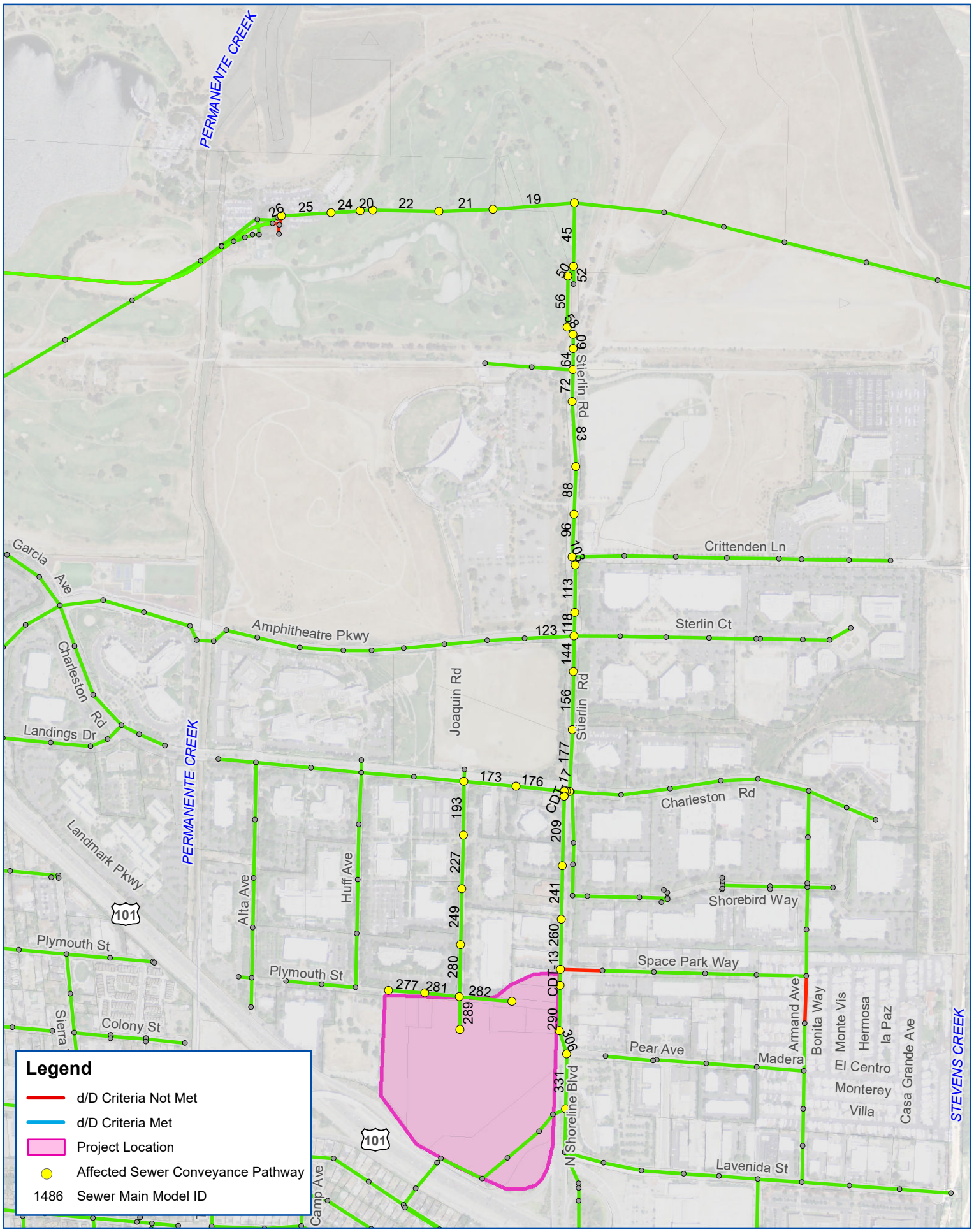

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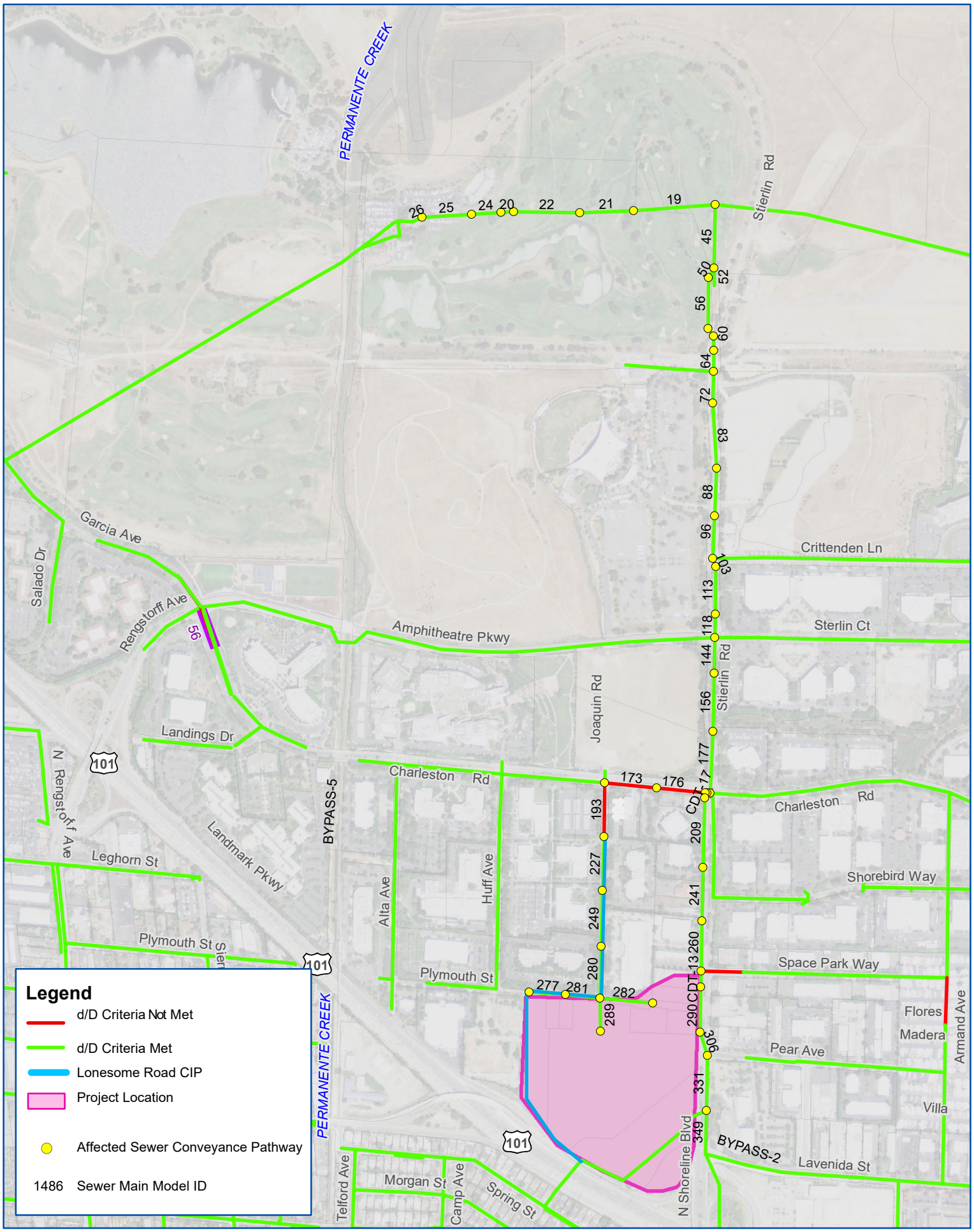
FIGURE B-10:

PWWF - Without Project

Sewer System Model - Existing Condition



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Colony St

FIGURE B-11:

PWWF - With Project

Sewer System Model - Existing Condition

Gateway Master Plan Utility Impact Study | February 2021

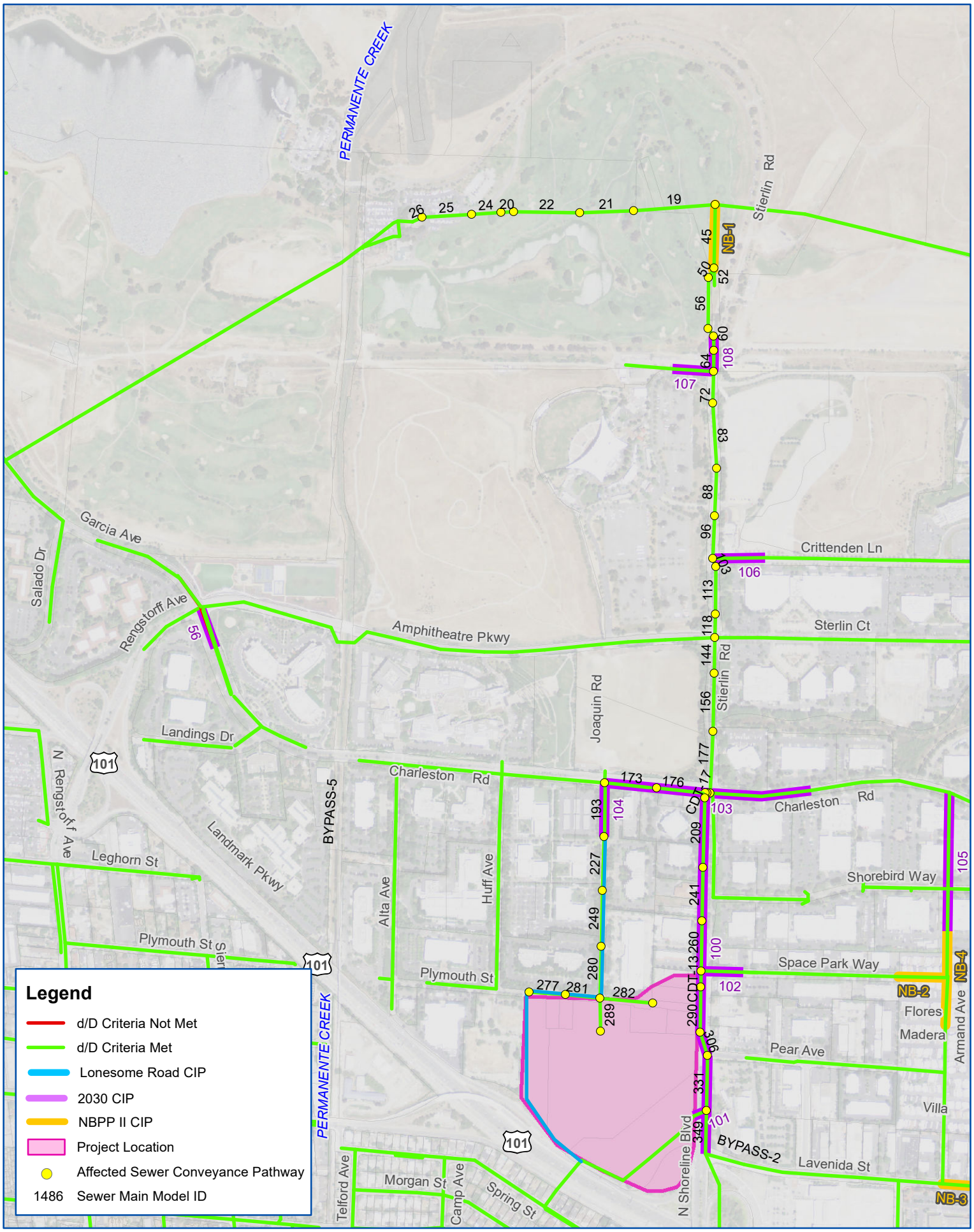

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FIGURE B-12:

PWWF - Without Project

Sewer System Model - Existing Condition

Gateway Master Plan Utility Impact Study | February 2021

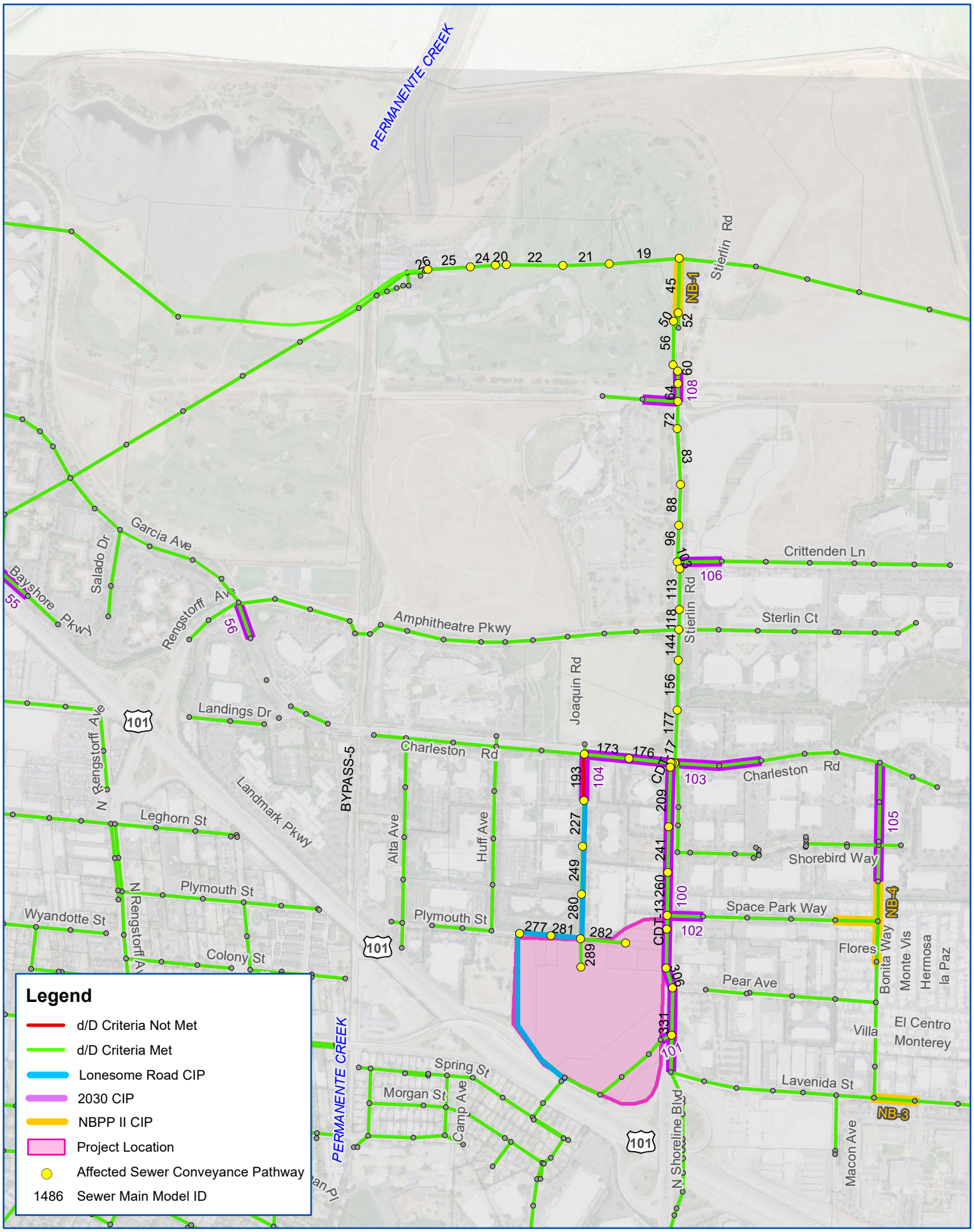

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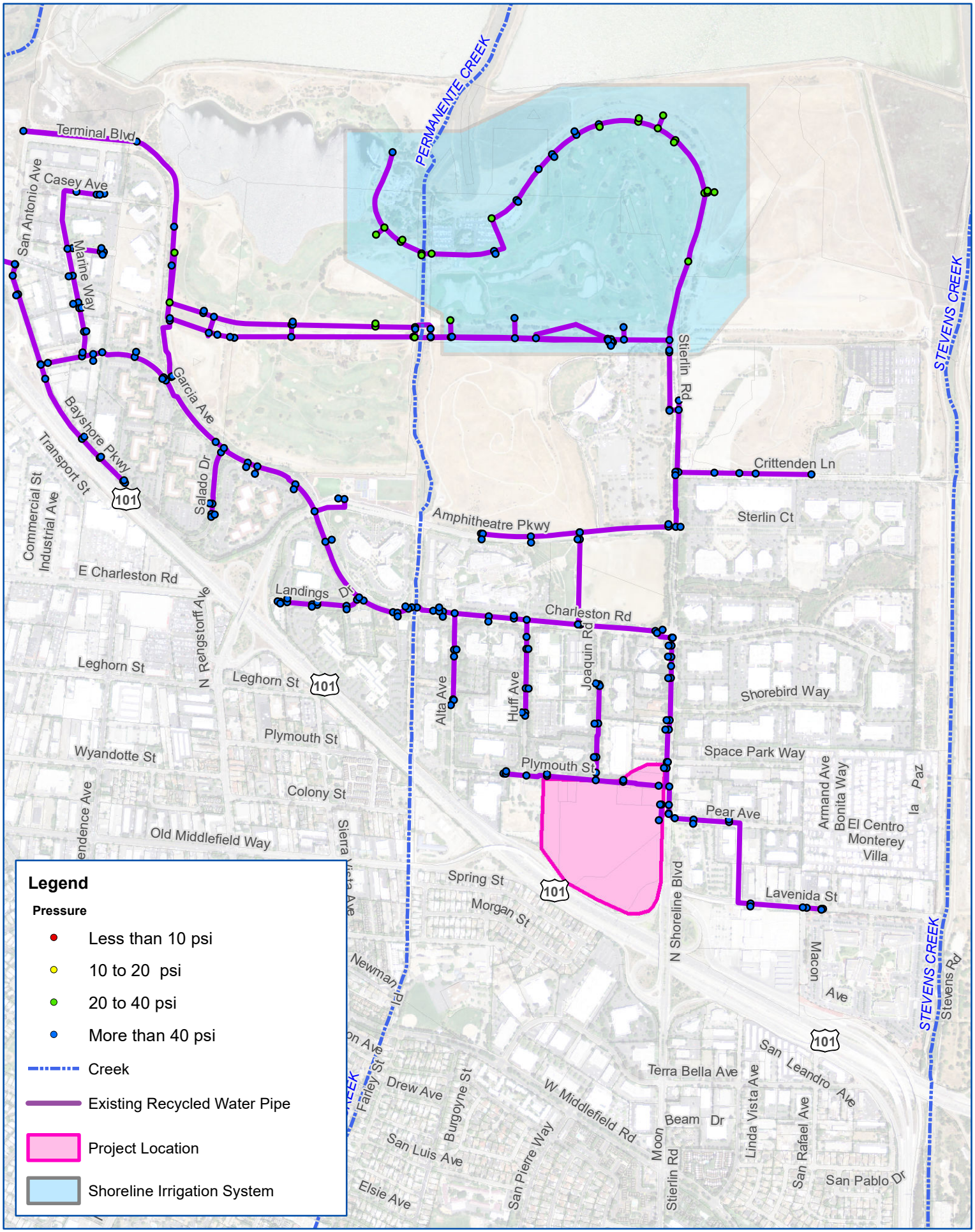
FIGURE B-13:

PWWF - With Project

Sewer System Model - Future Cumulative Condition

Google Landings Utility Impact Study | February 2021



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0 550 1,100 Feet

FIGURE B-14: **Existing Recycled Water Pressure**

Recycled Water Feasibility Model - With Shoreline Pond Storage

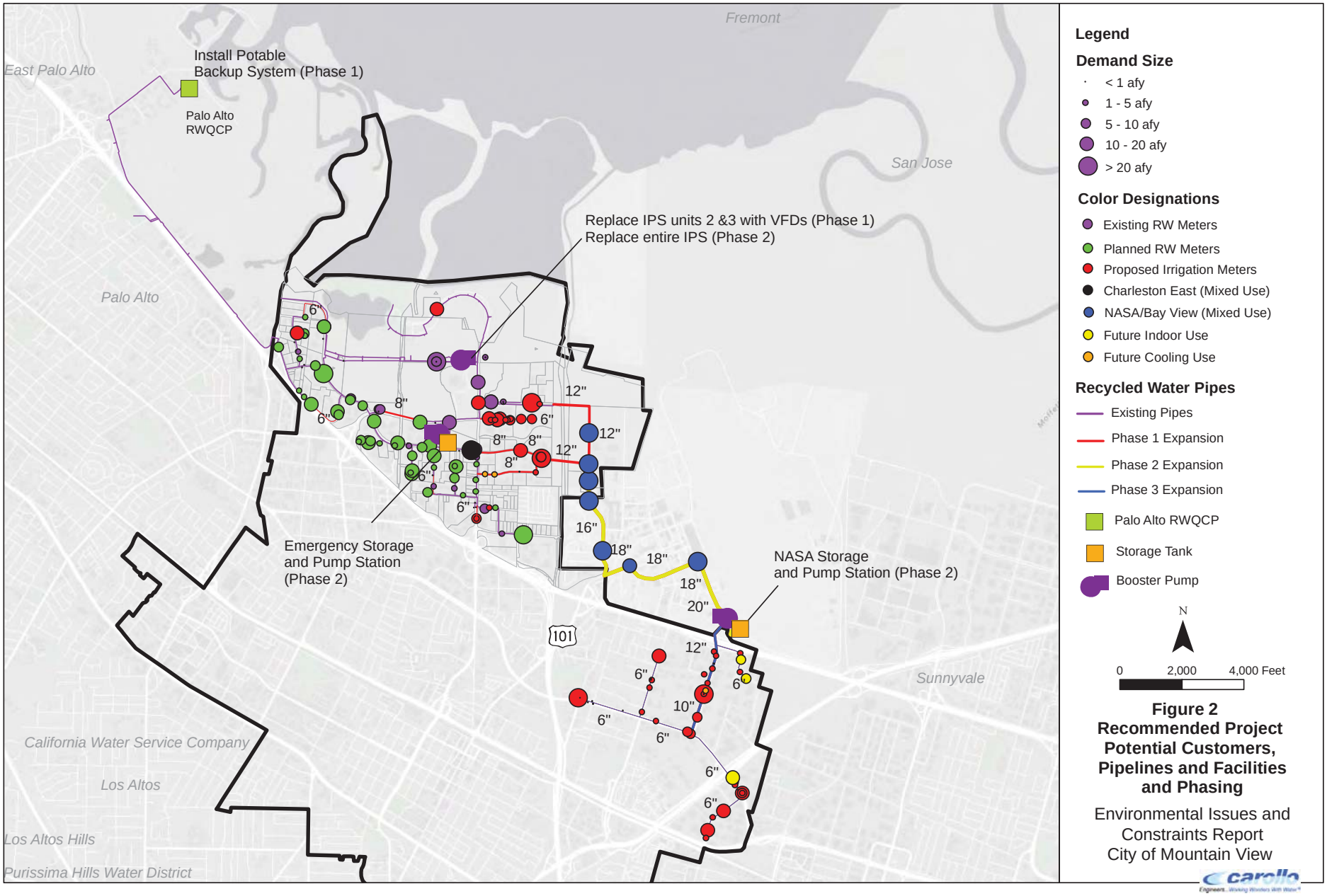
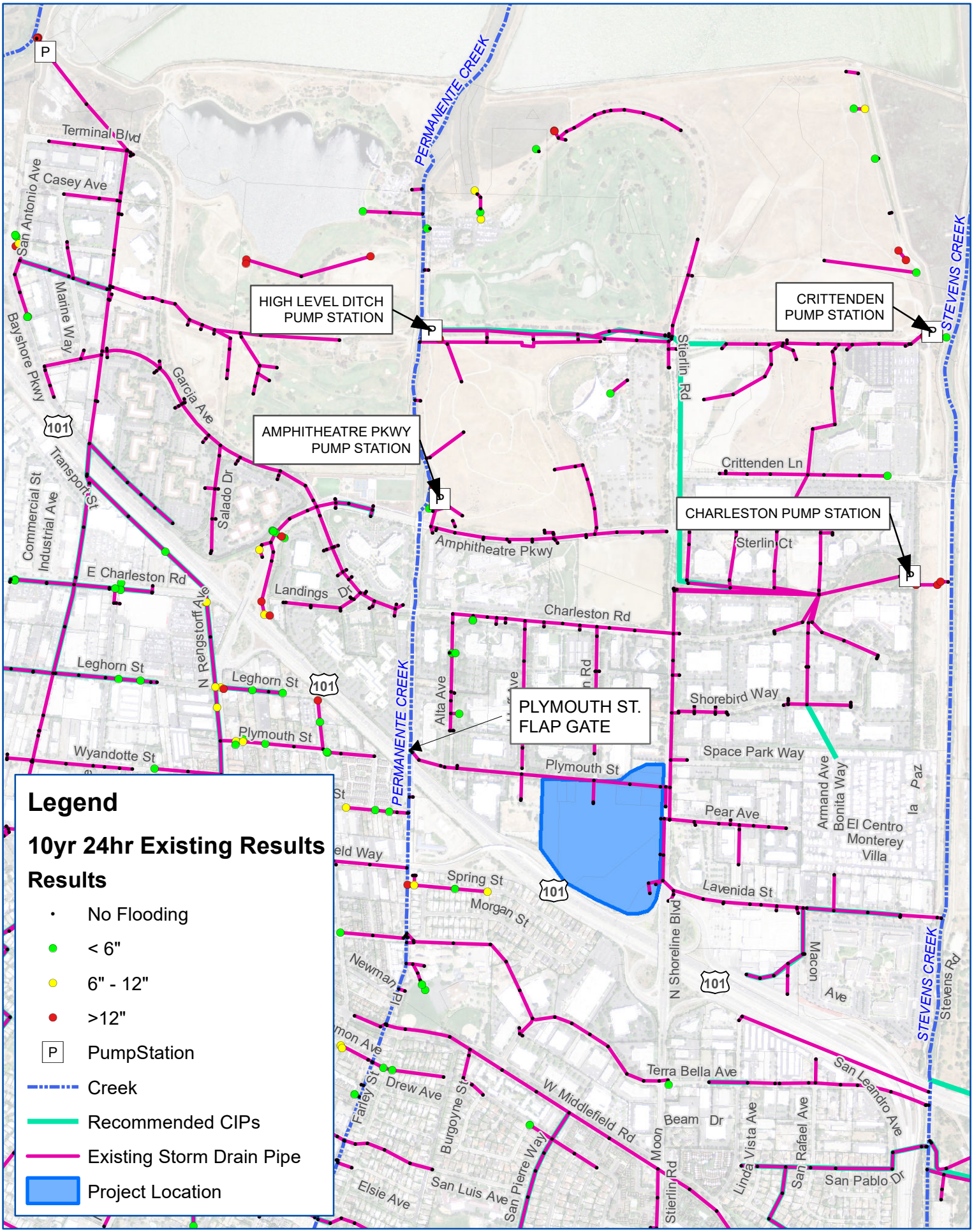


Figure 2
Recommended Project Potential Customers, Pipelines and Facilities and Phasing

Environmental Issues and Constraints Report
City of Mountain View

Figure B-15: Recycled Water Feasibility Study Recommended Projects (Carollo, 2012)



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

0 550 1,100 Feet

FIGURE B-16: **Storm Drain Existing 10yr Results**

CIPs From 2019 Storm Drain Master Plan