

Draft

# DOWNTOWN PRECISE PLAN (DTPP) PLAN-WIDE AMENDMENTS

Subsequent Environmental Impact Report

State Clearinghouse No. 2021090249

Prepared for  
City of Redwood City

November 2022





## **APPENDICES**

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# Appendix A

## **Notice of Preparation (NOP) and Responses to NOP**





## NOTICE OF PREPARATION

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<b>DATE:</b>	<b>September 14, 2021</b>
<b>TO:</b>	<b>Reviewing Agencies, Interested Parties and Organizations</b>
<b>FROM:</b>	<b>City of Redwood City, Lead Agency</b>
<b>APPLICANT:</b>	<b>City of Redwood City</b>
<b>SUBJECT:</b>	<b>Notice of Preparation of a Subsequent Draft Environmental Impact Report Regarding the Downtown Precise Plan Amendments</b>

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The City of Redwood City (City) is considering amendments to its General Plan and Downtown Precise Plan (DTPP) to accommodate additional office and residential development in the plan area, informed by the Gatekeeper Projects (described below), that are collectively referred to as the Downtown Precise Plan Amendments. Pursuant to the California Environmental Quality Act (CEQA), the City has determined that a program-level Subsequent Environmental Impact Report (SEIR) will be necessary to evaluate the environmental impacts of the project. The City is soliciting comments from the Redwood City community, the County of San Mateo, adjacent cities, responsible agencies, agencies with jurisdiction by law, trustee agencies, and other interested parties, as to the appropriate scope and content of the SEIR.

The SEIR will constitute a substantial revision of the Redwood City Downtown Precise Plan Final Environmental Impact Report (EIR; State Clearinghouse No. 2006052027), a programmatic environmental analysis, certified in 2011 and will analyze proposed amendments to the City's General Plan and to the DTPP, adopted in 2011 and amended in 2012, 2013, and 2016, that would, if adopted, apply to the entire DTPP area.<sup>1</sup>

Pursuant to Section 15162 of the CEQA Guidelines, a SEIR is required if the City, as the CEQA Lead Agency, determines on the basis of substantial evidence in light of the whole record that there have been substantial changes to the project and/or the circumstances under which the project is undertaken, or substantial new information has arisen, and that one or more of the foregoing will result in new or substantially more severe impacts and that thus necessitate major revisions to the prior environmental impact report and/or new mitigation measures or alternatives are now applicable.

In compliance with CEQA, the City will be the Lead Agency and will prepare the SEIR. Attached are a description of the Plan-wide amendments, location map, and preliminary identification of the potential environmental issues to be explored.

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<sup>1</sup> Separate General Plan and DTPP amendments related to creation of a Transit District overlay within the DTPP are also being proposed. The Plan-wide amendments are not dependent on those Transit District amendments. A separate SEIR is being prepared for those amendments. The Plan-wide amendments are independently justified and serve the distinct purpose of creating and planning for the DTPP area as a whole.



## Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments


The City is requesting review and consideration of this Notice of Preparation (NOP) and comments and guidance on the scope and content of the program-level SEIR from the Redwood City community, responsible and trustee agencies, interested public agencies, organizations, and the general public (CEQA Guidelines Section 15082). If your agency is a responsible agency as defined by Section 15381 of the CEQA Guidelines, your agency may use the environmental documents prepared by the City when considering permits or approvals for action regarding the Plan-wide amendments. Due to the time limits mandated by state law, your response must be sent at the earliest possible date but **not later than 30 calendar days** after receipt of this NOP. The 30-day comment period for this NOP is **September 14 to October 14, 2021**. The final date for responses to the NOP to be received by the City of Redwood City is **October 14, 2021, by 5:00 PM**.

Comments and responses to this NOP must be in writing and submitted by the close of business on the last day of the comment period. Please provide a contact name, phone number and email address with your comments. All comments must be sent to:

Anna McGill, Principal Planner  
City of Redwood City  
1017 Middlefield Road, Redwood City, CA 94063  
(650) 780-7278 | [amcgill@redwoodcity.org](mailto:amcgill@redwoodcity.org)

Pursuant to CEQA Guidelines Section 15082(c) (Notice of Preparation and Determination of Scope of EIR) and Section 15083 (Early Public Consultation), the Redwood City Planning Commission will also conduct a scoping session for the purpose of soliciting views of the Redwood City community, the County of San Mateo, adjacent cities, responsible agencies, agencies with jurisdiction by law, trustee agencies, and other interested parties, as to the appropriate scope and content of the SEIR.

**The scoping session will be conducted by the Planning Commission at its September 21, 2021 meeting, which begins at 7:00 PM via teleconference, which can be accessed by visiting [www.redwoodcity.org/PC](http://www.redwoodcity.org/PC).**

  
\_\_\_\_\_  
Anna McGill, Principal Planner  
City of Redwood City

9.14.21

\_\_\_\_\_  
Date



## **Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments**

### **Project Title and Applicant**

Downtown Precise Plan Amendments by the City of Redwood City (City)

### **Project Location**

See **Figure 1, Project Site Location**, at the end of this Notice of Preparation (NOP). The project site is located within Downtown Redwood City in the City's Downtown Precise Plan (DTPP), generally bounded by Veterans Boulevard, Maple Street, El Camino Real, and Brewster Avenue in Redwood City, San Mateo County, California. The proposed project would extend the northern DTPP boundary to include the following four additional parcels: APNs 052-271-040, -050, -080, and -090.

### **Project Description**

#### Project Background

Since the adoption of the City's General Plan in 2010, the City has experienced substantial growth and development due to a variety of factors. A strong economy and the adoption of the DTPP in 2011 streamlined project analysis and public review by setting overall development caps (Maximum Allowable Development) for office, residential, retail, and hotel development. The caps for office space and residential uses are almost met, so any project proposing to exceed these caps must request both a General Plan amendment and a DTPP amendment to increase the caps. Given the large number of projects requesting such amendments, the City Council used a "Gatekeeper" process to evaluate pending amendment requests. The City Council analyzed a variety of projects against its Strategic Plan and Priorities and authorized six projects within the DTPP area to formally submit applications to initiate the General Plan and DTPP amendment process and obtain any necessary discretionary approvals. Those individual "Gatekeeper Projects" are located at: 1) 651 El Camino Real, 2) 901-999 El Camino Real, 3) 2300 Broadway, 4) 603 Jefferson/750 Bradford, 5) 1900 Broadway, and 6) 601 Allerton Street.

Applications for the individual Gatekeeper Projects are in various stages of detailed planning, revision, and submission and none have been deemed complete. One of the Gatekeeper Projects is seeking an amendment to its initiated project which, if adopted by the City Council, would result in further increases to the office caps. The City Council's conceptual review of the Gatekeeper Projects did not constitute their approval, nor has the City made any commitment to approve any or all of these projects. Pursuant to the Redwood City Municipal Code Chapter 18, Article XI (Adoption and Amendment of General Plan), the Gatekeeper process resulted in initiation of the proceedings to amend the General Plan, DTPP, and Zoning Ordinance. As a result, City staff was directed by the City Council to review and recommend an appropriate maximum allowable development cap under the General Plan and DTPP.

In light of this direction, as explained in the SEIR Scope below, this SEIR is a programmatic EIR analyzing the comprehensive effort to increase the maximum allowable development caps (in both the General Plan and DTPP) to potentially accommodate the Gatekeeper Projects collectively. This SEIR will not analyze any of the Gatekeeper Projects individually or at a project-specific level as the City's actions proposed here relate to only policy and plan amendments, not individual project approvals. The Gatekeeper Projects will proceed independently at the discretion of the applicants and will undergo environmental review



## Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments

(potentially tiering from this broader, programmatic SEIR) if and when complete applications are submitted and processed, in the manner provided for in CEQA Guidelines 15168.

### Current Project

Currently, less than 5,000 square feet (sq. ft.) of office space remains in the office development cap, while about 500 dwelling units remain in the residential development cap. The project includes amending the office and residential maximum allowable development caps in both the General Plan and DTPP to accommodate the potential collective development of the six Gatekeeper Projects, along with a 10 percent buffer for both office square footage and residential units beyond the totals proposed by the Gatekeeper Projects; this buffer would allow for other potential future development in the DTPP area. Consistent with current practice, a portion of the residential development cap would be set aside for affordable housing. Table 1 below describes the proposed cap increases.

**TABLE 1**  
**PROPOSED INCREASES IN DOWNTOWN PRECISE PLAN DEVELOPMENT CAPS**

Land Use	Increase in Development Cap <sup>a,b</sup>
Office	1,167,000 square feet
Residential (Market Rate)	486 units
Residential (Affordable)	553 units

#### NOTES:

<sup>a</sup> The increase in development capacity is informed by the Gatekeeper projects (939,000 sq. ft. of office space and 673 residential units, the additional development capacity for the proposed boundary extensions (122,000 sq. ft. office and 271 units) and a 10% contingency in development capacity (106,000 sq. ft. office and 94 units).

<sup>b</sup> The Project also includes approximately 30,000 sq. ft. of retail space retail space, but this would replace existing retail space and would neither add retail beyond existing conditions nor increase the DTPP retail development cap. Also included would be approximately 19,500 sq. ft. of space for a replacement American Legion hall (11,500 sq. ft.) and a new teen center (8,000 sq. ft.), both of which are Civic Uses under the DTPP for which the Plan includes no development caps.

SOURCE: City of Redwood City, 2021

The proposed DTPP Plan-wide Amendments would extend the northern DTPP boundary approximately 0.1 mile northward between El Camino Real and the Caltrain tracks to include the following four additional parcels shown on Figure 1: APNs 052-271-040, -050, -080, and -090.

In addition to adjustments to DTPP maximum allowable development caps and boundaries, the proposed DTPP amendments include adjustments to parking ratios, circulation, and other development standards. The revisions to the Development Standards would include, but not be limited to, revising parking ratios, and allowing Contemporary design in the list of architectural styles permitted in the Historic Downtown. Certain design-related Development Regulations may also be converted from mandatory Standards to advisory Guidelines to provide for potential flexibility, such as build-to-corner requirements, height stepdown requirements, and side setback requirements.



## **Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments**

The proposed increase in the office and residential development caps, boundary extension, and revised DTPP development standards reflect the City Council's vision for the future of Downtown consistent with its initiation of the General Plan and DTPP amendments related to the Gatekeeper Projects and accommodate the desired additional growth based on numerous study sessions and public meetings that have taken place since 2017. The proposed amendments would establish the programs and policies necessary to further the goal of meeting the existing and projected residential and office needs in the Downtown.

The City is aware of a potential land swap that would result in the potential reconfiguration of California Street and Winklebleck Street to realign the street grid and provide better roadway connectivity for all roadway users (i.e., vehicles, bicyclists, pedestrians), which is generally consistent with the DTPP standards and circulation network, evaluated in the Final EIR for the DTPP, certified in 2011. Should this occur, it would result in project changes to an initiated Gatekeeper Project, including increased office space and changes to existing open space. The office increase would entail an additional 100,000 sq. ft. of office use to the development caps (for a total of 1,157,000 sq. ft.). The open space change would entail channelizing a 200-foot section of open creek (Arroyo Ojo, a small creek that is otherwise completely culverted within downtown Redwood City) and providing a replacement public open space that otherwise meets the DTPP purpose and goals.

### **SEIR Scope**

The City has determined, pursuant to CEQA, that the DTPP Plan-wide amendments will require the preparation of a Subsequent EIR (SEIR) to substantially revise the Redwood City Downtown Precise Plan Final Environmental Impact Report (DTPP Final EIR), a programmatic environmental analysis certified in 2011. A SEIR is warranted because there is reasonable potential that the Plan amendments may result in new or more substantially more severe significant environmental effects than those identified in the certified DTPP Final EIR for one or more of the following CEQA topics:

- Land Use and Planning
- Population and Housing
- Aesthetics and Shadows
- Cultural and Historic Resources (including Paleontological and Tribal Cultural Resources)
- Public Services (including Recreation)
- Transportation
- Utilities and Infrastructure (including Hydrology and Water Quality)
- Noise and Vibration
- Air Quality
- Climate Change (Greenhouse Gas Emissions, Energy and Sea Level Rise)
- Hazards and Hazardous Materials



## Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments

- Biological Resources
- Geology and Soils

The SEIR will also address:

**Cumulative Impacts.** Consistent with the format for the DTPP Final EIR, a separate cumulative impacts section will be provided in the SEIR. The cumulative analysis will assess where cumulative impacts are significant compared to baseline conditions, and when the DTPP Plan-wide amendments' incremental effect is cumulatively considerable. The cumulative impact analysis in the SEIR will use the same approach as the DTPP Final EIR cumulative impact analysis, which relied on a combined projections/list-based approach. The cumulative impacts section will also consider the separate General Plan and DTPP amendments related to the proposed Transit District, a subarea of the DTPP, that constitute a separate project, for which a separate SEIR is being prepared. Additionally, the City is currently updating its General Plan Housing Element, and the cumulative analysis will consider those updates.

**Alternatives.** Pursuant to CEQA Guidelines Section 15126.6, the SEIR will also identify and conduct a comparative evaluation of a reasonable range of alternatives to the DTPP Plan-wide amendments. The alternatives assessment in the SEIR will tier from the alternatives analysis in the DTPP Final EIR and will consider alternatives to the Plan-wide amendments proposed to accommodate the planned growth, including the CEQA-required no-project and environmentally superior alternatives.

Further, CEQA Guidelines section 15165 provides:

"Where individual projects are...to be undertaken and where the total undertaking comprises a project with significant environmental effect, the lead agency shall prepare a single program EIR for the ultimate project."

As described above, the DTPP Plan-wide amendments include increasing the office and residential maximum allowable development caps in the DTPP area to accommodate additional development capacity, extending the DTPP boundary; modifying certain DTPP development standards; and, potentially, a land swap that would realign a portion of the street grid, increase the amount of office space, channelize a short section of creek, and realign open space. Therefore, the City has determined that a program-level SEIR would be appropriate. Like the programmatic DTPP Final EIR certified in 2011, this program SEIR will analyze General Plan and DTPP amendments that would, if adopted, govern future development in the DTPP. Future specific development proposals, such as the Gatekeeper Projects, will be examined in light of the program SEIR to determine whether additional environmental review is required. The City anticipates using a checklist or similar device to determine whether the environmental effects of future development proposals are within the scope of the program EIR, as described in CEQA Guidelines Section 15168(c)(2) or further review is required.





## **Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments**

### **SEIR Purpose**

The purpose of an Environmental Impact Report (subsequent or otherwise) is to inform decision-makers and the general public of the environmental impacts of a proposed project that an agency (in this case, the City of Redwood City) may implement or approve. The SEIR process is intended to: (1) provide information sufficient to evaluate a project and its potential for significant impacts on the environment; (2) examine methods (e.g., project-specific mitigations, uniformly applied development regulations) for avoiding or reducing significant impacts; and (3) consider alternatives to the proposed project.

In accordance with CEQA, the SEIR will include the following:

- A summary of the project, its potential significant environmental impacts, and mitigations required to avoid or reduce those significant impacts;
- A project description, with a focus on changes in the approved DTPP;
- A description of the existing environmental setting, potential environmental impacts, and mitigations for the project, with a focus on changes in impacts compared to those identified in the certified DTPP Final EIR;
- Alternatives to the proposed project, including an explanation of alternatives from the DTPP Final EIR that are no longer under consideration; and
- Other environmental consequences of the project, including
  - (1) growth-inducing effects
  - (2) significant unavoidable impacts
  - (3) irreversible environmental changes
  - (4) cumulative impacts, and
  - (5) effects found not to be significant.

As discussed above, like the DTPP Final EIR certified in 2011, the SEIR will be a program EIR pursuant to Section 15168 of the State CEQA Guidelines of the program EIR, as described in CEQA Guidelines Section 15168(c)(2) or further review is required.

### **Required Approvals**

*City of Redwood City Discretionary Approvals.* Implementation of the DTPP Plan-wide amendments would require the following discretionary approvals by the City of Redwood City:

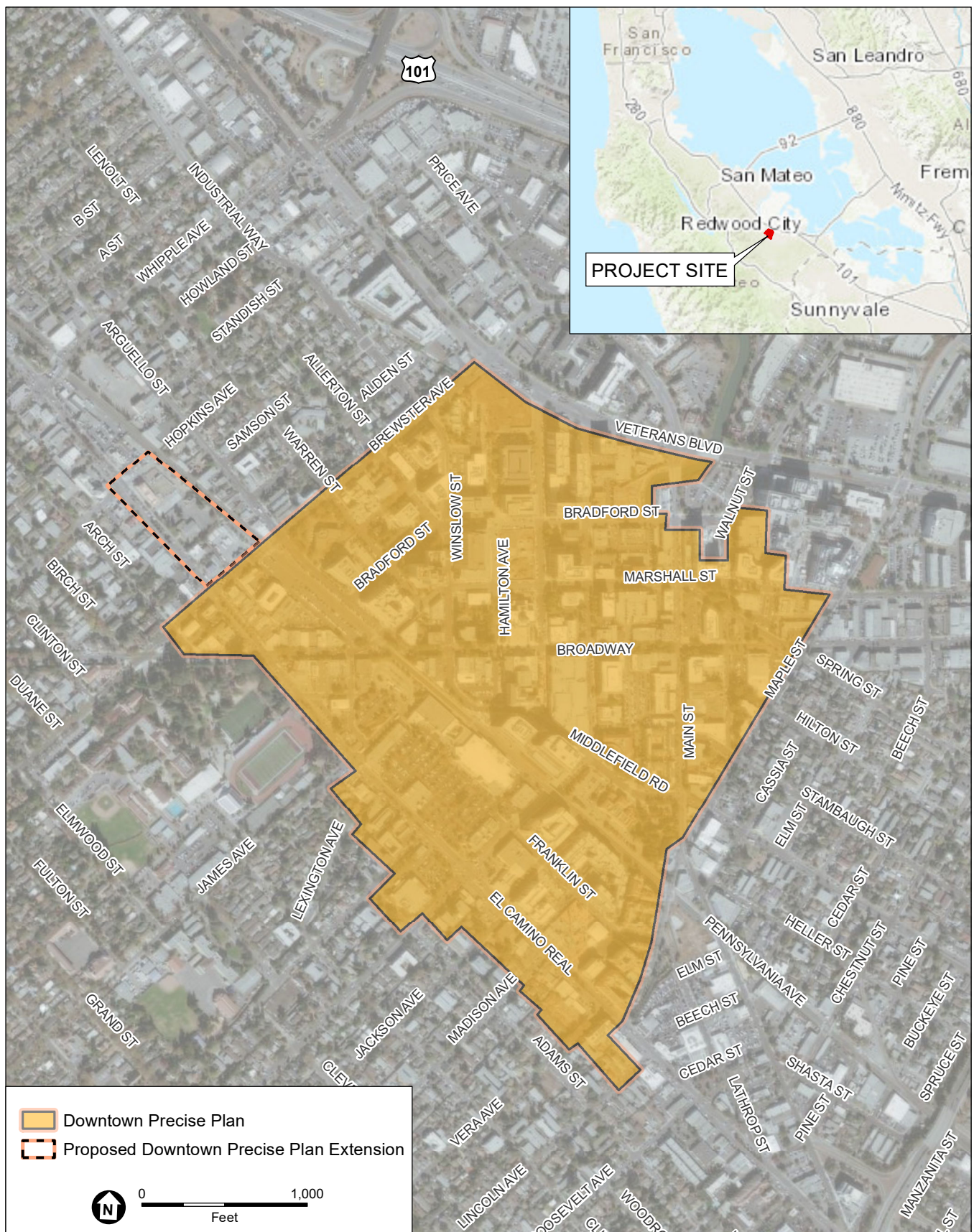
- Certification of the Final SEIR
- Adoption of a Mitigation Monitoring or Reporting Program



## **Notice of Preparation of a Subsequent Draft Environmental Impact Report to the DTPP Final EIR for Proposed Plan-wide Amendments**

- Adoption of General Plan amendments, including revisions to the Downtown maximum allowable development caps for office and residential development therein, to implement the DTPP Plan-wide amendments
- Adoption of DTPP amendments, including, but not necessarily limited to, the following:
  - Amendment of the maximum allowable development cap for office and residential development to accommodate the growth described in Table 1 above
  - Inclusion of a separate allowance (cap) for small office development
  - Revisions to the DTPP New Streets (Circulation) Regulations and associated revisions to DTPP maps
  - Revisions to the DTPP maps to accommodate potential future relocation of the Caltrain station to the north side of Broadway and expansion of the station to four tracks as part of Caltrain's 2040 Service Vision plan (the station relocation would be a separate project).
  - Revisions to the DTPP to include the addition of utility and infrastructure requirements.
  - Revisions to certain of the DTPP Parking Regulations
  - Conversion of certain design-related Development Regulations from mandatory Standards to advisory Guidelines, from which the City, at its discretion, may grant exceptions; these changes could include, but not necessarily be limited to, build-to-corner requirements, height stepdown requirements, and side setback requirements
  - Potential addition to the DTPP's list of permitted architectural styles to include Contemporary design in the Historic Downtown
- Potential approval of an associated Zoning Map amendment to reflect the amended DTPP

*Other Government Agency Approvals.* In general, amendment of the General Plan and DTPP to implement the DTPP Plan-wide amendments is not anticipated to require review and/or approval from other jurisdictional agencies, with the potential exception of circulation improvements. However, if the land exchange involving 901-999 El Camino Real proceeds, approval could be required from the San Francisco Bay Regional Water Quality Control Board, U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, and/or the U.S. Department of Fish and Wildlife.



SOURCE: ESRI Imagery; City of Redwood City, 2021

DTPP Planwide Amendments SEIR

**Figure 1**  
Project Site Location



## Responses to NOP





## California Department of Transportation

DISTRICT 4  
OFFICE OF TRANSIT AND COMMUNITY PLANNING  
P.O. BOX 23660, MS-10D | OAKLAND, CA 94623-0660  
[www.dot.ca.gov](http://www.dot.ca.gov)



October 13, 2021

SCH #: 2021090249  
GTS #: 04-SM-2021-00386  
GTS ID: 24284  
Co/Rt/Pm: SM/28/3.85

Anna McGill, Principal Planner  
City of Redwood City  
1017 Middlefield Road  
Redwood City, CA 94063

### Re: Downtown Precise Plan Amendments Notice of Preparation (NOP)

Dear Anna McGill:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Downtown Precise Plan Amendments (Project). We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the September 2021 NOP.

#### Project Understanding

The project proposes amending the office and residential maximum allowable development caps in both the General Plan and Downtown Precise Plan (DTPP). The Office development cap would increase by 1,167,000 square-feet, Market-Rate Residential cap increased by 486 units, and the Affordable Residential cap increased by 553 units. The proposed DTPP Plan-wide Amendments would extend the northern DTPP boundary approximately 0.1 mile northward to include four additional parcels. In addition to adjustments to DTPP maximum allowable development caps and boundaries, the proposed DTPP amendments include adjustments to parking ratios, circulation, and other development standards. The project area is located along State Route (SR)-82 (El Camino Real) between Hopkins Avenue and Maple Street.

#### Travel Demand Analysis

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses

Transportation Impact Studies, please review Caltrans' [Transportation Impact Study Guide](#).

If the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in align with the City's VMT policy. Projects that do not meet the screening criteria should include a detailed VMT analysis in the Subsequent Environmental Impact Report (SEIR), which should include the following:

- VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.
- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Additionally, the project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

### **Mitigation Strategies**

Location efficiency factors, including community design and regional accessibility, influence a project's impact on the environment. Using Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, the proposed project site is identified as a Close-In Community Center where community design is moderate and regional accessibility is strong.

Given the place, type and size of the project, the SEIR should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions from future development in this area. The measures listed below have been quantified by California Air Pollution Control Officers Association (CAPCOA) and shown to have different efficiencies reducing regional VMT:

- Project design to encourage mode shift like walking, bicycling and transit access;
- Transit and trip planning resources such as a commute information kiosk;
- Real-time transit information systems;



- Transit access supporting infrastructure (including bus shelter improvements and sidewalk/ crosswalk safety facilities);
- New development vehicle parking reductions;
- Implementation of a neighborhood electric vehicle (EV) network, including designated parking spaces for EVs;
- Designated parking spaces for a car share program;
- Unbundled parking;
- Wayfinding and bicycle route mapping resources;
- Participation/Formation in/of a Transportation Management Association (TMA) in partnership with other developments in the area;
- Aggressive trip reduction targets with Lead Agency monitoring and enforcement;
- VMT Banking and/or Exchange program; and/or
- Area or cordon pricing.

Using a combination of strategies appropriate to the project and the site can reduce VMT, along with related impacts on the environment and State facilities. TDM programs should be documented with annual monitoring reports by a TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets.

Please reach out to Caltrans for further information about TDM measures and a toolbox for implementing these measures in land use projects. Additionally, Federal Highway Administration's Integrating Demand Management into the Transportation Planning Process: A Desk Reference (Chapter 8). The reference is available online at: <http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf>.

### **Transportation Impact Fees**

Please identify project-generated travel demand and estimate the costs of transit and active transportation improvements necessitated by the proposed project; viable funding sources such as development and/or transportation impact fees should also be identified. We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT.

### **Lead Agency**

As the Lead Agency, the City of Redwood City is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

### **Equitable Access**

If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

### **Encroachment Permit**

Please be advised that any permanent work or temporary traffic control that encroaches onto the State Right of Way (ROW) requires a Caltrans-issued encroachment permit. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating the State ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement. Your application package may be emailed to [D4Permits@dot.ca.gov](mailto:D4Permits@dot.ca.gov).

To download the permit application and to obtain more information on all required documentation, visit <https://dot.ca.gov/programs/traffic-operations/ep/applications>.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Nick Hernandez at [nick.hernandez@dot.ca.gov](mailto:nick.hernandez@dot.ca.gov). Additionally, for future notifications and requests for review of new projects, please email [LDIGR-D4@dot.ca.gov](mailto:LDIGR-D4@dot.ca.gov).

Sincerely,

A handwritten signature in black ink that reads "Mark Leong". The signature is fluid and cursive, with a long horizontal stroke at the end.

MARK LEONG  
District Branch Chief  
Local Development - Intergovernmental Review

c: State Clearinghouse



## NATIVE AMERICAN HERITAGE COMMISSION

September 15, 2021

Anna McGill, Principal Planner  
City of Redwood City  
1017 Middlefield Road  
Redwood City, CA 94063

**Re: 2021090249, Downtown Precise Plan Amendments Project, San Mateo County**

Dear Ms. McGill:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines § 15064.5 (b))). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1))). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Meri Lopez-Kelfer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

COMMISSIONER  
[Vacant]

COMMISSIONER  
[Vacant]

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
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California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

  - a. A brief description of the project.
  - b. The lead agency contact information.
  - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
  - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

  - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

  - a. Alternatives to the project.
  - b. Recommended mitigation measures.
  - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:

  - a. Type of environmental review necessary.
  - b. Significance of the tribal cultural resources.
  - c. Significance of the project's impacts on tribal cultural resources.
  - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

  - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
  - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).



- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- Avoidance and preservation of the resources in place, including, but not limited to:
    - Planning and construction to avoid the resources and protect the cultural and natural context.
    - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - Protecting the cultural character and integrity of the resource.
    - Protecting the traditional use of the resource.
    - Protecting the confidentiality of the resource.
  - Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - Protecting the resource. (Pub. Resource Code §21084.3 (b)).
  - Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
  - Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
  - The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).



## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf).

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

## NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

**3. Contact the NAHC for:**

- a.** A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
- b.** A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

**4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.**

- a.** Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, § 15064.5(f) (CEQA Guidelines § 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- c.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code § 7050.5, Public Resources Code § 5097.98, and Cal. Code Regs., tit. 14, § 15064.5, subdivisions (d) and (e) (CEQA Guidelines § 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:

[Katy.Sanchez@nahc.ca.gov](mailto:Katy.Sanchez@nahc.ca.gov).

Sincerely,



Katy Sanchez  
Associate Environmental Planner

cc: State Clearinghouse



Kelly M. Rem  
*Attorney at Law*

E-mail: krem@lozanosmith.com

October 13, 2021

**By Email and U.S. Mail: amcgill@redwoodcity.org**

Anna McGill  
Principal Planner  
City of Redwood City  
1017 Middlefield Road,  
Redwood City, CA 94063

Re: Response of Sequoia Union High School District to Notice of Preparation of Subsequent Draft Environmental Impact Report Regarding the Downtown Precise Plan Amendments

Dear Ms. McGill:

This office represents Sequoia Union High School District (“District”). The District appreciates the opportunity to provide comments and input regarding the Notice of Preparation of an Subsequent Draft Environmental Impact Report (“EIR”) regarding the proposed amendments to the Downtown Precise Plan (“DTPP”).

The District is very concerned about the numerous mixed-use development projects proposed in the downtown Redwood City area, including the designated “Gatekeeper Projects.” The District’s Sequoia High School is located adjacent to the DTPP area. These Gatekeeper Projects, and the proposed amendments to the DTPP are anticipated to result in extensive impacts on student safety, among other impacts. As such, the District requests that all direct and indirect impacts related to the proposed amendments to the DTPP and the DTPP area’s proximity to District schools, especially Sequoia High School and Redwood High School, be thoroughly reviewed, analyzed, and mitigated.

The City of Redwood City (“City”) is considering amendments to its General Plan and the DTPP to accommodate additional office and residential developments in the plan area, informed by a series of Gatekeeper Projects. The plan area is located within Downtown Redwood City, generally bounded by Veterans Boulevard, Maple Street, El Camino Real, and Brewster Avenue. The amendments to the DTPP propose the following increased development caps: 1,167,000 square feet for office use, 486 market rate residential units, and 553 affordable residential units. In addition to adjustments to DTPP maximum allowable development caps, the proposed DTPP amendments include extending the DTPP boundary, modifying certain DTPP development standards, adjustments to parking ratios, circulation, and potentially a land swap that would realign a portion of the street grid, increase the amount of office space, channelize a short section of creek, and realign open space. As explained further below, these proposed amendments collectively have the potential to cause severe detriment to the District and its students.

*Limited Liability Partnership*

2001 North Main Street, Suite 500 Walnut Creek, California 94596 Tel 925-953-1620 Fax 925-953-1625



The Notice of Preparation (“NOP”) prepared for the proposed amendments concludes that the proposed amendments may have numerous impacts on the environment, including potential impacts on Public Services, Population and Housing, Transportation, Noise and Vibration, Air Quality and Utilities. The NOP thus correctly concludes that a subsequent full-scope EIR is required.

Preliminarily, the District notes that it is willing to participate in meetings or study sessions with City Staff to discuss the proposed amendments to the DTPP or any general development occurring in the downtown area. The District is hopeful that opening the door to these discussions will yield solutions that benefit the District, the City, and the community as a whole. The District therefore requests that the following topics be analyzed and considered in the Draft EIR for the proposed amendments to the DTPP.

**A. Transportation/Circulation/Traffic Analysis**

- 1. Describe the existing and the anticipated vehicular traffic and student pedestrian movement patterns to and from school sites, including movement patterns to and from Sequoia High School and Redwood High School, and including consideration of bus routes.**
- 2. Assess the impact(s) of increased vehicular movement and volumes caused by the proposed amendments, including but not limited to potential conflicts with school pedestrian movement, school transportation, and busing activities to and from Sequoia High School and Redwood High School.**
- 3. Estimate travel demand and trip generation, trip distribution, and trip assignment by including consideration of school sites and home-to-school travel.**
- 4. Assess cumulative impacts on schools and the community in general resulting from increased vehicular movement and volumes expected from additional development already approved or pending in downtown Redwood City.**
- 5. Discuss the direct, indirect, and cumulative impacts on the circulation and traffic patterns in the community as a result of traffic generated by the transportation needs of students to and from the downtown area and schools throughout the District during and after the implementation of the DTPP amendments.**
- 6. Assess the impacts on the routes and safety of students traveling to school by vehicle, bus, walking, and bicycles.**

The District has significant concerns about the traffic, transportation, and circulation impacts that the proposed amendments may have on the District, including the District’s staff, parents, and

students that attend the Sequoia High School. The foregoing categories of information are critical for determining the extent of those impacts.

**(a) The City Must Consider All Traffic and Related Impacts, Including Impacts of Traffic on Student Safety, Caused by the implementation of the proposed amendments.**

Any environmental analysis related to the proposed amendments must address potential effects related to traffic, noise, air quality, and any other issues affecting schools. (Pub. Resources Code, §§ 21000, *et seq.*; Cal. Code Regs., tit. 14, §§ 15000, *et seq.*; *Chawanakee Unified School District v. County of Madera, et al.*, (2011) 196 Cal.App.4th 1016.) Additionally, specifically regarding traffic, there must be an analysis of safety issues related to traffic impacts, such as reduced pedestrian safety, particularly as to students walking or bicycling to and from Sequoia High School; potentially reduced response times for emergency services and first responders traveling to these schools; and increased potential for accidents due to gridlock during school drop-off and pick up hours. (See, Journal of Planning Education and Research, “Planning for Safe Schools: Impacts of School Siting and Surrounding Environments on Traffic Safety,” November 2015, Chia-Yuan Yu and Xuemei Zhu, pg. 8 [Study of traffic accidents near Austin, Texas schools found that “[a] higher percentage of commercial uses was associated with more motorist and pedestrian crashes” around schools].)

The State Office of Planning and Research has developed new CEQA Guidelines which set forth new criteria for the assessment of traffic impacts, and now encourages the use of metrics such as vehicle miles traveled (VMT), rather than level-of-service (LOS), to analyze project impacts on traffic. (14 Cal. Code Regs. § 15064.3.) However, local agencies may still consider impacts on traffic congestion at intersections where appropriate, and must do so where, as here, such traffic congestion will cause significant impacts on air quality, noise, and safety issues caused by traffic. (Pub. Res. Code § 21099(b)(3).)

Since the adoption of the City’s General Plan in 2010, the City has experienced substantial growth and development. This is reflected in the proposed amendments’ aim to adjust maximum allowable development caps and boundaries, as well adjustments to parking ratios and circulation. **The construction resulting from and traffic generated by the proposed amendments will severely exacerbate the already stifling traffic in the downtown area, and the safety issues posed thereby. These impacts will severely inhibit the District’s ability to operate its educational programs, including at Sequoia High School.**

The proposed amendments are anticipated to impede circulation in the downtown area, and clog the access roads to, from, and around the District’s Sequoia High School, including along Brewster Avenue. (See, 5 Cal. Code Regs. § 14010(k), which requires that school facilities be easily accessible from arterial roads.) Sequoia High School is located close to the downtown area and within walking distance of many of the Gatekeeper Projects. Both Sequoia High School and the areas affected by the proposed amendments would be accessed by the same roads, including those mentioned above. In addition to drawing a large number of new residents to the area, the areas affected by the proposed amendments will draw thousands of daily office

commuters, visitors, and emergency access vehicles from around the Bay Area. The immediate roads surrounding the downtown area and Sequoia High School, will bear the burden of the increased traffic patterns. Such increases to traffic in the area will not only make it much more difficult for students and staff to travel to and from Sequoia High School, but will also **drastically increase the risk of vehicular accidents to District families, students, and staff traveling to and from school.**

In addition to increased risks of vehicular accidents, the traffic and parking impacts posed by the proposed amendments may severely impact the safety and convenience of Sequoia High School students who walk or bike to school. Title 5 of the California Code of Regulations requires that school sites be located within a proposed attendance area that encourages student walking and avoids extensive bussing. (5 Cal. Code Regs. § 14010(l).) The City has previously acknowledged that Sequoia High School's location is not pedestrian-friendly, stating that the Sequoia High School Open Space is "not particularly easy to get to due to El Camino Real...[h]igh traffic volumes, high speeds, wide crossing distances, and excessive spacing between crosswalks all contribute to a barrier effect."<sup>1</sup>

The EIR must analyze and mitigate all of the above traffic and related impacts, including those impacts related to student safety and ability to get to school, the District's ability to implement its transportation and safety mitigation measures for the Sequoia High School, and the District's ability to promote alternative modes of transportation to and from Sequoia High School. It is important that these traffic impacts are not only assessed through a VMT analysis, but also through a LOS analysis, as traffic congestion surrounding the District's Sequoia High School caused by the proposed amendments will in turn cause significant issues related to safety, noise, and air quality. It is anticipated that these impacts will extend far beyond the downtown area. Rather, the District requests that all intersections that could be impacted by the proposed amendments, including those within and outside of the downtown area, be analyzed for LOS and related safety impacts. The District further suggests that the lead agency consult with the District's own traffic engineering company regarding the placement of driveways to service the proposed amendments, so as to achieve a plan that minimizes, to the greatest extent possible, the risk of potential injuries to students walking and biking to school in the downtown area. The District is hopeful that it can work with the City to reach its stated goals to "[m]ake pedestrian comfort, safety and convenience a priority" and to "[i]ntegrate more bicycle routes, storage, and bicycle-friendly improvements into the DPP area."<sup>2</sup>

### **(b) City Must Consider Cumulative Traffic and Related Impacts.**

Environmental impact reports must address cumulative impacts of a project when the project's effects on the environment, viewed in conjunction with impacts of other past, present, or reasonably foreseeable future projects, is cumulatively considerable. (14 CCR 15130(a).) (See *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 CA4th 713, 720,

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<sup>1</sup> Redwood City Downtown Precise Plan, Adopted January 24, 2011, Last Amended June 11, 2018. Section 1.2.5 Public Open Spaces

<sup>2</sup> Redwood City Downtown Precise Plan, Draft EIR, August 27, 2010 – p. 3-6

finding that piecemeal approval of several projects with related impacts could lead to severe environmental harm.) While a lead agency may incorporate information from previously-prepared program EIRs into the agency's analysis of a project's cumulative impacts, the lead agency must address all cumulative impacts that were not previously addressed in the program EIR. (Pub. Res. Code § 21083.3(c); 14 CCR 14183(b)(3).)

The proposed amendments' above- and below-discussed anticipated impacts on the District, combined with the anticipated impacts of the vast number of development projects that have recently been approved and are being considered for approval in the downtown area are cumulatively considerable. All of these impacts are exacerbated by the volume of projects that the City is considering and approving development projects in the downtown area, as the District will be unable to accommodate the influx of students through facilities, infrastructure, and related improvements. The proposed amendments seek to increase development caps throughout the DTPP area, which promises drastically to increase traffic in the neighborhood, resulting in air quality, noise, and safety issues for District families and staff attending Sequoia High School. When considered together, their collective impacts on traffic, safety, and air quality in the neighborhood will be devastating. **These cumulative impacts on the District's Sequoia High School and Redwood High School must be analyzed and mitigated.**

#### **B. Air Quality**

- 7. Identify and assess the direct and indirect air quality impacts of the proposed amendments on sensitive receptors, such as the District's Sequoia High School.**
- 8. Identify and assess cumulative air quality impacts on schools and the community in general resulting from increased vehicular movement and volumes expected from additional development already approved or pending in the downtown area.**

The Bay Area Air Quality Management District's (BAAQMD) CEQA Guidelines (May 2017) impose numerous limitations on the exposure of "sensitive receptors," such as schools, to odors, toxics, and pollutants, including pollutants from vehicular exhaust.

It is anticipated that the proposed amendments, including when viewed in conjunction with all of the other developments being considered and approved in the vicinity of Sequoia High School, will have a significant impact on the air quality of the neighborhood due to extensive construction activities and increases in vehicular traffic. Even more pressing, the proposed amendments are anticipated to result in significant impacts to sensitive receptors as an increased number of vehicles enter and exit the downtown area, creating increased levels of air toxins and particulate matter that could negatively impact student health. These impacts, as they relate to the District's students at Sequoia High School, must be analyzed in the Draft EIR. This analysis also dovetails with the discussion above regarding the necessity of LOS analysis. Decreased levels of service at intersections generally mean lengthier amounts of time for cars to idle, including near schools, resulting in decreased air quality and the potential for substantial impacts on students.

**C. Noise**

**9. Identify any noise sources and volumes which may affect school facilities, classrooms and outdoor school areas.**

It is expected that noise from construction stemming from the implementation of the proposed amendments will cause impacts on the District's educational programs at Sequoia High School. Request No. 9 is intended to clarify that the EIR's consideration of noise issues take into account all of the various ways in which noise may impact schools, including increases in noise levels in the immediate vicinity of Sequoia High School.

**D. Population**

**10. Describe historical, current, and future population projections for the District.**

**11. Assess the impacts of population growth within the District on the District's ability to provide its educational program.**

In addition to the increased cap for residential units, it is anticipated that the proposed increased cap of approximately 1,000,000 sf of office space will draw thousands of residents into the area on a permanent, or at least a daily basis. The District, therefore, specifically demands that historic, current, and future population projections for the District be addressed in the EIR. Population growth or shrinkage is a primary consideration in determining the impact that development may have on a school district, as a booming population can directly impact the District and its provision of educational services, largely because of resulting school overcrowding, while a district with declining enrollment may depend on new development to avoid school closure or program cuts. Overcrowding can constitute a significant impact within the meaning of CEQA. (See, 14 Cal. Code Regs. §§ 15064(e).) This is particularly true where the overcrowding results in unsafe conditions, decreased quality of education, the need for new bus routes, and a need for new school construction. The same can hold true for potential school closures or program cuts resulting from a declining population.

**E. Housing**

**12. Describe the type and number of anticipated dwelling units indirectly resulting from the proposed amendments.**

**13. Describe the average square footage for anticipated dwelling units, broken down by type of unit, indirectly resulting from the proposed amendments.**

**14. Estimate the amount of development fees to be generated by development in accordance with implementation of the proposed amendments.**

The foregoing categories of information are critical for determining the extent of both physical and fiscal impacts on the District caused by increased population growth.

California school districts are dependent on developer fees authorized by the provisions of Government Code Sections 65995, *et seq.*, and Education Code sections 17620, *et seq.*, for financing new school facilities and maintenance of existing facilities. The developer fees mandated by Section 65995 provide the District a significant portion of its local share of financing for facilities needs related to development.

The adequacy of the statutory development fees to offset the impact of new development on local school districts can be determined only if the types of housing and average square footage can be taken into consideration. For instance, larger homes often generate approximately the same number of students as smaller homes. At the same time, however, a larger home will generate a greater statutory development fee, better providing for facilities to house the student being generated. It is for these reasons that the Government Code now requires a school district to seek – and presumably to receive – such square footage information from local planning departments. (Gov. Code § 65995.5(c)(3).)

While the foregoing funding considerations raise fiscal issues, they also translate directly into physical, environmental impacts, in that inadequate funding for new school construction results in overcrowding of existing facilities. Without funding to build new facilities or land on which to expand, students may need to attend schools outside their attendance boundaries, creating significant traffic impacts, among others. Furthermore, fiscal and social considerations are relevant to an EIR, particularly when they either contribute to or result from physical impacts. (Pub. Resources Code § 21001(g); 14 Cal. Code Regs. §§ 15021(b), 15131(a)-(c), 15142 & 15382.)

Phasing of development is also a crucial consideration in determining the extent of impacts on schools, which is especially relevant considering the volume of development occurring in the downtown area. The timing of the development will determine when new students are expected to be generated, and therefore is an important consideration particularly when considering the cumulative impact of a project in conjunction with other approved or pending development.

**F. Public Services**

- 15. Describe existing and future conditions within the District, on a school-by-school basis, including size, location and capacity of facilities.**
- 16. Describe the adequacy of both existing infrastructure serving schools and anticipated infrastructure needed to serve future schools.**
- 17. Describe the District's past and present enrollment trends.**
- 18. Describe the District's current uses of its facilities.**
- 19. Describe projected teacher/staffing requirements based on anticipated population growth and existing State and District policies.**
- 20. Describe any impacts on curriculum as a result of anticipated population growth.**
- 21. Identify the cost of providing capital facilities to properly accommodate students on a per-student basis, by the District (including land costs).**
- 22. Identify the expected shortfall or excess between the estimated development fees to be generated by the proposed amendments and the cost for provision of capital facilities.**
- 23. Assess the District's present and projected capital facility, operations, maintenance, and personnel costs.**
- 24. Assess financing and funding sources available to the District, including but not limited to those mitigation measures set forth in Section 65996 of the Government Code.**
- 25. Identify any expected fiscal impacts on the District, including an assessment of projected cost of land acquisition, school construction, and other facilities needs.**
- 26. Assess cumulative impacts on schools resulting from additional development already approved, pending, or anticipated.**
- 27. Identify how the District will accommodate students from the projects created by the proposed amendments who are not accommodated at current District schools, including the effects on the overall operation and administration of the District, the students and employees.**

CEQA Guidelines, Appendix G, states that a project may have public services impacts on schools if the project would “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 the provision of school services.

There are a myriad of ways in which large residential and commercial development projects can impact a school district’s need for new or physically altered facilities in order to maintain performance objectives. The Draft EIR’s examination of the proposed amendments should analyze all potential impacts under this standard, including but not limited to: (1) whether the influx of students would require “physically altered” school facilities unrelated to the accommodation of additional enrollment; (2) whether other impacts of the proposed amendments, such as increased traffic, noise, or air pollutants in the neighborhood surrounding Sequoia High School, could impact the District’s need for new or physically altered school facilities; and (3) whether other impacts of the proposed amendments could otherwise interfere with the District’s ability to accomplish its own performance objectives. Consideration of the above-listed categories of information is essential to properly making these determinations.

In the 2010 Draft EIR, the City provided minimal analysis on the plan’s impact on schools, merely stating that “[t]he California State Legislature has determined that school impact fees shall be the exclusive method of mitigating the school facilities impacts of a project or plan, has set limits on school impact fees, and has determined that payment of school impact fees shall be deemed to provide full and complete school facilities mitigation.”<sup>3</sup> While the City acknowledged that physical environmental impact triggers a lead agency’s duty to mitigate school impacts beyond the state-mandated fees, the City conducted no further analysis on school impacts, deeming the impacts to be “too speculative to predict or evaluate at this time.”<sup>4</sup> The City further concluded that “cumulative impacts related to schools would be less than significant.”<sup>5</sup>

As demonstrated above, lead agencies often cite to SB 50 (specifically, Government Code sections 65995(h) and 65996(a)), for the proposition that the payment of school impact fees (commonly referred to as “developer fees”) excuses them from their obligations to analyze and mitigate impacts posed on school districts by development. This, however, is a misstatement of the law related to developer fees and CEQA. While SB 50 does declare that the payment of the developer fees authorized by Education Code section 17620 constitutes “full and complete mitigation of the impacts of any legislative or adjudicative act on the provision of adequate school facilities,” (Gov. Code § 65995(h)), SB 50 does not excuse lead agencies from analyzing such impacts on school facilities in the first place. Further, **California courts have since acknowledged that developer fees do not constitute full and complete mitigation for school-related impacts other than school overcrowding.** (*Chawanakee Unified Sch. Dist. v. County of Madera* (2011) 196 Cal.App.4th 1016.) Thus, the payment of fees does not constitute full

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<sup>3</sup> Redwood City Downtown Precise Plan, Draft EIR, August 27, 2010 – p. 17-9

<sup>4</sup> Id. at p. 17-9

<sup>5</sup> Id. at p. 17-9



mitigation for all impacts caused by development related to traffic, noise, biological, pedestrian safety, and all other types of impacts related to the District and its educational program. The District expects the City to analyze and mitigate all such impacts in the EIR for these proposed amendments.

### **Conclusion**

The District does not oppose development within District boundaries, and recognizes the importance of housing on the health and welfare of the community. However, the District maintains that the community can only thrive if the District's educational program and its facilities are viable and sufficient, and District staff, families, and students are safe. Accordingly, the needs of the District must be appropriately considered in the environmental review process for all proposed new development that will impact the District, such as the significant proposed amendments to the DTPP.

We request that all notices and copies of documentation with regard to these proposed amendments be mailed both to the District directly, and also to our attention as follows:

Crystal Leach, Associate Superintendent, Administrative Services  
Sequoia Union High School District  
480 James Avenue  
Redwood City, CA 94062

Kelly M. Rem, Esq.  
Lozano Smith  
2001 N. Main St., Suite 500  
Walnut Creek, CA 94596

Please feel free to contact us directly if we can be of any assistance in reviewing the above issues. Thank you.

Sincerely,

LOZANO SMITH

A handwritten signature in blue ink that reads "Kelly M. Rem". The signature is written in a cursive, flowing style.

Kelly M. Rem

KMR/mag

cc: Crystal Leach, Associate Superintendent, Administrative Services (cleach@seq.org)

# Appendix B

## **Gatekeeper Project Details**



## APPENDIX B

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### Gatekeeper Project Details

A brief summary of each of the six Gatekeeper Projects is provided below. These sites are representative of the redevelopment potential of certain locations within the DTPP area where existing land uses may not be maximizing the development potential; that is, each of these sites is currently occupied by one- and two-story buildings, all but one of which are commercial, with adjacent surface parking, where the height limit is generally five to eight stories or more. Applications for the individual Gatekeeper Projects are in various stages of planning, revision, and submission and none have been deemed complete. The City Council's conceptual review of the Gatekeeper Projects did not constitute their approval, nor has the City made any commitment to approve any or all of these projects.

The land use breakdown for each Gatekeeper Project is provided in **Table B-1**, based upon conceptual plans presented to the City for projects authorized for initiation of General Plan amendments as of September 2021. The Gatekeeper Projects are subject to change and will be considered subsequently by the City, as part of project-specific reviews. For additional project details and the most current proposed land use program, please refer to the City's website: [www.redwoodcity.org/currentprojects](http://www.redwoodcity.org/currentprojects)

#### 651 El Camino Real

The proposed project is an eight-story building consisting of 300 residential units and a new American Legion facility, which would replace the existing American Legion facility currently on the site. The residential component would include 68 before-market-rate housing units intended for veterans, and 232 market-rate units. The American Legion component would include approximately 13,500 square feet of space for the facility and would include, among other things, a service area to support veterans, an event space, a commercial kitchen, and a replacement of the current bar/cocktail lounge. The proposed facility also would function as a community space, which can be reserved for City or community events. In addition, the project would provide about 6,050 square feet of open space for project residents and would include 250 off-street parking spaces (160 residential spaces and 90 spaces for the American Legion Hall) and 154 secure bicycle spaces.

#### 901-999 El Camino Real/Caltrain Property

This proposed project would include a six-story building with approximately 259,000 square feet of office space, an 8,000 square-foot teen center, 3,000 square feet of ground-floor retail, and

about 23,200 square feet of public open space (Chrysanthemum Plaza and reconfigured open space in the general location of the existing Little River Park, which would be eliminated). The project would provide approximately 340 below-grade motor vehicle parking spaces (up to 590 spaces with valet operations) and 68 secure bicycle spaces.<sup>1</sup> In conjunction with this project, the developer and the Peninsula Corridor Joint Powers Authority (Caltrain) are proposing an exchange of land—in which the City would also participate—under which Caltrain would gain land needed for its planned right-of-way expansion, including an existing vacant retail store and parking lot at 2529 Broadway, to accommodate four rail tracks as part of the planned expansion and relocation of the Redwood City Caltrain station, a separate project. In return, the project developer would obtain the westernmost portion of the existing Redwood City Transit Center, which would become part of the 901-999 El Camino Real project site and would include the aforementioned Chrysanthemum Plaza. Along with the land exchange, City would realign the street grid by extending Franklin Street north from James Avenue to the intersection of Winklebleck and California Streets, closing California Street west of Winklebleck Street, and closing Winklebleck Street south of California Street. Finally, the existing Little River Park would be removed.

## **2300 Broadway**

This proposed project would include a ten-story building with approximately 200,000 square feet of office space, about 13,400 square feet of retail space, and 5,000 square feet of open space (“Redwood Grove”) on the corner of Broadway and Hamilton Street. The project would provide approximately 151 parking spaces and 45 secure bicycle spaces. In addition to the onsite open space, the project proposes using a portion of the block of Hamilton Street adjacent to the subject property to create a 15,000-square-foot plaza (“Hamilton Green”); accordingly, as described in Chapter 3, Project Description, the City proposes to close this segment of Hamilton Street, between Broadway and Marshall Street, to motor vehicle traffic. This area, together with Redwood Grove and the existing Courthouse Square to the south, would constitute a contiguous pedestrian-only area of some 33,000 square feet.<sup>2</sup>

## **603 Jefferson Avenue/750 Bradford Street**

This is a proposed mixed-use development that would include a seven-story, approximately 170,000-square-foot office building at 750 Bradford Street and a six-story residential building containing 87 housing units designated for occupancy by Redwood City School District staff and faculty at 603 Jefferson Avenue. This project would include approximately 263 off-street parking spaces (about 187 office spaces and about 76 residential spaces) and 60 secure bicycle spaces. The project would provide about 5,600 square feet of open space for project residents in the form of a rear yard, as well as elevated outdoor terraces in the office building. This project also

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<sup>1</sup> This project also proposes to develop 100 below-market-rate housing units at an off-site location outside the DTPP area. Inasmuch as they would be outside the Plan boundaries, these units are analyzed as part of this SEIR’s cumulative analysis.

<sup>2</sup> This project also proposes to develop 80 below-market-rate housing units at an off-site location outside the DTPP area. Inasmuch as they would be outside the Plan boundaries, these units are analyzed as part of this SEIR’s cumulative analysis.

contemplates a future land exchange (or other similar agreement) between the Redwood City School District (owner of 750 Bradford Street) and the owner of 603 Jefferson Avenue.

## 1900 Broadway

This proposed mixed-use project would include a neo-classical seven-story building consisting of approximately 225,000 square feet of office space, 71 residential units designated as affordable to low- and very-low-income households, about 10,000 square feet of ground-floor retail and interior community space, and an approximately 12,000-square-foot publicly accessible outdoor plaza at the corner of Broadway and Main Street. The plaza is anticipated to include a mix of amenities including public art, bike parking and repair, seating and dining, and a pet refreshment station. The project would provide approximately 405 vehicle parking spaces total (up to 595 spaces with valet operations), including about 380 non-residential spaces and about 25 residential spaces. The project would also provide 29 motorcycle spaces, and 71 long-term and 10 short-term bicycle spaces. This project also proposes to close, acquire from the City, and include in the project site, the one-block segment of Spring Street that runs diagonally between Main and Walnut Streets and the adjacent Spring/Marshall Parklet. Open space would be provided in the form of the approximately 12,000-square-foot plaza at the southwest corner of the project site, as well as two elevated residential courtyards, totaling about 6,000 square feet, at the building's first residential level.

## 601 Allerton Street

This is a proposed mixed-use development that would construct a five-story building with 85,000 square feet of office space, 540 square feet of ground-floor retail/café space, and about 14,000 square feet of publicly-accessible rooftop open space (recreational space provided as two scaled-down soccer fields, or “futsal courts”). This project would include 132 parking spaces below grade (220 spaces with valet operations).<sup>3</sup>

<sup>3</sup> This project also proposes to develop 26 below-market-rate housing units at an off-site location outside the DTPP area. Because these units would be outside the Plan boundaries and would not require any of the Plan-Wide Amendments, these units are analyzed as part of this SEIR's cumulative analysis.

**TABLE B-1  
GATEKEEPER PROJECTS PROPOSED LAND USES**

<b>Project Address</b>	<b>Office (sq. ft.)</b>	<b>Retail (sq. ft.)<sup>a</sup></b>	<b>Other (sq. ft.)<sup>a</sup></b>	<b>Residential (units)<sup>b</sup></b>
651 El Camino Real	–	–	13,500 (American Legion)	300
901-999 El Camino Real	259,000	3,000	8,000 (teen center)	–
2300 Broadway	200,000	13,400	–	–
603 Jefferson/ 750 Bradford	170,000	-	–	87
1900 Broadway	225,000	10,000	–	71
601 Allerton	85,000	540	–	–
<b>Total</b>	<b>939,000</b>	<b>26,940</b>	<b>21,500</b>	<b>458</b>

NOTE: Square footages and unit counts in this table are rounded, and all figures are based on available information at the time of publication.

<sup>a</sup> Information on retail and other square footage is provided for information only; these uses are not analyzed in the SEIR because the retail space proposed is anticipated to replace existing retail space, the American Legion hall would replace an existing American Legion hall, and the teen center would occupy minimal floor area. Moreover, all of these uses are currently permitted under the DTPP and no adjustment of any maximum development caps would be necessary.

<sup>b</sup> Off-site affordable units not included in totals, as they would be outside the amended DTPP area and are therefore not analyzed in this SEIR, except as part of the cumulative analysis. CEQA review of those units would be pursuant to the separate EIR for the Housing Element Update.

SOURCE: City of Redwood City, 2022.

# Appendix C

## **Transportation Analysis**





# Redwood City Plan-wide Amendments Transportation Analysis

Prepared for:  
ESA and  
The City of Redwood City

November 2022

SJ21-2103.02

FEHR  PEERS

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# 1. Introduction

This report presents the results of a transportation analysis (TA) conducted for the proposed Plan-wide Amendments project in downtown Redwood City, California. The purpose of this TA is to identify potentially significant adverse impacts of the proposed project on the surrounding transportation system and to recommend mitigation measures, if needed. This report was prepared for California Environmental Quality Act (CEQA) clearance purposes and to meet requirements from the City of Redwood City's *Transportation Analysis Manual* (TAM) (July 2020), which adopted vehicle miles traveled (VMT) as the primary metric for transportation studies under CEQA.

According to CEQA, a project could have a significant transportation impact on the environment if it meets any of the following criteria:

1. Conflicts with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths
2. Conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1) (i.e., VMT impact assessment consistent with the City's TAM)
3. Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
4. Results in inadequate emergency access

A local transportation analysis (LTA) report will be prepared as a standalone document to provide additional information regarding vehicle, transit, bicycle, and pedestrian network operations and constraints, as well as site access and circulation consistent with the City's TAM. The separate LTA is prepared for General Plan and the City/County Association of Governments (C/CAG) of San Mateo County Congestion Management Plan (CMP) consistency purposes and is not prepared for CEQA purposes.

This introduction chapter discusses the project description, analysis scenarios, and report organization.

## Project Description

The DTPP Plan-wide Amendments ("Project") includes the amendment of the Redwood City General Plan and Downtown Precise Plan (DTPP) to accommodate growth in jobs and housing within downtown Redwood City. The caps for office space and residential uses in Downtown are almost met, so any project proposing to exceed these caps must request both a General Plan amendment and a DTPP amendment to increase the caps. Given the large number of projects requesting such amendments, the City Council used a "gatekeeper" process to evaluate pending amendment requests. As a result of the "gatekeeper" process, the City initiated six projects within the DTPP to be studied further. The plan-wide amendments propose policy changes in advance of these gatekeeper projects being processed to ensure they conform to the City's vision for the development of the Downtown. The Project involves amending the DTPP to make



circulation improvements, alter parking ratios, revise certain development standards and policies, and accommodate additional office and residential development capacity in the plan area.

The Project area (i.e., boundaries of Plan-wide Amendments) is located within Downtown Redwood City in the City's DTPP, generally bounded by Veterans Boulevard, Maple Street, El Camino Real, and Brewster Avenue as shown in **Figure 1**. The Project evaluates a potential future extension of the northern DTPP area boundary between El Camino Real and the railroad tracks and the potential for additional office and residential development assumptions in the DTPP area. The potential boundary extension includes the following five parcels not currently within the DTPP area: APNs 052-271-030, -040, -050, -080, and -090. The potential boundary extension and increases in office and residential development would be considered by the City when individual projects are brought forward for action on project entitlements.

The six "gatekeeper projects" are located at:

1. 651 El Camino Real,
2. 901-999 El Camino Real,
3. 2300 Broadway,
4. 603 Jefferson/750 Bradford,
5. 1900 Broadway, and
6. 601 Allerton Street.

## Proposed Land Uses

Currently, less than 5,000 square feet of office space remains in the office development cap, while fewer than 500 dwelling units remain in the residential development cap before it was proposed to be eliminated pursuant to the City's new Housing Element. The DTPP Plan-Wide Amendments analyzes a total of 1,167,100 square feet of office and 830 residential units. For the office development, the DTPP Plan-Wide Amendments include increasing the office maximum allowable development cap on office square footage by 80,000 square feet, specifically for small office uses, defined as "projects containing no more than 20,000 net new square feet of office uses." Beyond this increase in the office cap, this analysis assumes an additional office development of 1,087,100 square feet (for a total of 1,167,100 square feet including the 80,000 square feet for small office uses) within the DTPP area. The proposed increases in development assumptions for the DTPP Plan-wide amendments are summarized in **Table 1**. The Plan-wide Amendments include growth in development to accommodate the six gatekeeper projects listed above, along with an additional 10 percent allowance for both office square footage and residential units beyond the totals proposed by the Gatekeeper Projects.

**Table 1: Proposed Increases in Development Assumptions for Plan-wide Amendments**

Land Use	Increase in Development Cap
Office	1,167,000 square feet
Residential	830 units

Note:

The development assumptions in this TA are based a previous project description and include slightly higher office square footage and residential units than is currently proposed.

Source: City of Redwood City, June 2022.



It is important to state that this TA analyzes the potential transportation impacts of the proposed increases in office and residential development at a programmatic level, based on the projected development anticipated within the DTPP area. The actual adjustments to the office development caps and the number of residential units would be considered subsequently by the City, as part of project-specific reviews.

The Plan-wide amendments also include retail space, but this would replace existing retail space (to be demolished) and would neither add retail beyond existing conditions nor increase the DTPP retail development cap. Replacement of existing retail space with new retail uses would not necessitate an increase in the retail development cap, and because no change in the retail cap is proposed it is not analyzed as part of this report.

### Proposed Transportation Changes

This section discusses the Project's proposed transportation changes to the General Plan and DTPP, which are also illustrated on **Figure 1**.

#### *Roadway Network*

The following roadways would be vacated/closed:

- One-block segment of Hamilton Street between Broadway and Marshall Street (closed to vehicle access only; pedestrian and bicycle access would be maintained)
- One-block segment of Broadway between Redwood Creek and Main Street (closed to vehicle access only; pedestrian and bicycle access would be maintained)
- One-block segment of Spring Street between Main Street and Walnut Street
- One-block segment of Winklebleck Street between California Street and James Avenue

In addition, the following streets would be modified:

- California Street between Winklebleck Street and James Avenue would be abandoned
- Franklin Street between Winklebleck Street and James Avenue would be extended

The proposed street closures, particularly those that maintain pedestrian and bicycle access, and modifications (besides the Franklin Street extension and the Spring Street closure) were not included in the DTPP but would generally be consistent with the circulation network that was included in the DTPP. They promote a vibrant, mixed-use downtown that allows for small grid network and prioritizes mobility by active modes like walking and riding bikes. In addition, the revised street grid just north of James Avenue would allow for implementation of the DTPP's proposed Franklin Street extension between James Avenue and Winklebleck Street.





*Pedestrian, Bicycle, and Transit Improvements*

The Project's proposed circulation improvements discussed above also ensure adequate bicycle and pedestrian connections. This realigned street grid north of James Avenue and west of the Transit District would create better connections to the Transit Center, allow for wider sidewalks and improved pedestrian sight angles, and provide a new four-way stop-controlled intersection. In the greater DTPP area, widened sidewalks and protected pedestrian crossings would also be provided on certain designated streets. The closure of street segments to vehicular traffic, while allowing for people to walk or ride bikes, would increase safety for these people on the closed segments. These circulation improvements would generally be consistent with the circulation plan set forth in the DTPP.





Figure 1

## Downtown Precise Plan Plan-wide Amendments Roadway Network Changes



## Analysis Scenarios

The City/County Association of Governments of San Mateo County Travel Demand Model, also known as the C/CAG-VTA model, was used to calculate VMT. Two VMT analyses were performed in compliance with CEQA Guidelines: project-generated VMT and project-effect on VMT.

The first analysis method, project-generated VMT, considers all vehicle miles of travel generated by the Project and does not truncate trips within the specified boundary or region, which is San Mateo County. The second method, boundary VMT, considers all vehicle miles traveled within Redwood City and is used to assess the Project's effect on VMT. Both methods are further explained in **Chapter 4** and were analyzed for the following analysis scenarios:

- Scenario 1:** *Existing Conditions* – Countywide daily VMT per service population for the base year (2015) from the C/CAG-VTA model. The year 2015 model was last adjusted in 2020 by C/CAG to include modifications to centroid connectors and travel outside of the model area. For this Project, the model land uses were updated for the entire DTPP area to reflect current (year 2021<sup>1</sup>) development conditions. All other land uses were assumed to be consistent with the current C/CAG-VTA model assumptions.
- Scenario 2:** *Cumulative (2040) Conditions* – Countywide daily VMT per service population and Redwood City boundary daily VMT per service population from the future year (2040) C/CAG-VTA model. The cumulative land use information within Redwood City was updated to include preliminary assumptions for the City's recent Regional Housing Needs Assessment (RHNA) allocation, as well as growth associated with the Transit District Amendments project.
- Scenario 3:** *Cumulative (2040) with Project Conditions* – Countywide daily VMT per service population and Redwood City boundary daily VMT per service population from the C/CAG-VTA future year (2040) model with the addition of the Plan-wide Amendments Project.

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<sup>1</sup> Year 2021 represents existing conditions for the analysis, since it is the year that the CEQA-required Notice of Preparation (NOP) was released for this Project.



## Report Organization

The remainder of this report is divided into the following chapters:

- **Chapter 2 – Analysis Methods and Thresholds of Significance** presents the CEQA analysis methods and thresholds of significance for transit, bicycle, and pedestrian facilities.
- **Chapter 3 – Existing Conditions** describes the transportation system near the Project area including the surrounding roadway network, and existing bicycle, pedestrian, and transit facilities.
- **Chapter 4 – CEQA VMT Analysis** presents the CEQA VMT analysis for the Project including the initial VMT screening, model assumptions and adjustments, and the residential and office VMT results.
- **Chapter 5 – Additional CEQA Impact Analysis** presents the CEQA impact analysis for the Project including verification that that Project does not conflict with existing programs, plans, ordinances, or policies, increase hazards, or result in inadequate emergency access.



## 2. Analysis Methods and Thresholds of Significance

This chapter describes the analysis methods used to evaluate potential transportation impacts for vehicle, bicycle, pedestrian, and transit facilities and access.

### Senate Bill (SB) 743

The operations of transportation facilities have traditionally been described with the term *level of service* (LOS). LOS describes traffic flow from the driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. SB 743 was adopted in 2013 and directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts and make corresponding revisions to the CEQA Guidelines. Following several years of draft proposals and related public comments, OPR settled upon daily VMT as the preferred metric for assessing passenger vehicle related impacts. OPR issued revised CEQA Guidelines in December 2018 along with a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the CEQA Guidelines to use VMT as the new metric. Under the revised Guidelines, vehicle LOS will no longer be used as a determinant of significant environmental impacts. The City has implemented SB 743 in their TAM, which provides specific guidance for VMT analysis and determination of significant impacts.<sup>2</sup>

### Thresholds of Significance

The criteria for evaluating the significance of a project's environmental impacts are based on the State CEQA Guidelines as implemented by the City's TAM. According to the current version of Appendix G of the CEQA Guidelines, transportation impacts are considered significant if a proposed project meets any of the following criteria:

1. Conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities
2. Conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (i.e., VMT impact assessment consistent with the City's TAM)
3. Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
4. Results in inadequate emergency access

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<sup>2</sup> While LOS is no longer used to determine CEQA impacts, Redwood City as well as C/CAG still require LOS analysis for select intersections under their development approval processes. The intersection analysis for this project was conducted as part of the standalone LTA.



The impact assessment for each of the CEQA criteria is discussed in this report. Specifically, threshold 2, which relates to the VMT impact assessment, is discussed in **Chapter 4** (CEQA VMT Analysis), and thresholds 1, 3, and 4 are discussed in **Chapter 5** (Additional CEQA Transportation Analysis). The City's specific VMT impact criteria, as outlined in the TAM, is summarized below and used to evaluate program-level impacts of the Plan-wide Amendments.

### CEQA Analysis Screening Criteria

In the first step, the TAM applies specific screening criteria for projects presumed to have a less-than-significant impact, eliminating the need to conduct a VMT analysis for CEQA transportation purposes. The TAM includes a detailed screening criteria related to affordable housing, small projects, local-serving public facilities, neighborhood serving retail, and childcare projects, as well as projects that are in a Transit Priority Area (TPA). Each component of a mixed-use project is considered separately and each of the project's individual land uses is compared to the screening criteria. Since the Plan-wide Amendments exceeds the 500,000 square feet size limit for projects within a Transit Priority Area as specified in the TAM, the Project is not eligible for VMT screening.

### Project-Generated VMT Impact Criteria

A visual representation of project-generated VMT is provided in **Figure 2**. Per the City's TAM, a significant project-generated VMT impact would occur if a project meets any of the following criteria:

- Residential land uses: The daily project-generated VMT per service population for the residential portion of the Project is above the countywide home-based VMT per capita threshold of 10.5 miles, which is 15 percent below the countywide home-based VMT of 12.3 miles.
- Office land uses: The daily project-generated VMT per service population for the office portion of the Project is above the countywide home-based work VMT per employee threshold of 15.0 miles, which is 15 percent below the countywide home-based VMT of 17.6 miles.
- Retail land uses: The daily project-generated VMT per service population for the retail, entertainment, and childcare portions of the Project is above the countywide total VMT per service population threshold of 32.0 miles.

For mixed-use development, each individual land use component must be evaluated independently, taking credit for internal capture, and applying the significance criteria for each land use type.

The VMT estimates for the Project, which only include residential and office land uses, are compared to this threshold to identify significant impacts. Project-generated VMT below this local threshold indicates the Project is not likely to rely on vehicle travel as much as other developments in the City.

Since the DTPP Plan-Wide Amendments are evaluated at a program-level, VMT for the Project is only analyzed under future year 2040 conditions consistent with the timeframe anticipated for the build-out of future individual development projects that could occur with the DTPP Plan-Wide Amendments. Year 2040 conditions is referred to as "cumulative without Project" and "cumulative with Project" conditions consistent with the City's TAM.



This comparison of 2040 conditions without the Project to 2040 conditions with the Project appropriately isolates Project-only VMT (i.e., VMT attributable to the proposed DTPP Plan-Wide Amendments) for evaluation against the City's VMT thresholds. Near-term (i.e., baseline) conditions is not analyzed for this program-level analysis; future individual development projects proposed under the DTPP Plan-Wide Amendments would be required to conduct additional VMT screening and/or analysis to reflect baseline conditions, consistent with guidance provided in the City's TAM.

### Project Effects on VMT Impact Criteria

A visual representation of a project's effects on VMT is provided in **Figure 2**. As outlined in the TAM, a significant project effect on VMT impact would occur if the City's per capita VMT under cumulative conditions (Year 2040) applying the boundary method would increase with the project and compared without the project scenario.

### Pedestrian and Bicycle Facilities

Pursuant to the CEQA Guidelines, the Project would cause a significant impact to bicycle and/or pedestrian facilities if an element of the Project:

- Conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

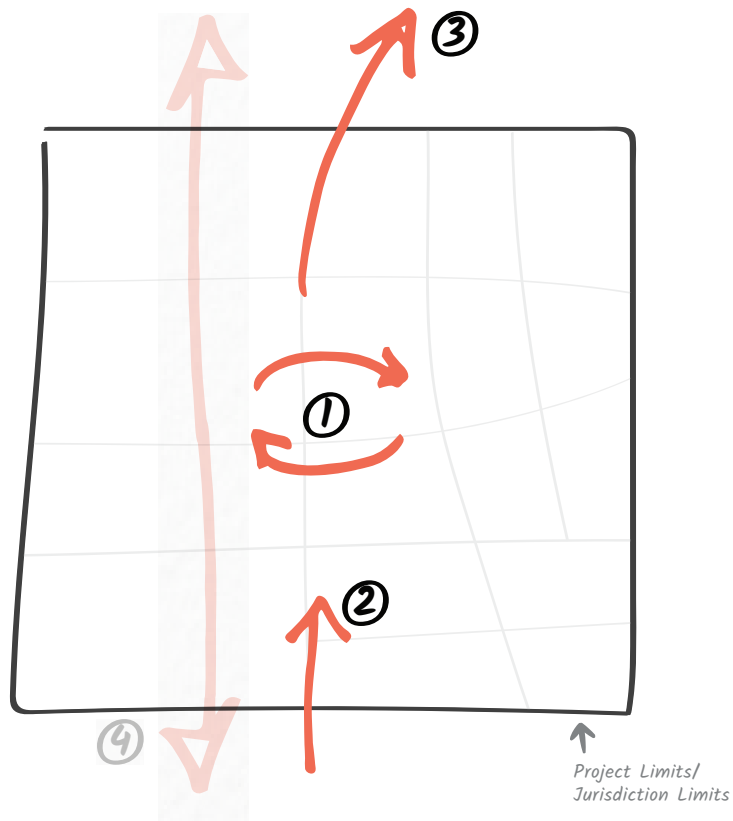
The 2018 *RWCmoves* plan, the 2021 *San Mateo County Comprehensive Bicycle and Pedestrian Plan*, and the 2022 *RWC Walk Bike Thrive* plan describe related policies and programs necessary to ensure pedestrian and bicycle facilities are safe and effective for City residents. Using these plans as a guide, significant impacts to these facilities would occur if the Project, or an element of the Project, meet any of the following criteria:

- Creates a hazardous condition that does not currently exist for pedestrians and bicyclists, or otherwise interferes with pedestrian accessibility to the site and adjoining areas; or
- Conflicts with an existing or planned pedestrian or bicycle facility; or
- Conflicts with policies related to bicycle and pedestrian activity adopted by the City of Redwood City, San Mateo County, or Caltrans for their respective facilities in the Project area.





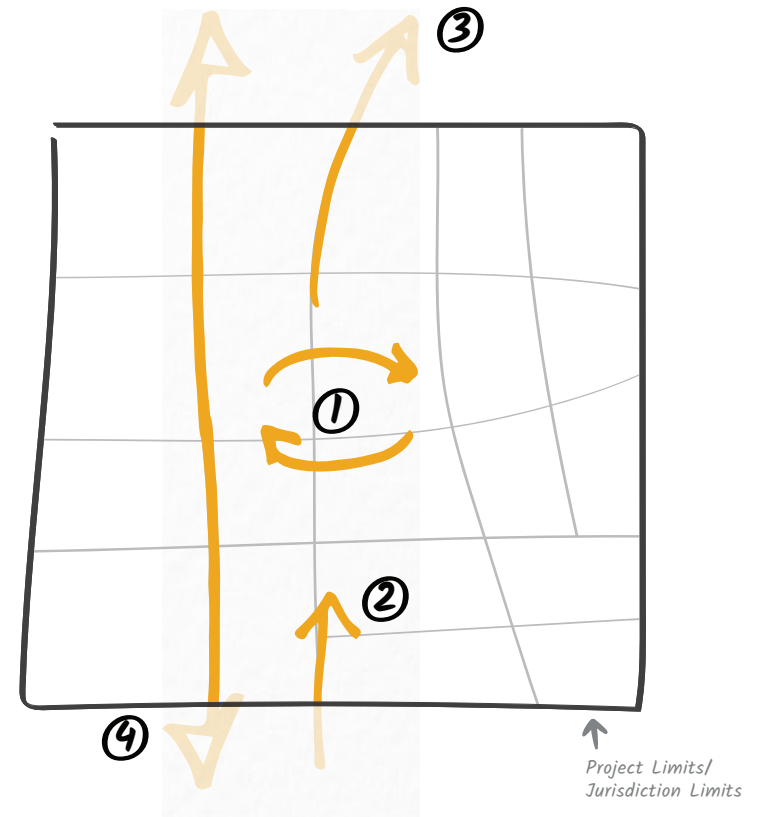
## Project Generated VMT



- ① 2x Internal to Internal (2xII) VMT    ③ Internal to External (IX) VMT  
 ② External to Internal (XI) 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    ③ Internal to External (IX) VMT  
 ② External to Internal (XI) 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 2  
 Measuring Vehicle Miles Traveled (VMT)



## Safety and Hazards

The Project would cause a significant impact related to safety and hazards if the Project would increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. Applicable design standards for this project include the City's *Downtown Precise Plan* (June 2018), *RWCmoves* (July 2018) street typologies, and the *Street Design Criteria* included in the City's 2019 Engineering Standards, all of which include design specifications to ensure safe and efficient travel of vehicles, bicycles, pedestrians, and transit vehicles. Using these plans as a guide, significant impacts related to safety and hazards would occur if the Project, or an element of the Project, conflicts with policies related to street design adopted by Redwood City.

## Emergency Access

An emergency access impact is considered significant if implementation of the Project would provide inadequate access to accommodate emergency vehicles. Specifically, assessment should determine if a project has the potential to impact emergency vehicle access by creating conditions that would substantially affect the ability of drivers to yield the right-of-way to emergency vehicles or preclude the ability of emergency vehicles to access streets within the Project area.



## 3. Existing Conditions

This chapter describes existing transportation conditions including the nearby land uses that affect travel demand and the transportation facilities—the roadway network, transit service, and pedestrian and bicycle facilities—in the vicinity. It also describes existing operations of the study intersections and freeway segments with the level of service calculations results. Future planned facilities that will enhance the existing system are also described.

### Existing Roadway Network

The following roadways provide access to the Project area: El Camino Real (SR 82), Woodside Road (SR 84), Alameda de Las Pulgas, Arguello Street, Bradford Street, Brewster Avenue, Broadway, Convention Way, E. Bayshore Road, Hamilton Street, Hudson Street, Jefferson Avenue, Main Street, Maple Street, Marshall Street, Veterans Boulevard, Walnut Street, and Whipple Avenue. Descriptions of these roadways are presented below. For the sake of simplicity, El Camino Real (SR 82) is considered a north-south roadway.

*El Camino Real (SR 82)* is a four- to six-lane, north-south major arterial and serves as the western boundary for the Project. El Camino Real extends from Santa Clara County through San Mateo County. El Camino Real provides direct access to the Project.

*Woodside Road (SR 84)* is a four-lane, east-west major arterial located toward the southern edge of the City. Woodside Road extends from Redwood City through Woodside. Woodside Road provides regional access to the Project, including access to I-280 and US 101.

*Alameda de Las Pulgas* is a two-lane, north-south connector street between San Carlos and Woodside and is lined with primarily residential uses. Alameda de las Pulgas provides regional access to the Project.

*Arguello Street* is a two-lane, north-south neighborhood connector boulevard that provides access between Whipple Avenue and Broadway and primarily serves commercial and residential uses. Arguello Street partially borders the Project to the east.

*Bradford Street* is a two-lane, east-west connector street that stretches from Arguello Street to Walnut Street, with a break at Winslow Street, and provides access to the Transit Center and is lined with a mix of residential and commercial uses.

*Brewster Avenue* is a two- to four-lane, east-west local road bicycle boulevard that stretches from Main Street to Upland Road. Brewster Avenue provides direct access to the northern end of the Project and is a mix of retail, office, school, and housing land uses.

*Broadway* is a two-lane, east-west transit street between Elwood Street and Fifth Avenue. Broadway serves as one of the primary roadways connecting the downtown area with surrounding roadways in Redwood



City. Broadway provides direct to the Project area. Both sides of Broadway around the railroad tracks are lined with mix of restaurants, office, and retail uses.

*California Street* is a short (i.e., two block) two-lane, north-south local street located between Broadway and James Avenue. California Street provides a connection to the Redwood City Transit Center and is lined with commercial uses and parking lots.

*Convention Way* is a two-lane, north-south neighborhood connector street sandwiched between Veterans Boulevard and Walnut Street. Convention Way provides direct and local access to the Project area and is lined with a mix of housing, offices, and commercial uses.

*East Bayshore Road* is a two-lane, east-west connector street that stretches from Whipple Avenue to the Bair Island Road roundabout. East Bayshore provides access to US 101.

*Hamilton Street* is a two-lane, north-south neighborhood connector street that extends between Winslow Street and Marshall Street and is lined with a mix of restaurants, commercial uses, and offices.

*Hudson Street* is a two-lane north-south connector street that extends from Whipple Avenue to Woodside Road and is lined with primarily residential uses.

*Jefferson Avenue* is a two- to four-lane, east-west connector street that extends from Cañada Road to Veterans Boulevard. Jefferson Avenue serves regional and local trips throughout Redwood City and provides regional access to the Project. East of El Camino Real, Jefferson Avenue has primarily commercial land uses, whereas west of El Camino Real, the street is primarily residential.

*Main Street* is a two-lane, east-west neighborhood connector street that extends between Convention Way and El Camino Real. Main Street serves as one of the primary roadways connecting the downtown area with surrounding roadways in Redwood City. Railroad tracks divide the east and west sides, and the street is lined with a mix of restaurants, housing, office, and some small businesses.

*Maple Street* is a two-lane, east-west neighborhood connector street that provides access between El Camino Real and the industrial and public service uses northeast of US 101 including access to the bay. Maple Street runs east-west through the Project area and is lined with a mix of housing, restaurants, office, and local serving uses.

*Marshall Street* is a two-lane, north-south neighborhood connector street that extends between Arguello Street and Chestnut Street. Marshall Street provides direct access to the Project and is lined with a mix of housing, offices, and commercial uses.

*Veterans Boulevard* is a six-lane, east-west neighborhood connector boulevard that extends between the US 101 southbound off-ramp and Woodside Road (SR 84) and provides regional as well as local access to the Bay Area and the Project area, and is lined with mix of housing, office, and commercial uses.



*Walnut Street* is a two-lane, north-south connector street that extends from Stambaugh Street and ends in a cul-de-sac in the north. Walnut Street provides direct access to the Project from the Transit Center and is lined with a mix of restaurants, offices, and retail.

*Whipple Avenue* a four-lane, east-west connector street that extends from East Bayshore Road to Upland Road. Whipple Avenue connects various parts of Redwood City with US 101 including access to the greater Bay Area, and is lined with a mix of housing, offices, retail, restaurants, and local serving uses.

*Winklebleck Street* is short (i.e., one block) two-lane, east-west local street that extends from El Camino Real to California Street. The street is lined with commercial uses and parking lots.

## Transit Service

This section summarizes local and regional transit connectivity in the Project area, including bus and commuter rail. **Figure 3** illustrates the existing transit facilities and routes in the Project area.

### SamTrans Bus Service

Bus service is provided by the San Mateo County Transit District (SamTrans). Eight SamTrans routes (270, 275, 278, 295, 296, 2960, 397 OWL, 398) and the El Camino Real (ECR) bus route run along El Camino Real and stop at the El Camino Real / Jefferson Avenue intersection and the Redwood City Transit Center at Sequoia Station. Sequoia Station directly serves the Plan-wide Amendment area via connections from Winslow Street-Middlefield Road. This reflects route changes that took effect in August 2022 as part of the phased implementation of the *Reimagine SamTrans* project.<sup>3</sup> El Camino Real, with SamTrans' ECR service, qualifies as a high-quality transit corridor since the frequency of service is 15 minutes or less during the morning and evening peak commute periods. **Table 2** summarizes the transit service near the Project area.

### Commuter Rail Service

*Caltrain* is a commuter heavy rail service that runs from downtown San Francisco (4<sup>th</sup> and King Streets) to downtown San José (Diridon Station), with a limited number of commute period trains running farther south to Gilroy. The Redwood City Transit Center adjacent to Sequoia Station, includes transit services from Caltrain and multiple SamTrans bus and local commuter shuttle routes and is considered a major transit stop.

During commute periods, Caltrain offers express service ("Baby Bullet") between downtown San José and San Francisco, which allows the trip between San Francisco and San José to be made in one hour. This service stops at a limited number of stations, including Redwood City. Caltrain also offers local service, which serves all stations and limited-stop service, which serves more stations than Baby Bullet but not all stations. All trains stop at the Redwood City Transit Center. In 2015, which is the base year of the travel demand model used for the VMT analysis discussed in more detail in **Chapter 4**, the average mid-

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<sup>3</sup> <https://www.samtrans.com/reimagine-samtrans-implementation>



weekday passenger boardings at Redwood City Transit Center was around 3,230 with a system-wide ridership of just over 58,000. In 2019, the most recent pre-COVID information available, the average mid-weekday passenger boardings was around 4,220 with a system-wide ridership of approximately 64,000. The system-wide ridership in 2020 was roughly 51,000, and there was no specific ridership information for Sequoia Station in 2020 during the pandemic. The decrease in system-wide ridership in 2020 is due to COVID-19 and the corresponding stay-at-home orders.

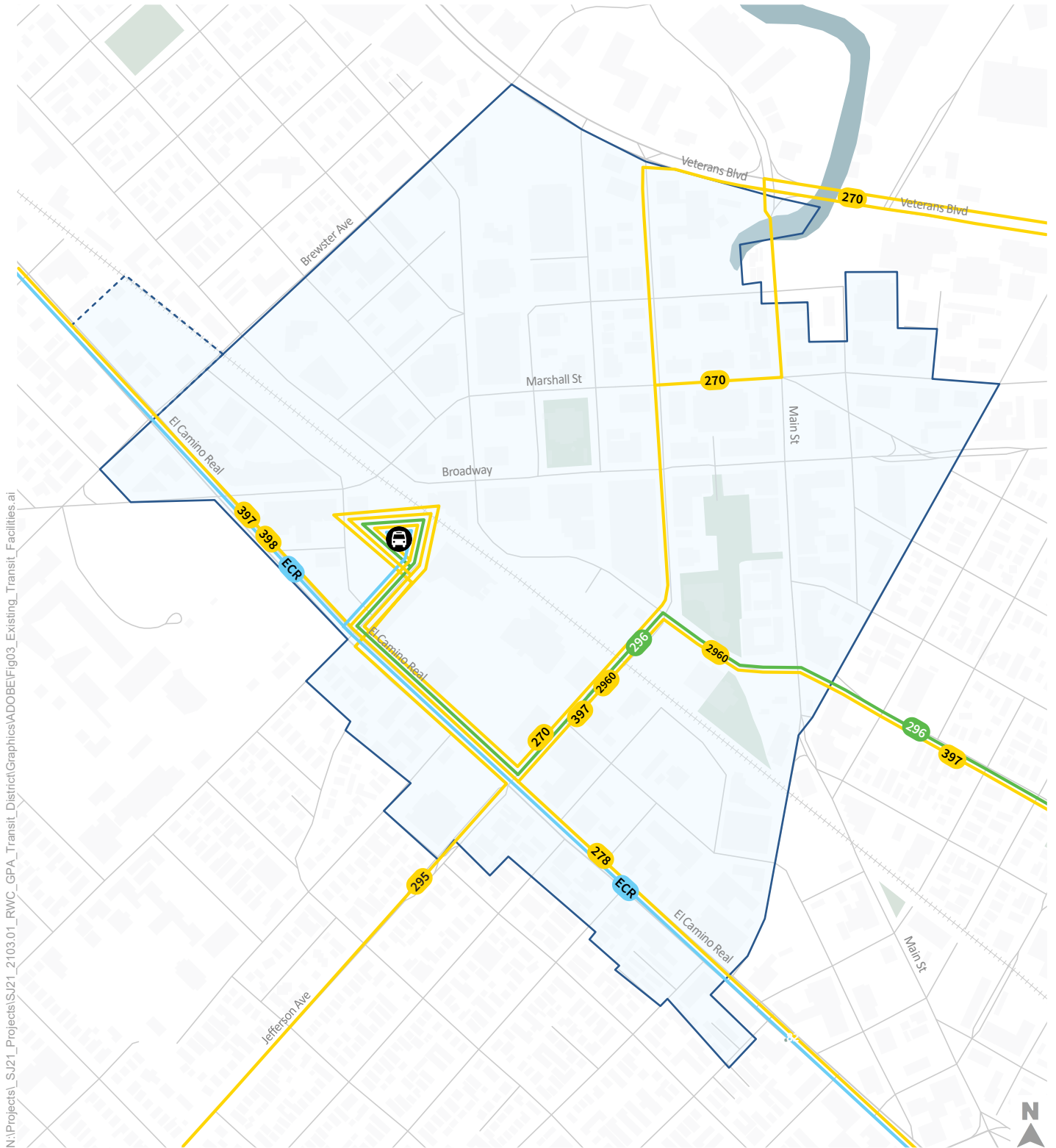


**Table 2: Existing Transit Service**

Route	From	To	Weekday		Weekends	
			Operating Hours	Peak Headway (minutes)	Operating Hours	Peak Headway (minutes)
SamTrans Local Bus Routes						
270	Redwood City Transit Center	Redwood City Transit Center	6:30 am – 7:10 pm	60	7:30 am – 7:10 pm	60
278	Redwood City Transit Center	Cañada College	6:20 am – 8:45 pm	60	7:20 am – 7:15 pm	60
295	San Mateo Caltrain	Redwood City Transit Center	6:20 am – 7:00 pm	60	N/A	
296	Redwood City Transit Center	Palo Alto Transit Center	5:15 am – 10:40 pm	20	7:45 am – 8:00 pm	30
2960	Redwood City Transit Center	Palo Alto Transit Center	10:00 pm – 5:20 am	30	6:45 pm – 8:30 am	60
SamTrans Express Bus Routes						
ECR	Palo Alto Transit Center	Daly City BART	4:05 am – 1:50 am	15	4:45 am – 2:25 am	15
397 OWL	San Francisco	Palo Alto Transit Center	12:45 am – 6:40 am	60	12:45 am – 6:40 am	60
398	San Francisco	Redwood City Transit Center	6:00 am – 9:20 pm	Two in the morning, two in the evening	N/A	
Caltrain						
All routes	Gilroy/San Jose	San Francisco	4:20 am – 1:45 am	10	7:10 am – 1:50 am	60

Source: SamTrans, August 2022.





#### samTrans Service by Frequency

- 15 minutes
- 20 minutes
- 60 minutes
- 120 minutes



Transit Center



Downtown Precise Plan



Proposed Downtown Precise Plan Extension



Figure 3

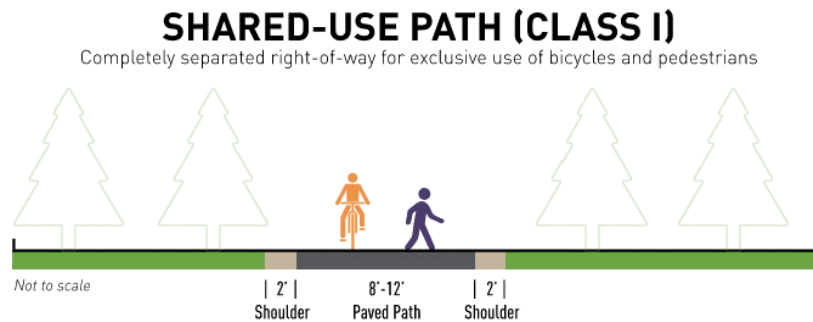
Existing Transit Facilities



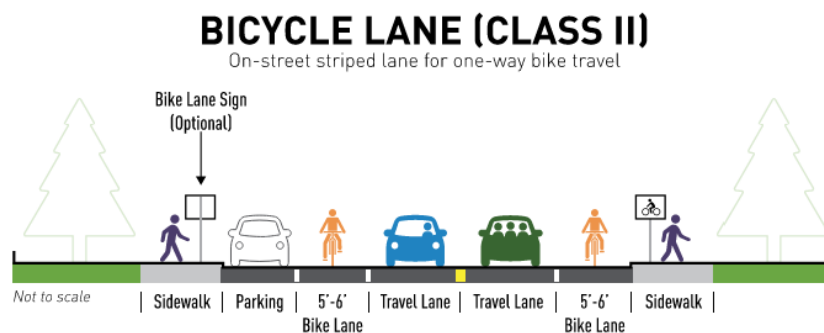
## Existing Bicycle Facilities

Bikeway planning and design in California typically relies upon guidelines and design standards established by California Department of Transportation (Caltrans) in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). The City of Redwood City uses these guidelines to define five general bikeway facility classifications, as outlined below.

- *Class I Paths (Shared-Use Paths)* provide a completely separate right-of-way and are designated only for bicycle and pedestrian use. Shared-use paths serve corridors where there is enough right-of-way, or space, to allow them to be constructed or where on-street facilities are not appropriate due to vehicular volumes, speeds, or other roadway characteristics. There are currently no Class I paths serving the Project area. Shared-Use Paths are proposed along East Bayshore Road and Redwood Creek.



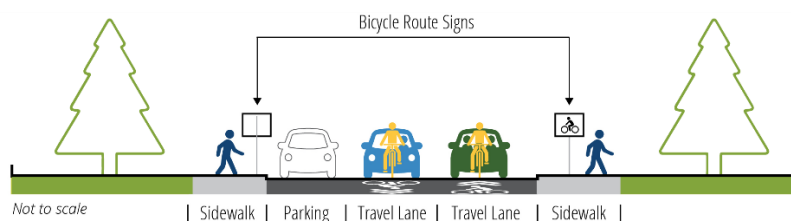
- *Class II Bikeways (Bicycle Lanes)* are dedicated lanes for bicyclists, generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends and signage. Bicycle lanes are typically five to six feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-traffic are permitted. There are segments of Class II bike lanes along Whipple Avenue, Brewster Avenue, Marshall Street, Winslow Street, Arguello Street, Veterans Boulevard, Broadway, Main Street, Alameda de las Pulgas, Hudson, and Maple Street between El Camino Real and the Caltrain railroad tracks. Class II bikeways that will provide additional bicycle access to the Project area as shown in the *Walk Bike Thrive* document are proposed along Arguello Street, Broadway, Chestnut Street, and Whipple Avenue.



- **Class III Bike Routes** are designated by signs or pavement markings for shared use with pedestrians or motor vehicles but have no separated bike right-of-way or lane striping. Bike routes serve either to a) provide a connection to other bicycle facilities where dedicated facilities are infeasible, or b) designate preferred routes through high-demand corridors. There are currently Class III bikeways along Broadway, Brewster Avenue, Jefferson Avenue and Whipple Avenue that provide access to the Project area. Class III bikeways that will provide additional bicycle access to the Project area as shown in *Walk Bike Thrive* are proposed along Arguello Street, Middlefield Road, Walnut Street, Chestnut Street, and Lathrop Street.
- **Class III Bicycle Boulevards** are “quiet” or “slow” streets, with low motor-vehicle volumes and speeds, designed to prioritize bike travel by discouraging through trips by cars. Bike boulevards share space with cars but along with traffic calming improvements that gives priority to bicyclists. Currently, the only bike boulevard in Redwood City is on Vera Avenue. Class III bikeways that will provide additional bicycle access to the Project area as shown in *Walk Bike Thrive* are proposed along Franklin Street and Lathrop Street.

### BIKE ROUTE / BOULEVARD (CLASS III)

Shared on-street facility



- **Class IV Bikeways (Separated Bikeways)** provide a right-of-way designated exclusively for bicycle travel within a street and are protected from other vehicle traffic by physical barriers, including, but not limited to, grade separation, flexible posts, inflexible vertical barriers such as raised curbs, or parked cars. Currently, Class IV bicycle exist on Middlefield Road between Woodside Road and Maple Street and on Maple Street, between Lathrop and the railroad tracks. Future Class IV facilities have been proposed along Brewster Avenue, El Camino Real, James Avenue, Middlefield Road, Main Street, Maple Street and Winslow Street as shown in *Walk Bike Thrive*.

### CYCLE TRACK/SEPARATED BIKEWAY (CLASS IV)

Physically separated bike lane



Bicyclists who commute to the Project area can take the following routes:



- **Maple Street** is an east-west street designated as a Class III bicycle route between Main Street and the Caltrain railroad tracks that transitions into Class II bicycle lanes west of the Caltrain railroad tracks and ends at El Camino Real. A two-way Class IV separated bicycle facility is on the south side of Maple Street, between Lathrop and the railroad tracks. These facilities provide access to downtown Redwood City.
- **Jefferson Avenue** is designated as a Class III bicycle route west of El Camino Real and provides east-west access to and through the Project area.
- **Brewster Avenue** has Class II bike lanes east of Fulton Street and provides east-west access to and through the Project area.
- **Whipple Avenue** has a mixture of Class II and III bike facilities and provides access to the Project from the north via El Camino Real and Veterans Boulevard.
- **Broadway** (Class II bicycle lanes and III bicycle routes) provides access through the Project area between Woodside Road and El Camino Real.
- **Arguello Street** has Class II bike lanes and provides access to the Project from the north.
- **Winslow Street** has Class II bike lanes which provide access to the Project from the north/east.
- **Main Street** has Class II bike lanes east of Veterans Boulevard and provides east-west access through the Project area.
- **Marshall Street** has Class II bike lanes from Main Street to Broadway and provides access through the Project area.
- **Veterans Boulevard** (Class II bike lanes) provides access to the Project from the north.

**Figure 4** illustrates the existing bicycle facilities near the Project area.

## Existing Pedestrian Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. The Project area has pedestrian signals and sidewalks provided on both sides of El Camino Real, Jefferson Avenue, Arguello Street, Whipple Avenue, Brewster Avenue, Veterans Boulevard, Broadway, Main Street, Marshall Street, Hamilton Street, Walnut Street, Alameda de las Pulgas, Hudson Street and Maple Street. The following locations are missing pedestrian facilities:

- No sidewalk on the north side of Whipple Avenue, between Veterans Boulevard and E. Bayshore Road
- No crosswalk on east leg of Arguello Street and Broadway intersection
- No crosswalk on north leg of Whipple Street and El Camino Real intersection
- No crosswalk on east leg of Veterans Boulevard and Whipple Street intersection



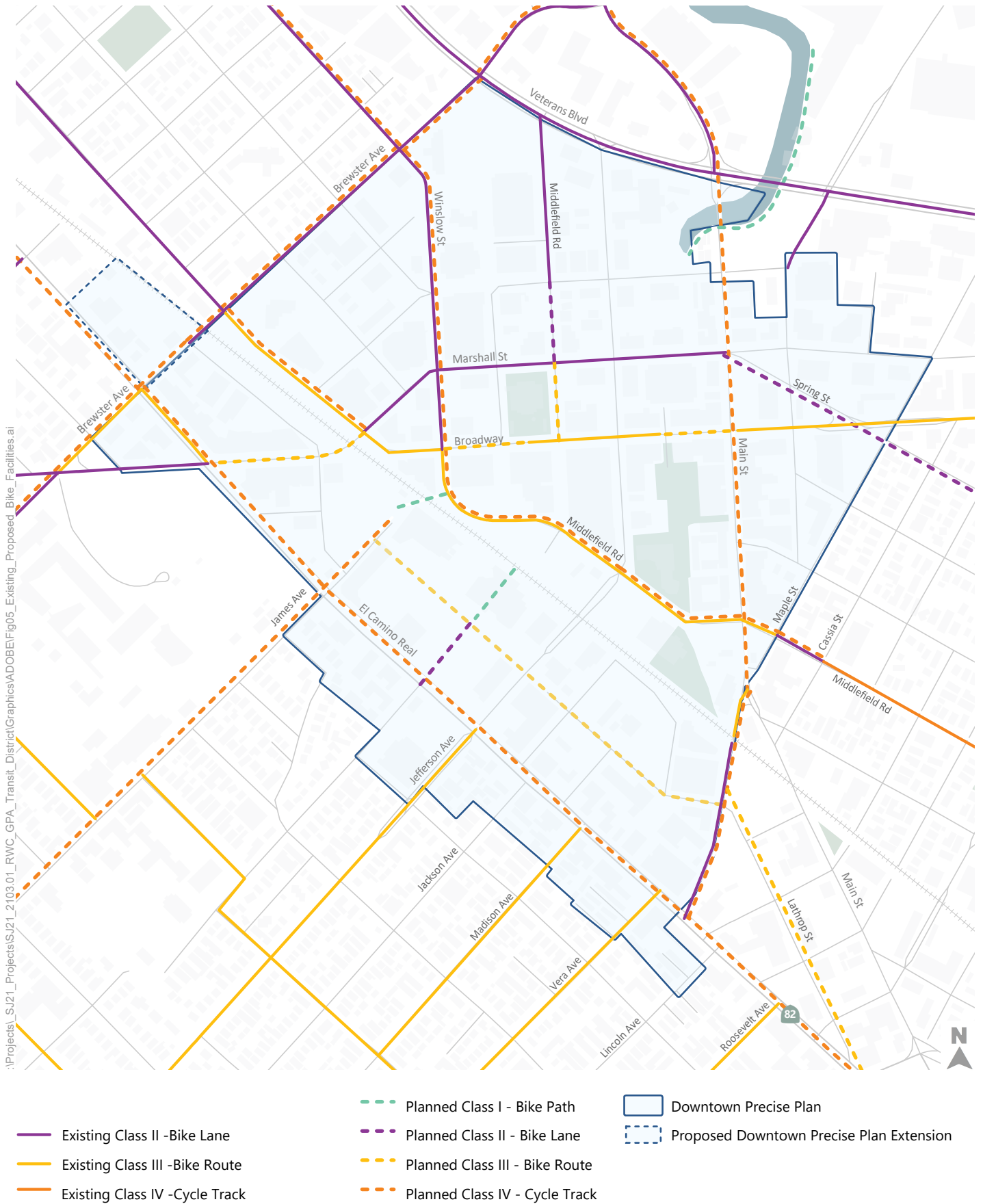


Figure 4  
Existing and Proposed Bike Facilities

## 4. CEQA VMT Analysis

This chapter provides a description of the process used to estimate the Existing, Cumulative No Project, and Cumulative with Project VMT results of the VMT analysis, including VMT modeling assumptions, and the Project's consistency with *Redwood City General Plan*. VMT estimates are prepared using the C/CAG-VTA model for the year 2015 and 2040, which are the most current versions of the model available.

### VMT Screening

In the first step of the VMT evaluation, the Project components are evaluated against the City's screening criteria. Land use projects that meet the City's screening criteria summarized in **Chapter 2** are presumed to be less-than-significant and do not require CEQA transportation analysis. While some land uses in the Project would meet screening criteria (given the proximity to Transit Priority Areas, affordable housing, and locally serving public facilities), the Project exceeds 500,000 square feet it is not eligible for VMT screening and a full VMT analysis was conducted using the VTA-C/CAG model.

### Model Assumptions

The C/CAG-VMT model was used to calculate VMT. Specifically, Transportation Analysis Zones (TAZ) <sup>4</sup> number 2015, which approximates the boundaries of the amended DTPP area, was modified to represent the Plan-wide Amendments in the model.<sup>5</sup> C/CAG provided the most recent copies of the Year 2015 and Year 2040 models for use in this analysis. The Year 2015 and 2040 models were last updated in 2020 with adjustments made to include centroid connectors, and travel outside of the model area and are the best and most recent tool currently available.<sup>6</sup> The Year 2015 model was used to develop existing VMT estimates, and the Year 2040 model was used for VMT impact assessment. The C/CAG model does not account for the City's recently adopted TDM ordinance, which was adopted on December 20, 2021, and has specific mode share requirements for development in Redwood City. Thus, model outputs were adjusted off-model to account for the TDM requirements, which are discussed in more detail in the following sections. Traffic growth estimates were developed using the C/CAG model for the CEQA air and noise analyses but are not directly referenced in this report.

### Year 2015 Model Adjustments

For the purpose of this VMT analysis, the year 2015 model land uses were updated for the entire DTPP area to reflect current (year 2021) development conditions. All other land uses were assumed to be

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<sup>4</sup> A TAZ is a geographic area used in travel demand forecasting models. TAZ boundaries are usually major roadways and/or jurisdictional borders that generally have homogenous land use characteristics.

<sup>5</sup> The C/CAG-VTA model base year 2015 coincidentally is the same as the TAZ number for this project; there is no significance or correlation between the two.

<sup>6</sup> The updates in 2020 did not include any updates to the volume assumptions and the Year 2015 model is reflective of the year 2015 conditions (i.e., pre-COVID-19).



consistent with the current C/CAG-VTA model assumptions. As noted, the 2015 model is the best and most recent tool currently available.

### **Year 2040 Model Adjustments**

The Year 2040 No Project model was updated to include reasonably foreseeable projects, including the City-proposed Transit District Amendments project and recent Regional Housing Needs Assessment (RHNA) allocation. The RHNA allocation included an additional 1,700 housing units throughout the City and were provided by City staff. The RHNA housing allocation included assumptions as of December 2021 and were draft assumptions for the purpose of this analysis, since the City had not completed final allocation process at the time of this study. The 2040 model was not adjusted outside of Redwood City for the most recent proposed rezoning and associated increased residential development as part of the eight-year RHNA allocations. These rezonings are still under consideration and have not been finalized and any assumptions about their outcomes are still too speculative to rely on for this analysis.

### *Grade Separations and VMT*

The City, in partnership with Caltrain, SamTrans, and the San Mateo County Transportation Authority, is studying the feasibility of separating all existing at-grade crossings in Redwood City. The six at-grade crossings are located at Whipple Avenue, Brewster Avenue, Broadway, Maple Street, Main Street, and Chestnut Street. The goal of the grade separation study is to evaluate alternatives to address the current challenges of Caltrain at-grade crossings and to separate the railroad from the roadway. The City has not selected a preferred alternative; though currently it is considering two main options: a) grade-separate all with Maple Street having bicycle and pedestrian access only and Chestnut Street have either full access or bicycle and pedestrian access only, and b) grade separate the northern crossings and leave southern crossings at grade.

The cumulative year 2040 conservatively assumes current conditions, i.e., at-grade crossings at the six locations within Redwood City. The primary components in VMT calculations are the number of trips multiplied by the trip distance. It is not anticipated that the VMT for the Plan-wide Amendments would change substantially between a scenario where the crossings are at-grade or fully grade separated, since the access routes and associated trip lengths to the Plan-wide Amendments would not change; it is the potential delay at the crossings that would change.

In the scenario where one or two of the southern grade crossings are closed to vehicle access, any changes to grade crossing access at the southern end of the City is not likely to result in any substantial changes to the Plan-wide Amendments VMT per employee or VMT per resident, since the downtown and surrounding areas have a grid network that allow for multiple access routes of similar trip lengths. The City is not considering closing all three southern grade crossings to vehicular traffic. For example, for a trip starting at the Vera Avenue/Hudson Road intersection that normally travels east on Vera Avenue to El Camino Real to access the Maple Street grade crossing to travel to the Maple Street/Broadway intersection, the trip length is one mile. If crossings were closed for vehicles access at Maple Street, one could use the Jefferson Avenue undercrossing or use Beech Street to access the Main Street crossing to



access the Maple Street/Broadway intersection. The trip length for either of these two access routes is just over a mile and while longer, is not substantially longer. Thus, the City's grid network allows for reasonable alternate routes that have very similar trip lengths and are not likely to change the VMT impact conclusions of the Project. As the City's grade separation project moves forward, that project would need to go through its own environmental review process, including VMT evaluation.

## Trip Generation

Trip generation refers to the amount of travel activity associated with a change in land use at a given location. The C/CAG-VTA model was used to estimate daily vehicle trips for the purposes of this Transportation Analysis. This represents a conservative approach, since the C/CAG-VTA model uses industry standard/generic trip generation characteristics for the different land uses to estimate vehicle trips. Trip generation studies conducted as part of *RWCmoves* show that Redwood City's rates are typically lower than standard industry rates. The intersection analysis conducted as part of the standalone LTA, updates the trip generation estimates prepared in this document to use the Redwood City specific rates from *RWCmoves*. Furthermore, the modeling conducted for this analysis represents all potential office development as having the same trip generation characteristics. As stated in Chapter 3, *Project Description*, R&D Laboratory space could be permitted as a conditional use with implementation of the DTPP Plan-Wide Amendments; however, the C/CAG-VTA model does not have a specific land use input to represent R&D Laboratory space. From a trip generation perspective, this represents a conservative approach because R&D Laboratory space would typically have fewer employees per square foot as compared to a general office use, since R&D space also need to accommodate equipment and materials storage needs.

The Project's land uses were allocated to TAZ 2015. The City model adjusts the trip generation to account for internalization, or the trips among uses within the Project that are not expected to leave the Project area. Therefore, the trip generation is reported for the entire Project and is not broken down by specific land use.

**Table 3** shows the total number of average weekday daily vehicle trips. Based on the model structure the trip generation is reported for the entire Project and is not broken down by specific land use.

**Table 3: Plan-wide Amendments Project Vehicle Trips**

	Cumulative No Project	Cumulative + Project	Net New Project Trips
Daily	46,700	60,000	13,300

Notes:

Trip generation estimates are rounded to nearest 100.

Source: C/CAG-VTA Model; Fehr & Peers, 2022.





As shown in **Table 3**, the Project would generate approximately net new 13,300 total daily vehicle trips at full buildout.<sup>7</sup>

## Project Generated VMT: Residential and Office

The Project generated VMT estimate for all residential vehicle trips due to the Project with an origin or destination within the Project area were divided by the number of residents in TAZ 2015 to obtain VMT per capita. Similarly, the VMT estimate for all Project-related office-generated vehicle trips with an origin or destination within the Project area were divided by the number of employees in TAZ 2015 to obtain VMT per employee. The initial C/CAG-VTA model VMT estimates are summarized in **Table 4**.

**Table 4: Plan-wide Amendments Residential and Office Initial Unadjusted VMT Results**

Scenario	VMT
<b>Residential Project Components</b>	
Existing	9.7
Cumulative No Project	8.5
Cumulative Plus Project	8.2
<b>Office (General Employment) Project Component</b>	
Existing	17.0
Cumulative No Project	17.3
Cumulative Plus Project	15.8

Source: C/CAG Travel Model; Fehr & Peers, 2022.

The VMT results from the C/CAG-VTA model from **Table 4** were adjusted to account for the effects of the City's mandatory Transportation Demand Management (TDM) Ordinance that is discussed in more detail below. The VMT results with the TDM Ordinance were compared to the City's respective VMT threshold for residential and office projects to determine the Plan-wide Amendments' potential VMT impacts.

<sup>7</sup> For comparison purposes, trip generation rates from the industry standard Institute of Transportation Engineers (ITE) Trip Generation Manual were applied to the Plan-wide Amendments' land use types and quantities. Using ITE's average daily rates of 10.84 trips per thousand square feet of office development and 4.72 trips per housing unit, the Plan-wide Amendments would generate approximately 16,568 daily vehicle trips (12,650 for office, 4,918 for residential). In comparison to the C/CAG-VTA modeled average daily vehicle trips shown above in **Table 3**, the estimated trip generation using ITE's rates is about 19 percent higher. The raw ITE estimates are higher because the ITE trip generation estimates, unlike the C/CAG-VTA trip generation estimates, are unadjusted and do not take into account vehicle trip efficiencies that are a function of the presence/proximity of complementary land uses and the mode shift to non-vehicle travel modes (i.e., walking, bicycling, transit) that occurs in a dense downtown area in proximity to transit.





## Redwood City Transportation Demand Management (TDM) Ordinance

In December 2021, the City of Redwood City adopted a TDM Ordinance. The TDM ordinance requires all new development in the City that meet specified development thresholds (generally 25 or more units and/or 10,000 s.f. or more commercial development, including offices development) to develop a TDM plan and requires annual monitoring of specific mode share targets. Applicable mode share targets for both residential and commercial sites in the Downtown Area are no more than 33 percent of trips being drive-alone trips (i.e., single-occupancy vehicle or “SOV trips”). The TDM Ordinance provides financial incentives to meet specified targets. This ordinance applies to all new development, even if individual projects qualified for VMT screening or do not have a VMT impact based on City thresholds.

In addition, many of the proposed Plan-wide Amendments reflect elements that would reduce single-occupancy vehicle trips and compliment the City’s TDM Ordinance goals to reduce single-occupancy vehicle trips. Specifically, the Plan-wide Amendments concentrate jobs and housing within walking distance of several major transit stops, would lower parking ratios, incentivize shared parking, increase bicycle parking, and improve multimodal access within the DTPP by implementing new and/or enhanced bicycle, pedestrian, and transit facilities. These elements would support the City’s goal to increase multimodal access and reduce single-occupancy vehicle trips.

## Project Generated VMT Impact Assessment

As noted earlier, the C/CAG-VTA travel model does not fully account for the City’s TDM Ordinance. The C/CAG-VTA model estimates an SOV rate of 48% for the Plan-wide Amendments, which is 15 percentage points greater than the 33% required per the TDM Ordinance. Since the Ordinance is mandatory for all new development, the VMT results from the C/CAG-VTA model were adjusted using California Air Pollution Control Officers Association (CAPCOA) December 2021 *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (“CAPCOA report”) to account for the required TDM Ordinance.

### Off-Model VMT Reductions

The CAPCOA report provides guidance to quantify TDM reductions for VMT analysis. The CAPCOA report advises that users should use caution when selecting transportation measures to avoid double counting VMT benefits that may already be accounted for in the model used to produce the baseline VMT estimate. For the purposes of the Plan-wide Amendments, this means that the C/CAG-VTA model generally already accounts for VMT reducing strategies related to the built environment (i.e., density and mix of land uses) and transit service availability.

The CAPCOA report includes quantification methods for 14 trip reduction program and parking management strategies, which are summarized in **Table 5**. The City’s TDM Ordinance includes a list of recommended TDM measures that could be implemented to reach the required mode share goals. The list includes about 20 TDM measures ranging from on-site information centers to on-site showers, shared parking, signage, and telecommuting/flexible working hours. Comparable TDM measures from the City’s TDM Ordinance are also included in **Table 5**.



Based on the CAPCOA report, trips could be reduced by up to 26 percent with implementation of mandatory TDM programs that include monitoring requirements (CAPCOA Measure T-6: *Implementation of Commute Trip Reduction Program (Mandatory Implementation and Monitoring)*). Individual measures within T-6, such as providing end-of-trip bicycle facilities and implementing marketing strategies to promote commute reduction programs, would reduce trips by up to approximately four percent each. More cost intensive individual TDM measures such as employee parking cash-out or providing employer-sponsored vanpool could reduce VMT by up to 12 and 20 percent, respectively. For residential projects, CAPCOA also includes reductions for affordable housing (Measure T-4) and limiting parking supply (Measure T-15), which could reduce VMT by up to approximately 29 and 13 percent, respectively. Thus, there is great variability in TDM effectiveness depending which measures are implemented and how complementary they are to each other.

**Table 5: TDM Reduction Measures**

TDM Related CAPCOA VMT Reduction Measures		Comparable TDM Measures from City's TDM Ordinance <sup>2</sup>
TDM Strategy	Maximum Potential Reduction <sup>1</sup>	
T-6: Implementation of Commute Trip Reduction Program, which includes mandatory monitoring of following individual elements: <sup>3</sup>	26.0%	Individual TDM measures listed below.
<i>T-7: Implement Commute Trip Reduction Marketing</i>	4.0%	A: On-site information and brochures about transit, bicycling, Carpool, Rideshare, and shuttle programs, in a kiosk, board or similar installation. M: Information about alternative transportation for new employees or new tenants N: Website TDM information page on residential website portals or an internal website for employees
<i>T-8: Provide Ridesharing Program</i>	8.0%	This TDM measure is not specifically listed in the Ordinance
<i>T-9: Implement Subsidized or Discounted Transit Program Cumulative Plus Project</i>	5.5%	B: Employee pre-tax deduction for transit passes G: Free or discounted transit passes
<i>T-10: Provide End-of-Trip Bicycle Facilities</i>	4.4%	C: Bike racks or indoor bike parking E: Shower for people who commute to work by bicycle
<i>T-11: Provide Employer-Sponsored Vanpool</i>	20.4%	K: Shuttle service or participation in an area-wide shuttle service. Shuttle service shall be open to the public
T-12: Price Workplace Parking	20.0%	This TDM measure is not specifically listed in the Ordinance
T-13: Implement Employee Parking Cash-Out	12.0%	This TDM measure is not specifically listed in the Ordinance
T-23: Provide Community-Based Travel Planning	2.3%	This TDM measure is not specifically listed in the Ordinance



TDM Related CAPCOA VMT Reduction Measures		Comparable TDM Measures from City's TDM Ordinance <sup>2</sup>
TDM Strategy	Maximum Potential Reduction <sup>1</sup>	
T-14: Provide Electric Vehicle Charging Infrastructure	11.9%	This TDM measure is not specifically listed in the Ordinance
T-15: Limit Residential Parking Supply	13.7%	T: Unbundled parking for residential buildings
T-16: Unbundle Residential Parking Costs from Property Cost	15.7%	This TDM measure is not specifically listed in the Ordinance
T-24: Implement Market Price Public Parking (On-Street)	30.0%	This TDM measure is not specifically listed in the Ordinance

Notes:

1. Each of the CAPCOA TDM strategies can be combined with others to increase the effectiveness of vehicle trip and VMT mitigation; however, the interaction between the various strategies is complex. Generally, with each additional measure implemented, a vehicle trip and VMT reduction is achieved, but the incremental benefit of vehicle trip and VMT reduction may be less than the benefit that measure would have if it was considered on its own. For example, CAPCOA TDM measures T-7 through T-11 have a range of effectiveness of 4.0 percent to 20.4 percent each when they are considered on their own as shown above. However, if these five measures are combined and include mandatory monitoring, the reduction is only 26.0 percent and not the 42.3 percent expected by adding the five measures together. Thus, the list provides the maximum reductions expected and the effect of TDM measures should not be considered to be purely additive.

2. Identified are the TDM strategies specifically listed in the City's TDM Ordinance, though per the Ordinance, other equally effective measures as approved by the Director can also be included for projects in Redwood City.

Source: California Air Pollution Control Officers Association (CAPCOA), 2021; Transportation Demand Management, Chapter 48 of City Ordinance; Fehr & Peers, 2022.

While the TDM Ordinance is mandatory, each tenant will implement its own mix of TDM measures. For the purpose of this analysis, we included TDM reductions from those measures that are most commonly implemented and did not include TDM measures, such as proving shuttle programs, that have greater time and money investment requirements. Specifically, to account for the City's TDM Ordinance, we included TDM reductions for TDM measures similar to T-7 through T-10, which on average have a modest six percent reduction. With the six percent reduction, the SOV rate for the Plan-wide Amendments would be approximately 45%.<sup>8</sup> Since the Plan-wide Amendments would need to include additional TDM Measures beyond those analyzed for this report to meet the TDM Ordinance target of 33% SOV, the VMT analysis represents a conservative analysis and does not capture the full TDM commitments required under the City's TDM Ordinance.

### Project Generated VMT Results

The Project generated VMT results for the residential and office components of the Project are summarized in **Table 6**. The Plan-wide Amendments would meet the VMT threshold and would have a

<sup>8</sup> The six percent TDM reduction is applied to the vehicle trip generation of the project. The vehicle trips minus TDM reduction are used to re-calculate the SOV rate. Thus, a six percent TDM reduction does not represent a six-percentage point reduction from the original SOV rate of 48% but rather results in an SOV rate of 45%.



**less-than-significant project generated VMT impact** for both the residential and office components of the Project.

**Table 6: Plan-wide Amendments Residential and Office VMT Impact Results**

Scenario	VMT	VMT Threshold	Exceed VMT Threshold?
<b>Residential Project Components</b>			
Cumulative Plus Project including TDM Ordinance <sup>1</sup>	7.8	10.5 VMT per capita	No
<b>Office (General Employment) Project Component</b>			
Cumulative Plus Project including TDM Ordinance <sup>1</sup>	14.9	15.0 VMT per employee	No

Notes:

1. The VMT analysis accounts for an SOV rate of 45%. The Plan-wide Amendments would need to include additional TDM Measures beyond those analyzed for this report to meet the TDM Ordinance target of 33% SOV, therefore, the VMT analysis represents a conservative analysis and does not capture the full TDM commitments required under the City's TDM Ordinance.  
Source: C/CAG Travel Model; California Air Pollution Control Officers Association (CAPCOA), 2021; Fehr & Peers, 2022.

While this analysis evaluates nearly 1.2 million s.f. of office uses and over 800 housing units<sup>9</sup>, the VMT per resident/employee decreases due to the increase in infill development and proximity to and improved connectivity with the Transit Center, which will encourage shorter trip lengths and more trips via transit. For example, an office project that has 150 employees and is in a location without good transit service is likely going to have most employees drive; thus, each employee has two trips (one trip to the office and one trip back home). If the average employee commute trip length is 10 miles roundtrip, then this hypothetical project would generate 1,500 total VMT (150 driving employees x 10-mile roundtrip = 1,500 miles) or 10.0 VMT per employee (1,500 miles divided by 150 total employees). If this same company is located near good transit and we assume for this hypothetical example 1/3 would choose to use transit, then only 100 employees would drive. In this scenario, the hypothetical project would generate 1,000 total VMT (100 driving employees x 10-mile roundtrip = 1,000 miles) or 6.7 VMT per employee (1,000 miles divided by 150 total employees). Please note that this is a hypothetical example for discussion purposes only to demonstrate how access to transit can affect VMT.

#### *Future Development Projects*

As noted previously, future development projects proposed under the proposed DTPP Plan-Wide Amendments would be required to conduct baseline VMT screening/analysis consistent with guidance provided in the City's TAM to determine if additional VMT analysis and/or a VMT-reducing TDM plan is required.

<sup>9</sup> The development assumptions in this TA are based a previous project description and include slightly higher office square footage and residential units than is currently proposed. The current project anticipates 817,000 square feet of office space, 350,000 square feet of R&D and lab use, and 830 multi-family units.



The TAM specifies that projects that are consistent the General Plan and any applicable Specific Plans would be able to apply specified VMT screening criteria. Since cumulative VMT analysis for the DTPP Plan-Wide Amendments has already been conducted for this Project, future development projects that are consistent with the DTPP Plan-Wide Amendments can apply the City's screening criteria from the TAM for their baseline VMT analysis, as follows:

- Transit Priority Areas (TPA): This criterion only applies to projects located within a one-half-mile walkshed around major transit stops (i.e., the Redwood City Transit Center) or within a one-quarter-mile walkshed around high-quality transit corridors (i.e., El Camino Real) in Redwood City. TPA screening will only apply if the project meets the following additional criteria:
  - Floor Area Ratio (FAR) of 0.75 or more; and
  - Total square footage of 500,000 square feet or less; and
  - Proposed parking does not exceed minimum required by the Zoning Code or applicable plan; and
  - Project is consistent with Sustainable Communities Strategy (as determined by the lead agency, with input from MTC); and
  - Existing on-site affordable residential units are maintained or increased; and
- Less than significant levels of VMT are anticipated through project-specific or location-specific information (i.e., based on the City's discretion a project is not anticipated to have characteristics that would result in VMT that is substantially different from similar and/or surrounding uses).
- Affordable Housing: This criterion applies to 100-percent restricted affordable residential projects in infill locations (i.e., developments within unused and underutilized lands within existing development patterns) and near transit (i.e., located within one-half-mile of a transit stop).
- Small Projects: This criterion applies to projects defined as generating 150 or fewer average daily vehicle trips, absent substantial evidence indicating that a project would generate a potentially significant level of VMT. Each project is required to document the trip generation methodology and number of trips it would generate.

Future development projects that meet at least one of the screening criteria identified above would require no further VMT analysis. Future development projects that do not meet at least one of the screening criteria identified above would be required to conduct a VMT analysis using the C/CAG-VTA Model or the C/CAG VMT Estimation Tool to determine if VMT generated by the project is below the City's applicable threshold. Projects that are below the threshold would require no further VMT analysis or mitigation. Projects that exceed the City's VMT threshold would be required to develop a TDM plan consistent with City's TDM Ordinance (Chapter 48 of the Redwood City Municipal Code) and demonstrate that the proposed TDM plan reduces the project's VMT below the City's threshold. The City's current TDM Ordinance focuses on achieving mode share goals and not VMT targets. To demonstrate the effectiveness of a project's TDM plan to reduce VMT, the TDM plan for projects that do not meet the screening criteria and exceed the City's VMT threshold shall quantify the VMT effectiveness of the TDM plan by including data and reduction calculations from the latest CAPCOA guidance. Quantifying the CAPCOA reductions



could be achieved through manual application of the CAPCOA guidance or the C/CAG VMT Estimation Tool once the Tool has been updated to reflect the most current version of the CAPCOA guidance (the current VMT reductions in the C/CAG VMT Estimation Tool are based on outdated 2010 CAPCOA guidance).

## Roadway Network Changes

The Project includes several roadway network changes, summarized below and described in more detail in **Chapter 1** and illustrated on **Figure 1**.

The following roadways would be vacated/closed:

- One-block segment of Hamilton Street between Broadway and Marshall Street
- One-block segment of Broadway between Jefferson Avenue and Main Street
- One-block segment of Spring Street between Main and Walnut Streets
- One-block segment of Winklebleck Street between California Street and James Avenue

In addition, the following streets would be modified:

- California Street between Winklebleck Street and James Avenue would be abandoned
- Franklin Street between Winklebleck Street and James Avenue would be extended

The proposed roadway network changes are short (less than 330 feet) and would not result in any noticeable change in VMT, since the area generally provides a small grid network that allows for efficient circulation within the Project area. Parallel facilities are available throughout the Plan-wide Amendments area.

Since the proposed Project area generally has a small grid network, there are easily accessible alternate routes for vehicle travel, and on balance the network changes are small and will not substantially increase VMT in the area, the Project is considered to have a **less-than-significant roadway network change impact**.

## Project Effects on VMT

The Project effect on VMT is analyzed using the “boundary method.” The boundary method evaluates VMT that occurs within a selected geographic boundary (e.g., city, county, or region). The selected regional boundary for this analysis includes the City of Redwood City. This captures all on-road vehicle travel on a roadway network for any purpose and includes local trips as well as trips that pass through the area without stopping.

An example of how a project can affect VMT is the addition of housing in a job-rich downtown. Workers in the downtown that has limited housing options must travel a greater distance between their home and work. Adding the housing in downtown will shorten many of the home-to-work trips and reduce the VMT



to/from the downtown. While the new housing itself will “generate” more daily trips, in that there will be more cars coming in and out of the housing develop, it will generally attract those trips *away* from other residential developments located farther away. If the boundary VMT in the area served by the new residential development were to be assessed, it is likely that the total amount of driving in that area will have decreased rather than increased.

**Table 7** below presents the total City VMT under cumulative conditions in 2040 and the calculated citywide VMT per capita, based on the total VMT in Redwood City divided by the total service population (residents and employees).

**Table 7: Boundary Method Citywide Cumulative VMT Estimates**

Scenario	Cumulative No Project	Cumulative With Project	Exceed VMT Threshold?
Vehicle Miles Traveled	2,044,200	2,059,300	n/a
Service Population	198,700	204,800	n/a
VMT per Capita	10.3	10.1	No

Notes:

1. Per capita is defined by dividing total VMT by the sum of all employees, residents, and students.

Source: C/CAG-VTA Travel Model; Fehr & Peers, 2022.

As shown in **Table 7**, the citywide VMT per capita under 2040 cumulative conditions without the Plan-wide Amendments would be 10.3 VMT per capita. Under 2040 cumulative conditions with Plan-wide Amendments the citywide boundary VMT per capita is estimated to be 10.1 miles, which would be less than the citywide VMT per capita without the Plan-wide Amendments. Accordingly, the Plan-wide Amendments’ effect on VMT applying the boundary would be a **less-than-significant impact**.



## 5. Additional CEQA Transportation Impact Analysis

This chapter presents the transportation impacts related to the other significance criteria not covered in **Chapter 4**. (CEQA VMT Analysis). Specifically, a project could have a significant transportation impact on the environment if it meets any of the following criteria:

1. Conflicts with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths
2. Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
3. Results in inadequate emergency access

### Plan Conflicts Evaluation

This section discusses the Project's conformance with the City's General Plan, as well as relevant pedestrian, bikeway, traffic calming, or regional transit plans.

#### City of Redwood City Policies

##### *Redwood City General Plan*

According to the City's TAM, projects must demonstrate consistency with the *Redwood City General Plan* to address cumulative impacts. Relative to transportation, the determination of consistency conformance to the goals and policies set forth in the General Plan. The transportation goals in the General Plan aim to maintain a multimodal transportation system that encourages active transportation, transit use, and appropriate curb management/parking implementation. Policies relevant to the specific context of this Project are listed in **Table 8**.

The proposed Project is consistent with the General Plan goals making circulation improvements to promote quality vehicular, bicycle, and pedestrian connections. Specifically, the Plan-wide Amendments proposes to lower parking ratios, incentivize shared parking, increase bicycle parking, and improved multimodal access within the DTPP by implementing new and/or enhanced bicycle, pedestrian, and transit facilities. These elements would support the City's goal to increase multimodal access and are consistent with the City's General Plan goals discussed in more detail below in **Table 8**.





**Table 8: Redwood City's 2010-2030 General Plan Transportation Goals**

Transportation Goals		Project Consistency Examples
Goal BE-25	Maintain a local transportation system that balances the needs of bicyclists, pedestrians, and public transit with those of private cars.	The Project's objectives include making circulation improvements to ensure adequate vehicular, bicycle and pedestrian connections.
Goal BE-26	Improve walking, bicycling, and electric bicycle/scooter facilities to be more convenient, comfortable, and safe, and therefore more common transportation modes in Redwood City.	The proposed improvements, such as requiring protected bike lanes, would be in accordance with the Redwood City's <i>Walk Bike Thrive</i> Plan and would enhance safety and convenience for active transportation within DTPP area.
Goal BE-27	Create conditions to improve utilization of existing public transportation services to increase ridership.	The Project would require potential improvements to bus loading along El Camino Real.
Goal BE-28	Provide maximum opportunities for upgrading passenger rail service for faster and more frequent trains, while making this improved service a positive asset to Redwood City that is attractive, accessible, and safe.	While the Project does not directly provide opportunities for upgrading passenger rail service, it does provide for the land use mix and density to support passenger rail service.
Goal BE-29	Maintain the city's street network to promote the safe and efficient movement of people.	See project consistency example for Goal BE-25.
Goal BE-31	Encourage developments and implementation of strategies that minimize vehicle trips and vehicle miles traveled.	The Project's location within the downtown and directly adjacent to the Transit Center minimizes vehicle trips and vehicle miles traveled (see <b>Table 6</b> ).

Source: *Redwood City General Plan*, October 2010.

### *Downtown Precise Plan*

The Downtown Precise Plan (DTPP) was adopted by the City Council on January 24, 2011 and was amended most recently on June 11, 2018. The DTPP describes the vision for the future of Downtown, regulates private development, and recommends potential future City projects. Policies relevant to the specific context of this Project are listed in **Table 9**.



**Table 9: Redwood City’s Downtown Precise Plan Goals and Guiding Principles**

Transportation Goals and Principles		Project Consistency Examples
A	Revive Downtown by creating a beautiful and memorable urban district interwoven with the City’s identity.	The Project will enhance the area’s small grid network that allows for safe and efficient movement of people, encouraging non-motorized modes of travel. The Project also includes a mix of office and residential land uses to promote walkable / bikeable / transit trips.
D	Provide the choice of “convenience living”.	The Project would increase the number of people who could live downtown, which provides convenient access to the Redwood City Transit Center, offering access to the Peninsula, and city and regional services amid a mixed-use, walkable environment.
F	Create a strong employment district and “vital center”.	The Project will allow an additional 1,167,000 square feet of office development and will anchor a vibrant downtown area.
G	Make pedestrians the priority.	See project consistency example for Goal A.
H	Integrate transit and bicycle use.	The Plan-wide Amendments allow for enhanced pedestrian and bicycle facilities to increase safety and improve connectivity to and from Transit Center.
I	Provide “just enough” parking and create a “park-once and walk” district.	The Project includes revisions to certain of the DTPP Parking Regulations, to lower the parking requirement to provide for “just enough” parking and create a “park- once and walk” district while continuing to incentivize shared parking and the ability for project applicants to pay a fee to the City in lieu of providing new parking spaces. The Amendments would also increase bicycle parking in the downtown.

Source: *Redwood City Downtown Precise Plan*, June 2018.

The Project does not conflict with any of the overarching transportation goals of the Downtown Precise Plan, as the Project prioritizes pedestrians and creates additional office space and residential units for a vibrant mixed-use downtown. The project also proposes to alter parking requirements in order to better align with the “just enough” principle.

### *RWCmoves*

*RWCmoves* expands on the General Plan in recognition of the importance of improving transportation options in the City. As a result, the guiding vision for *RWCmoves* is to promote the best travel experience possible for everyone in Redwood City by creating and maintaining a safe, multimodal, and accessible transportation network. Through *RWCmoves*, the City identifies and prioritizes the types of projects and programs with the greatest potential to enhance transportation safety, mobility, equity, and access for everyone traveling in Redwood City. The goals included in *RWCmoves* are summarized in **Table 10**.



**Table 10: RWCmoves Goals**

Transportation Goals		Project Consistency Examples
Goal 1	Eliminate traffic fatalities and severe injuries for all modes by 2030.	The Project will enhance the area's small grid network that allows for safe movement of people and discourages speeding and other hazardous vehicle movements.
Goal 2	Create a walking and bicycling-friendly community that provides a safe, balanced, and convenient transportation system.	The Project's enhanced small grid network and realigned street grid would create better connections to the Transit Center, allow for wider sidewalks and improved pedestrian sight angles, and provide a new four-way stop-controlled intersection.
Goal 3	Provide seamless connections and improved street access to all areas within the City, but especially along mixed-use corridors designated in the General Plan and Citywide Transportation Plan.	See project consistency examples for Goals 1 and 2.
Goal 4	Embrace innovation in all forms of emerging technologies, especially in ways to creatively manage congestion and the transportation system.	The Project includes revisions to certain of the DTPP Parking Regulations, to lower the parking requirement to provide for "just enough" parking and create a "park- once and walk" district while continuing to incentivize shared parking and the ability for project applicants to pay a fee to the City in lieu of providing new parking spaces.
Goal 5	Reach over 50% of all trips being by non-driving modes by 2040; remaining automobile trips should be shared rides and/ or zero emission trips.	The Project's location within the downtown and directly adjacent to the Transit Center minimizes vehicle trips and vehicle miles traveled (see <b>Table 6</b> ). Reduced parking ratios, required TDM measures, and increased bicycle parking will encourage trips to shift from driving alone to active modes.
Goal 6	Invest in projects that support a resilient, equitable and sustainable transportation system.	The Project allows for improvements for non-vehicle modes of transportation and is situated near the Transit Center, which promotes transit use.

Source: RWCmoves, July 2018, Fehr & Peers, 2022.

The proposed Project does not conflict with any of the listed goals, as the Project prioritizes pedestrian and bicyclists, and increases the density of infill development to reduce the need for vehicle trips.

### *Walk Bike Thrive*

Redwood City *Walk Bike Thrive* is the Citywide Bicycle & Pedestrian Master Plan and Vision Zero Action Plan finalized in June 2022. *Walk Bike Thrive* serves as a guiding document and presents a vision and strategy for enhanced safety, walking, and bicycling in the City. The Plan combines the Vision Zero Plan, Pedestrian Master Plan, and Bicycle Master Plan, which were identified as critical next steps in *RWCmoves*. The goals in the plan are the same those in *RWCmoves*, which are summarized in **Table 10**.



## Transit, Bicycle, and Pedestrian Impacts and Mitigations

The proposed Project will maintain the existing adjacent sidewalks and bicycle facilities. The Project will not negatively impact transit service and additional development will support increased ridership on transit. As specific development projects are proposed in the DTPP, they will be required to implement new transit, bicycle, and pedestrian facilities as identified in approved plans such as the *DTPP*, *El Camino Real Corridor Plan*, *RWCmoves*, *Walk Bike Thrive* etc. With implementation of the required improvements, the anticipated transit, bicycle, or pedestrian impacts are less-than-significant, and no mitigations are needed.

## Safety and Hazard Assessment

While conceptual street network changes are proposed, the Project has not advanced to the stage of developing detailed street designs. As it does, any roadway extensions and new streets would need to comply with Redwood City's *Downtown Precise Plan* (June 2018), *RWCmoves* (July 2018), and the Street Design Criteria included in their 2019 Engineering Standards, which all include design specifications to ensure safe and efficient travel of vehicles, bicycles, pedestrians, and transit vehicles.

For this reason, the proposed Project would not introduce any geometric design features or incompatible uses, and this impact would be less-than-significant.

## Emergency Vehicle Access

Efficient operations of City streets help to reduce response times for emergency responders including the Redwood City Police and Fire Department personnel, as well as private ambulance services.

The emergency access assessment was conducted to determine if the Project has the potential to impact emergency vehicle access by creating conditions that would substantially affect the ability of drivers to yield the right-of-way to emergency vehicles or preclude the ability of emergency vehicles to access streets within the Project area. An emergency access impact is considered significant if implementation of the Project would provide inadequate access to accommodate emergency vehicles.

Any roadway extensions, such as Franklin Street between Winklebleck Street and James Avenue, would need to comply with the City of Redwood City's Street Design Criteria included in their 2019 Engineering Standards, as well as relevant sections from *RWCmoves*, which include design specifications that consider emergency vehicle access requirements. All new street segments will be designed in accordance with City policies and provide adequate emergency vehicle access and would not impede emergency vehicle access to the Project and surrounding area by emergency vehicles. The fire department and other pertinent City groups will review the final design and on-site circulation, once completed, to ensure that there is adequate emergency access.

The Plan also incorporates standards for the closed street segments, with respect to such features as land width, lighting, paving, and emergency access requirements. The Spring Street closure, between Main



Street and Walnut Street, is a frequently used route by the fire station located on Marshall Street, just north of Main Street. With Spring Street closed, in order to go south on Broadway, fire vehicles would likely take Main Street to Broadway, which is approximately 1,200-feet, compared to 1,000 feet without the closure. Similarly, the closure on Broadway and Hamilton Street each have alternative routes that allow emergency vehicles to efficiently circulate in the DTPP area. In other words, the City's grid network allows for reasonable alternative routes in locations where street segments are proposed to be closed to vehicular access. Emergency responders will continue to have access to those roadway segments that are closed to private vehicles. The street closures do not substantially affect the ability of drivers to yield the right-of-way to emergency vehicles or preclude the ability of emergency vehicles to access streets within the Project area.

Furthermore, any potential disruptions to emergency access resulting from the construction of any of the roadway modifications described above would be minimized through the implementation of standard conditions of approval (COAs) relating to project construction. Standard COAs would require implementation of an approved traffic control plan during construction activities, in accordance with the Work Area Traffic Control Handbook. The traffic control plan would identify traffic control methods and plans for flagging; provide notification to affected landowners, residents, and emergency service providers; and provide appropriate warning signs.

Overall, the proposed roadway closures, modifications, and extensions provide for a grid network that does not substantially affect the ability of drivers to yield the right-of-way to emergency vehicles or preclude the ability of emergency vehicles to access streets within the Project area. Construction activities associated with these proposed roadway modifications would be required to conform to standard COAs that would minimize any potential disruptions to emergency access. The proposed DTPP Plan-Wide Amendments would not result in a new or more severe impact related to emergency access and the Project's impact is **less-than-significant**.



# Appendix D

## **Supplemental Noise and Vibration Information**



# Traffic Noise Model





# TRAFFIC NOISE ANALYSIS TOOL

Project Name: Redwood City Transit District  
 Analysis Scenario: 2021  
 Source of Traffic Volumes: Fehr & Peers



Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Maple St from El Camino Real to Main St	Hard	50	25	25	25	53	1	1	49.1	49
James Ave from Clinton St to El Camino Real	Hard	50	25	25	25	776	16	8	60.8	61
Jefferson Ave from Clinton St to El Camino Real	Hard	50	25	25	25	1,508	31	16	63.6	64
Jefferson Ave from El Camino Real to Middlefield Rd	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Sequoia Station (Centroid)	Hard	50	35	35	35	2,956	61	30	69.7	70
Sequoia Station (Centroid) to Middlefield Rd	Hard	50	35	35	35	0	0	0	NA	NA
Broadway from El Camino Real to Arguello St	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Perry St	Hard	50	25	25	25	619	13	6	59.8	60
Perry St to Arguello St	Hard	50	30	30	30	704	15	7	61.9	62
Broadway from Arguello St to Jefferson Ave	Hard	50	25	25	25	0	0	0	NA	NA
Arguello St to Winslow St	Hard	50	25	25	25	704	15	7	60.3	61
Winslow St to Jefferson Ave	Hard	50	25	25	25	159	3	2	53.9	54
Marshall St from Arguello St to Winslow St	Hard	50	25	25	25	44	1	0	48.3	49
Brewster Ave from Elwood St to El Camino Real	Hard	50	35	35	35	0	0	0	4.8	5
Fulton St to Broadway	Hard	50	35	35	35	83	2	1	54.2	54
Broadway to El Camino Real	Hard	50	25	25	25	54	1	1	49.2	49
Brewster from Arguello St to Winslow St	Hard	50	35	35	35	0	0	0	NA	NA
Middlefield Road from Jefferson Ave to Main St	Hard	50	25	25	25	626	13	6	59.8	60
Middlefield Road from Main St to Chestnut St (existing 2 segments)(cumulative 3 seg	Hard	50	25	25	25	0	0	0	NA	NA
Main St to Maple St	Hard	50	35	35	35	639	13	7	63.0	63
Maple St to Beech St	Hard	50	40	40	40	0	0	0	NA	NA
Beech St to Chestnut St	Hard	50	25	25	25	691	14	7	60.2	61

## Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within  $\pm 0.1$  dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Redwood City Gatekeeper  
Analysis Scenario: Existing 2021 Additional Roadways  
Source of Traffic Volumes: Fehr & Peers

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Veterans Blvd from Brewster Ave to Walnut St Brewster Ave to Jefferson Ave Jefferson Ave to Main St Main St to Maple St	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	25	25	25	3,437	71	35	67.2	68
	Hard	50	25	25	25	1,094	23	11	62.2	63
	Hard	50	25	25	25	977	20	10	61.8	62
Broadway St from Jefferson Ave to Maple St Jefferson Ave to Main St Main St to Spring St	Hard	50	35	35	35	0	0	0	NA	NA
	Hard	50	35	35	35	673	14	7	63.3	64
	Hard	50	25	25	25	888	18	9	61.3	62
Winslow St from Marshall St to Brewster Ave Marshall St to Brewster Ave	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	30	30	30	63	1	1	51.4	52

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Redwood City Gatekeeper  
Analysis Scenario: Existing Plus Project  
Source of Traffic Volumes: Fehr & Peers

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Maple St from El Camino Real to Main St	Hard	50	25	25	25	52	1	1	49.0	49
James Ave from Clinton St to El Camino Real	Hard	50	25	25	25	774	16	8	60.7	61
Jefferson Ave from Clinton St to El Camino Real	Hard	50	25	25	25	1,532	32	16	63.7	64
Jefferson Ave from El Camino Real to Middlefield Rd	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Sequoia Station (Centroid)	Hard	50	35	35	35	3,063	63	32	69.9	70
Sequoia Station (Centroid) to Middlefield Rd	Hard	50	35	35	35	117	2	1	55.7	56
Broadway from El Camino Real to Arguello St	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Perry St	Hard	50	25	25	25	746	15	8	60.6	61
Perry St to Arguello St	Hard	50	30	30	30	1,385	29	14	64.8	65
Broadway from Arguello St to Jefferson Ave	Hard	50	25	25	25	0	0	0	NA	NA
Arguello St to Winslow St	Hard	50	25	25	25	800	16	8	60.9	61
Winslow St to Jefferson Ave	Hard	50	25	25	25	139	3	1	53.3	54
Marshall St from Arguello St to Winslow St	Hard	50	25	25	25	79	2	1	50.8	51
Brewster Ave from Elwood St to El Camino Real	Hard	50	35	35	35	0	0	0	NA	NA
Fulton St to Broadway	Hard	50	35	35	35	86	2	1	54.3	55
Broadway to El Camino Real	Hard	50	25	25	25	58	1	1	49.5	50
Brewster from Arguello St to Winslow St	Hard	50	35	35	35	6	0	0	NA	NA
Middlefield Road from Jefferson Ave to Main St	Hard	50	25	25	25	714	15	7	60.4	61
Middlefield Road from Main St to Chestnut St (existing 2 segments)(cumulative 3 seg	Hard	50	25	25	25	0	0	0	NA	NA
Main St to Maple St	Hard	50	35	35	35	838	17	9	64.2	65
Maple St to Beech St	Hard	50	40	40	40	838	17	9	65.8	66
Beech St to Chestnut St	Hard	50	25	25	25	851	18	9	61.2	61

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Redwood City Gatekeeper  
Analysis Scenario: Existing 2021 Plus Project - Additional Roadways  
Source of Traffic Volumes: Fehr & Peers



Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Veterans Blvd from Brewster Ave to Walnut St Brewster Ave to Jefferson Ave Jefferson Ave to Main St Main St to Maple St	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	25	25	25	3,592	74	37	67.4	68
	Hard	50	25	25	25	1,269	26	13	62.9	63
	Hard	50	25	25	25	1,285	26	13	62.9	63
Broadway St from Jefferson Ave to Maple St Jefferson Ave to Main St Main St to Spring St	Hard	50	35	35	35	0	0	0	NA	NA
	Hard	50	35	35	35	568	12	6	62.5	63
	Hard	50	25	25	25	852	18	9	61.2	61
Winslow St from Marshall St to Brewster Ave Marshall St to Brewster Ave	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	30	30	30	87	2	1	52.8	53

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Redwood City Gatekeeper  
Analysis Scenario: Cumulative No Project  
Source of Traffic Volumes: Fehr & Peers

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Maple St from El Camino Real to Main St	Hard	50	25	25	25	145	3	1	53.5	54
James Ave from Clinton St to El Camino Real	Hard	50	25	25	25	167	3	2	54.1	54
Jefferson Ave from Clinton St to El Camino Real	Hard	50	25	25	25	2,073	43	21	65.0	65
Jefferson Ave from El Camino Real to Middlefield Rd	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Sequoia Station (Centroid)	Hard	50	35	35	35	4,127	85	43	71.1	71
Sequoia Station (Centroid) to Middlefield Rd	Hard	50	35	35	35	4,000	82	41	71.0	71
Broadway from El Camino Real to Arguello St	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Perry St	Hard	50	25	25	25	1,030	21	11	62.0	62
Perry St to Arguello St	Hard	50	30	30	30	478	10	5	60.2	61
Broadway from Arguello St to Jefferson Ave	Hard	50	25	25	25	0	0	0	NA	NA
Arguello St to Winslow St	Hard	50	25	25	25	994	21	10	61.8	62
Winslow St to Jefferson Ave	Hard	50	25	25	25	279	6	3	56.3	57
Marshall St from Arguello St to Winslow St	Hard	50	25	25	25	34	1	0	47.1	47
Brewster Ave from Elwood St to El Camino Real	Hard	50	35	35	35	0	0	0	NA	NA
Fulton St to Broadway	Hard	50	35	35	35	141	3	1	56.5	57
Broadway to El Camino Real	Hard	50	25	25	25	283	6	3	56.4	57
Brewster from Arguello St to Winslow St	Hard	50	35	35	35	9	0	0	44.3	45
Middlefield Road from Jefferson Ave to Main St	Hard	50	25	25	25	1,083	22	11	62.2	62
Middlefield Road from Main St to Chestnut St (existing 2 segments)(cumulative 3 seg	Hard	50	25	25	25	0	0	0	NA	NA
Main St to Maple St	Hard	50	35	35	35	1,081	22	11	65.3	66
Maple St to Beech St	Hard	50	40	40	40	1,086	22	11	66.9	67
Beech St to Chestnut St	Hard	50	25	25	25	1,166	24	12	62.5	63

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Redwood City Gatekeeper  
Analysis Scenario: Cumulative no Project Additional Roadways  
Source of Traffic Volumes: Fehr & Peers

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Veterans Blvd from Brewster Ave to Walnut St Brewster Ave to Jefferson Ave Jefferson Ave to Main St Main St to Maple St	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	25	25	25	3,162	65	33	66.9	67
	Hard	50	25	25	25	1,562	32	16	63.8	64
	Hard	50	25	25	25	1,927	40	20	64.7	65
Broadway St from Jefferson Ave to Maple St Jefferson Ave to Main St Main St to Spring St	Hard	50	35	35	35	0	0	0	NA	NA
	Hard	50	35	35	35	1,641	34	17	67.1	67
	Hard	50	25	25	25	1,821	38	19	64.5	65
Winslow St from Marshall St to Brewster Ave Marshall St to Brewster Ave	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	30	30	30	71	1	1	51.9	52

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

# TRAFFIC NOISE ANALYSIS TOOL

Project Name: Redwood City Transit District  
Analysis Scenario: Cumulative with Project  
Source of Traffic Volumes: Fehr & Peers



Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Maple St from El Camino Real to Main St	Hard	50	25	25	25	148	3	2	53.6	54
James Ave from Clinton St to El Camino Real	Hard	50	25	25	25	170	3	2	54.1	54
Jefferson Ave from Clinton St to El Camino Real	Hard	50	25	25	25	2,044	42	21	65.0	65
Jefferson Ave from El Camino Real to Middlefield Rd	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Sequoia Station (Centroid)	Hard	50	35	35	35	4,002	83	41	71.0	71
Sequoia Station (Centroid) to Middlefield Rd	Hard	50	35	35	35	4,117	85	42	71.1	71
Broadway from El Camino Real to Arguello St	Hard	50	25	25	25	0	0	0	NA	NA
El Camino Real to Perry St	Hard	50	25	25	25	1,126	23	12	62.4	63
Perry St to Arguello St	Hard	50	30	30	30	1,126	23	12	63.9	64
Broadway from Arguello St to Jefferson Ave	Hard	50	25	25	25	0	0	0	NA	NA
Arguello St to Winslow St	Hard	50	25	25	25	1,067	22	11	62.1	62
Winslow St to Jefferson Ave	Hard	50	25	25	25	273	6	3	56.2	57
Marshall St from Arguello St to Winslow St	Hard	50	25	25	25	60	1	1	49.6	50
Brewster Ave from Elwood St to El Camino Real	Hard	50	35	35	35	0	0	0	NA	NA
Fulton St to Broadway	Hard	50	35	35	35	130	3	1	56.1	56
Broadway to El Camino Real	Hard	50	25	25	25	287	6	3	56.4	57
Brewster from Arguello St to Winslow St	Hard	50	35	35	35	14	0	0	46.6	47
Middlefield Road from Jefferson Ave to Main St	Hard	50	25	25	25	1,040	21	11	62.0	62
Middlefield Road from Main St to Chestnut St (existing 2 segments)(cumulative 3 s	Hard	50	25	25	25	0	0	0	NA	NA
Main St to Maple St	Hard	50	35	35	35	1,038	21	11	65.1	65
Maple St to Beech St	Hard	50	40	40	40	1,174	24	12	67.3	68
Beech St to Chestnut St	Hard	50	25	25	25	1,139	23	12	62.4	63

Model Notes:  
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.  
Noise propagation greater than 50 feet is based on the following assumptions:  
For hard ground, the propagation rate is 3 dB per doubling the distance.  
For soft ground, the propagation rate is 4.5 dB per doubling the distance.  
Vehicles are assumed to be on a long straight roadway with cruise speed.  
Roadway grade is less than 1.5%.  
Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

**Model Notes:**  
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).  
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.  
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.  
Noise propagation greater than 50 feet is based on the following assumptions:  
For hard ground, the propagation rate is 3 dB per doubling the distance.  
For soft ground, the propagation rate is 4.5 dB per doubling the distance.  
Vehicles are assumed to be on a long straight roadway with cruise speed.  
Roadway grade is less than 1.5%.  
Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.



# TRAFFIC NOISE ANALYSIS TOOL

Project Name: Redwood City Gatekeeper  
 Analysis Scenario: Cumulative with Project Additional Roadways  
 Source of Traffic Volumes: Fehr & Peers



Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
			Auto	MT	HT	Auto	MT	HT		
Veterans Blvd from Brewster Ave to Walnut St Brewster Ave to Jefferson Ave Jefferson Ave to Main St Main St to Maple St	Hard	50	25	25	25	0	0	0	NA	NA
	Hard	50	25	25	25	3,353	69	35	67.1	67
	Hard	50	25	25	25	1,748	36	18	64.3	65
	Hard	50	25	25	25	2,144	44	22	65.2	65
Broadway St from Jefferson Ave to Maple St Jefferson Ave to Main St Main St to Spring St	Hard	50	35	35	35	0	0	0	NA	NA
	Hard	50	35	35	35	1,412	29	15	66.5	67
	Hard	50	25	25	25	1,672	34	17	64.1	64
	Hard	50	25	25	25	0	0	0	NA	NA
Winslow St from Marshall St to Brewster Ave Marshall St to Brewster Ave	Hard	50	30	30	30	82	2	1	52.5	53

## Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within  $\pm 0.1$  dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

# Noise Monitoring Output



## Summary

File Name on Meter	LxT_Data.098
File Name on PC	SLM_0004437_LxT_Data_098.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-1 Jeferson at Franklin SE corner
Job Description	RWCTD
Note	

## Measurement

Description	
Start	2022-01-11 10:27:25
Stop	2022-01-11 10:42:38
Duration	00:15:13.6
Run Time	00:15:13.6
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:02
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	67.9	
LAE	97.5	
EA	624.260 $\mu\text{Pa}^2\text{h}$	
EA8	19.679 $\text{mPa}^2\text{h}$	
EA40	98.395 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 10:39:48	105.2 dB
LASmax	2022-01-11 10:39:58	82.1 dB
LASmin	2022-01-11 10:34:34	53.5 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	77.3 dB	
LAeq	67.9 dB	
LCeq - LAeq	9.4 dB	
LAlaq	69.9 dB	
LAeq	67.9 dB	
LAlaq - LAeq	2.0 dB	

Record #	Record Type	Date	Time	L <sub>Aeq</sub>	L <sub>A</sub> S <sub>max</sub>	L <sub>A</sub> S <sub>min</sub>	TWA1	TWA2	OVLD	Marker
1	Calibration Change	2022-01-11	10:07:02							
2	Run	2022-01-11	10:27:25							
3		2022-01-11	10:27:25	65.5	73.1	53.6	64.4	64.4	No	
4		2022-01-11	10:28:25	68.1	75.4	59.6	67.5	67.5	No	
5		2022-01-11	10:29:25	65.5	71.9	56.3	65.1	65.1	No	
6		2022-01-11	10:30:25	67.6	73.1	55.3	66.9	66.9	No	
7		2022-01-11	10:31:25	67.5	74.4	59.4	66.7	66.7	No	
8		2022-01-11	10:32:25	71.1	77.0	61.0	70.5	70.5	No	
9		2022-01-11	10:33:25	67.9	80.0	55.0	65.7	65.7	No	
10		2022-01-11	10:34:25	69.7	78.0	53.5	68.4	68.4	No	
11		2022-01-11	10:35:25	62.2	68.8	56.4	61.5	61.5	No	
12		2022-01-11	10:36:25	66.2	72.5	55.2	65.4	65.4	No	
13		2022-01-11	10:37:25	64.8	71.8	58.8	64.2	64.2	No	
14		2022-01-11	10:38:25	65.4	75.1	55.0	64.3	64.3	No	
15		2022-01-11	10:39:25	71.8	82.1	54.6	69.3	69.3	No	
16		2022-01-11	10:40:25	68.3	77.0	58.9	67.4	67.4	No	
17		2022-01-11	10:41:25	67.3	75.7	57.3	66.1	66.1	No	
18		2022-01-11	10:42:25	61.8	64.4	58.6	61.5	61.5	No	
19	Stop	2022-01-11	10:42:38							

## Summary

File Name on Meter	LxT_Data.099
File Name on PC	SLM_0004437_LxT_Data_099.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-2 ECR at Jefferson SE corner
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 10:44:36
Stop	2022-01-11 10:59:48
Duration	00:15:12.6
Run Time	00:15:12.6
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	68.6	
LAE	98.2	
EA	726.252 $\mu\text{Pa}^2\text{h}$	
EA8	22.919 $\text{mPa}^2\text{h}$	
EA40	114.596 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 10:54:26	104.0 dB
LASmax	2022-01-11 10:54:26	80.1 dB
LASmin	2022-01-11 10:51:52	59.5 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	78.2 dB	
LAeq	68.6 dB	
LCeq - LAeq	9.7 dB	
LAlaq	69.7 dB	
LAeq	68.6 dB	
LAlaq - LAeq	1.1 dB	

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	10:44:36							
2		2022-01-11	10:44:36	67.7	72.2	61.6	67.3	67.3	No	
3		2022-01-11	10:45:36	68.4	72.4	61.7	68.2	68.2	No	
4		2022-01-11	10:46:36	66.6	70.2	61.4	66.3	66.3	No	
5		2022-01-11	10:47:36	68.7	74.8	62.6	68.4	68.4	No	
6		2022-01-11	10:48:36	67.4	73.9	62.7	67.1	67.1	No	
7		2022-01-11	10:49:36	68.8	73.4	62.0	68.4	68.4	No	
8		2022-01-11	10:50:36	66.8	71.9	63.1	66.5	66.5	No	
9		2022-01-11	10:51:36	68.9	73.4	59.5	68.4	68.4	No	
10		2022-01-11	10:52:36	68.0	72.1	62.0	67.6	67.6	No	
11		2022-01-11	10:53:36	71.8	80.1	61.0	70.7	70.7	No	
12		2022-01-11	10:54:36	69.5	77.7	62.0	68.6	68.6	No	
13		2022-01-11	10:55:36	69.3	75.2	65.7	69.2	69.2	No	
14		2022-01-11	10:56:36	67.0	70.9	63.2	66.9	66.9	No	
15		2022-01-11	10:57:36	68.9	75.3	62.6	68.3	68.3	No	
16		2022-01-11	10:58:36	68.2	75.3	63.2	67.8	67.8	No	
17		2022-01-11	10:59:36	64.3	67.4	60.4	63.5	63.5	No	
18	Stop	2022-01-11	10:59:48							

## Summary

File Name on Meter	LxT_Data.100
File Name on PC	SLM_0004437_LxT_Data_100.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-3 Maple Franklin NE corner
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 11:05:43
Stop	2022-01-11 11:20:51
Duration	00:15:07.9
Run Time	00:15:07.9
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	67.2	
LAE	96.7	
EA	525.043 µPa²h	
EA8	16.655 mPa²h	
EA40	83.276 mPa²h	
LZpeak (max)	2022-01-11 11:08:55	101.9 dB
LASmax	2022-01-11 11:13:37	86.7 dB
LASmin	2022-01-11 11:11:05	48.3 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	1	1.5 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	72.0 dB	
LAeq	67.2 dB	
LCeq - LAeq	4.8 dB	
LALeq	70.7 dB	
LAeq	67.2 dB	
LALeq - LAeq	3.6 dB	



Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	11:05:43							
2		2022-01-11	11:05:43	62.8	72.3	53.2	61.4	61.4	No	
3		2022-01-11	11:06:43	60.2	65.3	55.5	60.0	60.0	No	
4		2022-01-11	11:07:43	57.7	63.8	50.0	57.2	57.2	No	
5		2022-01-11	11:08:43	63.6	76.2	54.1	61.8	61.8	No	
6		2022-01-11	11:09:43	59.8	69.5	49.3	57.7	57.7	No	
7		2022-01-11	11:10:43	72.5	82.0	48.3	69.0	69.0	No	
8		2022-01-11	11:11:43	67.2	77.9	59.5	67.2	67.2	No	
9		2022-01-11	11:12:43	75.6	86.7	59.9	73.4	73.4	No	
10		2022-01-11	11:13:43	60.3	72.8	50.3	59.3	59.3	No	
11		2022-01-11	11:14:43	60.0	68.4	49.8	58.9	58.9	No	
12		2022-01-11	11:15:43	59.3	69.9	48.8	57.5	57.5	No	
13		2022-01-11	11:16:43	68.2	80.2	49.5	66.0	66.0	No	
14		2022-01-11	11:17:43	59.8	69.5	49.9	58.9	58.9	No	
15		2022-01-11	11:18:43	58.7	69.1	51.6	57.6	57.6	No	
16		2022-01-11	11:19:43	60.9	66.3	51.7	60.0	60.0	No	
17		2022-01-11	11:20:43	63.2	64.0	60.9	62.9	62.9	No	
18	Stop	2022-01-11	11:20:51							

## Summary

File Name on Meter	LxT_Data.101
File Name on PC	SLM_0004437_LxT_Data_101.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-4 City Hall
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 11:32:13
Stop	2022-01-11 11:47:47
Duration	00:15:34.3
Run Time	00:15:34.3
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	51.3	
LAE	81.0	
EA	14.024 $\mu\text{Pa}^2\text{h}$	
EA8	432.290 $\mu\text{Pa}^2\text{h}$	
EA40	2.161 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 11:37:06	92.3 dB
LASmax	2022-01-11 11:32:43	65.8 dB
LASmin	2022-01-11 11:36:27	45.6 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	64.5 dB	
LAeq	51.3 dB	
LCeq - LAeq	13.2 dB	
LAlaq	54.1 dB	
LAeq	51.3 dB	
LAlaq - LAeq	2.8 dB	

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	11:32:13							
2		2022-01-11	11:32:13	57.7	65.8	46.6	56.0	56.0	No	
3		2022-01-11	11:33:13	47.6	51.0	46.0	47.5	47.5	No	
4		2022-01-11	11:34:13	47.8	53.5	45.8	47.7	47.7	No	
5		2022-01-11	11:35:13	53.1	58.8	46.4	52.3	52.3	No	
6		2022-01-11	11:36:13	50.8	61.1	45.6	50.0	50.0	No	
7		2022-01-11	11:37:13	48.7	56.4	46.5	48.4	48.4	No	
8		2022-01-11	11:38:13	47.6	51.2	46.0	47.5	47.5	No	
9		2022-01-11	11:39:13	47.5	50.3	46.3	47.5	47.5	No	
10		2022-01-11	11:40:13	52.6	59.8	46.6	51.6	51.6	No	
11		2022-01-11	11:41:13	54.9	64.3	46.8	53.2	53.2	No	
12		2022-01-11	11:42:13	48.4	57.9	45.9	48.1	48.1	No	
13		2022-01-11	11:43:13	48.2	52.7	47.0	48.1	48.1	No	
14		2022-01-11	11:44:13	47.7	49.7	46.5	47.6	47.6	No	
15		2022-01-11	11:45:13	49.2	52.3	47.1	49.1	49.1	No	
16		2022-01-11	11:46:13	48.5	49.9	47.3	48.5	48.5	No	
17		2022-01-11	11:47:13	48.5	51.8	47.3	48.3	48.3	No	
18	Stop	2022-01-11	11:47:47							

## Summary

File Name on Meter	LxT_Data.102
File Name on PC	SLM_0004437_LxT_Data_102.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-5 ECR at James NW corner
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 12:53:43
Stop	2022-01-11 13:09:58
Duration	00:16:14.5
Run Time	00:16:08.6
Pause	00:00:05.9
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	71.5	
LAE	101.4	
EA	1.531 mPa²h	
EA8	45.523 mPa²h	
EA40	227.617 mPa²h	
LZpeak (max)	2022-01-11 13:07:24	105.7 dB
LASmax	2022-01-11 13:09:48	86.1 dB
LASmin	2022-01-11 12:56:21	57.6 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	1	1.3 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	79.5 dB	
LAeq	71.5 dB	
LCeq - LAeq	7.9 dB	
LAlaq	73.7 dB	
LAeq	71.5 dB	
LAlaq - LAeq	2.1 dB	

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	12:53:43							
2		2022-01-11	12:53:43	68.6	73.9	59.3	68.0	68.0	No	
3		2022-01-11	12:54:43	71.5	75.2	61.2	71.0	71.0	No	
4		2022-01-11	12:55:43	68.5	74.2	57.6	68.1	68.1	No	
5		2022-01-11	12:56:43	71.8	75.4	59.7	71.1	71.1	No	
6		2022-01-11	12:57:43	70.6	75.4	58.7	69.9	69.9	No	
7		2022-01-11	12:58:43	70.0	74.9	61.7	69.2	69.2	No	
8		2022-01-11	12:59:43	75.8	79.7	73.8	75.5	75.5	No	
9	Pause	2022-01-11	12:59:58							
10	Resume	2022-01-11	13:00:04							
11		2022-01-11	13:00:04	70.5	77.1	64.0	70.2	70.2	No	
12		2022-01-11	13:01:04	73.0	78.2	63.8	72.3	72.3	No	
13		2022-01-11	13:02:04	68.3	75.8	61.2	67.8	67.8	No	
14		2022-01-11	13:03:04	71.5	75.3	61.5	71.0	71.0	No	
15		2022-01-11	13:04:04	69.7	73.6	61.9	69.3	69.3	No	
16		2022-01-11	13:05:04	73.3	77.8	58.2	72.5	72.5	No	
17		2022-01-11	13:06:04	70.4	76.9	61.8	69.7	69.7	No	
18		2022-01-11	13:07:04	75.5	84.3	64.4	74.4	74.4	No	
19		2022-01-11	13:08:04	69.7	74.3	61.5	69.2	69.2	No	
20		2022-01-11	13:09:04	72.7	86.1	62.4	70.6	70.6	No	
21	Stop	2022-01-11	13:09:58							

## Summary

File Name on Meter	LxT_Data.103
File Name on PC	SLM_0004437_LxT_Data_103.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-6 RC Caltrain Park
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 13:12:23
Stop	2022-01-11 13:27:32
Duration	00:15:08.3
Run Time	00:15:08.3
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	62.5	
LAE	92.1	
EA	180.811 $\mu\text{Pa}^2\text{h}$	
EA8	5.733 $\text{mPa}^2\text{h}$	
EA40	28.665 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 13:14:20	98.4 dB
LASmax	2022-01-11 13:24:19	74.4 dB
LASmin	2022-01-11 13:15:28	50.7 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	74.8 dB	
LAeq	62.5 dB	
LCeq - LAeq	12.2 dB	
LAlaq	64.9 dB	
LAeq	62.5 dB	
LAlaq - LAeq	2.3 dB	

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	13:12:23							
2		2022-01-11	13:12:23	61.7	68.3	55.7	61.2	61.2	No	
3		2022-01-11	13:13:23	60.5	70.2	51.0	58.8	58.8	No	
4		2022-01-11	13:14:23	61.7	70.1	52.0	61.8	61.8	No	
5		2022-01-11	13:15:23	62.7	70.1	50.7	61.8	61.8	No	
6		2022-01-11	13:16:23	59.1	63.2	53.8	58.7	58.7	No	
7		2022-01-11	13:17:23	64.9	73.0	56.1	64.2	64.2	No	
8		2022-01-11	13:18:23	67.2	71.4	58.5	66.9	66.9	No	
9		2022-01-11	13:19:23	60.4	66.7	52.3	59.8	59.8	No	
10		2022-01-11	13:20:23	59.1	65.9	53.6	58.8	58.8	No	
11		2022-01-11	13:21:23	62.3	69.4	53.8	61.4	61.4	No	
12		2022-01-11	13:22:23	62.0	69.1	55.0	61.6	61.6	No	
13		2022-01-11	13:23:23	62.4	74.4	51.5	61.4	61.4	No	
14		2022-01-11	13:24:23	58.4	64.2	51.5	58.2	58.2	No	
15		2022-01-11	13:25:23	61.8	69.4	51.4	60.7	60.7	No	
16		2022-01-11	13:26:23	64.3	72.6	52.3	63.0	63.0	No	
17		2022-01-11	13:27:23	63.0	72.1	60.2	65.1	65.1	No	
18	Stop	2022-01-11	13:27:32							

## Summary

File Name on Meter	LxT_Data.104
File Name on PC	SLM_0004437_LxT_Data_104.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-7 2601 Broadway SE corner
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 13:30:13
Stop	2022-01-11 13:45:15
Duration	00:15:01.2
Run Time	00:15:01.2
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	A	C	Z
Under Range Peak	98.8	95.8	100.8 dB
Under Range Limit	37.2	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	59.9	
LAE	89.4	
EA	97.779 $\mu\text{Pa}^2\text{h}$	
EA8	3.125 $\text{mPa}^2\text{h}$	
EA40	15.624 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 13:30:43	97.8 dB
LASmax	2022-01-11 13:37:40	74.5 dB
LASmin	2022-01-11 13:42:14	47.8 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	72.9 dB	
LAeq	59.9 dB	
LCeq - LAeq	13.0 dB	
LALeq	62.1 dB	
LAeq	59.9 dB	
LALeq - LAeq	2.2 dB	



Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	13:30:13							
2		2022-01-11	13:30:13	59.1	66.0	55.8	58.7	58.7	No	
3		2022-01-11	13:31:13	64.5	72.5	57.9	63.8	63.8	No	
4		2022-01-11	13:32:13	53.4	61.2	50.7	53.4	53.4	No	
5		2022-01-11	13:33:13	56.7	61.6	53.8	56.6	56.6	No	
6		2022-01-11	13:34:13	53.3	60.6	49.0	52.9	52.9	No	
7		2022-01-11	13:35:13	56.4	62.3	51.0	55.9	55.9	No	
8		2022-01-11	13:36:13	59.9	66.5	58.0	59.8	59.8	No	
9		2022-01-11	13:37:13	67.4	74.5	55.7	66.7	66.7	No	
10		2022-01-11	13:38:13	56.0	60.7	50.8	55.8	55.8	No	
11		2022-01-11	13:39:13	56.3	62.9	48.4	55.5	55.5	No	
12		2022-01-11	13:40:13	52.8	59.7	48.2	52.3	52.3	No	
13		2022-01-11	13:41:13	53.3	61.9	48.1	52.7	52.7	No	
14		2022-01-11	13:42:13	55.6	62.8	47.8	54.5	54.5	No	
15		2022-01-11	13:43:13	55.5	64.2	49.3	55.1	55.1	No	
16		2022-01-11	13:44:13	60.9	71.5	49.5	59.0	59.0	No	
17		2022-01-11	13:45:13	49.7	51.7	50.4	51.0	51.0	No	
18	Stop	2022-01-11	13:45:15							

## Summary

File Name on Meter	LxT_Data.105
File Name on PC	SLM_0004437_LxT_Data_105.00.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	C. Sanchez
Location	ST-8 75 Perry Street
Job Description	RWC TD
Note	

## Measurement

Description	
Start	2022-01-11 13:49:42
Stop	2022-01-11 14:04:45
Duration	00:15:02.5
Run Time	00:15:02.5
Pause	00:00:00.0
Pre Calibration	2022-01-11 10:07:00
Post Calibration	None
Calibration Deviation	---

## Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamp	PRMLxT2B		
Microphone Correction	Off		
Integration Method	Linear		
Overload	142.5 dB		
	<b>A</b>	<b>C</b>	<b>Z</b>
Under Range Peak	98.8	95.8	<b>100.8</b> dB
Under Range Limit	<b>37.2</b>	36.7	43.5 dB
Noise Floor	28.0	27.6	34.3 dB

## Results

LAeq	67.8	
LAE	97.3	
EA	602.812 $\mu\text{Pa}^2\text{h}$	
EA8	19.237 $\text{mPa}^2\text{h}$	
EA40	96.183 $\text{mPa}^2\text{h}$	
LZpeak (max)	2022-01-11 13:50:52	108.4 dB
LASmax	2022-01-11 13:50:52	92.2 dB
LASmin	2022-01-11 13:58:50	46.6 dB
SEA	-99.9 dB	
LAS > 85.0 dB (Exceedance Counts / Duration)	1	4.9 s
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	73.9 dB	
LAeq	67.8 dB	
LCeq - LAeq	6.1 dB	
LAlaq	71.0 dB	
LAeq	67.8 dB	
LAlaq - LAeq	3.2 dB	

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	13:49:42							
2		2022-01-11	13:49:42	62.7	69.1	53.9	62.1	62.1	No	
3		2022-01-11	13:50:42	78.8	92.2	54.5	74.8	74.8	No	
4		2022-01-11	13:51:42	58.5	70.1	49.5	56.8	56.8	No	
5		2022-01-11	13:52:42	58.2	66.7	50.6	57.4	57.4	No	
6		2022-01-11	13:53:42	56.8	63.9	47.1	55.8	55.8	No	
7		2022-01-11	13:54:42	65.8	77.7	48.6	62.1	62.1	No	
8		2022-01-11	13:55:42	60.9	70.6	47.2	59.5	59.5	No	
9		2022-01-11	13:56:42	54.6	65.0	48.2	53.3	53.3	No	
10		2022-01-11	13:57:42	51.8	57.9	46.9	51.4	51.4	No	
11		2022-01-11	13:58:42	48.9	53.6	46.6	48.8	48.8	No	
12		2022-01-11	13:59:42	54.1	65.9	47.0	52.5	52.5	No	
13		2022-01-11	14:00:42	48.9	53.4	47.0	48.8	48.8	No	
14		2022-01-11	14:01:42	55.8	66.7	47.5	54.2	54.2	No	
15		2022-01-11	14:02:42	56.5	60.1	51.3	56.1	56.1	No	
16		2022-01-11	14:03:42	66.1	76.7	54.8	64.1	64.1	No	
17		2022-01-11	14:04:42	62.1	63.4	61.4	62.6	62.6	No	
18	Stop	2022-01-11	14:04:45							

Summary				
File Name on Meter	LxT_Data.106			
File Name on PC	SLM_0004437_LxT_Data_106.00.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	C. Sanchez			
Location	ST-9 Arguello across from 291 Marshall			
Job Description	RWC TD			
Note				
Measurement				
Description				
Start	2022-01-11 14:10:12			
Stop	2022-01-11 14:25:13			
Duration	00:15:01.4			
Run Time	00:14:45.5			
Pause	00:00:15.9			
Pre Calibration	2022-01-11 10:07:00			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamp	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.5 dB			
	A	C	Z	
Under Range Peak	98.8	95.8	100.8	dB
Under Range Limit	37.2	36.7	43.5	dB
Noise Floor	28.0	27.6	34.3	dB
Results				
LAeq	74.4			
LAE	103.9			
EA	2.735 mPa²h			
EA8	88.956 mPa²h			
EA40	444.779 mPa²h			
LZpeak (max)	2022-01-11 14:18:35	112.7 dB		
LASmax	2022-01-11 14:18:16	97.2 dB		
LASmin	2022-01-11 14:15:18	47.4 dB		
SEA	-99.9 dB			
LAS > 85.0 dB (Exceedance Counts / Duration)	4	16.7 s		
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s		
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s		
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s		
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s		
LCeq	79.7 dB			
LAeq	74.4 dB			
LCeq - LAeq	5.3 dB			
LAleq	76.7 dB			
LAeq	74.4 dB			
LAleq - LAeq	2.3 dB			

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker
1	Run	2022-01-11	14:10:12							
2		2022-01-11	14:10:12	53.0	57.8	48.9	52.9	52.9	No	
3		2022-01-11	14:11:12	57.3	66.8	47.9	55.8	55.8	No	
4		2022-01-11	14:12:12	52.5	57.7	48.5	52.3	52.3	No	
5		2022-01-11	14:13:12	54.2	60.4	50.3	53.9	53.9	No	
6		2022-01-11	14:14:12	52.1	56.4	48.6	51.9	51.9	No	
7		2022-01-11	14:15:12	62.0	71.8	47.4	58.4	58.4	No	
8		2022-01-11	14:16:12	70.7	72.7	68.9	70.7	70.7	No	
9		2022-01-11	14:17:12	76.2	85.5	54.2	72.9	72.9	No	
10		2022-01-11	14:18:12	86.3	97.2	58.2	83.8	83.8	No	
11	Pause	2022-01-11	14:19:02							
12	Resume	2022-01-11	14:19:17							
13		2022-01-11	14:19:17	59.4	67.9	51.2	58.5	58.5	No	
14		2022-01-11	14:20:17	54.3	59.2	48.1	53.9	53.9	No	
15		2022-01-11	14:21:17	54.8	63.5	49.0	54.3	54.3	No	
16		2022-01-11	14:22:17	54.8	59.9	49.3	54.3	54.3	No	
17		2022-01-11	14:23:17	53.9	59.9	48.3	53.8	53.8	No	
18		2022-01-11	14:24:17	56.8	64.2	50.3	56.3	56.3	No	
19	Stop	2022-01-11	14:25:13							

Summary				
File Name on Meter	LxT_Data.121.s			
File Name on PC	LxT_0004437-20220324 150245-LxT_Data.121.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-10 Broadway at Maple			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 15:02:45			
Stop	2022-03-24 15:17:49			
Duration	00:15:04.0			
Run Time	00:15:04.0			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9 dB	
Under Range Limit	37.3	36.9	43.6 dB	
Noise Floor	28.2	27.7	34.5 dB	
	First	Second	Third	
Instrument Identification				
Results				
LAeq	63.9			
LAE	93.5			
EA	247.244 µPa²h			
EA8	7.877 mPa²h			
EA40	39.384 mPa²h			
LZpeak (max)	2022-03-24 15:05:55	105.6 dB		
LASmax	2022-03-24 15:04:24	79.4 dB		
LASmin	2022-03-24 15:08:12	53.4 dB		
SEA	-99.9 dB			
	Exceedance Counts	Duration		
LAS > 85.0 dB	0	0.0 s		
LAS > 115.0 dB	0	0.0 s		
LZpeak > 135.0 dB	0	0.0 s		
LZpeak > 137.0 dB	0	0.0 s		
LZpeak > 140.0 dB	0	0.0 s		
LCeq	74.3 dB			
LAeq	63.9 dB			
LCeq - LAeq	10.4 dB			
LAlaq	65.5 dB			
LAeq	63.9 dB			
LAlaq - LAeq	1.6 dB			

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLd	Marker
1	Run	2022-03-24	15:02:44							
2		2022-03-24	15:02:45	60.2	64.8	55.2	59.8	59.8	No	
3		2022-03-24	15:03:45	67.6	79.4	55.8	65.3	65.3	No	
4		2022-03-24	15:04:45	64.0	68.7	58.0	63.7	63.7	No	
5		2022-03-24	15:05:45	63.5	70.0	59.0	63.0	63.0	No	
6		2022-03-24	15:06:45	62.0	68.9	58.7	61.8	61.8	No	
7		2022-03-24	15:07:45	62.6	69.5	53.4	61.5	61.5	No	
8		2022-03-24	15:08:45	59.6	65.6	54.9	59.6	59.6	No	
9		2022-03-24	15:09:45	61.0	70.8	54.8	59.4	59.4	No	
10		2022-03-24	15:10:45	63.9	69.3	56.9	63.6	63.6	No	
11		2022-03-24	15:11:45	63.0	69.3	56.1	62.6	62.6	No	
12		2022-03-24	15:12:45	63.1	69.5	57.1	62.4	62.4	No	
13		2022-03-24	15:13:45	63.8	69.4	56.6	63.4	63.4	No	
14		2022-03-24	15:14:45	62.4	68.3	56.5	62.1	62.1	No	
15		2022-03-24	15:15:45	63.6	67.2	59.3	63.3	63.3	No	
16		2022-03-24	15:16:45	68.4	75.8	56.9	67.3	67.3	No	
17		2022-03-24	15:17:45	57.2	57.5	56.8	57.1	57.1	No	
18	Stop	2022-03-24	15:17:49							

Summary				
File Name on Meter	LxT_Data.118.s			
File Name on PC	LxT_0004437-20220324 132542-LxT_Data.118.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-11 Bewster at Warren			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 13:25:42			
Stop	2022-03-24 13:40:52			
Duration	00:15:09.7			
Run Time	00:15:09.7			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9	dB
Under Range Limit	37.3	36.9	43.6	dB
Noise Floor	28.2	27.7	34.5	dB
	First	Second	Third	
Instrument Identification				
Results				
LAeq	63.3			
LAE	92.9			
EA	218.302 µPa²h			
EA8	6.911 mPa²h			
EA40	34.556 mPa²h			
LZpeak (max)	2022-03-24 13:31:32	102.9 dB		
LASmax	2022-03-24 13:35:58	80.8 dB		
LASmin	2022-03-24 13:26:12	47.2 dB		
SEA	-99.9 dB			
	Exceedance Counts	Duration		
LAS > 85.0 dB	0	0.0 s		
LAS > 115.0 dB	0	0.0 s		
LZpeak > 135.0 dB	0	0.0 s		
LZpeak > 137.0 dB	0	0.0 s		
LZpeak > 140.0 dB	0	0.0 s		
LCeq	71.0 dB			
LAeq	63.3 dB			
LCeq - LAeq	7.6 dB			
LAlaq	66.8 dB			
LAeq	63.3 dB			
LAlaq - LAeq	3.4 dB			



Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker	Comments
1	Run	2022-03-24	13:25:42								
2		2022-03-24	13:25:42	61.6	72.8	47.2	60.0	60.0	No		
3		2022-03-24	13:26:42	57.5	65.0	50.2	56.7	56.7	No		
4		2022-03-24	13:27:42	54.6	60.3	49.0	54.1	54.1	No		
5		2022-03-24	13:28:42	62.6	71.3	47.7	60.4	60.4	No		
6		2022-03-24	13:29:42	58.6	67.0	48.9	57.4	57.4	No		
7		2022-03-24	13:30:42	66.4	74.1	49.3	65.2	65.2	No		
8		2022-03-24	13:31:42	65.9	76.9	48.2	62.8	62.8	No		
9		2022-03-24	13:32:42	63.4	75.5	50.5	61.8	61.8	No		
10		2022-03-24	13:33:42	65.1	72.4	50.2	63.7	63.7	No		
11		2022-03-24	13:34:42	50.7	53.7	48.6	50.7	50.7	No		
12		2022-03-24	13:35:42	68.4	80.8	50.1	65.6	65.6	No		
13		2022-03-24	13:36:42	63.5	76.0	49.1	60.1	60.1	No		
14		2022-03-24	13:37:42	60.0	67.0	51.3	59.6	59.6	No		
15		2022-03-24	13:38:42	64.2	71.6	52.0	62.9	62.9	No		
16		2022-03-24	13:39:42	60.5	71.0	49.9	59.4	59.4	No		
17		2022-03-24	13:40:42	57.2	64.2	49.8	53.4	53.4	No		
18	Stop	2022-03-24	13:40:52								

Summary				
File Name on Meter	LxT_Data.117.s			
File Name on PC	LxT_0004437-20220324 122736-LxT_Data.117.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-12 Brewster at Commercial			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 12:27:36			
Stop	2022-03-24 12:42:52			
Duration	00:15:15.6			
Run Time	00:15:15.6			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9 dB	
Under Range Limit	37.3	36.9	43.6 dB	
Noise Floor	28.2	27.7	34.5 dB	
	First	Second	Third	
Instrument Identification				
Results				
LAeq	67.8			
LAE	97.4			
EA	610.363 µPa²h			
EA8	19.199 mPa²h			
EA40	95.994 mPa²h			
LZpeak (max)	2022-03-24 12:30:15	106.5 dB		
LASmax	2022-03-24 12:30:15	90.3 dB		
LASmin	2022-03-24 12:28:49	51.5 dB		
SEA	-99.9 dB			
	Exceedance Counts	Duration		
LAS > 85.0 dB	2	4.2 s		
LAS > 115.0 dB	0	0.0 s		
LZpeak > 135.0 dB	0	0.0 s		
LZpeak > 137.0 dB	0	0.0 s		
LZpeak > 140.0 dB	0	0.0 s		
LCeq	77.9 dB			
LAeq	67.8 dB			
LCeq - LAeq	10.1 dB			
LAlaq	71.1 dB			
LAeq	67.8 dB			
LAlaq - LAeq	3.3 dB			

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker	Comments
1	Run	2022-03-24	12:27:36								
2		2022-03-24	12:27:36	65.8	75.3	56.9	64.7	64.7	No		
3		2022-03-24	12:28:36	61.6	65.9	51.5	61.0	61.0	No		
4		2022-03-24	12:29:36	75.6	90.3	57.0	71.2	71.2	No		
5		2022-03-24	12:30:36	62.1	68.7	54.5	61.3	61.3	No		
6		2022-03-24	12:31:36	61.7	69.8	53.8	60.8	60.8	No		
7		2022-03-24	12:32:36	64.0	70.2	55.6	63.3	63.3	No		
8		2022-03-24	12:33:36	64.8	74.5	56.0	63.8	63.8	No		
9		2022-03-24	12:34:36	61.6	66.2	56.4	61.2	61.2	No		
10		2022-03-24	12:35:36	63.1	69.6	55.6	62.6	62.6	No		
11		2022-03-24	12:36:36	63.9	70.5	57.6	63.4	63.4	No		
12		2022-03-24	12:37:36	61.2	69.6	55.1	60.6	60.6	No		
13		2022-03-24	12:38:36	73.7	86.1	57.0	70.8	70.8	No		
14		2022-03-24	12:39:36	63.4	78.8	53.0	63.6	63.6	No		
15		2022-03-24	12:40:36	66.9	79.2	55.5	64.3	64.3	No		
16		2022-03-24	12:41:36	64.4	69.2	56.3	64.2	64.2	No		
17		2022-03-24	12:42:36	65.8	69.1	62.8	65.3	65.3	No		
18	Stop	2022-03-24	12:42:52								

Summary				
File Name on Meter	LxT_Data.120.s			
File Name on PC	LxT_0004437-20220324 140826-LxT_Data.120.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-13 Brewster at Veterans			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 14:08:26			
Stop	2022-03-24 14:23:29			
Duration	00:15:03.1			
Run Time	00:15:03.1			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9 dB	
Under Range Limit	37.3	36.9	43.6 dB	
Noise Floor	28.2	27.7	34.5 dB	
	First	Second	Third	
Instrument Identification				
Results				
LAeq	64.7			
LAE	94.2			
EA	294.746 µPa²h			
EA8	9.399 mPa²h			
EA40	46.997 mPa²h			
LZpeak (max)	2022-03-24 14:13:08	101.7 dB		
LASmax	2022-03-24 14:18:20	79.5 dB		
LASmin	2022-03-24 14:16:00	55.0 dB		
SEA	-99.9 dB			
	Exceedance Counts	Duration		
LAS > 85.0 dB	0	0.0 s		
LAS > 115.0 dB	0	0.0 s		
LZpeak > 135.0 dB	0	0.0 s		
LZpeak > 137.0 dB	0	0.0 s		
LZpeak > 140.0 dB	0	0.0 s		
LCeq	74.9 dB			
LAeq	64.7 dB			
LCeq - LAeq	10.2 dB			
LAlaq	65.9 dB			
LAeq	64.7 dB			
LAlaq - LAeq	1.2 dB			

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker	Comments
1	Run	2022-03-24	14:08:26								
2		2022-03-24	14:08:26	62.9	66.8	55.6	62.5	62.5	No		
3		2022-03-24	14:09:26	65.4	70.2	58.0	64.9	64.9	No		
4		2022-03-24	14:10:26	64.1	70.3	58.8	63.7	63.7	No		
5		2022-03-24	14:11:26	65.3	73.9	59.6	64.9	64.9	No		
6		2022-03-24	14:12:26	65.6	71.0	57.9	65.1	65.1	No		
7		2022-03-24	14:13:26	62.0	65.4	57.6	61.9	61.9	No		
8		2022-03-24	14:14:26	64.0	69.1	58.2	63.8	63.8	No		
9		2022-03-24	14:15:26	61.1	66.9	55.0	60.5	60.5	No		
10		2022-03-24	14:16:26	65.1	70.7	57.0	64.3	64.3	No		
11		2022-03-24	14:17:26	67.7	79.5	57.8	66.0	66.0	No		
12		2022-03-24	14:18:26	66.5	73.1	59.7	65.9	65.9	No		
13		2022-03-24	14:19:26	60.6	65.3	55.5	60.4	60.4	No		
14		2022-03-24	14:20:26	63.7	67.7	58.5	63.5	63.5	No		
15		2022-03-24	14:21:26	67.1	75.0	57.2	66.4	66.4	No		
16		2022-03-24	14:22:26	60.9	66.8	55.5	60.4	60.4	No		
17		2022-03-24	14:23:26	64.7	65.1	63.6	64.2	64.2	No		
18	Stop	2022-03-24	14:23:29								

Summary				
File Name on Meter	LxT_Data.119.s			
File Name on PC	LxT_0004437-20220324 134923-LxT_Data.119.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-14 Middlefield at Veterans			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 13:49:23			
Stop	2022-03-24 14:04:30			
Duration	00:15:07.1			
Run Time	00:15:07.1			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9 dB	
Under Range Limit	37.3	36.9	43.6 dB	
Noise Floor	28.2	27.7	34.5 dB	
	First	Second	Third	
Instrument Identification				
Results				
LAeq	64.0			
LAE	93.6			
EA	256.011 µPa²h			
EA8	8.128 mPa²h			
EA40	40.641 mPa²h			
LZpeak (max)	2022-03-24 13:58:05	106.1 dB		
LASmax	2022-03-24 14:01:10	79.5 dB		
LASmin	2022-03-24 14:03:49	55.2 dB		
SEA	-99.9 dB			
	Exceedance Counts		Duration	
LAS > 85.0 dB	0		0.0 s	
LAS > 115.0 dB	0		0.0 s	
LZpeak > 135.0 dB	0		0.0 s	
LZpeak > 137.0 dB	0		0.0 s	
LZpeak > 140.0 dB	0		0.0 s	
LCeq	72.8 dB			
LAeq	64.0 dB			
LCeq - LAeq	8.7 dB			
LAlaq	65.7 dB			
LAeq	64.0 dB			
LAlaq - LAeq	1.7 dB			

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLD	Marker	Comments
1	Run	2022-03-24	13:49:23								
2		2022-03-24	13:49:23	67.9	75.5	56.7	66.8	66.8	No		
3		2022-03-24	13:50:23	57.9	62.9	55.6	57.8	57.8	No		
4		2022-03-24	13:51:23	64.6	70.9	58.1	64.0	64.0	No		
5		2022-03-24	13:52:23	60.6	65.6	55.7	60.2	60.2	No		
6		2022-03-24	13:53:23	63.5	68.7	57.0	63.0	63.0	No		
7		2022-03-24	13:54:23	61.9	66.4	57.7	61.7	61.7	No		
8		2022-03-24	13:55:23	60.6	65.2	56.2	60.5	60.5	No		
9		2022-03-24	13:56:23	59.8	63.4	56.4	59.7	59.7	No		
10		2022-03-24	13:57:23	66.9	74.1	56.8	66.0	66.0	No		
11		2022-03-24	13:58:23	63.4	68.5	58.6	63.2	63.2	No		
12		2022-03-24	13:59:23	62.3	65.2	57.7	62.0	62.0	No		
13		2022-03-24	14:00:23	69.5	79.5	59.1	67.5	67.5	No		
14		2022-03-24	14:01:23	62.3	65.4	55.7	62.1	62.1	No		
15		2022-03-24	14:02:23	60.0	64.5	55.9	59.9	59.9	No		
16		2022-03-24	14:03:23	60.0	64.6	55.2	59.5	59.5	No		
17		2022-03-24	14:04:23	63.3	64.3	62.6	63.6	63.6	No		
18	Stop	2022-03-24	14:04:30								

Summary				
File Name on Meter	LxT_Data.116.s			
File Name on PC	LxT_0004437-20220324 113157-LxT_Data.116.ldbin			
Serial Number	0004437			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	N. Reynoso			
Location	ST-15 New ECR Condos 23 Lisbon Lane			
Job Description	Gatekeeper			
Note				
Measurement				
Description				
Start	2022-03-24 11:31:57			
Stop	2022-03-24 11:47:13			
Duration	00:15:15.9			
Run Time	00:15:15.9			
Pause	00:00:00.0			
Pre-Calibration	2022-03-24 11:28:43			
Post-Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	142.6 dB			
	A	C	Z	
Under Range Peak	98.9	95.9	100.9 dB	
Under Range Limit	37.3	36.9	43.6 dB	
Noise Floor	28.2	27.7	34.5 dB	
	First	Second	Third	
Instrument Identification				
Results				
LAeq	67.3			
LAE	96.9			
EA	543.800 µPa²h			
EA8	17.100 mPa²h			
EA40	85.498 mPa²h			
LZpeak (max)	2022-03-24 11:45:06	101.3 dB		
LASmax	2022-03-24 11:40:44	76.5 dB		
LASmin	2022-03-24 11:33:28	48.4 dB		
SEA	-99.9 dB			
	Exceedance Counts	Duration		
LAS > 85.0 dB	0	0.0 s		
LAS > 115.0 dB	0	0.0 s		
LZpeak > 135.0 dB	0	0.0 s		
LZpeak > 137.0 dB	0	0.0 s		
LZpeak > 140.0 dB	0	0.0 s		
LCeq	75.2 dB			
LAeq	67.3 dB			
LCeq - LAeq	7.9 dB			
LAlaq	68.5 dB			
LAeq	67.3 dB			
LAlaq - LAeq	1.2 dB			



Record #	Record Type	Date	Time	LAeq	LASmax	LASmin	TWA1	TWA2	OVLd	Marker
1	Run	2022-03-24	11:31:57							
2		2022-03-24	11:31:57	67.9	72.5	56.7	67.1	67.1	No	
3		2022-03-24	11:32:57	65.4	72.8	48.4	64.0	64.0	No	
4		2022-03-24	11:33:57	69.7	75.7	55.7	68.7	68.7	No	
5		2022-03-24	11:34:57	66.5	71.7	56.0	66.0	66.0	No	
6		2022-03-24	11:35:57	67.3	75.7	50.9	65.6	65.6	No	
7		2022-03-24	11:36:57	63.4	70.7	53.0	62.4	62.4	No	
8		2022-03-24	11:37:57	67.3	74.8	54.9	66.3	66.3	No	
9		2022-03-24	11:38:57	68.8	74.4	63.1	68.6	68.6	No	
10		2022-03-24	11:39:57	67.4	76.5	55.4	66.3	66.3	No	
11		2022-03-24	11:40:57	66.1	70.8	57.4	65.4	65.4	No	
12		2022-03-24	11:41:57	66.9	73.1	57.1	66.3	66.3	No	
13		2022-03-24	11:42:57	68.4	72.9	61.2	68.1	68.1	No	
14		2022-03-24	11:43:57	67.1	75.5	59.2	66.6	66.6	No	
15		2022-03-24	11:44:57	69.4	76.3	50.1	68.3	68.3	No	
16		2022-03-24	11:45:57	61.4	67.6	50.9	60.6	60.6	No	
17		2022-03-24	11:46:57	66.4	70.3	62.2	66.2	66.2	No	
18	Stop	2022-03-24	11:47:13							

# Appendix E

## **Water Supply Evaluation**



# **Downtown Precise Plan (DTPP) Plan-Wide Amendments Water Supply Evaluation**

PREPARED FOR

City of Redwood City



PREPARED BY



# **Downtown Precise Plan (DTPP) Plan-Wide Amendments Water Supply Evaluation**

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Prepared for

**City of Redwood City**

Project No. 712-60-22-10

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Project Manager: Elizabeth Drayer, PE

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Date

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QA/QC Review: Jim Connell, PE

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Date

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Appendix A. Water Demand Projection

Appendix B. Regional Water System Supply Reliability and UWMP 2020 (June 2021)

## LIST OF ACRONYMS AND ABBREVIATIONS

AF	Acre-Feet
AFY	Acre-Feet per Year
AWSP	Alternative Water Supply Planning Program
BAWSCA	Bay Area Water Supply and Conservation Agency
CEQA	California Environmental Quality Act
City	City of Redwood City
CWC	California Water Code
DTPP	Downtown Precise Plan
DRT	Drought Response Tool
DWR	Department of Water Resources
FERC	Federal Energy Regulatory Commission
ISG	Individual Supply Guarantee
mgd	Million Gallons Per Day
Proposed Project	Downtown Precise Plan (DTPP) Plan-Wide Amendments
R&D	Research and Development
RWS	San Francisco Public Utilities Commission Regional Water System
SB	Senate Bill
SEIR	Subsequent Environmental Impact Report
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
SVCW	Silicon Valley Clean Water
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSAP	Water Shortage Allocation Plan
WSCP	Water Shortage Contingency Plan
WSE	Water Supply Evaluation
WSIP	Water System Improvement Program



# Downtown Precise Plan Plan-Wide Amendments

## Water Supply Evaluation

### EXECUTIVE SUMMARY

#### Overview

The City of Redwood City (City) is proposing to amend the City's Downtown Precise Plan (DTPP) to revise certain development standards, guidelines and policies, and to provide for internal consistency including, but not necessarily limited to, those with respect to permitted or conditionally permitted land uses; streets and circulation; building placement; minimum building height and massing; parking; historical resources; and open space. As part of the DTPP Plan-Wide Amendments (referred to herein as the Proposed Project), the City is also evaluating a potential future extension of the northern DTPP area boundary between El Camino Real and the Caltrain tracks, as well as the potential for additional office and residential development, to include the following:

- 1,167,100 square feet of office space, of which 30 percent, or 350,100 square feet, is assumed to be research & development (R&D) and laboratory use; and
- 830 multi-family residential units.

The Proposed Project includes a group of projects referred to as the Gatekeeper Projects. The locations of the six Gatekeeper Projects within the DTPP area are listed below:

- 651 El Camino Real
- 901-999 El Camino Real
- 2300 Broadway
- 603 Jefferson / 750 Bradford
- 1900 Broadway
- 601 Allerton Street

This Water Supply Evaluation (WSE) has been prepared for the City of Redwood City (City) to support the Subsequent Environmental Impact Report (SEIR) for the Proposed Project. As described in Section 2, a Water Supply Assessment (WSA) is not required for the Proposed Project pursuant to the California Water Code (CWC or Water Code) §10910-10915. However, for informational purposes, specifically with respect to the proposed amendments to the City's Downtown Precise Plan, the City has voluntarily elected to prepare a WSE for the Proposed Project that is modeled after, and in general conformance with, WSA requirements and the information requested within the California Department of Water Resources (DWR) *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: To Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, dated October 2003. The text of specific sub-sections of the Water Code is included in indented and italicized font at the beginning of specific sections of this WSE. The information presented in those respective sections, and the associated tables and figures, respond directly to Water Code requirements.



## **Projected Water Demands**

The projected water demands for the Proposed Project, which will be located within the City's potable and recycled water service area, were estimated using Attachment Q of Volume III (Design Criteria) of Redwood City's 2019 Engineering Standards. The projected water demand associated with the Proposed Project is 126.2 acre-feet per year (AFY) of potable water and 244.7 AFY of recycled water. According to Redwood City's Municipal Code Section 38.52, all new commercial and multi-family residential properties located within the recycled water service area must be dual plumbed to provide for internal use of recycled water and must use recycled water for landscape irrigation. Since Attachment Q does not differentiate between potable and recycled water uses, the indoor potable/recycled water ratios for the Proposed Project were assumed to be consistent with the ratios used in the City's 2020 Urban Water Management Plan (UWMP). As further described in the City's 2020 UWMP, the indoor potable/recycled water ratios are based on actual demand data from dual plumbed projects completed since 2015. In light of this information, the potable/recycled water ratio for indoor water use is estimated to be 20/80 percent for office space and R&D/laboratory uses and 70/30 percent for residential uses associated with the Proposed Project. In addition, all landscaping water demand projected for the Proposed Project is assumed to be supplied by recycled water, based upon the requirements of Municipal Code Section 38.52. Based on population and employment projections in the City's 2020 UWMP, the projected water demand for the Proposed Project is included in the UWMP water demand projections.

The Proposed Project, if approved, would require subsequent development to undertake certain improvements to utilities, including installation of new recycled water supply main(s) to serve it. It is anticipated that the new main(s) would extend from the closest existing or planned extension of the City's recycled water system to serve one or more individual projects in the DTPP area.

Summaries of the availability and reliability of potable water supplies to serve the projected water demands for the Proposed Project are discussed below.

## **Water Supply Availability and Reliability**

As discussed in this WSE, the City purchases all its potable water supplies from the San Francisco Regional Water System (RWS), which is operated by the San Francisco Public Utilities Commission (SFPUC). The City is a Wholesale Customer of the SFPUC. The availability and reliability of the City's water supplies, as described in this WSE, are based primarily on information contained in the City's 2020 UWMP and the SFPUC 2020 UWMP. The City's 2020 UWMP included projected water demand sufficient to accommodate the Proposed Project and is incorporated by reference into this WSE.

The reliability of the SFPUC RWS supply is highly dependent on the assumption of whether or not the 2018 Bay-Delta Plan Amendment is implemented. The Bay-Delta Plan Amendment was adopted in December 2018 by the State Water Resources Control Board (SWRCB) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 40 percent of the "unimpaired flow" on the three tributaries from February through June in every year type, whether wet, normal, dry, or critically dry. The implementation of the Bay-Delta Plan Amendment significantly impacts the SFPUC RWS supply reliability in dry years; however, the actual implementation of the Bay-Delta Plan Amendment is uncertain, as further explained in this WSE.

## DTPP Plan-Wide Amendments

### Water Supply Evaluation



Because of the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, this WSE presents findings for two scenarios, one assuming the Bay-Delta Plan Amendment is implemented and one assuming that the Bay-Delta Plan Amendment is not implemented.

Under the scenario where it is assumed the Bay-Delta Plan Amendment is implemented, the total projected water supplies determined to be available for the Proposed Project in normal years will meet the projected water demand associated with the Proposed Project, in addition to the City's existing and planned future uses through 2045. However, with the implementation of the Bay-Delta Plan Amendment, significant supply shortfalls are projected in dry years for agencies that receive water supplies from the SFPUC RWS, as well as other agencies whose water supplies would be affected by the Amendment. For the City, total supply shortfalls (i.e., for combined potable and recycled water) are projected in single dry years (ranging from 32 to 40 percent) and in multiple dry years (ranging from 32 to 47 percent) through 2045.

If supply shortfalls do occur, the City expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its Water Shortage Contingency Plan (WSCP), which was adopted on June 14, 2021 and is included in Chapter 8 of the City's 2020 UWMP. With the implementation of the Bay-Delta Plan Amendment, the projected single dry year shortfalls would require implementation of Stage 4 or 5 of the City's WSCP, while the projected multiple dry year shortfalls would require implementation of Stage 4, 5 or 6 of the City's WSCP. The Proposed Project would be subject to the same water conservation and water use restrictions as other water users within the City's system.

Under the scenario where it is assumed the Bay-Delta Plan Amendment is not implemented, the total projected water supplies determined to be available for the Proposed Project in normal years will meet the projected water demand associated with the Proposed Project, in addition to the City's existing and planned future uses through 2045. During single dry years and multiple dry years, supply shortfalls are projected for the City, but they are significantly less than the projected supply shortfalls if the Bay-Delta Plan Amendment is implemented. Supply shortfalls for both single dry years (ranging from 1 to 2 percent) and multiple dry years (ranging from 1 to 11 percent) are projected through 2045.

If supply shortfalls do occur, the City expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP. Without the implementation of the Bay-Delta Plan Amendment, the projected single dry year shortfalls would require implementation of Stage 1 of the City's WSCP, while the projected multiple dry year shortfalls would require implementation of Stage 1 or 2 of the City's WSCP. The Proposed Project would be subject to the same water conservation and water use restrictions as other water users within the City's system.

As described in this WSE, the SFPUC is implementing an Alternative Water Supply Planning Program to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS.

## **1.0 INTRODUCTION**

The City of Redwood City (City) is proposing to amend the City's Downtown Precise Plan (DTPP) to revise certain development standards, guidelines and policies, and to provide for internal consistency including, but not necessarily limited to, those with respect to permitted or conditionally permitted land uses; streets and circulation; building placement; minimum building height and massing; parking; historical resources; and open space. As part of the DTPP Plan-Wide Amendments (referred to herein as the Proposed Project), the City is also evaluating a potential future extension of the northern DTPP area boundary between El Camino Real and the Caltrain tracks, as well as the potential for additional office and residential development, to include the following:

- 1,167,100 square feet of office space, of which 30 percent, or 350,000 square feet, is assumed to be research & development (R&D) and laboratory use; and
- 830 multi-family residential units.

The proposed amendments are informed by the DTPP-area Gatekeeper Projects (described below) and are intended to make policy changes in advance of these Gatekeeper Projects to ensure they conform to the City's vision for the development of the Downtown.

The purpose of this Water Supply Evaluation (WSE) is to support the Subsequent Environmental Impact Report (SEIR) for the Proposed Project. The following sections describe the basis and purpose of this WSE and its organization.

### **1.1 Applicability of Senate Bills 610 and 221 to the Proposed Project**

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project<sup>1</sup>
- Request a WSA from the identified water purveyor

The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed development project, while still meeting the water purveyor's existing

---

<sup>1</sup> The definition of a "project" is provided in Water Code section 10912(a).

and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

The Proposed Project does not strictly meet the project definitions included in Water Code §10910(a) and 10912(a)(3). However, the City has determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and is voluntarily preparing a WSE as part of the SEIR that is modeled after, and in conformance with, all WSA requirements.

SB 221 amended State law (California Government Code section 66473.7) to require that approval by a city or county of certain residential subdivisions<sup>2</sup> requires an affirmative written verification of sufficient water supply. SB 221 was intended as a fail-safe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins. Demonstration of compliance with SB 221 typically coincides with approval of the tentative map for a new development project and will be included as a condition of approval for any portions of the Proposed Project which include a residential subdivision of more than 500 dwelling units.

## 1.2 Purpose of Water Supply Evaluation

This Water Supply Evaluation (WSE) has been prepared for the City to support the Subsequent Environmental Impact Report (SEIR) for the Proposed Project, located within Redwood City's water service area. This WSE does not reserve water or function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable policies and procedures, and consistent with existing law.

## 1.3 Water Supply Evaluation Preparation, Format, and Organization

The format of this WSE is intended to follow Water Code sections 10910 through 10915 to clearly delineate consistency with the specific requirements for a WSA. This WSE includes the following sections:

- Section 1: Introduction
- Section 2: Description of the Proposed Project
- Section 3: Redwood City Water System
- Section 4: Redwood City Water Demands
- Section 5: Redwood City Water Supplies
- Section 6: Water Supply Reliability
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 9: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSE in *italics* to demonstrate consistency with the specific requirements of SB 610.

---

<sup>2</sup> Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.

## **2.0 DESCRIPTION OF THE PROPOSED PROJECT**

The following sections describe the Proposed Project, including the Proposed Project's location, proposed land uses, and projected water demand.

### **2.1 Proposed Project Location and Overview**

The City is proposing to amend the City's Downtown Precise Plan (DTPP) to revise certain development standards, guidelines and policies, and to provide for internal consistency including, but not necessarily limited to, those with respect to permitted or conditionally permitted land uses; streets and circulation; building placement; minimum building height and massing; parking; historical resources; and open space. As part of the DTPP Plan-Wide Amendments (referred to herein as the Proposed Project), the City is also evaluating a potential future extension of the northern DTPP area boundary between El Camino Real and the Caltrain tracks, as well as the potential for additional office and residential development, to include the following:

- 1,167,100 square feet of office space, of which 30 percent, or 350,100 square feet, is assumed to be research & development (R&D) and laboratory use; and
- 830 multi-family residential units.

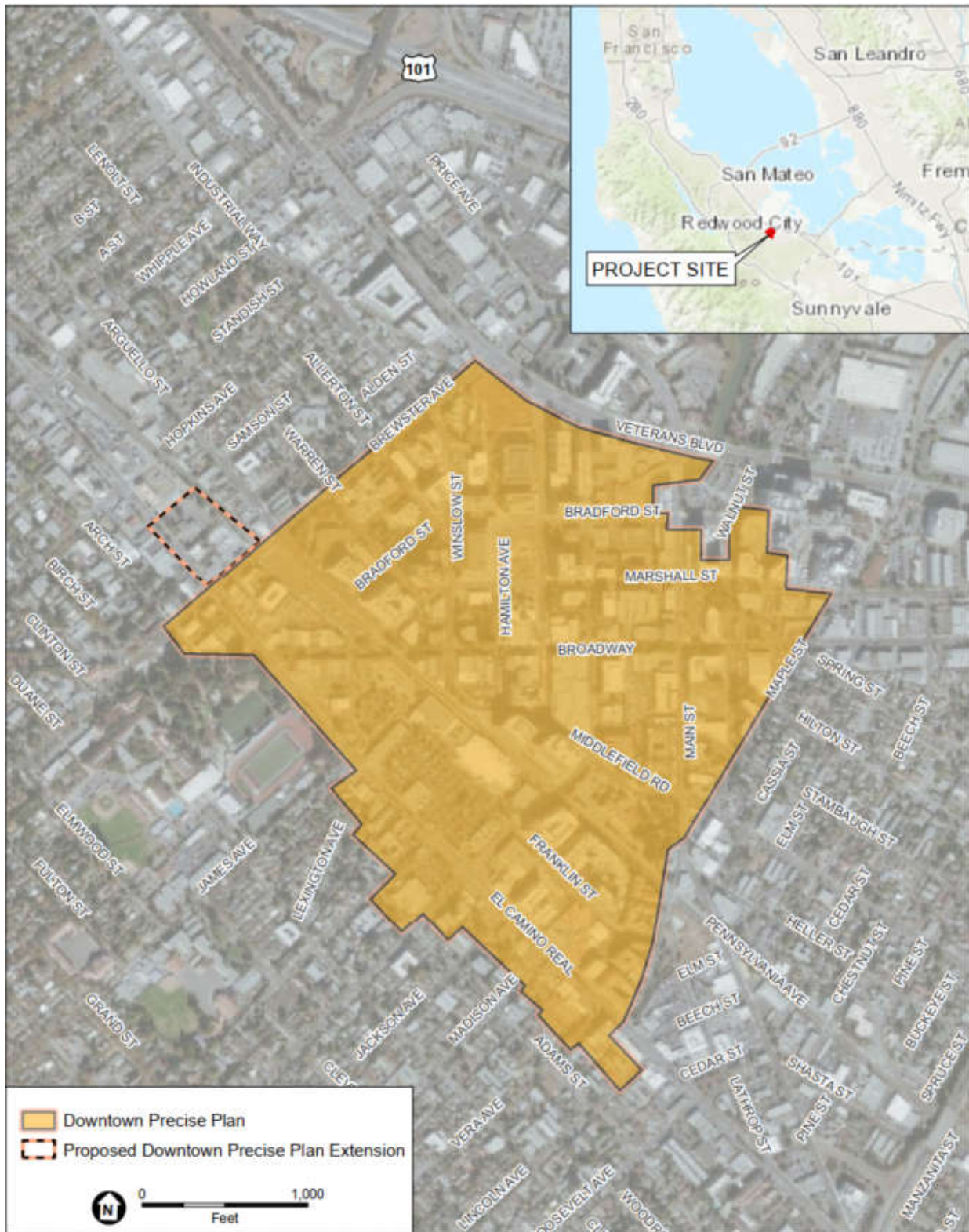
The Proposed Project includes a group of projects referred to as the Gatekeeper Projects. The locations of the six Gatekeeper Projects within the DTPP area are listed below:

- 651 El Camino Real
- 901-999 El Camino Real
- 2300 Broadway
- 603 Jefferson / 750 Bradford
- 1900 Broadway
- 601 Allerton Street

The Proposed Project location is shown on Figure 2-1. A map of the expanded DTPP boundary and the Gatekeeper Project locations is shown on Figure 2-2.



# DTPP Plan-Wide Amendments Water Supply Evaluation



Source: Redwood City DTPP Plan-Wide Amendments Draft SEIR, ESA, February 2022.

**Figure 2-1. Proposed Project Location**



# DTPP Plan-Wide Amendments Water Supply Evaluation



Source: Redwood City DTPP Plan-Wide Amendments Draft SEIR, ESA, February 2022.

**Figure 2-2. Downtown Precise Plan Map with Gatekeeper Project Locations**



## 2.2 Projected Water Demand for the Proposed Project

Water demand projections for the Proposed Project were developed using Attachment Q of Volume III (Design Criteria) of Redwood City's 2019 Engineering Standards (included in Appendix A of this WSE). The water demand projections for the Proposed Project include both potable and recycled water uses to conform to the requirements of Redwood City's Municipal Code. According to Redwood City's Municipal Code Section 38.52, all new commercial and multi-family residential properties located within the City's recycled water service area must be dual plumbed to provide for internal use of recycled water and must also use recycled water for any landscape irrigation. The Proposed Project will be located within the City's recycled water service area and so it must conform to the recycled water requirements.

Since Attachment Q does not differentiate between potable and recycled water uses, the indoor potable/recycled water ratios for the Project were assumed to be consistent with the ratios used in the City's 2020 UWMP. As further described in the City's 2020 UWMP, the indoor potable/recycled water ratios are based on actual demand data from dual plumbed projects completed since 2015. In light of the information in the City's 2020 UWMP, the potable/recycled water ratio for indoor water use is estimated to be 20/80 percent for office space and R&D/laboratory land uses and 70/30 percent for residential uses associated with the Proposed Project. All landscaping water demand projected for the Proposed Project is assumed to be supplied by recycled water, to adhere to the City's Municipal Code, as discussed above. The estimated water demand associated with the Proposed Project is presented in Table 2-1 below.

<b>Table 2-1. Estimated New Water Demand for the Proposed Project<sup>(a)</sup></b>					
Land Use	Quantity <sup>(c)</sup>	Quantity Units	Estimated Water Demand, AFY <sup>(b)</sup>		
			Potable <sup>(d)</sup>	Recycled <sup>(d)</sup>	Total
Office Space	817,000	sqft	23.8	103.6	127.4
R&D / Lab Use	350,100	sqft	16.5	69.5	86.0
Multi-Family Residential	830	DU	85.9	71.6	157.5
<b>Total</b>			<b>126.2</b>	<b>244.7</b>	<b>370.9</b>
<p>(a) This table includes proposed increases to office, research &amp; development / lab use, and residential development specific to the DTPP amendments. Re-development within the DTPP area that does not result in a net increase in water demand is not included.</p> <p>(b) Indoor and landscaping demands were estimated using Attachment Q of Volume III of Redwood City's 2019 Engineering Standards (Appendix A).</p> <p>(c) Land use quantities are from the Draft EIR for the Redwood City DTPP Plan-Wide Amendments (reference Table 3-1), as well as discussions with City staff.</p> <p>(d) The indoor potable/recycled water ratio is assumed to be 20/80 for office space and R&amp;D/lab use and 70/30 for residential. All landscaping is assumed to be supplied by recycled water. For the office space and R&amp;D/lab land use category, the irrigated landscape area is estimated to be 150,000 sq ft.</p> <p>R&amp;D = research and development; sqft = square feet; DU = dwelling unit; AFY = acre-feet per year.</p>					

The development anticipated in the DTPP area would require certain improvements to utilities, including installation of new recycled water supply main(s) to serve it. It is anticipated that the new main(s) would extend from the closest existing or planned extension of the City's recycled water system to serve one or more individual projects in the DTPP area.

## **3.0 REDWOOD CITY WATER SYSTEM**

The following sections describe the City's existing water service area, including existing and projected population.

### **3.1 Water Service Area**

The City's water service area spans approximately 17 square miles and includes the incorporated limits of Redwood City, as well as areas of San Mateo County outside of those limits, including Cañada College, the Emerald Lake Hills Area, a portion of the Town of Woodside, and the City of San Carlos. The service area is approximately bounded by Whipple Avenue to the north, Marsh Road to the south, I-280 to the west, and Highway 101 and San Francisco Bay to the east.

Land uses throughout the water service area consist primarily of residential, commercial, industrial, and institutional land uses. Potable water demand within the City's water service area is tracked and reported for the following sectors: single family residential, multi-family residential, commercial, industrial, municipal, irrigation, and 'other' connections (including schools, churches, temporary meters, and miscellaneous customers).

### **3.2 Population**

The City's service area is largely built-out, with future growth trends expected to be associated with multi-unit and mixed-use infill or redevelopment. This infill development is expected to largely occur within the City's Downtown area, along transit corridors, and in the waterfront neighborhoods east of Highway 101.

As shown in Table 3-1, the total population within the City's service area is projected to increase to 107,947 people by 2045, a 21 percent increase from the current 2020 population of 89,037 people. The projected population estimates represent a 0.9 percent annual growth rate compared to the 2020 population.

<b>Table 3-1. Redwood City Service Area Existing and Projected Population</b>						
<b>Year</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Population Served	89,037	93,765	97,128	100,614	104,247	107,947

*Source: Redwood City 2020 UWMP, Table 3-1.*

## 4.0 REDWOOD CITY WATER DEMANDS

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

The City's 2020 UWMP incorporated the future population, employment, and water demand projections for buildout of the City's 2010 General Plan, as well as the water demands associated with several other proposed development projects, including those included in the DTPP Plan-Wide Amendments. As such, the water demand for the Proposed Project is included in the City's 2020 UWMP water demand projection. The City's 2020 UWMP is incorporated by reference into this WSE.

The descriptions provided below for the City's water demands are based on the City's 2020 UWMP (adopted in June 2021).

### 4.1 Historical and Existing Water Demand

Table 4-1 shows the City's potable and recycled water demand (based on water production) for 2010 through 2020. According to the City's 2020 UWMP, the decrease in water demand from 2013 to 2016 can be attributed to the mandatory statewide restrictions issued by the State Water Resources Control Board (SWRCB) during the drought and water conservation efforts by the City's residents and businesses. Since 2016, water demands have increased, but remain below pre-drought levels.

<b>Table 4-1. Redwood City Historical Water Demand</b>			
<b>Year</b>	<b>Potable Water Demand, AFY</b>	<b>Recycled Water Demand, AFY</b>	<b>Total Water Demand, AFY</b>
2010	10,764	380	11,144
2011	10,246	623	10,869
2012	10,148	685	10,833
2013	10,897	712	11,609
2014	10,118	742	10,860
2015	8,876	712	9,589
2016	8,193	647	8,841
2017	8,694	627	9,321
2018	9,421	737	10,157
2019	9,136	689	9,825
2020	9,852	856	10,708

Source: Redwood City 2020 UWMP, Table 4-1.

## 4.2 Future Water Demand

Table 4-2 shows the City's projected normal year water demands through 2045, which includes the Proposed Project, as presented in the City's 2020 UWMP. These projections are based on anticipated future water demands associated with population and employment projections corresponding to buildout of the City's 2010 General Plan, as well as other planned projects, including those included in the DTPP Plan-Wide Amendments, that would require a General Plan amendment. The demand projections include active and passive water conservation through 2045. Passive conservation includes water savings from implementation of the current plumbing code for water efficient fixtures. Active conservation includes all of the water conservation programs the City is currently implementing or plans to implement through 2045. The projected increase in demand reflects the increase in water use following the end of the suppressed demands due to the 2015-2016 drought and an accelerated growth in employment due to planned development projects.

<b>Table 4-2. Redwood City Projected Future Water Demand – Normal Years</b>						
<b>Type</b>	<b>2020 (Actual), AF</b>	<b>Projected Water Demand, AF</b>				
		<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Potable Water	9,852	9,520	9,623	9,880	9,995	10,207
Recycled Water	856	1,286	1,426	1,686	1,701	1,716
<b>Total</b>	<b>10,708</b>	<b>10,806</b>	<b>11,049</b>	<b>11,566</b>	<b>11,696</b>	<b>11,923</b>

*Source: Redwood City 2020 UWMP, Table 4-8.*

## 4.3 Dry Year Water Demand

As shown in Table 4-1, the City's 2015 and 2016 demands were significantly lower than the demand in previous years. This reduction in demands occurred in response to the drought and mandated statewide reductions in urban potable water usage.

Following the drought, the City updated the stages of action to be taken in response to water supply shortages. The updated stages of action are reflected in the City's Water Shortage Contingency Plan (WSCP) and are included in Chapter 8 of the City's 2020 UWMP. The City has also implemented demand management measures with mandatory prohibitions that are in force at all times, as described in Chapter 9 of the City's 2020 UWMP. The projected future water demand presented in Table 4-2 includes continued implementation of the existing demand management program and is based on future normal hydrologic years.

Under dry water year conditions, the City anticipates implementing the demand reduction measures outlined in the WSCP as appropriate to reduce water demands to match the reduction in the supply. However, to be conservative, the City's 2020 UWMP and this WSE do not assume additional water conservation will occur in single dry or multiple dry years, as compared to normal years, even though additional water conservation is likely to occur during dry years or other water supply shortages, as a result of the City implementing additional water use reduction measures. In addition to being more conservative, this evaluation of unconstrained water demands under dry year conditions also better illustrates the potential supply/demand shortage gap that could be experienced before any mitigation

## DTPP Plan-Wide Amendments

### Water Supply Evaluation



measures are implemented. A discussion of shortage response actions is in Section 7 of this WSE and is also detailed in the City's WSCP, included in Chapter 8 of the City's 2020 UWMP.

Table 4-3 presents the projected future single and multiple dry year water demand, as presented in the City's 2020 UWMP prior to implementation of the WSCP and its associated demand reduction measures.

<b>Table 4-3. Redwood City Projected Future Water Demand – Dry Years</b>						
Hydrologic Condition	Assumed Demand Reduction <sup>(b)</sup>	Projected Water Demand, AF <sup>(a)</sup>				
		2025	2030	2035	2040	2045
Single Dry Year <sup>(c)</sup>	0%	10,806	11,049	11,566	11,696	11,923
Multiple Dry Years <sup>(d,e)</sup>	0%	10,806	11,049	11,566	11,696	11,923
<p>(a) Demand projection includes both potable water and recycled water (reference Table 4-2 of this WSE).</p> <p>(b) Conservatively assumes no demand reduction in dry years, as compared to normal years. Demands may be reduced in dry years as a result of the City's implementation of its Water Shortage Contingency Plan; however, such a demand reduction is not assumed or relied upon for the purposes of the Single Dry Year and Multiple Dry Year evaluations for this WSE.</p> <p>(c) Source: Redwood City 2020 UWMP, Table 7-5.</p> <p>(d) Source: Redwood City 2020 UWMP, Table 7-6.</p> <p>(e) Represents demands for each year of the 5-year multiple dry year period.</p>						

## **5.0 REDWOOD CITY WATER SUPPLIES**

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

*10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system...under the existing water supply entitlements, water rights, or water service contracts.*

*10910(e) If no water has been received in prior years by the public water system...under the existing water supply entitlements, water rights, or water service contracts, the public water system...shall also include in its water supply assessment...an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.*

*10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*

- (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
- (2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most recent bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*
- (3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
- (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
- (5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*



As described in Section 4 of this WSE, the projected water demand associated with the Proposed Project was accounted for in the City's most recently adopted Urban Water Management Plan. The descriptions provided below for the City's water supplies are based on the City's 2020 UWMP (adopted in June 2021) and the SFPUC 2020 UWMP (also adopted in June 2021).

## **5.1 Water Supply Overview**

The City currently purchases all of its potable water supplies from the SFPUC RWS. In addition, although the City does not currently use groundwater as a supply source, it is in the early phase of evaluating groundwater for potential future emergency supply. The City also operates a water recycling program, which supplies non-potable water to a portion of the City's customers. Silicon Valley Clean Water (SVCW) operates the wastewater treatment plant that produces recycled water for the City.

## **5.2 Water Supply from the SFPUC RWS**

The SFPUC RWS supplies water to both retail and wholesale customers. Retail customers include residents, businesses, and industries located within the boundaries of the City and County of San Francisco. Wholesale customers include 26 cities and water supply agencies in Alameda, San Mateo, and Santa Clara counties, including Redwood City.

The City is a member agency of Bay Area Water Supply and Conservation Agency (BAWSCA) and purchases treated water from the SFPUC RWS in accordance with the November 2018 Amended and Restated Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo, and Santa Clara Counties, which was adopted in 2019. The term of the agreement is 25 years, with a beginning date of July 1, 2009 and an expiration date of June 30, 2034. Per the agreement, the City has an Individual Supply Guarantee (ISG) of 10.93 million gallons per day (mgd), or 12,243 AFY, supplied by the SFPUC RWS. Between 2016 and 2020, the City purchased between 67 percent and 80 percent of its ISG.

Additional discussion of the SFPUC RWS water supplies is provided in the City's 2020 UWMP and SFPUC's 2020 UWMP.

## **5.3 Groundwater Supply**

The City does not rely upon groundwater supplies for its potable water supply since the entirety of the City's supply is purchased from the SFPUC RWS. However, the City is currently in the early stages of evaluating groundwater as a future emergency and back-up supply. As such, this WSE evaluates groundwater basin conditions pursuant to Section 10910(f).

### **5.3.1 Groundwater Basin Description**

The City's service area overlies the southern end of the San Mateo Plain Subbasin (DWR basin number 2-009.03; "subbasin") of the Santa Clara Valley Basin. The subbasin is not adjudicated, nor has it been found by the Department of Water Resources (DWR) to be in a condition of overdraft. As part of the implementation of the Sustainable Groundwater Management Act (SGMA), the subbasin was ranked as a "very low priority" basin under the California Statewide Groundwater Elevation Monitoring basin prioritization process. As such, the basin is not subject to the requirements of SGMA.



The subbasin is filled with alluvial fan deposits formed by tributaries to San Francisco Bay that drained across the basin and toward the center of the Bay. These alluvial fan deposits are interbedded with thick clay aquitards or confining layers and comprise the main water bearing formations within the subbasin. The major water bearing formation of the subbasin is the Quaternary alluvium, from which all larger yielding wells acquire their water. The Santa Clara Formation underlies the Quaternary alluvium and is the other water bearing formation of the subbasin. In general, the groundwater system is unconfined in the higher elevations, and confined or semiconfined at lower elevations closer to San Francisco Bay.

Groundwater flow in the subbasin is generally from west-southwest to east-northeast, from the edge of the Santa Cruz Mountains to San Francisco Bay. Both the southern and eastern edges of the subbasin are political boundaries that are roughly coincident with County lines, rather than physical hydrogeologic barriers to groundwater flow. Depending upon temporally varying streamflow, recharge, and pumping conditions, groundwater flow likely occurs in variable directions across each boundary.

A preliminary assessment of groundwater production potential for the City found that sufficient groundwater supply may be available for the City to use as a back-up supply. The portion of the subbasin underlying the City is in a state of equilibrium and water quality is expected to be sufficient for municipal and irrigation uses, though some level of treatment may be required. Additional discussion of the groundwater conditions and groundwater management is provided in the City's 2020 UWMP.

## 5.4 Recycled Water Supply

The City owns, operates, and maintains a wastewater collection system that serves residential and commercial customers throughout Redwood City. The collected wastewater is treated at a wastewater treatment plant that is operated by SVCW. The resulting recycled water is delivered into City-owned and operated storage tanks for use in the City's recycled water system.

The Redwood City recycled water project has a current theoretical supply capacity of 2,857 AFY, with potential expansion, when demand warrants, to its design capacity of up to 3,238 AFY of average annual demand and includes the option to export recycled water to neighboring communities. The "supply" of recycled water identified in the UWMP is limited by the demand, as the recycled water project does not produce recycled water for which no demand exists. Additionally, because recycled water cannot substitute for potable water in certain instances, the full potential supply of recycled water is not considered in the UWMP so as not to artificially "inflate" the City's overall water supply.

The recycled water project has been implemented in two phases. Phase I of the project included the design and construction of facilities to serve customers east of Highway 101 in Redwood Shores and the Greater Bayfront Area. Phase II of the project is underway and will expand the recycled water service area west of Highway 101 to downtown Redwood City.

Additional discussion of recycled water use is provided in the City's 2020 UWMP.





## 5.5 Summary of Existing and Additional Planned Future Water Supplies

Table 5-1 provides a summary of the City's current and projected future normal year supplies as presented in the City's 2020 UWMP. The availability and reliability of the City's water supplies in dry years is discussed in Section 6 of this WSE.

<b>Table 5-1. Redwood City Current and Projected Future Water Supplies – Normal Years</b>						
Water Source	Water Supply, AF					
	2020 Actual <sup>(a)</sup>	2025 <sup>(b)</sup>	2030 <sup>(b)</sup>	2035 <sup>(b)</sup>	2040 <sup>(b)</sup>	2045 <sup>(b)</sup>
Potable Water - Purchased from SFPUC RWS	9,852	12,243	12,243	12,243	12,243	12,243
Recycled Water <sup>(c)</sup>	856	1,286	1,426	1,686	1,701	1,716
<b>Total</b>	<b>10,708</b>	<b>13,529</b>	<b>13,669</b>	<b>13,929</b>	<b>13,944</b>	<b>13,959</b>
(a) Source: Redwood City 2020 UWMP, Table 6-9. (b) Source: Redwood City 2020 UWMP, Table 6-10. (c) The current theoretical supply capacity of recycled water is 2,857 AFY, with future capacity, when demand warrants, to 3,238 AFY.						

## **6.0 WATER SUPPLY RELIABILITY**

*10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

*10911(a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:*

- (1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.*
- (2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.*
- (3) Based on the consideration set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.*

The current reliability of the City's water supply is largely dependent upon its water supply contract with SFPUC and SFPUC's water supply reliability. The reliability discussion provided below is based on the City's 2020 UWMP (adopted in June 2021) and the SFPUC 2020 UWMP (also adopted in June 2021).

### **6.1 SFPUC RWS Reliability**

Information regarding the reliability of the SFPUC RWS was provided to the City by BAWSCA, in coordination with SFPUC, during the preparation of the City's 2020 UWMP. The following sections describe the potential impacts of the 2018 Bay-Delta Plan Amendment on SFPUC RWS reliability, allocation of RWS supplies during supply shortages, as well as SFPUC's Alternative Water Supply Planning Program designed to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS.

#### **6.1.1 Potential Impacts of the 2018 Bay-Delta Plan Amendment on SFPUC RWS Reliability**

In December 2018, the SWRCB adopted amendments to the Water Quality Control Plan for the San Francisco Bay Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 40 percent of the "unimpaired flow" on the three tributaries from February through June in every year type, whether wet, normal, dry, or critically dry.

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The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. But implementation of the Plan Amendment has not occurred to date and is uncertain for several reasons:

- Since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal court, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including two legal challenges filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation in state and federal courts. These cases are in the early stage and there have been no dispositive court rulings to date.
- The Bay-Delta Plan Amendment is not self-implementing and does not allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders. Rather, the Plan Amendment merely provides a regulatory framework for flow allocation, which must be accomplished by other regulatory and/or adjudicatory proceedings, such as a comprehensive water rights adjudication or, in the case of the Tuolumne River, the 401 certification process in the Federal Energy Regulatory Commission's (FERC) relicensing proceeding for Don Pedro Dam. The license amendment process is currently expected to be completed in the 2022-23 timeframe. This process and the other regulatory and/or adjudicatory proceedings would likely face legal challenges and have lengthy timelines, and quite possibly could result in a different assignment of flow responsibility (and therefore a different water supply impact on the SFPUC).
- In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and California Environmental Protection Agency and the leadership of the Newsom administration. The negotiations for a voluntary agreement have made significant progress since an initial framework was presented to the SWRCB on December 12, 2018. The package submitted on March 1, 2019 is the product of renewed discussions since Governor Newsom took office. While significant work remains, the package represents an important step forward in bringing together diverse California water interests.<sup>3</sup>

Because of the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, the SFPUC 2020 UWMP analyzed two supply scenarios, one with the Bay-Delta Plan Amendment assuming

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<sup>3</sup> In late October 2021, State regulators announced that these negotiations stopped before an agreement was reached. It is unclear whether or when negotiations might be reinitiated.

implementation starting in 2023, and one without the Bay-Delta Plan Amendment. Results of these analyses are summarized as follows:<sup>4</sup>

- If the Bay-Delta Plan Amendment is implemented, SFPUC will be able to meet its contractual obligations to its wholesale customers as presented in the SFPUC 2020 UWMP in normal years but would experience significant supply shortages in dry years. In single dry years, supply shortages for SFPUC's wholesale customers collectively, would range from 36 to 46 percent. In multiple dry years for SFPUC's wholesale customers collectively, supply shortages would range from 36 to 54 percent. Implementation of the Bay-Delta Plan Amendment will require rationing in all single dry and multiple dry years through 2045.
- If the Bay-Delta Plan Amendment is not implemented, SFPUC would be able to meet 100 percent of the projected purchases of its wholesale customers during all year types through 2045 except during the fourth and fifth consecutive dry years for base year 2045 when 15 percent wholesale supply shortages are projected.

In June 2021, in response to various comments from wholesale customers regarding the reliability of the RWS as described in SFPUC's 2020 UWMP, the SFPUC provided a memorandum describing SFPUC's efforts to remedy the potential effects of the Bay-Delta Plan Amendment. As described in the memorandum (included in Appendix B of this WSE), SFPUC's efforts include the following:

- Pursuing a Tuolumne River Voluntary Agreement
- Evaluating the drought planning scenario in light of climate change
- Pursuing alternative water supplies
- Litigating with the State over the Bay-Delta Plan Amendment
- Litigating with the State over the proposed Don Pedro FERC Water Quality Certification

#### **6.1.2 Allocation of RWS Supplies During Supply Shortages**

The wholesale customers and SFPUC adopted the November 2018 Amended and Restated Water Supply Agreement in 2019, which included a Water Shortage Allocation Plan (WSAP) to allocate water from the RWS to retail and wholesale customers during system-wide shortages of 20 percent or less, including such shortages occurring as a result of implementation of the Bay-Delta Plan Amendment. The WSAP has two tiers which are described below.

- The Tier One Plan allocates water between SFPUC and the wholesale customers collectively based on the level of the shortage (up to 20 percent). This plan applies only when SFPUC determines that a system-wide water shortage exists and issues a declaration of a water shortage emergency under California Water Code Section 350. The SFPUC may also opt to request voluntary cutbacks from San Francisco and the wholesale customers to achieve necessary water use reductions during drought periods. The allocations outlined in the Tier One Plan are provided in Table 6-1.

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<sup>4</sup> BAWSCA Drought Allocation Tables by Agency (Table E: Percent Cutback to the Wholesale Customers With Bay-Delta Plan and Table N: Percent Cutback to the Wholesale Customers Without Bay-Delta Plan), dated April 1, 2021.

**Table 6-1. Tier One Plan Water Shortage Allocations**

System-Wide Reduction Required, percent	Share of Available Water, percent	
	SFPUC	Wholesale Customers
≤ 5	35.5	64.5
6 to 10	36.0	64.0
11 to 15	37.0	63.0
16 to 20	37.5	62.5

- The Tier Two Plan allocates the collective wholesale customer share among the wholesale customers based on a formula that accounts for each wholesale customer's ISG, seasonal use of all available water supplies, and residential per capita use. BAWSCA calculates each wholesale customer's Allocation Factors annually in preparation for a potential water shortage emergency.

BAWSCA recognizes that the Tier Two Plan was not designed for RWS shortages greater than 20 percent, and in a memorandum dated March 1, 2021, BAWSCA provided a refined methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where supply shortfalls are greater than 20 percent for the purposes of the BAWSCA member agencies' 2020 UWMPs. The revised methodology developed by BAWSCA allocates the wholesale supplies as follows:

- When the average Wholesale Customers' RWS shortages are 10 percent or less, an equal percent reduction will be applied across all agencies. This allocation is consistent with the existing Tier Two requirements in a Tier Two application scenario.
- When average Wholesale Customers' shortages are between 10 and 20 percent, the Tier Two Plan will be applied.
- When the average Wholesale Customers' RWS shortages are greater than 20 percent, an equal percent reduction will be applied across all agencies.

In another memorandum dated February 18, 2021, BAWSCA explains that in actual RWS shortages greater than 20 percent, BAWSCA Member Agencies would have the opportunity to negotiate and agree upon a more nuanced and equitable approach. This would likely consider basic health and safety needs, the water needs to support critical institutions, and minimizing economic impacts on individual communities and the region. As such, the allocation method described in the City's 2020 UWMP is only intended to serve as the preliminary basis for the 2020 UWMP supply reliability analysis. The analysis provided in the SFPUC 2020 UWMP and the City's 2020 UWMP does not in any way imply an agreement by BAWSCA member agencies as to the exact allocation methodology. BAWSCA member agencies are in discussions about jointly developing an allocation method that would consider additional equity factors in the event that SFPUC is not able to deliver its contractual supply volume, and its cutbacks to the RWS supply exceed 20 percent.

### **6.1.3 Alternative Water Supply Program**

In early 2020, the SFPUC began implementation of the Alternative Water Supply Planning Program (AWSP), a program designed to investigate and plan for new water supplies to address future long-term



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water supply reliability challenges and vulnerabilities of the RWS particularly in light of the possible implementation of the Bay-Delta Plan Amendment.

Included in the AWSP is a suite of diverse, non-traditional supply projects that, to a great degree, leverage regional partnerships and are designed to meet the water supply needs of the SFPUC Retail and Wholesale Customers through 2045. As of the most recent Alternative Water Supply Planning Quarterly Update, SFPUC has budgeted \$264 million over the next ten years to fund water supply projects. The drivers for the program include: (1) the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations to RWS supply during dry years; (2) the net supply shortfall following the implementation of SFPUC's Water System Improvement Plan (WSIP)<sup>5</sup>; (3) San Francisco's perpetual obligation to supply 184 mgd to the Wholesale Customers; (4) adopted Level of Service Goals to limit rationing to no more than 20 percent system-wide during droughts; and (5) the potential need to identify water supplies that would be required to offer permanent status to interruptible customers.

The SFPUC is considering several water supply options and opportunities to meet all foreseeable water supply needs, including surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. These efforts and their expected benefit to supply reliability are listed below, and described in further detail in the City's 2020 UWMP and SFPUC 2020 UWMP:

- Daly City Recycled Water Expansion (Regional; Normal and Dry-Year Supply)
- Alameda County Water District – Union Sanitary District Purified Water Partnership (Regional; Normal and Dry-Year Supply)
- Crystal Springs Purified Water (Regional; Normal and Dry-Year Supply)
- Los Vaqueros Reservoir Expansion (Regional; Dry Year Supply)
- Bay Area Brackish Water Desalination (Regional; Normal and Dry-Year Supply)
- Calaveras Reservoir Expansion (Regional; Dry Year Supply)
- Groundwater Banking (Dry Year Supply)
- Inter-Basin Collaborations

Capital projects under consideration would be costly and are still in the early feasibility and conceptual planning stages. The exact yields from these projects are not quantified at this time, as these supply projects would take 10 to 30 years to implement and the exact amount of water that can be reasonably developed is currently unknown.

As with traditional infrastructure projects, there is a need to progress systematically from planning to environmental review, and then on to detailed design, permitting and construction of these alternative water supply projects. Given the complexity and inherent challenges, these projects will require a long

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<sup>5</sup> The Water System Improvement Program (WSIP) is a \$4.8 billion-dollar, multi-year capital program to upgrade the SFPUC's regional and local water systems. The program repairs, replaces, and seismically upgrades crucial portions of the Hetch Hetchy Regional Water System. The program consists of 87 projects (35 local projects located within San Francisco and 52 regional projects) spread over seven counties from the Sierra foothills to San Francisco. The San Francisco portion of the program is 100 percent complete as of October 2020. The Regional portion is approximately 99 percent complete. The current forecasted date to complete the overall WSIP is May 2023. Additional information on the WSIP is provided in Chapter 7 of the City's 2020 UWMP.

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lead time to develop and implement. SFPUC staff have developed an approach and timeline to substantially complete planning and initiate environmental review by July 2023 for a majority of the alternative water supply projects under consideration.

Additional information on the AWSP is provided in Chapter 7 of the City's 2020 UWMP.

## 6.2 Redwood City Water Supply Reliability

In the City's 2020 UWMP, projected normal year supplies are shown to be adequate to satisfy the City's projected normal year demands. However, in the City's 2020 UWMP, and this WSE, the City's purchased supplies from the SFPUC RWS assume dry year supply reductions as a result of the implementation of the Bay-Delta Plan Amendment, which significantly reduces dry year allocations for SFPUC wholesale customers. Recycled water is estimated to be available during all hydrologic years at a volume that meets the City's projected recycled water demands.

Table 6-2 shows the City's projected supplies during normal, single dry and multiple dry years through 2045 based on the assumptions in the City's 2020 UWMP which assumes implementation of the Bay-Delta Plan Amendment.

<b>Table 6-2. Redwood City Projected Water Supplies <u>with</u> Bay-Delta Plan Amendment</b>					
Hydrologic Condition	Projected Water Supply, AF <sup>(a)</sup>				
	2025	2030	2035	2040	2045
Normal Year <sup>(b)</sup>	13,529	13,669	13,929	13,944	13,959
Single Dry Year <sup>(c)</sup>	7,335	7,486	7,836	7,917	7,149
Multiple Dry Years – Year 1 <sup>(d)</sup>	7,335	7,486	7,836	7,917	7,149
Multiple Dry Years – Year 2 <sup>(d)</sup>	6,472	6,624	6,951	7,033	7,149
Multiple Dry Years – Year 3 <sup>(d)</sup>	6,472	6,624	6,951	7,033	7,149
Multiple Dry Years – Year 4 <sup>(d)</sup>	6,472	6,624	6,951	6,405	6,331
Multiple Dry Years – Year 5 <sup>(d)</sup>	6,472	6,624	6,514	6,405	6,331
(a) Includes projected potable water supply from the SFPUC RWS and projected recycled water supply (see Table 5-1).					
(b) Source: Redwood City 2020 UWMP, Table 7-4.					
(c) Source: Redwood City 2020 UWMP, Table 7-5.					
(d) Source: Redwood City 2020 UWMP, Table 7-6.					

The water supply estimates provided in Table 6-2 use the best available data at the time the City's 2020 UWMP was prepared, but do not account for the following factors:

- Potential changes to the implementation of the Bay-Delta Plan Amendment as discussed in Section 6.1.1 of this WSE
- Climate change impacts on the SFPUC RWS
- Potential delays in completion of the WSIP<sup>6</sup>

<sup>6</sup> The San Francisco portion of the WSIP is 100 percent complete as of October 2020. The Regional portion of the WSIP is approximately 99 percent complete. The current forecasted date to complete the overall WSIP is May 2023.

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For comparison purposes, the SFPUC 2020 UWMP also evaluated a scenario without implementation of the Bay-Delta Plan Amendment. Table 6-3 shows the City's projected supplies during normal, single dry and multiple dry years for 2025 through 2045 assuming that the Bay-Delta Plan Amendment is not implemented. SFPUC's analysis indicated that it would be able to meet 100 percent of the wholesale projected purchases during all year types through 2045 except during the fourth and fifth consecutive dry years for base year 2045 when a 11.1 percent supply shortfall is projected for the City<sup>7</sup>.

<b>Table 6-3. Redwood City Projected Water Supplies <u>without</u> Bay-Delta Plan Amendment</b>					
Hydrologic Condition	Projected Water Supply, AF <sup>(a)</sup>				
	2025	2030	2035	2040	2045
Normal Year <sup>(b)</sup>	13,529	13,669	12,929	13,944	13,959
Single Dry Year <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
Multiple Dry Years – Year 1 <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
Multiple Dry Years – Year 2 <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
Multiple Dry Years – Year 3 <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
Multiple Dry Years – Year 4 <sup>(c,d)</sup>	10,762	10,936	11,364	11,491	10,588
Multiple Dry Years – Year 5 <sup>(c,d)</sup>	10,762	10,936	11,364	11,491	10,588
<p>(a) Includes projected potable water supply from the SFPUC RWS (based on projected purchases) and projected recycled water supply (see Table 5-1).</p> <p>(b) Source: Redwood City 2020 UWMP, Table 7-4.</p> <p>(c) Source: BAWSCA Drought Allocation Tables by Agency (Table A: Wholesale RWS Actual Purchases in 2020 and Projected Purchases for 2025, 2030, 2035, 2040 and 2045), dated April 1, 2021.</p> <p>(d) An 11.1 percent reduction in supply from the SFPUC RWS is projected for the City in the fourth and fifth years of a multiple dry year drought, but not until 2045 (BAWSCA Drought Allocation Tables by Agency (Table O2: Individual Agency Drought Allocations, Base Year 2045, Without Bay-Delta Plan), dated April 1, 2021.)</p>					

As required under SB 610, in light of these identified water supply shortages, Section 7 of this WSE describes the City's proposals for reducing water demands and developing additional water supplies, including measures that are being undertaken to acquire and develop those water supplies.

<sup>7</sup> The projected purchases for Redwood City that are used in SFPUC's analysis for the scenario without implementation of the Bay-Delta Plan Amendment vary slightly from the demands projected in Redwood City's 2020 UWMP. Therefore, although SFPUC projects it can meet 100 percent of Redwood City's purchases, except for the fourth and fifth consecutive dry years for base year 2045, slight supply shortfalls (1 to 2 percent) are projected for the City in dry years prior to 2045, as further discussed in Section 7.



## 7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610 COMPARISON OF WATER SUPPLY AND DEMAND

*10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

*10911 (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies.*

Because of the uncertainties surrounding the implementation of the Bay-Delta Plan Amendment, this WSE presents findings for two scenarios, one assuming the Bay-Delta Plan Amendment is implemented and one assuming that the Bay-Delta Plan Amendment is not implemented.

Table 7-1 summarizes the scenario where it is assumed the Bay-Delta Plan Amendment is implemented. Under this scenario, significant supply shortfalls are projected in dry years for all agencies that receive water supplies from the SFPUC RWS. For the City, supply shortfalls are projected in single dry years (ranging from 32 to 40 percent) and in multiple dry years (ranging from 32 to 47 percent) through 2045.

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**Table 7-1. Summary of Water Demand Versus Supply with Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years<sup>(a)</sup>**

Hydrologic Condition		Supply and Demand Comparison, AF				
		2025	2030	2035	2040	2045
Normal Year						
Available Water Supply <sup>(b)</sup>		13,529	13,669	13,929	13,944	13,959
Total Water Demand <sup>(c)</sup>		10,806	11,049	11,566	11,696	11,923
Potential Surplus (Deficit)		2,723	2,620	2,363	2,248	2,036
Percent Shortfall of Demand		-	-	-		-
Single Dry Year						
Available Water Supply <sup>(d)</sup>		7,335	7,486	7,836	7,917	7,149
Total Water Demand <sup>(e)</sup>		10,806	11,049	11,566	11,696	11,923
Potential Surplus (Deficit)		(3,471)	(3,563)	(3,730)	(3,779)	(4,774)
Percent Shortfall of Demand		32	32	32	32	40
Multiple Dry Years						
Multiple-Dry Year 1	Available Water Supply <sup>(d)</sup>	7,335	7,486	7,836	7,917	7,149
	Total Water Demand <sup>(e)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(3,471)	(3,563)	(3,730)	(3,779)	(4,774)
	Percent Shortfall of Demand	32	32	32	32	40
Multiple-Dry Year 2	Available Water Supply <sup>(d)</sup>	6,472	6,624	6,951	7,033	7,149
	Total Water Demand <sup>(e)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(4,334)	(4,425)	(4,615)	(4,663)	(4,774)
	Percent Shortfall of Demand	40	40	40	40	40
Multiple-Dry Year 3	Available Water Supply <sup>(d)</sup>	6,472	6,624	6,951	7,033	7,149
	Total Water Demand <sup>(e)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(4,334)	(4,425)	(4,615)	(4,663)	(4,774)
	Percent Shortfall of Demand	40	40	40	40	40
Multiple-Dry Year 4	Available Water Supply <sup>(d)</sup>	6,472	6,624	6,951	6,405	6,331
	Total Water Demand <sup>(e)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(4,334)	(4,425)	(4,615)	(5,291)	(5,592)
	Percent Shortfall of Demand	40	40	40	45	47
Multiple-Dry Year 5	Available Water Supply <sup>(d)</sup>	6,472	6,624	6,514	6,405	6,331
	Total Water Demand <sup>(e)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(4,334)	(4,425)	(5,052)	(5,291)	(5,592)
	Percent Shortfall of Demand	40	40	44	45	47

(a) Numbers from this table may not exactly match numbers in Table 7-6 of the Redwood City 2020 UWMP due to rounding.

(b) From Table 5-1 of this WSE.

(c) From Table 4-2 of this WSE.

(d) From Table 6-2 of this WSE.

(e) From Table 4-3 of this WSE.

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If supply shortfalls do occur (from any cause, such as droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.), the City expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP.<sup>8</sup> Consistent with California Water Code (CWC) §10632, the WSCP includes six levels to address shortage conditions ranging from up to 5 percent to greater than 55 percent shortage, identifies a suite of demand mitigation measures for the City to implement at each level, and identifies procedures for the City to annually assess whether or not a water shortage is likely to occur in the coming year, among other things.

With implementation of the Bay-Delta Plan Amendment, the projected single dry year shortfalls (of 32 to 40 percent) would require implementation of Stage 4 or 5 of the City's WSCP, which, according to Chapter 8 of the UWMP, will reduce the shortage gap by 35 or 45, respectively. The projected multiple dry year shortfalls (of 32 and 47 percent) would require implementation of Stage 4, 5 or 6 of the City's WSCP, which will reduce the shortage gap by up to 55 percent. Each stage of the City's WSCP requires declaration by the City Council once a governing body, such as SFPUC, has required a voluntary or mandatory reduction in water use due to water supply shortages or an emergency. Each stage includes implementation of a mandatory water allocation program, voluntary restrictions on end uses, as well as various agency actions. The water saving impacts associated with each stage of action of the WSCP (Stages 1 through 6) are quantitatively estimated using the Drought Response Tool (DRT), as presented in Attachment 2 of the City's WSCP, provided in Chapter 8 of the City's 2020 UWMP. The DRT quantitative assessment considers each consumption reduction method independently to quantify water savings for Stages 1 through 6 of the City's WSCP.

As described in Section 6.1.3 of this WSE, the SFPUC is implementing an Alternative Water Supply Planning Program to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS. Also, as described in Section 5.3 of this WSE, the City is currently in the early stage of evaluating groundwater as a potential back-up supply. However, because these potential additional supplies are still being developed, they are not included in Table 7-1.

Table 7-2 summarizes the scenario where it is assumed the Bay-Delta Plan Amendment is not implemented. Under this scenario, the total projected water supplies determined to be available in single dry years and multiple dry years are only slightly lower than the projected water demand associated with the City's existing and planned future uses, including the Proposed Project, through 2045.<sup>9</sup> These projected supply shortfalls are significantly less than the projected supply shortfalls if the Bay-Delta Plan Amendment is implemented. This includes both single dry years (shortfalls ranging from 1 to 2 percent) and multiple dry years (shortfalls ranging from 1 to 11 percent). As described in Section 6.2, based on

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<sup>8</sup> A main focus of the City's planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. Other actions that the City will take include coordination with other agencies, implementing water rate incentives and penalties, increasing water waste patrols, etc. Additional information on the City's WSCP is provided in Chapter 8 of the City's 2020 UWMP.

<sup>9</sup> Although Table 7-2 shows shortfalls under all dry year scenarios, SFPUC's analysis only projects supply shortfalls for Redwood City during the fourth and fifth consecutive dry years for base year 2045 for the scenario without implementation of the Bay-Delta Plan Amendment. This difference is due to variations between the projected purchases (demands) for Redwood City that are used in SFPUC's analysis, and the demands projected in Redwood City's 2020 UWMP. The analysis in this WSE is consistent with the demands projected in Redwood City's 2020 UWMP.

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SFPUC's analysis, a 11.1 percent supply shortfall is projected during the fourth and fifth consecutive dry years for base year 2045.

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**Table 7-2. Summary of Water Demand Versus Supply without Bay-Delta Plan Amendment During Hydrologic Normal, Single Dry, and Multiple Dry Years**

Hydrologic Condition		Supply and Demand Comparison, AF				
		2025	2030	2035	2040	2045
Normal Year						
Available Water Supply <sup>(a)</sup>		13,529	13,669	13,929	13,944	13,959
Total Water Demand <sup>(b)</sup>		10,806	11,049	11,566	11,696	11,923
Potential Surplus (Deficit)		2,723	2,620	2,363	2,248	2,036
Percent Shortfall of Demand		--	--	--	--	--
Single Dry Year						
Available Water Supply <sup>(c)</sup>		10,762	10,936	11,364	11,491	11,685
Total Water Demand <sup>(d)</sup>		10,806	11,049	11,566	11,696	11,923
Potential Surplus (Deficit)		(44)	(113)	(202)	(205)	(238)
Percent Shortfall of Demand		0	1	2	2	2
Multiple Dry Years						
Multiple-Dry Year 1	Available Water Supply <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
	Total Water Demand <sup>(d)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(44)	(113)	(202)	(205)	(238)
	Percent Shortfall of Demand	0	1	2	2	2
Multiple-Dry Year 2	Available Water Supply <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
	Total Water Demand <sup>(d)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(44)	(113)	(202)	(205)	(238)
	Percent Shortfall of Demand	0	1	2	2	2
Multiple-Dry Year 3	Available Water Supply <sup>(c)</sup>	10,762	10,936	11,364	11,491	11,685
	Total Water Demand <sup>(d)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(44)	(113)	(202)	(205)	(238)
	Percent Shortfall of Demand	0	1	2	2	2
Multiple-Dry Year 4	Available Water Supply <sup>(c)</sup>	10,762	10,936	11,364	11,491	10,588
	Total Water Demand <sup>(d)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(44)	(113)	(202)	(205)	(1,335)
	Percent Shortfall of Demand	0	1	2	2	11
Multiple-Dry Year 5	Available Water Supply <sup>(c)</sup>	10,762	10,936	11,364	11,491	10,588
	Total Water Demand <sup>(d)</sup>	10,806	11,049	11,566	11,696	11,923
	Potential Surplus (Deficit)	(44)	(113)	(202)	(205)	(1,335)
	Percent Shortfall of Demand	0	1	2	2	11

(a) From Table 5-1 of this WSE.

(b) From Table 4-2 of this WSE.

(c) From Table 6-3 of this WSE.

(d) From Table 4-3 of this WSE.

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If supply shortfalls do occur, the City expects to meet these supply shortfalls through water demand reductions and other shortage response actions by implementation of its WSCP.<sup>10</sup> Without implementation of the Bay-Delta Plan Amendment, the projected single dry year shortfalls (of 1 to 2 percent) would require implementation of Stage 1 of the City's WSCP, which will reduce the gap by 5 percent. The projected multiple dry year shortfalls (of 1 to 11 percent) would require implementation of Stage 1 or 2 of the City's WSCP, which will reduce the gap by 5 or 15 percent, respectively. As previously discussed, each stage of the City's WSCP requires declaration by City Council, as well as various agency actions and restrictions on end users. The water saving impacts associated with these actions were quantitatively estimated through a DRT quantitative assessment, which is presented in Attachment 2 of the City's WSCP, provided in Chapter 8 of the City's 2020 UWMP.

In addition, as previously mentioned, discussion of SFPUC's Alternative Water Supply Planning Program is included in Section 6.1.3, and discussion of groundwater as a potential back-up supply is included in Section 5.3 of this WSE. Because these potential additional supplies are still being developed, they are not included in Table 7-2.

The water demand associated with the Proposed Project is included in the City's water demand projections shown in its 2020 UWMP. The Proposed Project would be subject to the same water conservation and water use restrictions as other water users within the City's system.

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<sup>10</sup> A main focus of the City's planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. Other actions that the City will take include coordination with other agencies, implementing water rate incentives and penalties, increasing water waste patrols, etc. Additional information on the City's WSCP is provided in Chapter 8 of the City's 2020 UWMP.

## **8.0 REFERENCES**

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